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DRAFT ENVIRONMENTAL IMPACT REPORT
California Marine Life Protection Act Initiative
South Coast Study Region

Prepared for:
California Department of Fish and Game

Prepared by:
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SOUTH COAST MARINE PROTECTED AREAS PROJECT

DRAFT ENVIRONMENTAL IMPACT REPORT

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LIST OF ACRONYMS AND ABBREVIATIONS

$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
AB	California Assembly Bill
Administrator	U.S. Environmental Protection Agency Administrator
AGO	California Attorney General's Office
ARMP	Abalone Recovery and Management Plan
ASBS	areas of special biological significance
BEACON	Beach Erosion Authority for Clean Oceans and Nourishment
BLM	Bureau of Land Management
bpd	barrels per day
BRTF	Blue Ribbon Task Force
CAA	federal Clean Air Act
CAAQS	California ambient air quality standards
Cal-EPA	California Environmental Protection Agency
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCC	California Coastal Commission
CCMP	California Coastal Management Plan
CCR	California Code of Regulations
CCW	California coastal waters
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CH ₄	methane
CNPS	California Native Plant Society
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e/y	carbon dioxide (emission) equivalent per year
Commission	California Fish and Game Commission
COPA	California Ocean Protection Act of 2004
Corps	U.S. Army Corps of Engineers
CPFV	commercial passenger fishing vessels
CRFS	California Recreational Fisheries Survey
Cu	copper
CWA	Clean Water Act
CZMA	Coastal Zone Management Act of 1972
DARRP	Damage Assessment Remediation and Restoration Program
DDE	dichlorodiphenyldichloroethylene
DDT	dichlorodiphenyltrichloroethane
Department	California Department of Fish and Game
DOGGR	Division of Oil, Gas, and Geothermal Resources

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EFH	essential fish habitat
EIR	environmental impact report
EPA	U.S. Environmental Protection Agency
ESA	Federal Endangered Species Act
FERC	Federal Energy Regulatory Commission
FMP	fishery management plans
FY	fiscal year
GCC	global climate change
GHG	greenhouse gas
GWP	global warming potential
H ₂ S	hydrogen sulfide
HAPCs	habitat areas of particular concern
HCP	habitat Conservation Plan
HFCs	hydrochlorofluorocarbons
HSWA	Hazardous and Solid Waste Amendments
IMO	International Marine Organization
IPA	Integrated Preferred Alternative
IPCC	Intergovernmental Panel on Climate Change
LACSD	Los Angeles County Sanitary District
LA-LB	(Sector) Los Angeles-Long Beach
MARPOL	International Convention for the Prevention of Pollution from Ships
MBTA	Migratory Bird Treaty Act
MHCP	Multiple Habitat Conservation Program
MHTL	Mean High Tide Line
MLMA	Marine Life Management Act of 1998
MLPA	Marine Life Protection Act of 1999
MMA	marine managed areas
MMAIA	Marine Managed Areas Improvement Act of 2000
MMPA	Marine Mammal Protection Act
mmscfd	million standard cubic feet per day
MMT	million metric tons
MPA	marine protected areas
MRFSS	Marine Recreational Fisheries Statistics
MSCP	Multiple Species Conservation Plan
MWDOC	Municipal Water District of Orange County
N ₂ O	nitrous oxide
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NAS	nonindigenous aquatic species
NCCP	Natural Community Conservation Planning or Natural Community Conservation Plan

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NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO ₂	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOP	Notice of Preparation
NPDES	National Pollution Discharge Elimination System
NPS	National Park Service
NWR	National Wildlife Refuges
O ₃	ozone
OCS	outer continental shelf
OCSLA	Outer Continental Shelf Lands Act of 1953
OEHHA	Office of Environmental Health and Hazard Assessment
OPA	Oil Pollution Act
OSPR	Office of Spill Prevention and Response
PAHs	polynuclear aromatic hydrocarbons
Pb	lead
PCBs	polychlorinated biphenyls
PFC	perfluorocarbons
PM ₁₀	particulate matter less than 10 microns in diameter
PM _{2.5}	particulate matter less than 2.5 microns in diameter
PoLA	Port of Los Angeles
POTW	publicly owned treatment works
ppm	parts per million
PRC	Public Resources Code
RCA	rockfish conservation area
RCRA	Resource Conservation and Recovery Act
RECLAIM	Regional Clean Air Incentives Market
RHA	Rivers and Harbors Act of 1899
RNA	Regulated Navigation Area
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SCA	Special closure area
SAT	Science Advisory Team
SBCAPCD	Santa Barbara County Air Pollution Control District
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SCCAB	South Central Coast Air Basin
SCRSG	South Coast Regional Stakeholder Group
SCSR	south coast study region
SCSR	South Coast Study Region
SDAB	San Diego Air Basin

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SDAPCD	San Diego County Air Pollution Control District
SF ₆	sulfur hexafluoride
SIG	Statewide Interests Group
SIP	state implementation plan
SLC	California State Lands Commission
SLOAPCD	San Luis Obispo County Air Pollution Control District
SMCA	state marine conservation area
SMCA	state marine conservation area
SMP	state marine park
SMP	State Marine Park
SMR	state marine reserve
SMR	State Marine Reserve
SMRMA	state marine recreational management area
SST	sea surface temperatures
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TBT	Tributyltin
TMDL	Total Maximum Daily Load
TSS	Traffic Separation Scheme
UnoCal	Union Oil of California
USCG	United States Coast Guard
USFWS	United States Fish and Wildlife Service
VCAPCD	Ventura County Air Pollution Control District
VTS	Vessel Traffic Services
Zn	zinc

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EXECUTIVE SUMMARY

This section provides an Executive Summary of the Draft Environmental Impact Report (EIR) for the Marine Life Protection Act South Coast Study Region Marine Protected Areas Project as prepared by the California Fish and Game Commission (Commission), with the assistance of the Department of Fish and Game (Department).

ES.1 PROJECT LOCATION

The currently proposed regulatory action involves only marine protected areas (MPAs) within state waters between Point Conception in Santa Barbara County and the California border with Mexico, and includes state waters adjacent to offshore islands and rocks. This region, designated in this process as the south coast study region (SCSR), covers approximately 2,351 square miles of coastal state waters, from the mean high tide line to a maximum depth of approximately 3,938 feet, including estuarine areas. The SCSR spans five coastal California counties: Santa Barbara, Ventura, Los Angeles, Orange, and San Diego. The Channel Islands are also included within the SCSR, however changes to MPAs adjacent to five Channel Islands (San Miguel, Santa Rosa, Santa Cruz, Anacapa, and Santa Barbara) are not part of the current regulatory action. The 13 existing MPAs surrounding these islands were established during prior Commission rulemaking, and would not be modified by the Commission's currently proposed regulatory action.

ES.2 PROJECT BACKGROUND

ES.2.1 Marine Resource Protection Background

California has a long tradition of addressing the conservation of its diverse coastal and marine wildlife and habitats. Since World War II, pressures on these resources have grown as fishing has increased and coastal development has transformed coastal habitats and generated pollutants (Department 2008).

Historically, the marine policies of California and other state and federal governments have been based largely on assumptions related to the idea that marine populations were large enough that human activities could not possibly impact them (Department 2008).

A wide range of factors, including short-term and long-term shifts in oceanographic conditions, numerous human activities, and accumulated research, have caused scientists, members of the public, and policy-makers to reject those assumptions, and instead, adopt the idea that natural and human factors directly and indirectly influence the abundance and diversity of populations of marine wildlife. The impact of each factor varies with distance from shore and with individual species (Department 2008).

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ES.2.2 Marine Life Protection Act

In 1999, the California state legislature approved and the governor signed the Marine Life Protection Act (MLPA; codified at Sections 2850 through 2863 of the Fish and Game Code, references herein to specific portions of the MLPA refer to these code sections). In determining the need for the act the legislature held that “California’s marine protected areas (MPAs) were established on a piecemeal basis rather than according to a coherent plan and sound scientific guidelines. Many of these MPAs lack clearly defined purposes, effective management measures, and enforcement. As a result, the existing array of MPAs creates the illusion of protection while falling far short of its potential to protect and conserve living marine life and habitat” (MLPA Section 2851).

In enacting the MLPA, the legislature declared that “California’s extraordinary marine biological diversity is a vital asset to the state and nation. The diversity of species and ecosystems found in the state’s ocean waters is important to public health and well-being, ecological health, and ocean-dependent industry” (MLPA Section 2851(b)). The legislature also held that coastal development, water pollution, and other human activities threaten the health of marine habitat and the biological diversity found in California’s ocean waters. New technologies and demands have encouraged the expansion of fishing and other activities to formerly inaccessible marine areas that once recharged nearby fisheries. As a result, ecosystems throughout the state’s ocean waters are being altered, often at a rapid rate (MLPA Sections 2851(c) and (d)).

The MLPA directs the state to redesign California’s system of MPAs to function as a network in order to: increase coherence and effectiveness in protecting the state’s marine life and habitats, marine ecosystems, and marine natural heritage, as well as to improve recreational, educational, and study opportunities provided by marine ecosystems subject to minimal human disturbance (Department 2008). Six goals guide the development of MPAs in the MLPA planning process, codified at MLPA Section 2853(b), including:

1. Protect the natural diversity and abundance of marine life, and the structure, function, and integrity of marine ecosystems.
2. Help sustain, conserve, and protect marine life populations, including those of economic value, and rebuild those that are depleted.
3. Improve recreational, educational, and study opportunities provided by marine ecosystems that are subject to minimal human disturbance, and manage these uses in a manner consistent with protecting biodiversity.
4. Protect marine natural heritage, including protection of representative and unique marine life habitats in California waters for their intrinsic values.
5. Ensure California’s MPAs have clearly defined objectives, effective management measures, and adequate enforcement and are based on sound scientific guidelines.

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6. Ensure the state's MPAs are designed and managed, to the extent possible, as a network.

The MLPA notes that MPAs should include several elements, such as: an "improved marine life reserve component"; specified objectives and management and enforcement measures; provisions for monitoring and adaptive management; provisions for educating the public and encouraging public participation, and; a process for the establishment, modification, or abolishment of existing or future new MPAs (MLPA Section 2853(c)) (Department 2008).

ES.3 PROPOSED PROJECT AND ALTERNATIVES

The proposed Integrated Preferred Alternative (IPA) evaluated in this Draft EIR consists of modifications to the Commission's regulations governing MPAs off the California coast. However, these modifications would not alter the existing regulations regarding the MPAs surrounding five Channel Islands (San Miguel, Santa Rosa, Santa Cruz, Anacapa, and Santa Barbara). Existing MPAs in these areas would remain unchanged.

As described more fully in Section 2.0 of the Draft EIR, substantial public, stakeholder, and agency participation was involved in the development of the proposed Project IPA, and the proposed Project IPA was created by combining elements of three distinct MPA network proposals received through the public participation process. Because the original three proposals were intended to achieve the basic objectives of the proposed Project (as set forth in the MLPA and described above), and represented three separate efforts by affected, concerned, and knowledgeable parties to do so, the three original proposals have been retained for analysis as alternatives to the proposed Project IPA. As required by the State CEQA Guidelines, a "No Project" alternative (Alternative 0) is also evaluated, considering a scenario under which no regulatory action would be taken by the Commission and the existing MPA regulations would remain in effect and unmodified.

The proposed Project IPA and the four alternatives considered in this Draft EIR are summarized below and described in detail in Section 3.0 and Section 10.0, respectively.

ES.3.1 Proposed IPA

Under the proposed Project IPA, MPAs would be designated as shown on Figure 3-2, and in Tables 3-2 and 3-3 (located in Section 3.0 of this Draft EIR). In total, the proposed Project IPA would increase the existing total of 42 MPAs in the SCSR to a minimum of 48 MPAs. (This number could increase based on which options are selected for some MPA boundaries.) The total area protected would increase substantially, from approximately 182 square miles under existing conditions to more than 351 square miles, depending on boundary options selected by the Commission. These figures include 13 existing MPAs surrounding five of the Channel Islands which are within the SCSR but would be retained without modification and are not a part of the currently proposed rulemaking.

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The SCSR contains federal Safety Zones, which are military closures enacted by the United States Coast Guard and managed by the United States Navy. The closures are intended to ensure public safety – not for marine preservation, but they provide additional protection to the proposed network by prohibiting public access and acting as no-fishing zones. Two such safety zones occur near San Clemente Island, and they encompass approximately 37 square miles. These areas are not under consideration for regulatory action because the compatibility of these uses with marine resource protection is uncertain; they are described for informational purposes only. They are not components of the proposed Project IPA and will not be proposed for formal designation as MPAs.

ES.3.2 Alternative 0 (No Project)

Under Alternative 0 (“No Project” alternative), the MPA regulations for the SCSR would not be revised, and the existing network of MPAs established by regulations in 14 CCR 632(b) would remain in effect. The locations of MPAs under this alternative are depicted graphically on Figure 10-1, and a numerical summary of the extent of these MPAs is presented in Table 10-1 (see Section 10.1 of this Draft EIR). The No Project alternative would retain the existing network of 42 MPAs within the SCSR, which includes the 13 existing MPAs surrounding the northern Channel Islands. The existing MPA network encompasses approximately 182 square miles of protected areas, representing approximately 7.7 percent of state waters within the SCSR.

ES.3.3 Alternative 1

Under Alternative 1, the existing MPA regulations at 14 CCR 632(b) would be modified, altering the boundaries, designations, and conditions governing the MPA network within the SCSR. The locations of MPAs under this alternative are depicted graphically on Figure 10-3, and a numerical summary of the changes in protected area that would occur under this alternative are presented in Table 10-2 (Section 10.0 of this Draft EIR). The regulatory changes proposed under Alternative 1 would expand the existing MPA network to encompass a total of 50 MPAs, compared to 42 under existing regulations, which include the existing 13 MPAs surrounding the northern Channel Islands. The total extent of areas protected would increase from approximately 182 square miles under existing conditions to approximately 361 square miles under Alternative 1.

ES.3.4 Alternative 2

Under Alternative 2 the existing MPA regulations at 14 CCR 632(b) would be modified, altering the boundaries, designations, and conditions governing the MPA network within the SCSR. A numerical summary of the changes in protected area that would occur under this alternative are presented in Table 10-3. The regulatory changes proposed under Alternative 2 would decrease the number of MPAs within the SCSR from 42 to 37, but would increase the geographic area protected from approximately 182 square miles to approximately 342 square

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miles. (These changes include the 13 existing MPAs which surrounding the northern Channel Islands that would be retained without modification). The eight existing SMPs previously designated by the Commission within the SCSR would not be retained under this alternative, and would be either removed or redesignated to other MPA classifications.

ES.3.5 Alternative 3

Under Alternative 3 the existing MPA regulations at 14 CCR 632(b) would be modified, altering the boundaries, designations, and conditions governing the MPA network within the SCSR. A numerical summary of the changes in protected area that would occur under this alternative are presented in Table 10-4. The regulatory changes proposed under Alternative 3 would expand the extent of marine areas protected from approximately 182 square miles under existing conditions to approximately 349 square miles (including the 13 existing MPAs surrounding the northern Channel Islands, which would be retained without modification under all alternatives considered in this Draft EIR). However, the number of discreet MPAs within the SCSR would decrease under this alternative, from an existing total of 42 to a revised total of 39. The 8 existing SMPs previously designated by the Commission within the SCSR would not be retained under this alternative, and would be either removed or redesignated to other MPA classifications.

Alternative 3 would also designate one area as a State Marine Recreational Management Area (SMRMA), a designation allowed pursuant to Section 36700(e) of the Public Resources Code for areas where restricting recreational opportunities may be necessary for the preservation of resource values. The restrictions imposed within a SMRMA are focused on recreational uses, and the MLPA (Section 2852(c)) does not include SMRMAs among the classifications considered to be MPAs. Thus, while a SMRMA would be designated under this alternative, that designation would not affect the extent of the MPA network. The SMRMA is also not included in the MPA summary statistics presented in this section. For more information related to the proposed SMRMA, refer to Section 10.4.1.8 of this Draft EIR.

ES.4 COMPARISON OF PROPOSED IPA AND ALTERNATIVES

ES.4.1 Proposed IPA and Alternatives 1, 2, and 3

A qualitative summary of potential environmental impacts of the proposed Project IPA as compared to the alternatives is provided in Table ES-1. As may be seen in the table, the impacts associated with both the proposed Project IPA and its alternatives are similar and consist of “no impact” or less-than-significant impacts; no significant or unavoidable impacts were identified (for a detailed description of impact analyses, refer to Sections 5.0, 6.0, 7.0, and 8.0 [for the proposed Project IPA], and 10.0 [for the alternatives]). Minor differences in impacts are qualitatively identified in the table using the signs for “plus” (greater than the IPA), “minus” (less than the IPA) and “equal” (similar to the IPA). These differences are

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**TABLE ES-1
SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS UNDER PROPOSED
IPA AND ALTERNATIVES**

Environmental Topic	Proposed IPA	Alternative 0 (No Project)	Alternative 1	Alternative 2	Alternative 3
Protected Area (square miles)	350.59	181.86	360.82	341.56	348.92
Consumptive Uses and Socioeconomic Considerations	LTS ¹	NI ¹	LTS	LTS	LTS
Air Quality	LTS	NI	LTS (+) ²	LTS (-)	LTS (=)
Global Climate Change and Greenhouse Gas Emissions	LTS to B	NI	LTS to B (+)	LTS to B (-)	LTS to B (=)
Water Quality	NI to LTS	NI	NI to LTS	NI to LTS	NI to LTS
Mineral Resources	LTS	NI	LTS (-)	LTS (+)	LTS (=)
Biological Resources	LTS	NI	LTS (+)	LTS (-)	LTS (=)
Cultural Resources	NI to LTS	NI	NI to LTS (+)	NI to LTS (-)	NI to LTS (=)
Public Services and Utilities	LTS	NI	LTS (=)	LTS (=)	LTS (=)
Land Use and Recreational Resources	NI to LTS	NI	NI to LTS (+)	NI to LTS (-)	NI to LTS (=)
Vessel Traffic	LTS	NI	LTS (+)	LTS (-)	LTS (=)
Hazards and Hazardous Materials	NI to LTS	NI	NI to LTS	NI to LTS	NI to LTS
Environmental Justice	LTS	NI	LTS (=)	LTS (=)	LTS (=)

¹ NI = No Impact; LTS = Less Than Significant.

² Impact levels relative to proposed Project are as follows: (+) = greater impact than proposed Project IPA; (=) = same impact; and (-) = less impact than proposed Project IPA.

primarily associated with the change in area of the MPA networks. However, in some cases the change in area was offset by other factors and no difference in impacts was discernable.

ES.4.2 Alternative 0 (No Project)

Alternative 0 has the potential to result in potential environmental impacts to some resources, as the foreseeable consequences of not approving the Project could include continued decline of marine ecosystems. For additional discussion, see Section 10.0 of this Draft EIR. However, under this alternative the benefits of the proposed Project IPA would not occur. Alternative 0 would not comply with the MLPA’s mandate to improve the existing network of MPAs, and would not realize any of goals of the MLPA (refer to Section 3.0 of this Draft EIR). Additionally, the No Project alternative would not take full advantage of the multiple benefits that can be derived from the establishment of marine life reserves, and would not result in changes to those factors shown to directly and indirectly influence the abundance and diversity of marine wildlife populations and fisheries.

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**SECTION 1.0
INTRODUCTION**

This Draft Environmental Impact Report (EIR) has been prepared in accordance with the California Environmental Quality Act (CEQA) (California Public Resources Code Section 21000 *et seq.*), and evaluates proposed adoption by the California Fish and Game Commission (Commission) of revised regulations governing the nature and extent of marine protected areas (MPAs) off Southern California's Pacific coast. The lead agency responsible for preparing this Draft EIR is the Commission, with assistance from the California Department of Fish and Game (Department).

1.1 PROJECT SUMMARY

California has a long tradition of addressing the conservation of its diverse coastal and marine wildlife and habitats. In the last 35 years, both federal and state government programs have made efforts to address the environmental problems associated with changes in state population and human use of ocean resources, as well as in long-term changes in oceanographic conditions. Parts of these efforts include designating areas of the marine environment for protection and preservation.

In 1999, the legislature approved and the Governor signed the Marine Life Protection Act (MLPA; Stats.1999, Chapter 1015). In determining the need for the act, the legislature held that California's MPAs were not established according to a coherent plan. Many of these MPAs lack clearly defined purposes, effective management measures and enforcement. As a result, the array of MPAs creates the illusion of protection while falling far short of its potential to protect and conserve living marine life and habitat."

The MLPA (codified at Sections 2850 through 2863 of the California Fish and Game Code), is intended to conserve and rebuild California's marine ecosystems, including those of commercial importance. In passing this statute, the legislature declared that "California's extraordinary marine biological diversity is a vital asset to the state and nation, and that the diversity of species and ecosystems found in the state's ocean waters is important to public health and well-being, ecological health, and ocean-dependent industry." Further, the legislature acknowledged that fish and other sea life are a sustainable resource, that fishing is an important community asset, and that ongoing coastal development, water pollution, and other human activities currently threaten the health of marine habitat and the biological diversity found in California's ocean waters (California Fish and Game Code §2851).

To address alterations of the state's natural marine ecosystem, the MLPA directs the Commission to improve the design and management of California's existing system of MPAs to increase its coherence and effectiveness at protecting the state's marine ecosystems (California Fish and Game Code §2853). The MLPA requires that the Department prepare

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and present to the Commission a master plan that will guide the adoption and implementation of a Marine Life Protection Program, which includes a statewide network of MPAs (California Fish and Game Code §2855). The master plan can be found on the Department's website at <http://www.dfg.ca.gov/mlpa/masterplan.asp>. Rather than designing and implementing regulations for a single MPA network for the entire state at one time, the MLPA planning and implementation process has been broken down into a series of independent regional processes across five geographically defined study regions. Currently, the Commission is proposing regulations that would comply with the MLPA's mandate by revising the boundaries, designations, and allowed uses within MPAs in the region extending from Point Conception in Santa Barbara County to the U.S. – Mexico border in San Diego County. This area, illustrated graphically on Figures 1-1 and 1-2, is termed the south coast study region (SCSR), and is the project area evaluated in this Draft EIR.

The regulations currently proposed by the Commission represent the culmination of an extensive planning process which sought and incorporated input from stakeholders, the scientific community, policy experts, and the general public. The Commission voted on April 7, 2010 to move forward with making the regulatory changes necessary to implement the proposed Project IPA as well as conduct the required CEQA review of the proposed Integrated Preferred Alternative (IPA) and alternatives. Sections 2.2 through 2.4 discuss in detail the process of creating the proposed and alternative MPA designations and regulations.

If adopted, the proposed regulations that are the subject to environmental review in this Draft EIR would: remove a small number of existing MPAs; establish a number of new MPAs; or modify or replace existing MPA boundaries and regulations. Those existing MPAs along the five northern Channel Islands (San Miguel, Santa Rosa, Santa Cruz, Anacapa, and Santa Barbara Islands) would be retained without modification and are not considered part of the proposed Project IPA or alternatives.

Once the CEQA review is completed, the Commission will make a determination as to whether or not to adopt the proposed Project IPA, or one of four alternatives being evaluated in this Draft EIR (three alternative MPA network configurations and a "No Project" alternative which would retain the existing MPA regulations without modification). For a more detailed description of the regulatory, scientific, and stakeholder-driven processes that were instrumental in developing the proposed MPAs and the proposed Project IPA and alternatives, please refer to Section 2.0 of this Draft EIR.

1.2 GENERAL DESCRIPTION OF THE PROJECT LOCATION

The proposed Project IPA would be established within the SCSR, which consists of state waters between Point Conception and the Mexican border including state waters adjacent to offshore islands. State waters are those waters located from the mean high tide mark out to 3 geographic miles offshore. (43 USC Chapter 29) The SCSR encompasses over 1,046 linear

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miles of coastline, and features diverse habitats ranging from sandy beaches and rocky coasts to soft- and hard-bottom deepwater habitats. These habitats in turn engender the region's high biodiversity, supporting 481 species of fishes, 4 species of sea turtles, 195 species of birds, 7 species of pinnipeds, and more than 5,000 species of invertebrates. Nearly half of California's existing MPAs, as well as several federally managed marine areas, lie in waters off the Southern California coast.

Coastal Southern California is home to over 10 million of the state's residents, and the SCSR is adjacent to major urban centers, as well as many smaller coastal cities and towns. Southern Californians utilize coastal resources within the SCSR for recreational activities such as; fishing, diving, surfing, kayaking, beach-going, swimming, and shore and boat-based wildlife viewing. In addition many commercial activities occur within the SCSR, these include; such as; oil and gas production, electric power generation, waste water treatment, commercial marine mammal and bird viewing charters, commercial shipping, and commercial fishing activities that provide fresh seafood to the region and world and support numerous associated industries.

To facilitate clear analysis and orderly display of information in this Draft EIR, the SCSR has been divided into seven geographic subregions. These subregions are illustrated on Figure 1-2, and include, from north to south:

- Point Conception (Government Point) to Rincon Point (subregion 1)
- Rincon Point to Point Dume (subregion 2)
- Point Dume to Newport Beach (subregion 3)
- Newport Beach to Agua Hedionda (subregion 4)
- Agua Hedionda to United States – Mexico border (subregion 5)
- Northern Channel Islands and Santa Barbara Island (subregion 6; no regulatory changes are being proposed to MPAs in this subregion)
- Southern Channel Islands (subregion 7)

For a description of the physical, biological, and oceanographic characteristics of the SCSR, please refer to Sections 2.0 and 7.0 of this Draft EIR.

1.3 PURPOSE OF THE EIR

This Draft EIR has been prepared in accordance with CEQA, which requires all state and local government agencies in California to consider the environmental consequences of projects over which they have discretionary authority before taking action on those projects. As described in the State CEQA Guidelines, an EIR is a public information document that assesses potential environmental effects of a proposed project and identifies mitigation

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measures and alternatives to the project that could reduce or avoid adverse environmental impacts (14 CCR 15121(a)). The Commission's proposed adoption of the regulatory changes comprising the proposed Project IPA constitutes a "project" under CEQA. The EIR is an informational document used in the planning and decision-making process. The EIR is not intended to recommend either approval or denial of the proposed Project IPA.

The purpose of this document is to:

- Identify potential direct and indirect environmental impacts associated with the proposed Project.
- Identify the Project's potential contributions to cumulative environmental impacts in the study region.
- Evaluate the potential for growth inducement due to the proposed Project.
- Identify mitigation measures that would avoid any potentially significant impacts or reduce them to a less-than-significant level.
- Discuss potential alternatives that would avoid or substantially lessen the Project's significant impacts while still attaining most of the objectives of the proposed Project.

This Draft EIR is also intended to supply the information necessary to allow the Commission to employ adaptive management measures and make periodic revisions to the MPA network, consistent with the review process proscribed by the MLPA. As described below, this Draft EIR will be made available for public review and comment.

1.4 NOTICE OF PREPARATION AND EIR SCOPING

One of the purposes of CEQA is to establish opportunities for responsible and interested agencies and the public to review and comment on projects that may affect the environment. CEQA provides these opportunities for public participation through:

- Publication of the Notice of Preparation (NOP).
- Preparation and public review of a Draft EIR.
- Public hearings.

In late June, 2010 the Department circulated an NOP soliciting participation from responsible and trustee agencies and from the public in order to determine the scope and content of this Draft EIR. The NOP was submitted to the State Clearinghouse on June 29, 2010 and copies were sent to such government agencies as the National Marine Fisheries Service, U.S. Fish and Wildlife offices, U.S. Environmental Protection Agency and others; ports and harbor associations; the counties of Santa Barbara, Ventura, Los Angeles, Orange, and San Diego; and mayors' offices and law enforcement departments in 34 coastal cities. A complete list of

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recipients can be found at the end of this section. The Department also conducted a public scoping meeting at which adjacent jurisdictions, public agencies, stakeholders, and the general public were invited to provide suggestions on the scope of the EIR. The meeting was held on July 23, 2010 at the Hyatt Regency Long Beach, a coastal location approximately halfway between the northern and southern boundaries of the SCSR, and was attended by staff from public agencies, environmental organizations, and members of the public.

All oral and written comments received in response to the NOP and during the public scoping process were considered during preparation of this Draft EIR. Input received from stakeholders, agencies, the scientific community, and the general public during the extensive public participation process that preceded preparation of this Draft EIR (refer to Section 2.0 for details) was also considered. Comments submitted in response to the NOP and during the public scoping process are available upon request by contacting the Department at the address provided in Section 1.5 below.

This Draft EIR evaluates the potential impacts of the proposed Project in relation to the following environmental resource areas:

- Air Quality
- Greenhouse Gases
- Water Quality
- Mineral Resources
- Biological Resources
- Cultural Resources
- Public Services and Utilities
- Land Use and Recreation
- Vessel Traffic
- Hazards and Hazardous Materials

As required by CEQA and the State CEQA Guidelines, this Draft EIR also analyzes:

- Significant and unavoidable impacts
- Significant irreversible changes in the environment
- Growth inducement
- Cumulative impacts
- Alternatives to the proposed Project IPA

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In addition to the topics identified above, this Draft EIR contains information on some topics not expressly required by CEQA. These topics are generally related to the goals and constraints taken into consideration during development of the proposed Project IPA regulatory package, and are included for informational purposes in light of the overall program objectives described in Section 3.2 of this Draft EIR in a good-faith effort at full disclosure. Specifically, these topics include:

- Information related to Objective 5.4 – Minimize negative socio-economic impacts and optimize positive socio-economic impacts for all users including coastal-dependent entities, communities, and interests, to the extent possible, and if consistent with the MLPA and its goals and guidelines.
- Information related to Objective 3.1 – Sustain or enhance cultural, recreational, and educational experiences and uses (for example, by improving catch rates, maintaining high scenic value, lowering congestion, increasing size or abundance of species, and protection of submerged sites).
- Information related to Objective 3.2 – Provide opportunities for scientifically valid studies, including studies on MPA effectiveness and other research that benefits from areas with minimal or restricted human disturbance.
- Information related to Objective 3.3 – Provide opportunities for collaborative scientific monitoring and research projects that evaluate MPAs that promote adaptive management and link with fisheries management, seabird and mammals information needs, classroom science curricula, cooperative fisheries research and volunteer efforts, and identify participants.
- Information related to Environmental Justice as required by the Environmental Justice Policy, California Resources Agency (see http://www.resources.ca.gov/environmental_justice_policy_20031030.pdf).

The following organizations received a copy of the Notice of Preparation, which was sent June 29, 2010.

County Clerks (Point Conception to U.S. Mexico Border)

- Santa Barbara County Clerk-Recorder
- Ventura County County Clerk and Recorder
- Los Angeles County Registrar-Recorder/County Clerk
- County of Orange Clerk-Recorder
- San Diego County County Clerk

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Mayor's Offices (Coastal Cities from Point Conception to U.S. Mexico Border)

- City of Goleta
- City of Santa Barbara
- City of Carpinteria
- City of Ventura
- City of Oxnard
- City of Port Hueneme
- City of Los Angeles
- City of Malibu
- City of Santa Monica
- City of El Segundo
- City of Manhattan Beach
- City of Hermosa Beach
- City of Redondo Beach
- City of Torrance
- City of Palos Verde Estates
- City of Rancho Palos Verdes
- City of Long Beach
- City of Seal Beach
- City of Huntington Beach
- City of Newport Beach
- City of Laguna Beach
- City of Dana Point
- City of San Clemente
- City of Avalon
- City of Oceanside
- City of Carlsbad
- City of Encinitas

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- City of Solana Beach
- City of Del Mar
- City of Coronado
- City of San Diego
- City of Chula Vista
- City of National City
- City of Imperial Beach

Law Enforcement (e.g., Police and Sheriff; Point Conception to U.S. Mexico Border)

Note: In some cases these may not have a law enforcement agency, protection may be provided at the county level and that agency was notified.

- Santa Barbara County Sheriff's Office
- Ventura County Sheriff's Office
- Los Angeles County Sheriff's Department
- Orange County Sheriff's Office
- San Diego County Sheriff's Office
- City of Goleta Police Department
- Santa Barbara Police Department
- Carpinteria Police Department
- Ventura Police Department
- Oxnard Police Department
- Port Hueneme Police Department
- Los Angeles Police Department
- Los Angeles County Sheriff's Department – Malibu/Lost Hills Station
- Santa Monica Police Department
- El Segundo Police Department
- Manhattan Beach Police Department
- Hermosa Beach Police Department
- Redondo Beach Police Department

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- Torrance Police Department
- Palos Verdes Estates Police Department
- City of Rancho Palos Verdes
- Long Beach Police Department
- Seal Beach Police Department
- Huntington Beach Police Department
- Newport Beach Police Department
- Laguna Beach Police Department
- City of Dana Point Police Department
- City of San Clemente Police Department
- City of Avalon
- Oceanside Police Department
- Carlsbad Police Department
- City of Encinitas
- City of Coronado Police Department
- City of San Diego Police Department
- City of Chula Vista Police Department
- National City Police Department
- City of Imperial Beach
- US Coast Guard, Sector Los Angeles – Long Beach Command Center
- US Coast Guard, Sector San Diego Command Center
- US Navy, Naval Air Warfare Center
- Governor’s Office of Planning and Research State Clearinghouse
(*15 copies of the NOP and a NOP from and NOC form*)
- Office of Leasing and Environment, Minerals Management Service, Pacific Region
- National Marine Fisheries Service Southwest Regional Office
- Carlsbad Fish and Wildlife Office
- United States Army Corps of Engineers, Los Angeles
- U.S. EPA Region 9

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- Environmental Planning, Port of Long Beach
- Environmental Management Division, Port of Los Angeles
- Port of Long Beach
- Port of San Diego
- Santa Barbara Harbor
- Orange County Parks
- Orange County Dana Point Harbor
- King Harbor
- Sunset Harbour (Huntington Harbor)
- Port of Hueneme, Oxnard Harbor District
- Ventura Harbor
- National Parks Service, Cabrillo National Monument
- National Parks Service, Channel Islands National Park
Natural Reserve System, University of California
Los Angeles County Department of Beaches and Harbors
- Commander, Navy Region Southwest
- Naval Air Station North Island
Naval Base Coronado
Naval Station San Diego
Naval Submarine Base
- San Diego Association of Governments
- City of San Diego Metropolitan Wastewater Department
- South Orange County Wastewater Authority
- Sanitation Districts of Los Angeles County
- Goleta Sanitary District

This is not a complete list; private entity recipients are not included in this public document.

1.5 PUBLIC REVIEW OF THE DRAFT EIR

This Draft EIR is being circulated to local, state, and federal agencies, as well as to interested organizations and individuals who may wish to review and comment on the report. Its publication on August 18, 2010 marks the beginning of a 45-day public review period, which

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will close on October 4, 2010. Written comments may be submitted via e-mail (preferred) or by standard mail to the address below:

MLPA South Coast CEQA
California Department of Fish and Game
4665 Lampson, Suite C
Los Alamitos, CA 90720
(562) 342-7100
(562) 342-7139 fax
Email: tnapoli@dfg.ca.gov

1.6 EIR ORGANIZATION

This Draft EIR is comprised of an Executive Summary, 13 sections, and appendices:

- **Executive Summary:** The executive summary includes a brief Project description, a description of issues of concern and alternatives, and a summary of environmental impacts.
- **Section 1 – Introduction:** This section describes the Project background; purpose and organization of the EIR; and the EIR preparation, and review.
- **Section 2 – Project Background:** This section describes the Project’s regulatory context, the need for the Project, and the process by which the Project and alternatives were developed.
- **Section 3 – Project Description:** This section provides a detailed description of the proposed regulatory changes that comprise the proposed Project IPA.
- **Section 4 – Disciplines Excluded from Detailed Environmental Analysis:** This section describes environmental topics that are not discussed in detail in this Draft EIR, and presents the reasons for their exclusion.
- **Section 5 – Consumptive Uses and Socioeconomics:** This section describes the existing environmental setting as it relates to consumptive uses, and provides an overview of the potential economic and social consequences of the proposed Project. Although not significant impacts as defined by CEQA, these effects are included in this Draft EIR for informational purposes.
- **Section 6 – Physical Resources:** This section evaluates the Project’s effects on physical resources, including air quality, water quality, geology and soils, and mineral resources.
- **Section 7 – Biological Resources:** This section evaluates the Project’s effects on biological resources.

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- **Section 8 – Social Resources:** This section evaluates the Project’s effects on social resources, including cultural resources, public services and utilities, recreation, vessel traffic, hazards and hazardous materials, land use, and environmental justice.
- **Section 9 – Cumulative Impacts:** This section considers the environmental effects of the proposed Project in conjunction with similar effects from other past, present, and probable future projects.
- **Section 10 – Other Statutory Considerations:** This section addresses the CEQA requirement to identify significant, irreversible environmental changes; significant unavoidable impacts; and the potential for the proposed Project to induce urban growth and development.
- **Section 11 – Alternatives:** This section describes feasible alternatives to the proposed Project, and describes the environmental impacts of those alternatives.
- **Section 12 – List of Preparers:** This section identifies the individuals who prepared this Draft EIR.
- **Section 13 – References:** This section provides bibliographic citations for all documents referenced in this Draft EIR.

**SECTION 2.0
PROJECT BACKGROUND**

2.1 INTRODUCTION

This section of the Draft Environmental Impact Report (EIR) discusses the project background, including certain legislation that directs the proposed Project's goals. The section includes discussion on the design and implementation processes for revising the network of marine protected areas (MPAs) in the South Coast Study Region (SCSR).

2.1.1 Marine Resource Protection Background

Historically, the marine policies of California and other state and federal governments have been based largely on several assumptions. First, the abundance of marine wildlife was thought to be nearly without practical limits. Second, scientists and fishery managers believed that we possessed enough knowledge to exploit marine populations at very high levels over long periods of time without jeopardizing them. Third, marine wildlife was principally valued as a commodity to be processed and traded. Finally, the chief challenge in commercial fisheries management was to expand domestic fishing fleets in order to exploit the assumed riches of the sea (Department 2008).

A wide range of factors and accumulated research have caused scientists, members of the public, and policy-makers to reject those assumptions, and instead, adopt the idea that natural and anthropogenic (or human) factors directly and indirectly influence the abundance and diversity of populations of marine wildlife. The impact of each factor varies with distance from shore and with individual species (Department 2008).

Some types of natural phenomena, such as El Niño and La Niña fluctuations (in which especially warm or especially cool waters, respectively, dominate within the south coast study region [SCSR]), may have transitory impacts on marine wildlife and their habitats. Other natural phenomena, such as longer-term shifts in oceanographic conditions, may affect the abundance of some types of marine wildlife over much longer periods. Increasingly, fisheries managers are attempting to adapt their practices to account for these natural phenomena (Department 2008).

As in other coastal states, California's development and the growth of its population and economy, especially since World War II, have introduced additional stresses to coastal ecosystems. Coastal development has transformed coastal watersheds, wetlands, and estuaries, and placed greater demands on coastal ecosystems. These stresses include chemical pollution and the invasion of non-native species. Numerous public utilities facilities that provide necessary water and energy services to the region also impact the marine environment. For example, intake structures for cooling systems at electrical power plants

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impinge and entrain marine organisms, and thermal discharges from these facilities contribute the largest volume of effluent into California's coastal ocean (Department 2008).

Fishing – both commercial and recreational – impacts marine fish populations and other wildlife. Improvements in technology and the expansion of fishing fleets have led to overfishing, increased by-catch, and habitat damage. Declines in some fish populations have altered species interactions, resulting in adverse ecological impacts (Department 2008).

To address these declines, California's first six MPAs were created between 1909 and 1913; however, all had been removed by 1950. Since 1950, more than 50 other MPAs were created along the California coast, but these MPAs were established on a piecemeal basis and without comprehensive regional management goals. By 2002, MPAs protected less than 1 percent of coastal waters statewide, and no protection extended to deeper waters. Today, many fisheries continue to decline, leading to the general consensus among scientists and concerned citizens that the majority of existing MPAs established before 2002 are too small and lacking in effective protection (legislative declaration at Section 2851 of the California Fish and Game Code).

2.1.2 Purpose of Marine Life Protection Act

In 1999, the California state legislature approved and the governor signed the Marine Life Protection Act (MLPA; codified at Sections 2850 through 2863 of the Fish and Game Code, references herein to specific portions of the MLPA refer to these code sections). In determining the need for the act the legislature held that “California's marine protected areas (MPAs) were established on a piecemeal basis rather than according to a coherent plan and sound scientific guidelines. Many of these MPAs lack clearly defined purposes, effective management measures, and enforcement. As a result, the existing array of MPAs creates the illusion of protection while falling far short of its potential to protect and conserve living marine life and habitat” (MLPA Section 2851).

In enacting the MLPA, the legislature declared that “California's extraordinary marine biological diversity is a vital asset to the state and nation. The diversity of species and ecosystems found in the state's ocean waters is important to public health and well-being, ecological health, and ocean-dependent industry” (MLPA Section 2851(b)). The legislature also held that coastal development, water pollution, and other human activities threaten the health of marine habitat and the biological diversity found in California's ocean waters. New technologies and demands have encouraged the expansion of fishing and other activities to formerly inaccessible marine areas that once recharged nearby fisheries. As a result, ecosystems throughout the state's ocean waters are being altered, often at a rapid rate (MLPA Sections 2851(c) and (d)).

Fish and other sea life are a sustainable resource, and fishing is an important community asset. MPAs and sound fishery management are complementary components of a

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comprehensive effort to sustain marine habitats and fisheries. Understanding of the impacts of human activities and the processes required to sustain the abundance and diversity of marine life is limited. The designation of certain areas as marine life reserves can help expand our knowledge by providing baseline information and improving our understanding of ecosystems where minimal human disturbance occurs. Marine life reserves are an essential element of an MPA system because they protect habitat and ecosystems, conserve biological diversity, provide a sanctuary for fish and other sea life, enhance recreational and educational opportunities, provide a reference point against which scientists can measure changes elsewhere in the marine environment, and may help rebuild depleted fisheries (MLPA Sections 2851(d) through (f)).

Despite the expected value of marine life reserves, only 14 of the 220,000 square miles of combined state and federal ocean water off California, or six-thousandths of 1 percent (0.006 percent), are currently set aside as genuine “no-take” areas (MLPA Section 2851(g)). For all of the above reasons, it is necessary to modify the existing collection of MPAs to ensure that they are designed and managed according to clear, conservation-based goals and guidelines that take full advantage of the multiple benefits that can be derived from the establishment of marine life reserves.

2.2 MARINE PROTECTED AREA PROJECT

The process for improving the MPAs in the SCSR involved a great diversity of individuals and groups that worked together to reach consensus on the best approach to achieve the goals of the MLPA. The following sections detail the groups and agencies involved and the activities that were undertaken to create the proposed Project IPA and alternatives. A brief description of the roles of these agencies, groups, and task forces in implementing the MLPA of is provided below (Department 2008):

- **California Natural Resources Agency.** The Natural Resources Agency provides general oversight and public leadership for MLPA implementation, and this agency’s staff are active participants in the steering committee planning process. The secretary of the agency selects the chair and other members of the Blue Ribbon Task Force (BRTF), and convenes and charges the members with meeting their objectives. The agency provides policy direction for coordinating funding and staffing, and seeks current and future funding for agency and Department personnel committed to the initiative and for completing future phases of the MLPA.
- **California Department of Fish and Game.** The Department serves as the lead agency responsible for the design and implementation of the MLPA Master Plan and statewide network of MPAs. The Department continues its traditional support of the Natural Resources Agency and the Commission. The director of the Department selects the members of the science advisory team (SAT) in consultation with the Resources Agency secretary, the Commission president, and the BRTF chair. Through the MLPA Initiative’s

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steering committee, the Department assists with the development of the draft Master Plan framework and proposals for MPAs. The Department also provides biological, enforcement, and other relevant information, participates in meetings as appropriate, reviews working documents, and acts as the lead agency for CEQA environmental review of regulatory proposals promulgated under the MLPA.

- **Resources Legacy Fund Foundation and the MLPA Initiative.** In August 2004, the California Natural Resources Agency, the Department, and the Resources Legacy Fund Foundation (RLFF) formed the MLPA Initiative, a public-private partnership established to implement the MLPA. The RLFF uses its best efforts to obtain, coordinate, and administer philanthropic investments to supplement public funding for the MLPA Initiative; provides strategic advice to the Resources Agency on public-private funding; and supports the initiative staff in managing private contracts for the initiative.
- **Blue Ribbon Task Force.** The MLPA Initiative's BRTF is composed of distinguished, knowledgeable, and highly credible public leaders selected by the secretary of the California Natural Resources Agency. This task force oversees regional projects to develop alternative MPA proposals to present to the Commission, prepares information and recommendations for coordinating management of MPAs with federal agencies, and provides direction for expenditure of initiative funds. The BRTF also works to resolve policy disputes and provides direction to the MLPA Initiative, while meeting the objectives of the MLPA. The chair of the BRTF oversees the work of the executive director of the initiative, works with the director of the Department to convene the stakeholder group, and serves as the principal link between the BRTF and MLPA Initiative staff. Members of the BRTF are also expected to serve as liaisons to the stakeholder groups.
- **Science Advisory Team.** The director of the Department, in consultation with the chair of the BRTF, the secretary of the California Natural Resources Agency, and the president of the Commission, convenes the SAT for each study region. The SAT is composed of the members required by the MLPA, including staff from the Department, the Department of Parks and Recreation, the State Water Resources Control Board, one member appointed from a list provided by Sea Grant (a state program that sponsors marine research), and an expanded group of scientists knowledgeable in marine ecology, fisheries science, MPAs, economics, and the social sciences. The SAT provides the scientific knowledge and judgment necessary to assist the Department with meeting the objectives of the MLPA Initiative, providing input to the task force BRTF, and completing the master plan for MPAs. Principally, the SAT is charged with reviewing and commenting on scientific papers relevant to the implementation of the MLPA, reviewing alternative MPA proposals, reviewing draft master plan documents, addressing scientific issues presented by those documents, and addressing scientific questions raised by the BRTF or stakeholders. A sub-team of the SAT also attends regularly scheduled

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meetings of the regional stakeholder group to provide scientific summaries, answer scientific questions, and advise on relevant scientific merits of various MPA proposals.

- **Regional Stakeholder Groups.** The regional stakeholder groups are composed of individuals from each study region who are able and willing to provide information that will assist in developing alternative proposals for MPAs in their region. The chair of the task force and the director of the Department solicit nominations, and select from the nominees regionally representative groups that meet regularly over the course of each regional process. The stakeholder groups provide local knowledge for refining regional profiles and informing the MLPA planning process, evaluate existing MPAs, provide information to other stakeholder group members that may be helpful in designing alternative MPA packages, develop alternative MPA proposals, conduct outreach to constituent groups, and identify potential panel speakers to present stakeholder group recommendations and commentary at task force and other public meetings.
- **Other Agencies.** Other state and federal agencies play a variety of roles in the MLPA Initiative. These agencies include, but are not limited to the following, and have provided valuable information related to their operations, programs, and areas of responsibility that have been taken into account in designing regional MPAs:
 - National Oceanic and Atmospheric Administration Marine Fisheries Service
 - National Ocean Service
 - National Marine Sanctuaries Program
 - U.S. Fish and Wildlife Service
 - Pacific Fisheries Council
 - U.S. Minerals Management Service
 - California Coastal Commission
 - State Lands Commission
 - California Park and Recreation Commission/California Department of Parks and Recreation

2.3 DESIGN PROCESS FOR MPA PROPOSALS

Rather than attempting to design a single MPA network for the entire state at one time, the MLPA Initiative envisioned the assembly of a statewide network by 2011 from a series of independent regional processes. The MLPA Initiative identified five study regions:

1. North coast study region (California/Oregon border to Alder Creek near Point Arena)

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2. North central coast study region (Point Arena to Pigeon Point [not including San Francisco Bay])
3. San Francisco Bay study region (waters within San Francisco Bay, from the Golden Gate Bridge northeast to Carquinez Bridge)
4. Central coast study region (Pigeon Point to Point Conception)
5. South coast study region (SCSR; the focus of the presently proposed regulatory action) (Point Conception to the California/Mexico border)

In each of the study regions, it was envisioned that an appointed regional stakeholder group would develop MPA proposals that would be reviewed and evaluated by the SAT, the Department, MLPA Initiative staff, and the public. Public input was central to the process, and in addition to direct input at open houses, the public was also invited to nominate people for appointment to the regional stakeholder group and the SAT. Table 2-1 identifies all public meetings held for the purpose of inviting and accumulating input on the MPA proposal process.

Based on input from these groups, the SCSR MPA proposals were refined by the regional stakeholder group and presented to the BRTF, which made a recommendation to the Commission. This process involved four basic steps, as described below (Department 2008):

1. **Regional Planning:** The regional planning phase involves the preparation of a representative profile of the study region (regional profile), which is then assessed by the regional stakeholder group and SAT, among others, in order to identify potential MPA sites.
2. **MPA Planning:** The regional stakeholder group and SAT review information from the regional planning phase, evaluate existing and proposed new MPAs, as well as other management activities, and the regional stakeholder group develops proposals for packages of MPAs. These proposal packages are submitted by the regional stakeholder group to the SAT and BRTF for review.
3. **Evaluating the Proposals:** The SAT provides a scientific evaluation of the MPA proposals while the BRTF evaluates the proposal packages to identify a preferred alternative and other alternatives to recommend to the Commission. The Department assists in this process by conducting a feasibility analysis for each of the alternatives, providing comments on the alternatives, developing initial regulatory guidance, and forwarding this information to the Commission for review.
4. **Commission Action:** Commission action on the adoption of the BRTF MPA proposals or alternatives takes place based on the above recommendations, regulatory analyses (including CEQA review), and public testimony.

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**TABLE 2-1
PUBLIC MEETINGS HELD DURING THE SOUTH COAST STUDY REGION
PLANNING PROCESS**

Meeting	Major Topic	Meeting Dates	Location
Public Open House	Introduce public to MLPA planning process	6/23/2008	Santa Barbara
Public Open House	Introduce public to MLPA planning process	6/24/2008	Oxnard
Public Open House	Introduce public to MLPA planning process	6/25/2008	Santa Monica
Public Open House	Introduce public to MLPA planning process	7/8/2008	Huntington Beach
Public Open House	Introduce public to MLPA planning process	7/9/2008	Carlsbad
Public Open House	Introduce public to MLPA planning process	7/10/2008	San Diego
BRTF	Provide guidance to SAT/SCRSO on planning process	9/8/2008	San Diego
SAT	Develop science guidance	9/10/2008	Conference Call
SAT	Develop science guidance	9/15/2008	El Segundo
SCRSO	Begin discussion and guidance for MPA proposal development	10/6–7/08	El Segundo
SAT	Develop science guidance	11/12/2008	Los Angeles
SCRSO	Begin discussion and guidance for MPA proposal development	11/18–19/08	Ventura
BRTF	Provide guidance to SAT/SCRSO on planning process	12/10/2008	Sacramento
Joint BRTF and FGC	Provide guidance on how to consider the northern Channel Islands in the south coast planning process	12/11/2008	Sacramento
SAT	Develop science guidance	12/17/2008	Los Angeles
SCRSO	Begin developing round 1 MPA arrays	1/13–14/09	San Diego
BRTF	Discuss policy guidance for the south coast planning process	1/22/2009	Conference Call
SAT	Review and discussion of evaluation methods for south coast planning process	1/23/09 and 1/27/09	Los Angeles
SCRSO	RSG work session	1/29/2009	Los Angeles
SCRSO	RSG work session	2/10/2009	Huntington Beach
SIG	Discuss opportunities for public involvement	2/13/2009	Conference Call
SAT	Consider military use areas in evaluations	2/24/2009	Conference Call
BRTF	Discussion of regional goals and objectives	2/26/2009	Santa Barbara
SCRSO	Discussion and guidance for MPA proposals in development	3/3–4/09	Long Beach
SAT	Review and discuss evaluations of SCRSO proposals for round 1	4/1/09 and 4/6/09	Los Angeles

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**TABLE 2-1 (CONTINUED)
PUBLIC MEETINGS HELD DURING THE SOUTH COAST STUDY REGION
PLANNING PROCESS**

Meeting	Major Topic	Meeting Dates	Location
SIG	Discuss opportunities for public involvement	4/10/2009	Conference Call
BRTF	Discussion and guidance for MPA proposals in development	4/15–16/09	Dana Point
SCRSO	Discussion and guidance for MPA proposals in development	4/28/2009	Oxnard
SCRSO	RSG work session	4/29/2009	Oxnard
SAT	Develop guidance for MPA proposals	5/5/2009	Teleconference/Webinar
SAT	Develop guidance for MPA proposals	5/15/2009	Teleconference/Webinar
BRTF	Develop guidance for MPA proposals	5/18–19/09	Teleconference/Webinar
SCRSO	RSG work session	5/19–20/09	Santa Ana
SCRSO	Finalize round 2 MPA draft proposals	5/21/2009	Santa Ana
SIG	Discuss opportunities for public involvement	5/29/2009	Conference Call
BRTF	Provide guidance for MPA proposals	6/4/2009	Los Angeles
SAT	Evaluation of SCRSO draft MPA proposals	6/18/2009	Los Angeles
Public Open House	Solicit feedback on round 2 MPA proposals	6/29/2009	Carlsbad
Public Open House	Solicit feedback on round 2 MPA proposals	6/30/2009	San Diego
Public Open House	Solicit feedback on round 2 MPA proposals	7/1/2009	Laguna
Public Open House	Solicit feedback on round 2 MPA proposals	7/6/2009	San Pedro
Public Open House	Solicit feedback on round 2 MPA proposals	7/7/2009	Marina Del Rey
Public Open House	Solicit feedback on round 2 MPA proposals	7/8/2009	Oxnard
Public Open House	Solicit feedback on round 2 MPA proposals	7/9/2009	Santa Barbara
Public Open House	Solicit feedback on round 2 MPA proposals	7/13/2009	Avalon
BRTF	Discussion and guidance for final MPA proposal development	7/28–29/09	Santa Monica
SCRSO	Final MPA proposals development	8/3/2009	Carlsbad
SCRSO	RSG work session	8/4/2009	Carlsbad
SCRSO	Complete final MPA proposals	9/9/09–10/09	Los Angeles
SAT	Evaluation of final SCRSO MPA proposals	10/6/2009	Los Angeles
SCRSO and SIG	Briefing regarding Attorney General Informal Advice Letter	10/14/2009	Teleconference/Webinar
BRTF	Receipt of SCRSO alternative MPA proposals and development of IPA	10/20–22/09; and 11/10/09	Long Beach and Los Angeles
BRTF	Review of preferred alternative options	11/4/2009	Los Angeles
SAT	Evaluation of IPA	11/9/2009	Teleconference/Webinar

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**TABLE 2-1 (CONTINUED)
PUBLIC MEETINGS HELD DURING THE SOUTH COAST STUDY REGION
PLANNING PROCESS**

Meeting	Major Topic	Meeting Dates	Location
Joint BRTF and FGC	Delivery of south coast recommendations for alternative MPA proposals	12/9/2009	Los Angeles

Department 2010.

At the present time, the Commission is evaluating the proposed Project IPA that was recommended by the BRTF. The proposed regulations that are subject to environmental review in this Draft EIR will: remove a small number of existing MPAs; establish a number of new MPAs; or modify or replace existing MPA boundaries and regulations. Those existing MPAs along the northern Channel Islands (San Miguel, Santa Rosa, Santa Cruz, and Anacapa) and Santa Barbara Island in the southern Channel Islands, will be retained without modification and are not considered part of the proposed Project IPA or alternatives.

2.4 DESIGN CONSIDERATIONS FOR MPAs

Achieving the MLPA's improved statewide network of MPAs requires consideration of a number of issues and activities, which are discussed in Sections 2.4.1 through 2.4.11.

2.4.1 Goals of the MLPA that Directed Design Considerations

The MLPA directs the state to redesign California's system of MPAs to function as a network in order to: increase coherence and effectiveness in protecting the state's marine life and habitats, marine ecosystems, and marine natural heritage, as well as to improve recreational, educational, and study opportunities provided by marine ecosystems subject to minimal human disturbance (Department 2008). Six goals guide the development of MPAs in the MLPA planning process, codified at MLPA Section 2853(b), including:

1. Protect the natural diversity and abundance of marine life, and the structure, function, and integrity of marine ecosystems.
2. Help sustain, conserve, and protect marine life populations, including those of economic value, and rebuild those that are depleted.
3. Improve recreational, educational, and study opportunities provided by marine ecosystems that are subject to minimal human disturbance, and manage these uses in a manner consistent with protecting biodiversity.
4. Protect marine natural heritage, including protection of representative and unique marine life habitats in California waters for their intrinsic values.

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5. Ensure California's MPAs have clearly defined objectives, effective management measures, and adequate enforcement and are based on sound scientific guidelines.
6. Ensure the state's MPAs are designed and managed, to the extent possible, as a network.

The MLPA notes that MPAs should include several elements, such as: an "improved marine life reserve component"; specified objectives and management and enforcement measures; provisions for monitoring and adaptive management; provisions for educating the public and encouraging public participation, and; a process for the establishment, modification, or abolishment of existing or future new MPAs (MLPA Section 2853(c)).

The Department's Master Plan for Marine Protected Areas (Master Plan; Department 2008) specifies that each MPA proposal or alternative that the BRTF submits to the Commission must include recommended "no-take areas" that encompass a representative variety of marine habitat types and communities across a range of depths and conditions. Each proposal also must avoid activities that upset the natural functions within reserves. Collectively, the MPA proposals and regional alternatives must include replicates of similar types of habitats in each biogeographical region, to the extent possible (Department 2008).

2.4.2 MPA Networks

The MLPA calls for improving and managing the state's MPAs as a network to the extent possible (MLPA Section 2853(b)(6)). This implies a coordinated system of MPAs, and there are two typical approaches that may link MPA networks. MPAs managed as a network might be linked through biological and/or oceanographic functions, as in the case of adult and juvenile movement or larval transport. Additionally, MPA networks might also be managed and linked by administrative function; at a minimum, the statewide network should function at an administrative level that reflects a consistent approach to design, funding, and management. The important aspect is that MPAs should be linked by common goals and a comprehensive management and monitoring plan, and they should protect areas with a wide variety of representative habitat as required by the MLPA. MPAs should be based on the same guiding principles, design criteria, and processes for implementation (Department 2008).

2.4.3 SAT Guidance on MPA Network Design

The SAT for the MLPA Initiative developed the following guidance regarding the design of MPA networks. Although this guidance is not prescriptive, any significant deviation from it should be consistent with both regional goals and objectives, and MLPA requirements. The SAT's guidelines were included in the Master Plan (Department 2008), and are linked to specific objectives, with the understanding that the diversity of species and habitats to be protected, and the diversity of human uses of marine environments, prevents a single

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optimum network design in all environments. The SAT's guidelines on MPA network design include:

- To protect the diversity of species that live in different habitats and those that move among different habitats over their lifetime, every “key” marine habitat should be represented in the MPA network.
- To protect the diversity of species that live at different depths, and to accommodate the movement of individuals to and from shallow nursery or spawning grounds to adult habitats offshore, MPAs should extend from the intertidal zone to deep waters offshore.
- To best protect adult populations, based on adult neighborhood sizes and movement patterns, MPAs should have an alongshore extent of at least 3 to 6 miles (5 to 10 km) of coastline, and preferably 6 to 12.5 miles (10 to 20 km). Larger MPAs are required to fully protect marine birds, mammals, and migratory fish.
- To facilitate dispersal among MPAs of important bottom-dwelling fish and invertebrate groups, based on currently known scales of larval dispersal, MPAs should be placed within 31 to 62 miles (50 to 100 km) of each other.
- To enable analysis for management comparisons, and to buffer against catastrophic loss of an MPA, at least three to five replicate MPAs should be designed for each habitat type within each biogeographical region.
- To lessen negative impact, while maintaining value, placement of MPAs should take into account local resource use and stakeholder activities.
- Placement of MPAs should take into account the adjacent terrestrial environment and associated human activities.
- To facilitate adaptive management of the MPA network into the future, and the use of MPAs as natural scientific laboratories, the network design should account for the need to evaluate and monitor biological changes within MPAs.

The SAT's guidance acknowledges that not every MPA will necessarily meet all of these objectives.

2.4.4 Consideration of Habitats on Design of MPAs

The MLPA calls for protecting representative types of habitat in different depth zones and environmental conditions (MLPA Section 2857(c)(2)). The SAT generally confirms that all but one of the habitats identified in the MLPA occur within state waters, and include: rocky reefs, intertidal zones, sandy or soft ocean bottoms, underwater pinnacles, kelp forests, submarine canyons, and seagrass beds. Seamounts do not occur within state waters. The SAT also notes that rocky reefs, intertidal zones, and kelp forests are actually broad categories that include several types of habitat (Department 2008).

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The SAT has identified five depth zones which reflect changes in species composition: intertidal, intertidal to approximately 98 feet depth, 98 to 328 feet depth, 328 to 656 feet depth, and deeper than 656 feet. The SAT also calls for special delineation of estuaries as a critical California coastal habitat. Finally, the SAT recommends expanding the habitat definitions to include ocean circulation features, principally upwelling centers, freshwater plumes from rivers, and larval retention areas (Department 2008).

2.4.5 Species Likely to Benefit from MPAs

The MLPA requires the identification of species likely to benefit from MPAs (MLPA Section 2856(a)(1)(B)). Identifying these species may also assist in identifying habitat areas that can contribute to achieving the goals of the MLPA. The Department prepared a list of such species, which is provided in Appendix G of the Master Plan (Department 2008). The Department has worked with the SAT to refine this list for the SCSR; the list is included in Appendix E of this Draft EIR, and is discussed in detail in Section 7.1.2 of this Draft EIR. This effort included identifying species on the list that are in direct need of consideration when designing MPAs, as opposed to those that may benefit but are not in immediate need of additional protection.

2.4.6 Biogeographic Regions

To help ensure that MPAs established under the MLPA include adequate representation of the marine communities and species diversity representative of California, MPAs must be distributed across biogeographically distinct areas. Both the MLPA and the Master Plan identify two biogeographic regions: 1) Point Conception north to the California-Oregon border and 2) Point Conception south to the U.S.–Mexico border (which includes the entire SCSR).

The SCSR refers to state waters off the mainland coast extending from Point Conception to the U.S.–Mexico border, and state waters surrounding all eight Channel Islands in the Southern California Bight. Southern California is characterized by strong gradients in environmental conditions (e.g., water temperature) and species abundances across the study region. Some parts of the SCSR (e.g., the western Channel Islands) contain biotic assemblages highly similar to central California, while others support quite different species communities that resemble those found in Mexican waters to the south. As has been done in previous study regions, the SAT conducted analyses to identify biogeographically relevant subregions (hereafter referred to as “bioregions”) within the large-scale biogeographic region to help ensure that distinct species assemblages within each study region are adequately represented in MPAs.

The SAT identified five bioregions that characterize the MLPA SCSR:

- North Mainland (Point Conception to Marina Del Rey)

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- South Mainland (Marina Del Rey to U.S.–Mexico border)
- West Channel Islands (San Miguel, Santa Rosa, and San Nicolas islands)
- Mid-Channel Islands (Santa Cruz, Anacapa, and Santa Barbara islands)
- East Channel Islands (Santa Catalina and San Clemente islands)

The SAT recommends including representation of all key habitats in each bioregion (see habitat representation). Representation of key habitats in each of the five bioregions of the SCSR will be considered as part of the habitat representation evaluation for alternative MPA proposals. Replication of habitats will also be evaluated for each bioregion and the entire SCSR.

2.4.7 Types of MPAs

The term “Marine Protected Area” (MPA) refers to a named, discrete geographic marine or estuarine area seaward of the high-tide line or the mouth of a coastal river, including any area of intertidal or subtidal terrain, together with its overlying water and associated flora and fauna, with regulations that are designed to protect or conserve marine life and habitat (MLPA Section 2852(c)). The following MPA terms are defined in Sections 36700 and 36710 of the Public Resources Code; all are discussed in greater detail in Section 3.0 of this Draft EIR:

- **State Marine Reserve (Section 36700(a)):** A “state marine reserve” (SMR) is a non-terrestrial marine or estuarine area that is designated to protect or restore rare, threatened or endangered native plants, animals or habitats in marine areas; protect or restore outstanding, representative or imperiled marine species, communities, habitats and ecosystems; protect or restore diverse marine gene pools; or contribute to the understanding and management of marine resources and ecosystems by providing the opportunity for scientific research in outstanding, representative or imperiled marine habitats or ecosystems: Restrictions make it unlawful to injure, damage, take or possess any marine resource, except under a permit or specific authorization from the managing agency for certain reasons. Access and use by the public (such as walking, swimming, boating, and diving) may be restricted to protect marine resources. Allowable uses include permitted research, restoration, and monitoring; educational activities; and some other forms of non-consumptive human use.
- **State Marine Park (Section 36700(b)):** A “state marine park” (SMP) is a non-terrestrial marine or estuarine area that is to provide for spiritual, scientific, educational, and recreational opportunities. Restrictions make it unlawful to injure, damage, take or possess any living or nonliving marine resources for commercial purposes. Any human use that would compromise protection of the species of interest, natural community or habitat, or geological, cultural, or recreational features may be restricted by the

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designating entity or managing agency. Other uses are allowed, including scientific collection with a permit, research, monitoring and public recreation (including recreational harvest, unless otherwise restricted). Public use, enjoyment and education are encouraged, in a manner consistent with protecting resource values.

- **State Marine Conservation Area (Section 36700(c)):** A “state marine conservation area” (SMCA) is a marine or estuarine area that is designated to protect or restore rare, threatened or endangered native plants, animals or habitats in marine areas; protect or restore outstanding, representative or imperiled marine species, communities, habitats and ecosystems; protect or restore diverse marine gene pools; contribute to the understanding and management of marine resources and ecosystems by providing the opportunity for scientific research in outstanding, representative or imperiled marine habitats or ecosystems; preserve outstanding or unique geological features; or 6) provide for sustainable living marine resource harvest. It is unlawful in most circumstances to injure, damage, take, or possess any specified living, geological or cultural marine resources. In general, any commercial and/or recreational uses that would compromise protection of the species of interest, natural community, habitat or geological features may be restricted by the designating entity or managing agency. Allowable uses include research, education and recreational activities, and certain commercial and recreational harvest of marine resources.

The MLPA recognizes the role of different types, or classifications, of MPAs, and each type provides for different levels of restriction on human uses and includes various objectives. All of the above types of MPAs are discussed in greater detail in Section 3.0 of this Draft EIR. Because the Commission’s authority to restrict uses is limited by statute, the Commission must select types of MPAs that are appropriate for intended uses and restrictions. The Commission has the statutory authority to designate, delete, and modify SMRs and SMCAs. However, SMPs may only be created, modified, or deleted under the authority of the California State Park and Recreation Commission.

2.4.8 Levels of Protection for MPA Classifications

The SAT recognized that there is great variation in the type and magnitude of activities that may be permitted within the three types of MPAs, in particular SMPs and SMCAs (Department 2008). This variety intentionally provides designers of MPA networks with flexibility in proposing MPAs that either individually or collectively fulfill the various goals and objectives specified in the MLPA. However, this flexibility can result in complex and possibly confusing levels of protection afforded by any individual MPA or collection of MPAs. In particular, SMCAs allow for many possible combinations of recreational and commercial extractive activities. Therefore, MPA network proposals with similar numbers and sizes of SMCAs may in fact differ markedly in the type, degree, and distribution of protection.

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To facilitate comparison across alternative MPA proposals, the SAT assigns a “level of protection” to each MPA based on the uses allowed within its boundaries. Levels of protection are based upon the likely impacts of proposed activities to the ecosystems within a MPA. Conceptually, the SAT seeks to answer the following question in assigning levels of protection: “How much will an ecosystem differ from an unfished ecosystem if one or more proposed activities are allowed?”

In assigning MPA protection levels, the SAT considered the proposed allowed uses within each MPA (e.g., specific fishing methods), and the depth zones in which allowed uses could occur (e.g., restricting trolling in different depth zones could confer different levels of protection). Each proposed allowed use was assigned a level of protection, based on the extent to which allowing the use was deemed compatible with protecting living marine resources, and each MPA was then assigned a level of protection corresponding to the level of protection of the activities allowed. Where an MPA would allow multiple activities, the lowest (least protective) level of protection among the allowed activities was assigned to that MPA. The Fish and Game Commission does not have authority to regulate activities such as maintenance of existing artificial structures and ongoing point-source discharges. Therefore, these types of activities were not considered in the levels of protection process. The levels of protection applied to proposed MPAs within the SCSR are summarized below:

- **Very High:** No take of any kind allowed. This designation applies only to SMRs. (Department 2009a).
- **High:** Proposed activities were assigned this level of protection if the SAT concluded that the activity: 1) does not directly alter habitat, 2) is unlikely to significantly alter the abundance of any species relative to an SMR, and 3) is unlikely to have an impact on community structure relative to an SMR (Department 2009a).
- **Moderate-high:** Activities were assigned this level of protection if the SAT concluded that the activity: 1) does not directly alter habitat, 2) is unlikely to significantly alter the abundance of any species relative to an SMR, but 3) has some potential to alter community structure relative to an SMR (Department 2009a).
- **Moderate:** Activities were assigned to this level of protection if the SAT concluded that the activity was likely to alter either habitat or species abundance in the area relative to an SMR, but that these changes were unlikely to impact community structure substantially (Department 2009a).
- **Moderate-low:** Activities were assigned to this level of protection if the SAT concluded the activity was likely to: 1) alter species abundance relative to an SMR, and 2) alter community structure significantly through the change in abundance of a species that plays an important ecological role (e.g., top predator) but does not form biogenic habitat (Department 2009a).

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- **Low:** Only activities that alter habitat in a way that is likely to significantly alter community structure were assigned to this level of protection (Department 2009a).

For a detailed description of the SAT's methods for categorizing MPAs by their relative level of protection, refer to Draft Methods Used to Evaluate MPA Proposals in the MLPA South Coast Study Region (Department 2009).

2.4.9 Enforcement and Public Awareness Considerations in MPA Design

The design of MPAs has an effect on how well these regulations are understood and complied with by the public. The proposed regulatory revisions were drafted with the intent that boundaries should be clear, well-marked where possible, recognizable, measurable, and enforceable. Ease of access to MPAs may influence the level of enforcement activity required to ensure compliance and protection. Siting MPAs where there are other special management programs, such as national marine sanctuaries, may enhance enforceability. In its feasibility analysis (see Department 2009b), the Department has placed an emphasis on boundaries and regulations that are easily understood and enforced (Department 2008). During development of the IPA, the Department made recommendations to the Commission regarding improving comprehension and enforceability of the MPA regulations. These included (Department 2009b):

- Minimizing the use of irregular shapes, diagonal or curved lines, and unmarked offshore locations as MPA boundaries; and instead encouraging the use of straight lines along whole-number latitude and longitude lines, terminating at discernible landforms or other visible features.
- Discouraging the use of the intertidal zone as an MPA boundary, due to the difficulty of accurately determining the location of high- and low-tide lines by the public.
- Simplifying the lists of permitted and prohibited species and methods of take where possible, to facilitate public understanding and compliance.
- Considering and learning from previously documented violations, and avoiding catch-and-release regulations in certain areas to facilitate enforcement.

2.4.10 Information Supporting the Design of MPAs

Section 2855(c) of the MLPA calls for the use of the "best readily available science" in designing and managing MPAs. Baseline data needs are identified in regional profiles for the study regions and MPA management plans. The MLPA also calls for soliciting information from local communities and interested parties regarding the marine environment, the history of fishing, water pollution, and the socioeconomic and environmental impacts of MPA proposals.

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The successful implementation of the MLPA depends on the active involvement of stakeholders and the general public. The public can be involved in a variety of ways, including communicating directly with regional stakeholder group members, attending workshops and public meetings, and providing input on public documents and MPA proposals as they are developed. During the MPA development process, the Department established a website (http://www.dfg.ca.gov/mlpa/publicinvolvement_sc.asp) through which interest groups and the general public could submit comments, suggestions, and feedback into the MPA proposals. For each MPA study region, relevant documents such as the Regional Profile for that region, meeting agendas and materials, and descriptions of the public participation process were also available for review online.

MPA proposals for the SCSR, as well as other regions, are largely crafted by the regional stakeholder group in a collaborative process that occurs throughout MPA proposal development as outlined in the master plan (Department 2008). To help ensure an open transparent, public process where maximum information is made available to the regional stakeholder group for its deliberations, external MPA proposals are accepted outside the regional stakeholder process. Among the ways the regional stakeholder group incorporates external proposals includes, but is not limited to: 1) incorporating individual MPA concepts from external proposals into draft proposals; 2) use of entire external proposals as a starting place to develop draft proposals; and 3) use of boundary designs for particular regulations from external proposals. Extensive oral and written public comments were reviewed during the development of the proposed Project IPA and alternatives. These comments may be accessed at the Department's website at http://www.dfg.ca.gov/mlpa/publiccomments_sc.asp and http://www.dfg.ca.gov/mlpa/meetings_sc.asp.

2.4.11 Other Programs and Activities

Regional profiles and profiles of potential MPAs describe current and anticipated human activities that may affect representative habitats and focal species. Where non-fishing activities may have a significant impact (e.g., point-source or non-point-source discharges to the ocean), a proposal for an MPA may include recommendations to appropriate agencies for reducing the impacts of those activities that are likely to prevent an MPA from achieving its goals and objectives. Such recommendations are also generally referred to the California Ocean Protection Council established under the COPA of 2004, since the council was created to promote coordination of ocean protection efforts across agencies (Department 2008). However, the proposed regulatory changes are not intended to prohibit ongoing activities that have existing authorization from other federal or state agencies. In order to maintain compatibility with existing uses that are expected to continue (i.e., harbors, outfalls, dredging or other activities), it has been recommended that some areas be designated with less restrictive regulation. For example, an area might be designated an SMCA instead of an SMR.

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2.5 REGIONAL DESIGN CONSIDERATIONS

Based on the six goals of the MLPA (see Section 3.2 of this Draft EIR), the South Coast Regional Stakeholder Group (SCRSG) developed regional objectives to meet those goals in the SCSR. The SCRSG also identified design considerations based on the regional goals and objectives. These goals and objectives were critical guidelines used by the SCRSG and others to propose MPAs for the south coast. For each proposal, the SCRSG developed objectives for individual MPAs and linked them to the regional goals and objectives. The Department also evaluated SCRSG-identified goals and objectives for individual MPAs to ensure they were appropriate and attainable, and evaluated the prospects of individual areas to help achieve the MLPA goals.

The SAT for the SCSR provided scientific advice and guidelines, relative to the science guidelines and goals of the MLPA, to the BRTF and SCRSG for development of MPA proposals based on the best readily available science and the Master Plan (Department 2008). In order to analyze the differences between no-take reserves and limited take conservation areas, the SAT developed a ranking for “levels of protection” provided by an MPA based on the impact of allowed extractive (fishing) activities on ecological and ecosystem structure. The levels of protection are described in Section 2.4.8.

Several issues were considered in the design, evaluation, and siting of MPAs in the SCSR in accordance with the “Considerations in the Design of MPAs” that appear in the Master Plan. These considerations were applied to all MPAs and MPA proposals regardless of the specific regional goals and objectives for that MPA and may contribute to the site-level rationales for individual MPA design and placement.

As stated in the Master Plan, these design considerations specify the following:

1. In evaluating the siting of MPAs, considerations shall include the needs and interests of all users.
2. When designing or modifying MPAs, consider leveraging relevant portions of existing management activities and area-based restrictions, including state and federal fishery management areas and regulations (such as rockfish conservation areas and trawl fishery closures, or other restricted access zones).
3. Site MPAs to prevent fishing effort shifts that would result in serial depletion.
4. When crafting MPA proposals, include considerations for design found in state fishery management plans such as the Nearshore Fishery Management Plan (Department 2002) and the Abalone Recovery and Management Plan (Department 2005).
5. In developing MPA proposals, consider how existing state, local and federal programs address the goals and objectives of the MLPA and the south coast study region as well as how these proposals may coordinate with other programs.

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6. Site MPAs adjacent to terrestrial federal, state, county, or city parks, marine laboratories, or other areas that are easily visible to management and the public so as to facilitate management, enforcement, monitoring, education and outreach.
7. Site MPAs to facilitate use of volunteers to assist in monitoring and management.
8. Site MPAs to take advantage of existing long-term monitoring studies.
9. Design MPA boundaries that facilitate ease of public recognition and ease of enforcement.
10. Consider existing public coastal access points when designing MPAs.
11. MPA design should consider the benefits and drawbacks of siting MPAs near to or remote from public access.
12. Consider the potential impacts of climate change, ocean acidification, community alteration, and distributional shifts in marine species when designing MPAs.
13. Preserve the diversity of recreational, educational, commercial, and cultural uses.
14. Optimize the design of the MPA network to facilitate monitoring and research that answers resource management questions; an example is including MPAs of different protection levels in similar habitats and depths, adjacent or in otherwise comparable locations, to state marine reserves, to evaluate the effectiveness of different protection levels in meeting regional and statewide goals.
15. Ensure some MPAs are close to population centers, coastal access points, and/or research and education institutions and include areas of educational, recreational, and cultural use.

2.6 IMPLEMENTATION OF THE MLPA ON THE SOUTH COAST STUDY REGION

The SCSR is the third study region to conduct a regional MPA design process; it was preceded by the central coast and north central coast study regions. The MPA design process is guided by how well an MPA network alternative would meet the six regional goals and objectives identified in the *Adopted Regional Goals and Objectives and Design and Implementation Considerations for the MLPA South Coast Study Region* (Department 2009). See Section 3.2 of this Draft EIR, where the goals are presented in detail.

The planning process to implement the MLPA in the SCSR was conducted pursuant to the processes described in Sections 2.3 and 2.4 of the Master Plan (Department 2008). This process includes substantial public involvement, and Table 2-1 identifies public meetings held in the preparation of MPA alternatives for the SCSR. The process is summarized below (Department 2010a):

1. The SCRSG began meeting in October, 2008 to develop alternative MPAs for the SCSR. Based on the six goals of the MLPA, the SCRSG developed regional objectives to meet

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those goals, and also identified design and implementation considerations based on the regional goals and objectives. For each proposal, the SCRSG developed objectives for individual MPAs and linked them to the regional goals and objectives.

2. The Department contributed to the planning process by providing input to the SCRSG and BRTF throughout proposal development in the form of feasibility and design guidelines, as well as formal evaluations of MPA proposals based on those guidelines. Additionally, the Department provided guidance to the SCRSG regarding selection of appropriate MPA goals and objectives (based on the design of each MPA), and also evaluated SCRSG goals and objectives for individual MPAs to ensure that they were appropriate and attainable.
3. The SAT provided scientific evaluation of SCRSG MPA proposals relative to the science guidelines and goals of the MLPA. In order to analyze the differences between no-take reserves, limited take conservation areas, and recommended parks, the SAT developed a ranking for levels of protection (refer to Section 2.4.8).
4. At a meeting that occurred October 20 through 22, 2009, the BRTF received three SCRSG proposals for the SCSR, and voted to forward these proposals to the Commission for its review. At this time, the BRTF began to create an Integrated Preferred Alternative (IPA) by integrating, and in some cases modifying, MPAs from each of the three SCRSG proposals. The BRTF created the IPA with the intent to meet scientific guidelines and achieve MLPA goals, while also resolving the remaining areas of divergence among the SCRSG proposals and minimizing socioeconomic impacts to the extent feasible.
5. The BRTF voted to recommend that the Commission select the IPA as the regulatory preferred alternative for the SCSR. In a joint meeting on December 9, 2009, the Commission received these recommendations and directed the Department to prepare a regulatory package using the IPA as the Commission's preferred regulations and the three original SCRSG proposals as regulatory alternatives.

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**SECTION 3.0
PROJECT DESCRIPTION**

This section describes the location and specific regulatory changes proposed by the California Fish and Game Commission (Commission) under the proposed Integrated Preferred Alternative (IPA). Overview maps are included in this section. Detailed maps of each marine protected area (MPA) under consideration are located in Appendix A.

3.1 PROJECT LOCATION

The Commission is proposing to amend section 632 of Title 14 of the California Code of Regulations, which control certain activities within designated Marine Protected Areas off California. The currently proposed regulatory action involves only MPAs within state waters between Point Conception in Santa Barbara County and the California border with Mexico, and includes state waters adjacent to offshore islands and rocks (see Figure 3-1). This region, designated in this process as the south coast study region (SCSR), covers approximately 2,351 square miles of coastal state waters, from the mean high tide line to a maximum depth of approximately 3,938 feet, including estuarine areas. The SCSR spans five coastal California counties: Santa Barbara, Ventura, Los Angeles, Orange, and San Diego. The Channel Islands are also included within SCSR, however, changes to MPAs adjacent to five Channel Islands (San Miguel, Santa Rosa, Santa Cruz, Anacapa, and Santa Barbara) are not part of the current regulatory action. The 13 existing MPAs surrounding these islands were established during prior Commission rulemaking, and would not be modified by the Commission's currently proposed regulatory action.

The oceanography and ecology of the SCSR have been relatively well-characterized in several publicly available summary documents as well as numerous scientific studies (Department 2009). The following is a general overview of important geographic and ecological features of the region, generally described from north to south. For more specific oceanographic and biological information, please refer to Section 7.0 of this Draft Environmental Impact Report (EIR).

The SCSR is located in the northern portion of the Southern California Bight, a curving section of coastline which extends from Point Conception to Baja California in Mexico (Dailey 1993). Currents within the majority of the SCSR are dominated by a counter-clockwise circulating gyre called the Southern California Eddy (Department 2009). This oceanographic feature comprises a complicated set of seasonally varying currents, but generally forms when the southward-moving California Current bends shoreward near San Diego and northward along the Southern California Bight, forming the northward-moving Southern California Counter Current (Jones 1971). This feature is most well developed in the summer and fall months, and less developed during the winter and spring (Lynn and Simpson 1987, Hickey 1993).

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Point Conception, a rocky headland that delineates the northern limits of the Southern California Bight, marks the northern boundary of the SCSR (Department 2009). At this location, cold waters from central California meet warmer waters from Southern California, marking the interface between two biogeographic provinces, each with distinct biota and ecosystems: the Oregonian province to the north, and the San Diegan (or Californian) province to the south (NCCOS 2005). South of Point Conception, the coastline trends eastward along the Santa Barbara channel, where offshore oil seeps exist. This portion of the coast is relatively protected from ocean swells by the northern Channel Islands, and thus hosts unique marine communities, such as soft-bottom kelp forests. A number of coastal streams meet the sea in this region, as well as the Ventura and Santa Clara Rivers. Some of these systems support estuaries, such as Goleta Slough and Carpentaria Salt Marsh.

South of Ventura County is Los Angeles County. The Palos Verdes Peninsula is located near the center of the SCSR, with Santa Monica Bay to the north and the ports of Los Angeles and Long Beach to the south (Department 2009). The western slope of the peninsula is among the steepest and deepest areas in the SCSR. To the north, Santa Monica Bay contains a wide variety of habitats, including rocky reefs, sandy beaches, and submarine canyons, supporting some 5,000 species in close proximity to the largest urban population center in California. Also within Santa Monica Bay is Marina Del Rey, one of the nation's largest man-made small craft harbors (Department 2009). Adjacent to marina Del Rey is the Ballona Creek and Ballona Wetlands. The Ports of Los Angeles and Long Beach, two of the busiest ports in the country, lie to the south of the peninsula at the mouth of the Los Angeles River (Department 2009). South of Palos Verdes within Los Angeles County are several rivers and streams including the Los Angeles River, San Gabriel River, Dominguez channel (Compton Creek), and Coyote Creek.

The coastline along Orange and northern San Diego counties is mainly characterized by sandy beaches backed by wave-cut platforms and mostly sandy subtidal areas (Department 2009). Numerous small creeks and rivers form a large number of coastal estuaries and lagoons in this region that vary in tidal influence. Estuaries in Orange County include the Bolsa Chica Wetlands, and Upper Newport Bay, which is considered one of the most important birding sites in North America (Department 2009). In south Orange County, the Dana Point Headlands area exhibits rocky intertidal habitat. One of the southernmost active steelhead streams, San Mateo Creek, is located along the broader between Orange County and San Diego County. Farther south into San Diego County, the rocky points of La Jolla and Point Loma support hard-bottom habitat and nearshore kelp forests. A submarine canyon lies offshore near La Jolla and this area is used by a large number of individuals for recreational purposes such Fishing. Rivers and Streams in the San Diego region include the Aliso Creek, Santa Margarita, San Luis Rey, San Dieguito and San Diego rivers. Major estuaries in the southernmost portion of the SCSR include Santa Margarita Marsh, Batiquitos Lagoon, San Elijo Lagoon, San Dieguito Lagoon, Penasquitos Marsh, Mission Bay, San Diego Bay, and the Tijuana River Estuary.

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As stated previously, the SCSR also includes the Channel Islands, a group of eight major islands, islets, and offshore rocks located between 12 and 75 miles offshore (Department 2009). The northern Channel Islands (where no changes to the existing MPA regulations are proposed, as stated previously) – San Miguel, Santa Rosa, Santa Cruz, and Anacapa islands – lie on a submarine ridge between the shallower Santa Barbara Channel and the deeper Santa Cruz basin. The waters surrounding the mostly rocky islands are highly productive and support diverse species assemblages, in part due to the mixing between colder water from the California Current in the western portion of the islands and warmer water from the Southern California Counter Current in the eastern portion of the islands. Farther south lie the islands of Santa Barbara (also not affected by the proposed regulatory changes), San Nicolas, Santa Catalina, and San Clemente. These islands are mostly rocky, and support diverse marine life.

The diverse habitats of the SCSR support a host of marine species, including those that are important for both commercial and recreational fisheries (e.g., market squid, California sheephead, California halibut, California spiny lobster); depressed or overfished species (e.g., red abalone, bocaccio, cowcod, widow rockfish); special-status species that are protected under state and federal laws (e.g., southern sea otter, grey whale, snowy plover, least tern, green sea turtle, steelhead trout, giant sea bass, tidewater goby); and other regionally important species that may derive benefit from MPAs.

Areas along the entire coastline within the SCSR support large human populations and extensive development, with the largest urban centers occurring in the metropolitan areas of Los Angeles and San Diego. The abundant marine resources in the region support a large commercial fishing fleet, as well as a recreational fishing community that includes shore-based, private boaters, and, Commercial Passenger Fishing Vessel (CPFV), or “party boat” operations. Major fishing ports supporting these groups are located in Santa Barbara Harbor, Channel Island Harbor, Ventura Harbor, King Harbor, San Pedro and Terminal Island in the Port of Los Angeles, Port of Long Beach, Newport Bay, Mission Bay, and San Diego Bay, as well as numerous other locations. A variety of non-consumptive activities are also popular within the SCSR, including diving, kayaking, surfing, beach-going, swimming, and a number of different shore and ship-based wildlife viewing activities. Other activities also utilize state waters within the SCSR. These include oil and gas production, electrical energy production, publicly owned treatment works, and dredging.

3.2 PROJECT OBJECTIVES

The MLPA was passed in 1999, and is codified at Sections 2850 through 2863 of the California Fish and Game Code. The MLPA specifically requires that the Department of Fish and Game (Department) prepare a master plan for the reexamination and redesign of California’s existing MPAs (the *California Marine Life Protection Act Master Plan for Marine Protected Areas*, revised in January 2008 [Master Plan]) and that the Commission adopt regulations based on the Department’s 2008 Master Plan. The MLPA requires the

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Commission to reevaluate all existing MPAs and potentially design new MPAs that together function as a cohesive statewide network. The MLPA includes clear guidance associated with the development of the MPA network. MPAs are developed on a regional basis with MLPA- and MPA-specific goals in mind, and are evaluated over time to assess their effectiveness for meeting these goals. The MPA design process began with setting regional goals and objectives that are consistent with the MLPA, then identified site-specific rationales for individual MPAs. Once set, these regional goals and objectives influenced crucial decisions regarding MPA size, location, boundaries, management measures, and the scope of MPA monitoring and evaluation programs. The proposed Project IPA was designed to achieve the regional goals and objectives set forth in the *Adopted Regional Goals and Objectives and Design and Implementation Considerations for the MLPA South Coast Study Region* (Department 2009a), including:

- **Goal 1: To protect the natural diversity and abundance of marine life, and the structure, function, and integrity of marine ecosystems.¹**
 - Objective 1.1: Protect and maintain species diversity and abundance consistent with natural fluctuations, including areas of high native species diversity and representative habitats.
 - Objective 1.2: Protect areas with diverse habitat types in close proximity to each other.
 - Objective 1.3: Protect natural size and age structure and genetic diversity of populations in representative habitats.
 - Objective 1.4: Protect biodiversity, natural trophic structure and food webs in representative habitats.
 - Objective 1.5: Promote recovery of natural communities from disturbances, both natural and human induced, including water quality.

- **Goal 2: To help sustain, conserve, and protect marine life populations, including those of economic value, and rebuild those that are depleted.**
 - Objective 2.1: Help protect or rebuild populations of rare, threatened, endangered, depressed, depleted, or overfished species, and the habitats and ecosystem functions upon which they rely.²

¹ Natural diversity is the species richness of a community or area when protected from, or not subjected to, human-induced change. Natural abundance is the total number of individuals in a population.

² The terms “rare,” “threatened,” “endangered,” “depressed,” “depleted,” and “overfished” referenced here are designations in state and federal legislation, regulations, and fishery management plans (FMPs) – e.g., California Fish and Game Code, Marine Mammal Protection Act, Magnuson Stevens Fishery Conservation and Management Act, California Nearshore FMP, Federal Groundfish FMP. Rare, *endangered*, and

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- Objective 2.2: Sustain or increase reproduction by species likely to benefit from MPAs, with emphasis on those species identified as more likely to benefit from MPAs, and promote retention of large, mature individuals.³
- Objective 2.3: Sustain or increase reproduction by species likely to benefit from MPAs with emphasis on those species identified as more likely to benefit from MPAs through protection of breeding, spawning, foraging, rearing or nursery areas or other areas where species congregate.
- Objective 2.4: Protect selected species and the habitats on which they depend while allowing some commercial and/or recreational harvest of migratory, highly mobile, or other species; and other activities.
- **Goal 3: To improve recreational, educational, and study opportunities provided by marine ecosystems that are subject to minimal human disturbances, and to manage these uses in a manner consistent with protecting biodiversity.**
 - Objective 3.1: Sustain or enhance cultural, recreational, and educational experiences and uses (for example, by improving catch rates, maintaining high scenic value, lowering congestion, increasing size or abundance of species, and protection of submerged sites).
 - Objective 3.2: Provide opportunities for scientifically valid studies, including studies on MPA effectiveness and other research that benefits from areas with minimal or restricted human disturbance.
 - Objective 3.3: Provide opportunities for collaborative scientific monitoring and research projects that evaluate MPAs that promote adaptive management and link with fisheries management, seabird and mammals information needs, classroom science curricula, cooperative fisheries research and volunteer efforts, and identify participants.
- **Goal 4: To protect marine natural heritage, including protection of representative and unique marine life habitats in south coast California waters, for their intrinsic value.**

threatened are designations under the California Endangered Species Act. *Depleted* is a designation under the federal Marine Mammal Protection Act. *Depressed* means the condition of a marine fishery that exhibits declining fish population abundance levels below those consistent with maximum sustainable yield (California Fish and Game Code, Section 90.7). *Overfished* means a population that does not produce maximum sustainable yield on a continuing basis (MSA) and in the California Nearshore FMP and federal Groundfish FMP also means a population that falls below the threshold of 30 percent or 25 percent, successively, of the estimated unfished biomass.

³ An increase in lifetime egg production will be an important quantitative measure of an improvement of reproduction.

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- Objective 4.1: Include within MPAs key and unique habitats identified by the MLPA Master Plan Science Advisory Team for this study region.
- Objective 4.2: Include and replicate to the extent possible (practicable), representatives of all marine habitats identified in the MLPA or the California Marine Life Protection Act Master Plan for Marine Protected Areas across a range of depths.
- **Goal 5: To ensure that south coast California’s MPAs have clearly defined objectives, effective management measures, and adequate enforcement, and are based on sound scientific guidelines.**
 - Objective 5.1: Minimize negative socio-economic impacts and optimize positive socio-economic impacts for all users including coastal dependent entities, communities and interests, to the extent possible, and if consistent with the Marine Life Protection Act and its goals and guidelines.
 - Objective 5.2: Provide opportunities for interested parties to help develop objectives, a long-term monitoring plan that includes standardized biological and socioeconomic monitoring protocols, a long-term education and outreach plan, and a strategy for MPA evaluation.
 - Objective 5.3: Effectively use scientific guidelines in the California Marine Life Protection Act Master Plan for Marine Protected Areas.
 - Objective 5.4: Ensure public understanding of, compliance with, and stakeholder support for MPA boundaries and regulations.
 - Objective 5.5: Include simple, clear, and focused site-specific objectives/rationales for each MPA and ensure that site-level rationales for each MPA are linked to one or more regional objectives.
- **Goal 6: To ensure that the south coast’s MPAs are designed and managed, to the extent possible, as a component of a statewide network.**
 - Objective 6.1: Provide opportunities to promote a process that informs adaptive management and includes stakeholder involvement for regional review and evaluation of management effectiveness to determine if regional MPAs are an effective component of a statewide network.
 - Objective 6.2: Provide opportunities to coordinate with future MLPA regional stakeholder groups in other regions to ensure that the statewide MPA network meets the goals of the MLPA.

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- Objective 6.3: Ensure ecological connectivity within and between regional components of the statewide network.
- Objective 6.4: Provide for protection and connectivity of habitat for those species that utilize different habitats over their lifetime.

3.3 REGIONAL DESIGN CONSIDERATIONS

Based on the six goals of the MLPA (see Section 3.2), the South Coast Regional Stakeholder Group (SCRSG) developed regional objectives to meet those goals in the SCSR, with the support of the SAT, the Department, the BRTF, and others. Regional design considerations are discussed in detail in Section 2.5 of this Draft EIR.

3.4 TYPES OF MPAs

The term “MPA” refers to a named, discrete geographic marine or estuarine area seaward of the high-tide line or the mouth of a coastal river, including any area of intertidal or subtidal terrain, together with its overlying water and associated flora and fauna, with regulations that are more restrictive than the general regulations in the general area and that are designed to protect or conserve marine life and habitat. MPAs are primarily intended to protect or conserve marine life and habitat; therefore, they are a subset of “marine managed areas,” which are broader groups of named, discrete geographic areas along the coast that protect, conserve, or otherwise manage a variety of resources and uses, including living marine resources, cultural and historical resources, and recreational opportunities.

The focus of the SCSR MPA effort is to revise the existing system of MPAs and implementing regulations set forth at 14 California Code of Regulations (CCR) 632 to form a more effective and cohesive network. The existing MPA regulations include four distinct MPA designations: state marine reserves (SMRs), state marine conservation areas (SMCAs), state marine parks (SMPs) and state marine recreational management areas (SMRMA)s. Under current law the Commission has the statutory authority to designate only SMRs and SMCAs. State marine parks may only be created, modified, or deleted under the authority of the California Park and Recreation Commission. Similarly, other types of marine managed areas such as state marine cultural preservation areas and State Water Quality Protection Areas, are beyond the scope of the MPA regulations, and are not part of the proposed Project. Definitions, goals, and a comparison of allowed and prohibited uses among SMRs, SMCAs, and SMPs are presented in Table 3-1.

In some portions of the SCSR, protected zones occur which are not among the formally-identified MPA types set forth in Section 36700 of the California Public Resources Code, but which nonetheless provide protection for marine resources within their boundaries. These types of designations are also described in this section, and their interface with the proposed regulatory changes is briefly discussed.

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**TABLE 3-1
MPA DEFINITIONS, RESTRICTIONS, AND ALLOWABLE USES**

Characteristic	State Marine Reserve	State Marine Conservation Area	State Marine Park. (Designation authority lies with the Ca. Dept. Parks and Rec.)
Definition	<p>A nonterrestrial marine or estuarine area that is designated so that the managing agency may achieve one or more of the following:</p> <ul style="list-style-type: none"> • Protect or restore rare, threatened, or endangered native plants, animals, or habitats in marine areas; • Protect or restore outstanding, representative, or imperiled marine species, communities, habitats, and ecosystems; • Protect or restore diverse marine gene pools; or • Contribute to the understanding and management of marine resources and ecosystems by providing the opportunity for scientific research in outstanding, representative, or imperiled marine habitats or ecosystems. 	<p>A nonterrestrial marine or estuarine area that is designated so that the managing agency may achieve one or more of the following:</p> <ul style="list-style-type: none"> • Protect or restore rare, threatened, or endangered native plants, animals, or habitats in marine areas; • Protect or restore outstanding, representative or imperiled marine species, communities, habitats, and ecosystems; • Protect or restore diverse marine gene pools; • Contribute to the understanding and management of marine resources and ecosystems by providing the opportunity for scientific research in outstanding, representative, or imperiled marine habitats or ecosystems; • Preserve outstanding or unique geological features; or • Provide for sustainable living marine resource harvest. 	<p>A nonterrestrial marine or estuarine area that is designated so that the managing agency may provide opportunities for spiritual, scientific, educational, and recreational opportunities, as well as one or more of the following:</p> <ul style="list-style-type: none"> • Protect or restore outstanding, representative, or imperiled marine species, communities, habitats, and ecosystems; • Contribute to the understanding and management of marine resources and ecosystems by providing the opportunity for scientific research in outstanding, representative, or imperiled marine habitats or ecosystems; • Preserve cultural objects of historical, archaeological, and scientific interest in marine areas; or • Preserve outstanding or unique geological features.
Restrictions	It is unlawful to injure, damage, take, or possess any living, geological, or cultural marine resource, except under a permit or specific authorization from the	It is unlawful to injure, damage, take, or possess any specified living, geological, or cultural marine resources for certain commercial, recreational, or	It is unlawful to injure, damage, take, or possess any living or nonliving marine resources for commercial exploitation

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**TABLE 3-1 (CONTINUED)
MPA DEFINITIONS, RESTRICTIONS, AND ALLOWABLE USES**

Characteristic	State Marine Reserve	State Marine Conservation Area	State Marine Park. (Designation authority lies with the Ca. Dept. Parks and Rec.)
	managing agency for research, restoration, or monitoring purposes. While to the extent feasible the area shall be open to the public for managed enjoyment and study, the area shall be maintained to the extent practicable in an undisturbed and unpolluted state. Therefore, access and use (e.g., walking, swimming, boating, diving) may be restricted to protect marine resources.	combination of commercial and recreational purposes. In general, any commercial or recreational uses that would compromise protection of the species of interest, natural community, habitat, or geological features may be restricted by the designating entity or managing agency.	purposes. Any human use that would compromise protection of the species of interest, natural community or habitat, or geological, cultural, or recreational features may be restricted by the designating entity or managing agency.
Allowable Uses	Research, restoration, and monitoring may be permitted by the managing agency. Educational activities and other forms of nonconsumptive human use may be permitted by the designating entity or managing agency in a manner consistent with the protection of all marine resources.	Research, education, recreational activities, and certain commercial and recreational harvest of marine resources may be permitted.	All other uses are allowed, including scientific collection with a permit, research, monitoring, and public recreation (including recreational harvest, unless otherwise restricted). Public use, enjoyment, and education are encouraged in a manner consistent with protecting resource values.

Note: These terms are defined in California Public Resources Code Sections 36700 and 36710.

3.4.1 State Marine Reserve

Statutory language governing the nature and intent of SMRs is codified at Section 36700(a) of the California Public Resources Code. In the simplest terms, an SMR prohibits all take, possession, injury, or damage of marine organisms and geological or cultural resources. SMRs do not restrict non-consumptive uses, and research, restoration, and monitoring may be permitted by the managing agency. Educational activities and other forms of non-consumptive human use may be permitted by the designating entity or managing agency in a manner consistent with the protection of all marine resources. While the MLPA specifically precludes commercial and recreational fishing in SMRs, it also allows the managing agency to place restrictions on other activities, including non-extractive activities (e.g., diving, kayaking, snorkeling). It is important to note that this statement does not necessarily imply

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that navigation would be restricted through MPAs, or that other non-extractive activities would be regulated, although in some instances the latter may be necessary.

3.4.2 State Marine Conservation Area

Statutory language governing the nature and intent of SMCAs is codified at Section 36700(c) of the California Public Resources Code. SMCAs differ from SMRs in their purpose and types of restriction. An individual SMCA may permit certain commercial and/or recreational harvest of marine resources. Fishing restrictions may vary with the focal species, habitats, and objectives of an individual MPA within a region, and may, for example, be in the form of restrictions on the catch of particular species and/or the use of certain types of fishing gear. SMCAs may be useful in protecting more sedentary, benthic (bottom-dwelling) species, while allowing the harvest of pelagic finfish⁴ species. As envisioned in the proposed Project, an SMCA designation would not prohibit maintenance and operation activities associated with existing structures and facilities such as outfall pipes, jetties, aquaculture operations, dredging, sand replenishment, or other permitted operations.

3.4.3 State Marine Park

Prior to the enactment of the MLPA, Marine Managed Areas Improvement Act (MMAIA), and the Marine Life Management Act of 1988 (MLMA), the Commission had designated certain areas as SMPs. Under current law the Commission has authority to designate SMRs or SMCAs but not SMPs. The MLMA requires a review of all MPAs to ensure naming consistent with the conservation mission of each MPA. In compliance with the renaming requirements of the MLMA, the regulatory action currently proposed by the Commission would include appropriately redesignating existing SMPs as SMCAs or SMRs. See Table 3-1 for further MPA definitions and uses.

Under current law, SMPs differ from SMRs in their purpose and types of restriction. Unlike SMRs, SMPs allow some or all types of recreational activities. The types of restrictions on allowed take may vary with the focal species, habitats, and objectives of an individual SMP within a region. Where the primary goal of MPAs in general is biodiversity conservation, the primary goal of an SMP may be to enhance recreational opportunities. As part of the proposed regulatory changes, corrections to Title 14 Section 632 would be made to correct inconsistencies in past naming of MPA areas whose primary mission was to conserve biological resources.

⁴ Pelagic finfish are defined at 14 CCR 632(a)(3) as northern anchovy (*Engraulis mordax*), barracudas (*Sphyraena* spp.), billfishes (family *Istiophoridae*), dolphinfish (*Coryphaena hippurus*), Pacific herring (*Clupea pallasii*), jack mackerel (*Trachurus symmetricus*), Pacific mackerel (*Scomber japonicus*), salmon (*Oncorhynchus* spp.), Pacific sardine (*Sardinops sagax*), blue shark (*Prionace glauca*), salmon shark (*Lamna ditropis*), shortfin mako shark (*Isurus oxyrinchus*), thresher sharks (*Alopias* spp.), swordfish (*Xiphias gladius*), tuna (family *Scombridae*), and yellowtail (*Seriola lalandi*).

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3.4.4 State Marine Recreational Management Area

In addition to SMRs and SMCAs the Commission has the authority to designate state marine recreational management areas (SMRMAs). Although not formally identified as MPAs in the MLPA, SMRMAs are non-terrestrial marine or estuarine areas designated so the managing agency may provide, limit, or restrict recreational opportunities to meet other than purely local needs while preserving basic resource values for present and future generations. Statutory language governing restrictions in SMRMAs are codified in Section 36700(e) of the California Public Resources Code. SMRMAs prohibit any activities that would compromise the recreational values for which the area is designated for. Specified recreational opportunities may be protected, enhanced or restricted in SMRMAs, while preserving basic resource values of the area.

3.4.5 Special Closure Areas

Special closure areas (SCAs) are areas where the Commission has created either a seasonal or a year-round closure to help protect sea bird nesting, breeding, and roosting areas and/or marine mammal rookeries, haul-out, and breeding colonies. The proposed Project IPA would result in some changes to the regulatory status of SCAs within the SCSR due to the conversion of one existing SCA to an SMCA designation (see Section 3.5, below). However, SCAs are not intended to provide permanent or broad-reaching protection, and are not among the categories of MPAs formally established by Section 36700 of the California Public Resources Code. The proposed Project IPA would not establish any new SCAs. It is anticipated that, regardless of whether or not the proposed Project IPA is adopted by the Commission, the Commission will continue to exercise its statutory authority and will designate SCAs at various times and locations, with appropriate use restrictions, when necessary. Please see Section 3.5.50 for further details on existing SCAs in the SCSR.

3.4.6 Ecological Reserves

Within the SCSR, a number of locations have been designated as Ecological Reserves under existing Commission regulations at 14 CCR 630. Ecological reserves are established to provide protection for rare, threatened or endangered native plants, wildlife, aquatic organism and specialized terrestrial or aquatic habitat types. Public entry and use of Ecological Reserves are restricted, and users must comply with general rules and regulations (14 CCR 630(a)) as well as special regulations specific to each Ecological Reserve (14 CCR 630(b)). The regulations designating Ecological Reserves are separate and apart from the Commission's MPA regulations 14 CCR 632 that are the subject of the proposed Project, and Ecological Reserves are not among the classifications formally identified as MPAs by Section 36700 of the California Public Resources Code. No changes to the Commission's existing regulatory language at 14 CCR 630 are proposed.

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At particular locations within the SCSR, Ecological Reserves overlap areas where changes to MPA regulations are proposed. Where this occurs, the currently proposed Commission regulations include a statement allowing the uses permitted under the existing Ecological Reserve regulations at 14 CCR 630(b) for that location. This practice ensures that there would be no inconsistencies between the proposed MPA regulations and existing Ecological Reserve regulations. Existing Ecological Reserves within or adjacent to the SCSR include: Goleta Slough; Ballona Wetlands; Bolsa Chica; Buena Vista Lagoon; Agua Hedionda Lagoon; Batiquitos Lagoon; San Elijo Lagoon; and San Dieguito Lagoon (14 CCR 630(b)).

3.4.7 National Wildlife Refuges

The National Wildlife Refuge System, managed by the U.S. Fish and Wildlife Service (USFWS), is a system of public lands and waters set aside to conserve the nation's fish, wildlife, and plants. The extent of public access and allowed uses vary within the network, but are intended to encompass wildlife-dependent uses involving hunting, fishing, wildlife observation, photography, interpretation, and education, when compatible (USFWS 2009). Although national wildlife refuges are not among the designations identified as MPAs in Section 36700 of the California Public Resources Code, these areas nonetheless provide levels of resource protection that beneficially augment the existing MPA network, and would continue to do so if the proposed regulatory changes were adopted. Three National Wildlife Refuges occur within the waters of the SCSR, including the Seal Beach National Wildlife Refuge in Anaheim Bay, the San Diego Bay National Wildlife Refuge, and the Tijuana Slough National Wildlife Refuge.

3.4.8 Federal Safety Zones

The SCSR contains federal Safety Zones, which are military closures enacted by the United States Coast Guard and managed by the United States Navy. The closures are intended to ensure public safety – not for marine preservation, but they provide additional protection to the proposed network by prohibiting public access and acting as no-fishing zones. Two such safety zones occur near San Clemente Island, and they encompass approximately 37 square miles. These areas are not under consideration for regulatory action because the compatibility of these uses with marine resource protection is uncertain; they are described for informational purposes only. They are not components of the proposed Project IPA and will not be proposed for formal designation as MPAs.

3.5 PROPOSED INTEGRATED PREFERRED ALTERNATIVE

This section describes the inclusions, changes, deletions, and additions to the existing MPA regulations that comprise the proposed Project IPA. Because the proposed regulatory action represents a change in an existing MPA program, rather than initiation of a new program, the following description focuses on the differences between pre- and post-project protections and impacts that would result from the proposed regulations.

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Generally, the proposed regulatory changes would: alter the geographic extent of the existing MPAs; change the specific prohibited and allowed uses within existing MPAs; add new MPAs; and remove areas from protection under MPA regulations. In some cases, enlargement of an MPA would result in two MPAs becoming merged, or one being subsumed by another. In these instances, the regulations specify the name and rules that would apply to the MPA. With regard to changes in allowed and prohibited uses, the proposed regulations control which species may be taken, the purpose for which they may be taken (i.e., recreational vs. commercial), and the method by which they are taken. The proposed Project IPA also includes boundary- and regulatory-related sub-options for some MPAs under consideration. A comparative description of each sub-option, illustrating the changes among them has been included in this Draft EIR.

As stated previously, the proposed regulatory action would not alter the existing regulations regarding any MPAs surrounding the five northernmost Channel Islands (San Miguel, Santa Rosa, Santa Cruz, Anacapa, and Santa Barbara Islands). A total of 13 MPAs exist in the vicinity of these islands, consisting of 11 SMRs and two SMCAs encompassing a total of approximately 168 square miles. These MPAs have been subject to prior California Environmental Quality Act (CEQA) environmental review, would remain in place regardless of whether the proposed Project IPA is approved, and would not be modified by the proposed Project IPA or by any of the alternatives evaluated in Section 10.0 of this Draft EIR. Although they would remain unchanged by the proposed Project IPA, these MPAs are included in the discussion below because they are geographically located within the SCSR, and thus provide a contextual backdrop for the proposed regulatory changes. These existing MPAs are also described in Section 9.0 (Cumulative Impacts) of this Draft EIR.

Under the proposed Project IPA, MPAs would be designated as shown on Figure 3-2 and in Tables 3-2 and 3-3. In total, the proposed Project IPA would expand the existing MPA regulations to encompass a minimum of 48 MPAs (with boundary options resulting in a maximum of 51 MPAs) within the SCSR, compared to 42 MPAs under existing conditions. The total area protected would increase substantially, from approximately 182 square miles under existing conditions to approximately 351 square miles under the proposed Project IPA (including MPAs in the vicinity of the northern Channel Islands as described above). In addition to the increased area under protection, the proposed Project IPA would improve the level of protection for the network of MPAs as a whole. This would be achieved by increasing the area captured in no-take MPAs, such as SMRs and the most restrictive SMCAs. The improved network of MPAs that would be created by the proposed regulatory action would increase the area captured in SMRs, “non-fishing” SMCAs, and SMCAs considered to have fishing activities that offer a “high” to “very high” levels of protection under guidelines created by the MLPA Science Advisory Team. Accordingly, the area within MPAs having “very high” and “high” levels of protection would increase under the proposed Project IPA. A numerical summary of the proposed changes to the extent of MPAs within the

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**TABLE 3-2
CONFIGURATION OF MPAS UNDER THE PROPOSED PROJECT**

Type of MPA ¹	Number of Existing MPAs ²	Number of MPAs Under Proposed Project IPA ²	Total Area of Existing MPAs ³ (Square Miles)	Total Area of MPAs after proposed Project IPA ³ (Square Miles)	Net Change In MPA Area (Square Miles)
State Marine Reserve (SMR) ⁴	15	20	161.0	252.8 – 271.1	+82.7 – 101.0
State Marine Conservation Area (SMCA) ⁵	19	28	17.95	205.1 – 270.1	+78.6 – 93.6
State Marine Park (SMP) ⁶	8	0	2.68	0	-2.68
Total	42	48	181.66	350.6 – 362.9	+169.1 – 184.4

Sources: Department 2010, and Department 2009b.

¹ Type of MPA refers to the type of designation as classified by Section 36710 of the California Public Resources Code.

² Includes all MPA designations within the SCSR, including 11 SMRs and 2 SMCAs at the five northernmost Channel Islands which are not a part of the currently proposed rulemaking and would be retained without modification.

³ Of this total, the retained Northern Channel Island MPAs account for 158.67 square miles encompassed within SMRs, and 9.08 square miles encompassed within SMCAs.

⁴ The total number of SMRs under the proposed Project IPA could decrease to 18 with the selections of Laguna Beach SMCA (Option 1) and Matlahuayl SMCA (Option 1).

⁵ The total number of SMCAs under the proposed Project IPA could increase to 33 with the selections of Refugio SMCA (Option 2), Doheny Beach SMCA (Option 2), Laguna Beach SMCA (Laguna Beach SMR Options 1 and 2), Matlahuayl SMCA (Option 1) and Robert E. Badham SMCA (Option 2).

⁶ An SMP may only be created, modified, or deleted under the authority of the Park and Recreation Commission [Public Resources Code 36725(b)]. (Department 2010:6). Existing SMPs will be renamed consistent with the requirements of MLPA.

SCSR is presented in Table 3-2, and summary characteristics of the MPAs affected by the proposed regulatory changes are presented in Table 3-3.

3.5.1 Point Conception SMR

Classification: Proposed Addition

Proposed Modification of Boundaries: The Point Conception SMR has been proposed in an area of the SCSR with no existing MPA, and the boundaries would be newly established. The proposed SMR would extend 3 nautical miles west of Point Conception, and approximately 2 miles east along the coast, bound to the north by the coast and to the south by the offshore limits of state jurisdiction. The proposed SMR has an area of 22.51 square miles and an alongshore span of 5.27 miles. Depths within the SMR would range from 0 to 489 feet. Boundaries of this proposed SMR are depicted graphically on Figure 3-10.

Proposed Modification of Take Regulations: New regulations would prohibit take of all living marine resources.

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**TABLE 3-3
PROPOSED MPA CONFIGURATION UNDER THE PROPOSED PROJECT**

MPA Name ¹	SAT Level of Protection	Size (Square Miles)	Alongshore Span ² (Miles)	Depth Range (Feet) ³
Point Conception SMR	Very High	22.51	5.27	0–489
Kashtayit SMCA ⁴	Low	1.97	1.87	0–165
Naples SMCA	Low	2.58	1.91	0–162
Campus Point SMR ⁶	Very High	10.42	2.86	0–748
Refugio SMCA (exclusion or inclusion options 1 and 2 [Figure 3-3])	N/A and Low	1.03	2.6	0–51
Goleta Slough SMCA ⁵	Very High	0.25	N/A	Depth data not available
Begg Rock SMR	Very High	37.96	6.94	219–374
Point Dume SMCA	High	15.85	4.24	0–2,023
Point Dume SMR	Very High	7.43	1.92	0–1,987
Point Vicente SMCA ⁵	Very High	15.12	3.69	0–2,640
Abalone Cove SMCA	High	4.75	1.23	0–2,181
Bolsa Bay SMCA ⁷	Moderate-Low	0.07	N/A	Depth data not available
Bolsa Chica Basin SMCA ^{5,7}	Very High	0.65	N/A	Depth data not available
Arrow Point to Lion Head Point SMCA (boundary options 1 and 2 [Figure 3-4])	Low	0.54–0.63	2.86	0–259
Blue Cavern SMCA ⁵	Very High	2.62	2.29	0–892
Bird Rock SMCA	High	7.70	2.29	267–2,616
Long Point SMR	Very High	1.67	1.98	0–749
Casino Point SMCA ⁵	Very High	0.01	0.15	0–73
Lover's Cove SMCA	All Moderate-High	0.06	0.39	0–188
Farnsworth Onshore SMCA	High	2.57	2.61	0–291
Farnsworth Offshore SMCA ⁸	High	6.67	2.61	135–1,909
Cat Harbor SMCA	Moderate-Low	0.25	0.45	0–186
Upper Newport Bay SMCA	Moderate-Low	1.28	N/A	Depth data not available
Crystal Cove SMCA (boundary options 1–5 [Figure 3-5])	All Moderate-Low	2.67–3.46	4.32	0–239
Robert E. Badham SMCA (inclusion options under Crystal Cove Options 3 and 4)	Moderate-Low	0.57	0.90	0–10
Laguna Beach SMR/SMCA ⁵ (boundary options 1–5 [Figure 3-5])	Very High	9.15–16.85	2.95	0–1,408
Dana Point SMCA (boundary options 1 and 2, and access options A and B [Figure 3-5])	All Moderate-Low	3.45–3.91	3.85	0–152

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**TABLE 3-3 (CONTINUED)
PROPOSED MPA CONFIGURATION UNDER THE PROPOSED PROJECT**

MPA Name ¹	SAT Level of Protection	Size (Square Miles)	Alongshore Span ² (Miles)	Depth Range (Feet) ³
Doheny Beach SMCA (exclusion or inclusion options 1 and 2 [Figure 3-6])	N/A or Low	0.19	1.2	0–14
Batiquitos Lagoon SMCA ⁵	Very High	0.48	N/A	Depth data not available
Swami's SMCA (boundary options 1 to 4, [Figure 3-7])	All High	9.68–12.66	2.68	0–979
San Elijo Lagoon SMCA ⁵	Very High	0.44	N/A	Depth data not available
San Diego-Scripps Coastal SMCA (boundary options 1 and 2 [Figure 3-8])	Moderate-Low	1.42–1.47	1.14	0–366
Matlahuayl SMR/SMCA ⁵ (boundary options 1 and 2 [Figure 3-8])	All Very High	1.06–1.11	1.21	0–331
South La Jolla SMR (boundary options 1–4, [Figure 3-9])	All Very High	4.65–5.05	1.74	0–176
South La Jolla SMCA (boundary options 1–4 [Figure 3-9])	All High	2.27–2.46	1.74	147–274
Famosa Slough SMCA ⁵	Very High	0.03	N/A	Depth data not available
Cabrillo SMR	Very High	0.38	1.26	0–30
Tijuana River Mouth SMCA	High	2.90	2.28	0–55

Source: Department 2010.

1. The 13 existing MPAs within the northern Channel Islands are not included. These MPAs would be retained without modification, and are not part of the proposed rulemaking, although they are displayed in the maps.
2. Alongshore span measured as direct line from one end of the MPA to the other. Estuarine MPAs are not given an alongshore span.
3. Comprehensive bathymetric data for all estuaries is not available. Though bathymetric data does exist in portions of some estuaries, depth ranges are not provided for estuarine MPAs for consistency among evaluations.
4. This area, recommended by stakeholders as an SMP, would instead be designated as SMCA, and could subsequently be designated a SMP at the discretion of the State Park and Recreation Commission.
5. Activities related to an existing artificial structure were identified in the Department of Fish and Game Report to the Fish and Game Commission, *Unresolved Issues and Potential Options for the Integrated Preferred Alternative of the Marine Life Protection Act in the South Coast Study Region* (March 2010) (Also available at http://www.dfg.ca.gov/mlpal/pdfs/scmpas_report_030310.pdf) as occurring within Campus Point SMR, with a recommendation to change the designation to an SMCA and specify that the permitted activities could continue. Information received subsequent to the report indicates that the artificial structure is outside the boundaries of the proposed SMR. Therefore, the regulation retains the SMR designation as proposed.
7. The names originally proposed (Bolsa Chica SMCA/SMCA) are identical. To avoid confusion, the names have been modified to reflect commonly-used terms for each of the respective areas: Bolsa Bay SMCA and Bolsa Chica Basin SMCA.
8. A preliminary wave energy permit has been granted by the Federal Energy Regulatory Commission (FERC) at Santa Catalina Island, that includes part of the proposed expansion of Farnsworth Bank (Catalina) Offshore SMCA, which may need to be included in future regulations for this MPA.

Proposed Modification of Other Regulated Activities: None.

3.5.2 Kashtayit SMCA

Classification: Proposed Addition

Proposed Modification of Boundaries: The Kashtayit SMCA has been proposed in an area of the SCSR with no existing MPA and the boundaries would be newly established. The proposed SMCA lies approximately 10 miles east of the proposed Point Conception SMR along the Santa Barbara County coastline. Named after the historic Chumash village site of Kashtayit, the proposed SMCA has a total area of 1.97 square miles and an alongshore span of 1.87 miles. Depths within the SMCA would range from 0 to 165 feet. Boundaries of this proposed SMCA are depicted graphically on Figure 3-10.

Proposed Modification of Take Regulations: New regulations would prohibit take of all living marine resources except the recreational take of finfish, invertebrates (other than rock scallops and mussels) and giant kelp (*Macrocystis pyrifera*) by hand harvest.

Proposed Modification of Other Regulated Activities: New regulations propose allowing continuation of activities related to the operation and maintenance of artificial structures, pursuant to any required permits or as otherwise authorized by the Department.

3.5.3 Refugio SMCA

Classification: Proposed Removal with Option to Retain

Proposed Modification of Boundaries: The Refugio SMCA is an existing SMCA adjacent to Refugio State Beach that is proposed for removal under the proposed Project IPA. However, the Department of Parks and Recreation has requested that the Commission consider retaining this existing SMCA without modification. Both the removal and retention options are being considered. This existing SMCA has an area of 1.03 square miles and an alongshore span running 2.6 miles. Depths within the SMCA range from 0 to 51 feet. Boundaries of this SMCA are depicted graphically on Figure 3-10.

Proposed Modification of Take Regulations: Proposed removal of this existing SMCA would lift the existing take regulations, and the option to retain this MPA would maintain the existing regulations without modification. The existing regulations prohibit take of all living marine resources within the Refugio SMCA except:

1. Recreational take of finfish, chiones, clams, cockles, rock scallops, native oysters, crabs, lobster, ghost shrimp, sea urchins, mussels, and marine worms.
2. Commercial take of finfish, crabs, ghost shrimp, jackknife clams, sea urchins, and algae (except giant kelp, bull kelp), and worms.

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Proposed Modification of Other Regulated Activities: None.

3.5.4 Naples SMCA

Classification: Proposed Addition

Proposed Modification of Boundaries: The Naples SMCA has been proposed in an area of the SCSR with no existing MPA and the boundaries would be newly established. The proposed Naples SMCA is located along the Gaviota Coast, approximately 14 miles east of the proposed Kashtayit SMCA. The proposed Naples SMCA has an area of 2.58 square miles and an alongshore span of 1.91 miles. Depths within the proposed SMCA range from 0 to 162 feet. Boundaries of this proposed SMCA are depicted graphically on Figure 3-10.

Proposed Modification of Take Regulations: New regulations would prohibit take of all living marine resources except:

1. Recreational take of pelagic finfish (including Pacific bonito) and white sea bass by spearfishing.
2. Commercial take of giant kelp (*Macrocystis pyrifera*) by hand harvest or mechanical harvest.

Proposed Modification of Other Regulated Activities: New regulations propose allowing activities related to the operation and maintenance of artificial structures pursuant to any required permits or as otherwise authorized by the Department.

3.5.5 Campus Point SMR

Classification: Proposed Addition

Proposed Modification of Boundaries: The Campus Point SMR is proposed in an area of the SCSR with no existing MPA and the boundaries would be newly established. The proposed SMR is located near the City of Goleta and the University of California, Santa Barbara (UCSB). The proposed SMR has an area extending west along the Gaviota Coast from UCSB's Campus Point, and south to the offshore limits of state jurisdiction, 3 nautical miles from shore. The proposed SMR has an area of 10.42 square miles and an alongshore span of 2.86 miles. Depths within the SMR range from 0 to 748 feet. Boundaries of this proposed SMR are depicted graphically on Figure 3-10.

Proposed Modification of Take Regulations: New regulations would prohibit take of all living marine resources.

Proposed Modification of Other Regulated Activities: None.

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3.5.6 Goleta Slough SMP and SMCA

Classification: Proposed Replacement

Proposed Modification of Boundaries: The existing Goleta Slough SMP located near the city of Goleta, is proposed to be removed and replaced by an SMCA designation (see modifications to regulations below) with no boundary modification. The proposed Goleta Slough SMCA would retain the same area as the existing SMP (0.25 square miles). Boundaries of this proposed SMCA are depicted graphically on Figure 3-10.

Proposed Modification of Take Regulations: Existing regulations allow the recreational hook and line take of species other than marine aquatic plants. Under the proposed Project IPA this use would be prohibited.

Proposed Modification of Other Regulated Activities: The prohibition against boating, swimming, wading, and diving in waters below the mean high tide line contained in the Goleta Slough Ecological Reserve regulations [14 CCR 630(b)(54)] would be retained. Existing regulations pertaining to access to the area for persons not carrying out official duties would also remain unmodified [14 CCR 632(b)(75)(D)]. The proposed regulations would allow the following activities to continue: routine maintenance, dredging, habitat restoration, research and education, maintenance of artificial structures, and operation and maintenance of existing facilities in the conservation area pursuant to any required federal, state, and local permits, or activities pursuant to 14 CCR 630 or as otherwise authorized by the Department.

Both the proposed MPA regulations and the existing Ecological Reserve regulations would allow for restoration and other activities to continue.

3.5.7 Big Sycamore Canyon SMR

Classification: Proposed Removal

Proposed Modification of Boundaries: The Big Sycamore Canyon SMR is proposed for removal under the proposed Project IPA. For a description of this existing SMR, please refer to the No Project alternative (existing MPAs) in Section 10.1 of this Draft EIR.

Proposed Modification of Take Regulations: Existing regulations prohibiting take of all living marine resources would be lifted.

Proposed Modification of Other Regulated Activities: Proposed removal of this SMR would lift existing restrictions at 14 CCR 632(b)(90)(C) through (L) pertaining to other regulated activities under such as swimming, boating, firearms, public entry, pesticides, litter, use of aircraft, and pets.

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3.5.8 Point Dume SMCA

Classification: Proposed Addition

Proposed Modification of Boundaries: The proposed Point Dume SMCA is within an area of the SCSR with no existing MPA, and the boundaries would be newly established. The proposed SMCA is located just south of the Los Angeles County line, southeast of Point Mugu, near Point Dume. The area expands west from Point Dume and extends to the limits of state jurisdiction. The proposed SMCA has an area of 15.85 square miles and an alongshore span running 4.24 miles. Depths within the SMCA range from 0 to 2,023 feet. Boundaries of this proposed SMCA are depicted graphically on Figures 3-11 and 3-12.

Proposed Modification of Take Regulations: Proposed regulations would prohibit take of all living marine resources except:

1. Recreational take of pelagic finfish, including Pacific bonito, and white sea bass by spearfishing.
2. Commercial take of coastal pelagic species by round haul net and swordfish by harpoon.

Proposed Modification of Other Regulated Activities: None.

3.5.9 Point Dume SMR

Classification: Proposed Addition

Proposed Modification of Boundaries: The proposed Point Dume SMR is within an area of the SCSR with no existing MPA, and the boundaries would be newly established. The proposed SMR is located adjacent to the proposed Point Dume SMCA, extending both east and west of Point Dume and extending south to the offshore limits of state jurisdiction. The proposed SMR has an area of 7.43 square miles and an alongshore span of 1.92 miles. Depths within the MPA range from 0 to 1,987 feet. Boundaries of this proposed SMR are depicted graphically on Figures 3-11 and 3-12.

Proposed Modification of Take Regulations: Proposed regulations would prohibit take of all living marine resources.

Proposed Modification of Other Regulated Activities: None.

3.5.10 Point Vicente SMCA

Classification: Proposed Addition

Proposed Modification of Boundaries: The proposed SMCA is within an area of the SCSR with no existing MPA, and the boundaries would be newly established. The proposed SMCA

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is located over the Rancho Palos Verdes Shelf, extending both east and west of Point Vicente, and southwest to the offshore limits of state jurisdiction. The proposed Point Vicente SMCA has an area of 15.12 square miles and an alongshore span of 3.69 miles. Depths within the proposed SMCA range from 0 to 2,640 feet. Boundaries of this proposed SMCA are depicted graphically on Figure 3-12.

Proposed Modification of Take Regulations: Proposed regulations would prohibit take of all living marine resources.

Proposed Modification of Other Regulated Activities: Proposed regulations would allow activities associated with the Palos Verdes Shelf Superfund Site remediation program pursuant to any required permits or as authorized by the Department.

3.5.11 Abalone Cove SMP and SMCA

Classification: Proposed Replacement

Proposed Modification of Boundaries: The boundaries of the Abalone Cove SMP would be eliminated and replaced by the boundaries of the significantly larger Abalone Cove SMCA. Under the proposed Project IPA, the SMCA would lie adjacent to the proposed Point Vicente SMCA, stretching 1.23 miles east and to the offshore limits of state jurisdiction at its southern boundary. The proposed SMCA would increase the existing MPA area from 0.10 square miles to 4.75 square miles. Boundaries of this proposed SMCA are depicted graphically on Figure 3-12.

Proposed Modification of Take Regulations: The regulations proposed under the IPA are more restrictive than the take regulations at 14 CCR 632(b)(92)(B) governing the existing SMP. The existing regulations allow the recreational take of finfish by hook and line or spearfishing. The regulations proposed in the IPA would allow only:

1. Recreational take of pelagic finfish, including Pacific bonito, white sea bass by spearfishing only, and market squid by hand-held dip net.
2. Commercial take of coastal pelagic species and Pacific bonito by round haul net, and swordfish by harpoon.

Proposed Modification of Other Regulated Activities: Proposed regulations would allow remediation activities associated with the Palos Verdes Shelf Superfund Site remediation program pursuant to any required permits or as authorized by the Department.

3.5.12 Point Fermin SMP

Classification: Proposed Removal

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Proposed Modification of Boundaries: The existing Point Fermin SMP is proposed for removal under the proposed Project IPA. For a description of this existing MPA, refer to the No Project alternative (existing MPAs) in Section 10.1 of this Draft EIR.

Proposed Modification of Take Regulations: Existing regulations allowing only the recreational take of lobster, rockfish (family *Scorpaenidae*), greenling, lingcod, cabezon, yellowtail, mackerel, bluefin tuna, kelp bass, spotted sand bass, barred sand bass, sargo, croaker, queenfish, California corbina, white sea bass, opaleye, halfmoon, surfperch (family *Embiotocidae*), blacksmith, Pacific barracuda, California sheephead, Pacific bonito, California halibut, sole, turbot, and sanddab by hook and line or by spearfishing would be lifted.

Proposed Modification of Other Regulated Activities: None.

3.5.13 Bolsa Chica SMP and Bolsa Bay SMCA

Classification: Proposed Replacement

Proposed Modification of Boundaries: Boundaries of the existing Bolsa Chica SMP would be modified and expanded by the Bolsa Bay SMCA and the Bolsa Chica Basin SMCA (see Section 3.5.14, below). Both proposed SMCAs are located within the Bolsa Chica Ecological Reserve, with Bolsa Bay SMCA encompassing the northern portion of the reserve, and Bolsa Chica Basin SMCA encompassing the southern portion. The proposed Bolsa Bay SMCA has an area of 0.07 square miles. Boundaries of this proposed SMCA are depicted graphically on Figure 3-12.

Proposed Modification of Take Regulations: The currently allowed recreational hook and line take of certain species (other than marine aquatic plants) would be prohibited, and only the recreational take of finfish by hook and line from shore in designated areas would be allowed under the proposed regulations.

Proposed Modification of Other Regulated Activities: Existing regulations restricting boating, swimming, wading, diving, hours of entry, and access locations would be retained under the proposed Project IPA. Existing regulations on management activities would be modified to allow the following: routine operation and maintenance, habitat restoration, maintenance dredging, research and education, and maintenance of artificial structure inside the conservation area pursuant to any required federal, state, and local permits.

3.5.14 Bolsa Chica SMP and Bolsa Chica Basin SMCA

Classification: Proposed Replacement

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Proposed Modification of Boundaries: The southern boundaries of the existing Bolsa Chica SMP would be modified, and this MPA would be replaced by the proposed Bolsa Chica Basin SMCA. Adjacent to the proposed Bolsa Bay SMCA, the larger Bolsa Chica Basin SMCA would add an additional area of 0.50 square mile to the existing MPA, yielding a revised total of 0.65 square mile. The proposed SMCA is located within the Bolsa Chica Estuary and Ecological Reserve. Boundaries of this proposed SMCA are depicted graphically on Figure 3-12.

Proposed Modification of Take Regulations: The currently allowed recreational hook and line take of species other than marine aquatic plants from outer Bolsa Bay would be prohibited. The proposed regulations would prohibit the take of all living marine resources.

Proposed Modification of Other Regulated Activities: Existing regulations governing non-consumptive activities at the existing Bolsa Chica SMP [see 14 CCR 632(b)(94)(C) through (F)] would be incorporated into regulations for the proposed Bolsa Chica Basin SMCA. This includes restrictions on boating, swimming, wading, diving, hours of entry, and access locations. Existing regulations on management activities would be modified, to allow routine operation and maintenance, habitat restoration, maintenance dredging, research and education, and maintenance of artificial structures inside the conservation area pursuant to any required federal, state, and local permits.

3.5.15 Arrow Point to Lion Head Point (Catalina Island) Special Closure and SMCA

Classification: Proposed Modification

Proposed Modification of Boundaries: Existing boundaries of the existing SCA would be modified according to two options presented in the proposed Project IPA. The proposed Arrow Point to Lion Head Point SMCA would replace the existing special closure area of the Arrow Point to Lion Head Point Invertebrate Area, and would have an area of 0.54 or 0.63 square miles (depending on which boundary option is selected), and an alongshore span of 2.86 miles. Depths within the proposed SMCA range from 0 to 259 feet. The proposed boundary options are as follows, and are depicted graphically on Figure 3-13:

1. Arrow Point to Lion Head Point Boundary Option 1: Boundaries would retain the existing MPA offshore boundary using distance from shore.
2. Arrow Point to Lion Head Point Boundary Option 2: Boundaries would be modified as coordinates connected by straight lines that approximate the distance from shore.

Proposed Modification of Take Regulations: None; existing regulations allowing recreational take of all living marine resources except marine invertebrates would be retained.

Proposed Modification of Other Regulated Activities: None.

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3.5.16 Catalina Marine Science Center SMR and Blue Cavern (Catalina Island) SMCA

Classification: Proposed Replacement

Proposed Modification of Boundaries: Existing MPA boundaries would expand offshore to the north, and the proposed Blue Cavern SMCA would replace the existing Catalina Marine Science Center SMR. The proposed Blue Cavern SMCA has an area of 2.62 square miles and an alongshore span of 2.29 miles. Depths within the SMCA range from 0 to 892 square feet. The boundaries of the existing SMR and proposed SMCA are depicted graphically on Figure 3-13.

Proposed Modification of Take Regulations: Existing regulations prohibiting the take of all living resources would be retained, but an exception allowing take for scientific purposes would be added.

Proposed Modification of Other Regulated Activities: Existing restrictions pertaining to anchoring or mooring vessels, and scientific collection [14 CCR 632(b)(96)(B)] would be retained. New regulations allowing maintenance of artificial structures inside the conservation area pursuant to any required federal, state, and local permits, or as otherwise authorized by the Department, would be added.

3.5.17 Bird Rock (Catalina Island) SMCA

Classification: Proposed Addition

Proposed Modification of Boundaries: Bird Rock SMCA is proposed in an area of the SCSR with no existing MPA, and the boundaries would be newly established. The proposed SMCA lies adjacent to the Blue Cavern SMCA, and encompasses an area of 7.70 square miles and an alongshore span of 2.29 miles. The northern boundary of the proposed SMCA extends to the offshore limits of state jurisdiction. Depths within the proposed SMCA range from 267 to 2,616 feet. The boundaries of the proposed SMCA are depicted graphically on Figure 3-13.

Proposed Modification of Take Regulations: New regulations would prohibit take of all living marine resources except:

1. Recreational take of pelagic finfish, including Pacific bonito, by hook and line or by spearfishing; white sea bass by spearfishing only; and market squid by hand-held dip net.
2. Commercial take of pelagic finfish by hook and line only, and swordfish by harpoon only.

Proposed Modification of Other Regulated Activities: None.

3.5.18 Long Point (Catalina Island) SMR

Classification: Proposed Addition

Proposed Modification of Boundaries: Long Point SMR is proposed in an area of the SCSR with no existing MPA, and the proposed boundaries would be newly established. The proposed SMR is located on the eastern side of Santa Catalina Island, southeast of the proposed Blue Cavern SMCA. The proposed SMR has an area of 1.67 square miles, extending offshore from Catalina Island in a northeast direction. The alongshore span covers 1.98 miles, and depths within the SMR would range from 0 to 749 feet. The boundaries of the proposed SMR are depicted graphically on Figure 3-13.

Proposed Modification of Take Regulations: New regulations would prohibit take of all living marine resources.

Proposed Modification of Other Regulated Activities: None.

3.5.19 Casino Point (Catalina Island) SMCA

Classification: Proposed Addition

Proposed Modification of Boundaries: Casino Point SMCA is proposed in an area of the SCSR with no existing MPA, and the boundaries would be newly established. The proposed SMCA is located near the southeastern side of Santa Catalina Island, north of Lover's Cove. The proposed SMCA has an area of 0.01 square mile and an alongshore span running 0.15 mile. Depths within the proposed SMCA range from 0 to 73 feet. The boundaries of the proposed SMCA are depicted graphically on Figure 3-13.

Proposed Modification of Take Regulations: New regulations would prohibit take of all living marine resources.

Proposed Modification of Other Regulated Activities: New regulations would allow maintenance of artificial structures inside the conservation area pursuant to any required permits, or as otherwise authorized by the Department. In addition, options for allowing the feeding of fish for the purpose of marine life viewing have been proposed, and would be considered by the Commission under the proposed Project IPA. The two options under consideration are as follows:

1. Option 1: Do not allow feeding of fish.
2. Option 2: Allow feeding of fish for marine life viewing.

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3.5.20 Lover's Cove SMCA

Classification: Proposed Modification

Proposed Modification of Boundaries: Existing boundaries of the Lover's Cove SMCA, located on the southeast side of Santa Catalina Island, would be expanded. The existing SMCA has an area of 0.02 square mile, and an alongshore span running 0.3 mile. The proposed SMCA would have an area of 0.06 square miles and would cover an alongshore span of 0.39 mile. Depths within the expanded SMCA would range from 0 to 188 feet. The proposed boundary revisions are depicted graphically on Figure 3-13.

Proposed Modification of Take Regulations: The currently allowed take of finfish and kelp would be disallowed, recreational pier fishing from Cabrillo mole by hook and line only would be permitted.

Proposed Modification of Other Regulated Activities: Proposed regulations would allow maintenance of artificial structures inside the conservation area pursuant to any required permits, or as otherwise authorized by the Department. In addition, options for allowing the feeding of fish for the purpose of marine life viewing have been proposed, and would be considered by the Commission under the proposed Project IPA. The two options under consideration are as follows:

1. Option 1: Do not allow feeding of fish.
2. Option 2: Allow feeding of fish for marine life viewing.

3.5.21 Farnsworth (Catalina Island) Onshore SMCA

Classification: Proposed Addition

Proposed Modification of Boundaries: Farnsworth Onshore SMCA is proposed in an area of the SCSR with no existing MPA, and the boundaries would be newly established. The proposed SMCA is located on the western side of Santa Catalina Island, adjacent to the proposed Farnsworth Offshore SMCA. The proposed SMCA has an area of 2.57 square miles and an alongshore span of 2.61 miles. Depths within the proposed SMCA range from 0 to 291 feet. The boundaries of the proposed SMCA are depicted graphically on Figure 3-13.

Proposed Modification of Take Regulations: New regulations would prohibit take of all living marine resources except:

1. Recreational take of: pelagic finfish including Pacific bonito and white sea bass by spearfishing; market squid by hand-held dip net; marlin, tunas, and dorado (or dolphinfish) by trolling.

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2. Commercial take of coastal pelagic species by round haul net only and swordfish by harpoon only.

Proposed Modification of Other Regulated Activities: None.

3.5.22 Farnsworth Bank (Catalina Island) SMCA and Farnsworth Offshore SMCA

Classification: Proposed Replacement

Proposed Modification of Boundaries: The proposed Farnsworth Offshore SMCA would subsume and augment the existing Farnsworth Bank SMCA. MPA boundaries would be expanded westward to the offshore limits of state jurisdiction. The existing MPA has an area of 1.68 square miles. The proposed SMCA has an area of 6.67 square miles and depths ranging from 135 to 1,909 feet. The boundaries of the proposed SMCA are depicted graphically on Figure 3-13.

Proposed Modification of Take Regulations: The proposed regulations would be more restrictive than existing regulations which allow take of all living marine resources except purple coral. Under the proposed Project IPA, allowed take would be limited to:

1. Recreational take of pelagic finfish including Pacific bonito by hook and line or by spearfishing; white sea bass by spearfishing only; market squid by hand-held dip net; marlin, tunas and dorado (dolphinfish) by trolling.
2. Commercial take of coastal pelagic species by round haul net, and swordfish by harpoon only.

Proposed Modification of Other Regulated Activities: None.

3.5.23 Cat Harbor (Catalina Island) SMCA

Classification: Proposed Addition

Proposed Modification of Boundaries: The Cat Harbor SMCA is proposed in an area of the SCSR with no existing MPA, and the boundaries would be newly established. The proposed SMCA is located on the western side of Santa Catalina Island. It has an area of 0.25 square mile and an alongshore span running 0.45 mile. Depths within the SMCA would range from 0 to 186 feet. The boundaries of the proposed SMCA are depicted graphically on Figure 3-13.

Proposed Modification of Take Regulations: New regulations would prohibit take of all living marine resources except:

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1. Recreational take of finfish by hook and line or by spearfishing, squid by hook and line only, and lobster and sea urchin.
2. Commercial take of sea cucumbers (by diving only), spiny lobster, and sea urchin.

Proposed Modification of Other Regulated Activities: Proposed regulations would allow aquaculture of finfish pursuant to any required state permits. Also, maintenance of artificial structures inside the conservation area pursuant to any required permits, or as otherwise authorized by the Department, would be allowed.

3.5.24 Begg Rock SMR

Classification: Proposed Addition

Proposed Modification of Boundaries: Begg Rock SMR is proposed in an area of the SCSR with no existing MPA, and the proposed boundaries would be newly established. The proposed SMR is located approximately 4 nautical miles northwest of San Nicolas Island. The proposed SMR is circular in shape, and has an area of 37.96 square miles. The boundaries of the proposed SMR are depicted graphically on Figure 3-13.

Proposed Modification of Take Regulations: New regulations would prohibit take of all living marine resources.

Proposed Modification of Other Regulated Activities: None.

Implementation Notes: This SMR is not intended to regulate, and would not regulate, activities and operations of the U.S. military (see 14 CCR 632: “Nothing in this section expressly or implicitly precludes, restricts or requires modification of current or future uses of the waters identified as marine protected areas, special closures, or the lands or waters adjacent to these designated areas by the Department of Defense, its allies or agents.”).

3.5.25 Upper Newport Bay SMP and SMCA

Classification: Proposed Replacement

Proposed Modification of Boundaries: Under the proposed Project IPA the exiting Upper Newport Bay SMP would be re-designated as an SMCA and the southern boundary would be extended approximately 0.25 mile to the Pacific Coast Highway. Aside from the southern boundary extension, the proposed SMCA would cover approximately the same area as the existing SMP. The existing SMP covers an area of 1.1 square miles and the proposed SMCA covers a total area of 1.28 square miles. This MPA is also within the Upper Newport Bay Ecological Reserve. The boundaries of the existing SMP and the proposed SMCA are depicted graphically on Figures 3-12 and 3-14.

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Proposed Modification of Take Regulations: Existing regulations that allow recreational hook and line take only would be changed to allow only take of finfish by hook and line from shore.

Proposed Modification of Other Regulated Activities: Existing restrictions on swimming, boat speed, and access would be retained under the proposed regulations. New language would be added to allow maintenance dredging, habitat restoration, research and education programs, maintenance of artificial structures, and operation and maintenance of existing facilities inside the conservation area pursuant to any required federal, state, and local permits, or activities allowed under Title 14 of the CCR section 630, or as otherwise authorized by the Department.

3.5.26 Robert E. Badham SMCA

Classification: Proposed Replacement with Option to Retain

Proposed Modification of Boundaries: The existing Robert E. Badham SMCA would be subsumed into the Crystal Cove SMCA. However options to retain and expand the SMCA, are also being considered by the Commission. If this MPA is retained, the boundaries of the existing Robert E. Badham SMCA would be extended northward and farther offshore. The area of the SMCA would increase from the existing 0.02 square mile, to a revised total of 0.57 square mile.

Proposed Modification of Take Regulations: Existing regulations within the Robert E. Badham SMCA allow only recreational take of lobster, rockfish, greenling, lingcod, cabezon, yellowtail, mackerel, bluefin tuna, kelp bass, spotted sand bass, barred sand bass, sargo, croaker, queenfish, California corbina, white sea bass, opaleye, halfmoon, surfperch, blacksmith, Pacific barracuda, California sheephead, Pacific bonito, California halibut, sole, turbot, and sanddab by hook and line or spearfishing. Commercial take of spiny lobster is also permitted. If the Robert E. Badham SMCA is subsumed into the Crystal Cove SMCA, then the regulations proposed for the Crystal Cove SMCA would dictate permitted and prohibited uses in this area. These regulations would be more restrictive than those currently in place for the Robert E. Badham SMCA, and would allow only:

1. Recreational take of finfish by hook and line or by spearfishing; lobster and sea urchin.
2. Commercial take of coastal pelagic species by round haul net, spiny lobster by trap, and sea urchin.

Proposed Modification of Other Regulated Activities: If Robert E. Badham SMCA is retained under the proposed Crystal Cove SMCA Options 3 or 4, new regulations would be added allowing beach nourishment or other sediment management activities and operation

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and maintenance of artificial structures pursuant to any required permits or as authorized by the Department.

3.5.27 Crystal Cove SMCA

Classification: Proposed Replacement

Proposed Modification of Boundaries: Under the proposed Project IPA, the boundaries of the existing Crystal Cove SMCA would be substantially expanded. The expanded SMCA would subsume the existing Robert E. Badham SMCA and Irvine Coast SMCA, with an option to retain and divide the Crystal Cove SMCA into two MPAs: the proposed Crystal Cove SMCA and an expanded Robert E. Badham SMCA. These options are depicted graphically in the maps presented in Appendix A to this Draft EIR. The three existing SMCAs cover a total area of 2.27 square miles, and cover an alongshore span of 3.7 miles. Under the proposed Project IPA, the alongshore span of the Crystal Cove SMCA would increase to 4.32 miles, and the area would vary depending on the boundary option selected for adoption. Depths within the SMCA would also increase from the existing 0 to 136 feet range, to 0 to 239 feet. The proposed SMCA is contiguous to an existing state park and is a site of Juaneno/Acjachemem cultural significance.

The four boundary options for this SMCA are depicted graphically on Figure 3-5. The options are as follows:

1. Crystal Cove Boundary Option 1: The proposed Crystal Cove SMCA would enlarge the three existing SMCAs, extending the protected area farther offshore and slightly farther north along the coast. The proposed SMCA under this option would have an area of 3.46 square miles. Option 1 is depicted graphically on Figure 3-5a.
2. Crystal Cove Boundary Option 2: This option differs from Option 1 in that the southern boundary is modified to use the existing onshore point and extending it perpendicular to shore. The proposed SMCA under this option would cover a total area of 3.24 square miles. Option 2 is depicted graphically on Figure 3-5d.
3. Crystal Cove Boundary Option 3: This option would divide the area from Boundary Option 1 into two MPAs in order to retain the historic name of Robert E. Badham, north of Crystal Cove State Park land. The proposed SMCA under this option would have an area of 2.89 square miles. Aside from this element, Option 3 is identical to Option 1. Option 3 is depicted graphically on Figure 3-5f.
4. Crystal Cove Boundary Option 4: This option would divide the area from Boundary Option 2 into two MPAs in order to retain the historic name of Robert E. Badham north of Crystal Cove State Park land. Aside from this element, Option 4 is identical to Option 2. The proposed SMCA under this option would have an area of 2.67 square miles. Option 4 is depicted graphically on Figure 3-5g.

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Proposed Modification of Take Regulations: Existing regulations prohibiting take of living marine resources would be retained. However, existing exceptions for recreational and commercial take outlined in 14 CCR 632(b)(101)(B) would be repealed, and replaced by one of the following two options:

1. Take Option A: Allow recreational take of finfish by hook and line or by spearfishing, and, lobster and sea urchin. Allow commercial take of coastal pelagic species by round haul net, spiny lobster by trap, and sea urchin.
2. Take Option B: Allow recreational take of finfish by hook and line or by spearfishing, and, lobster, and sea urchin.

Proposed Modification of Other Regulated Activities: New regulations would allow for beach nourishment or other sediment management activities and operation and maintenance of artificial structures inside the conservation area pursuant to any required federal, state, and local permits, or as otherwise authorized by the Department.

3.5.28 Irvine Coast SMCA

Classification: Proposed Replacement

Proposed Modification of Boundaries: Existing boundaries would be eliminated; the Irvine Coast SMCA would be subsumed into the proposed expanded Crystal Cove SMCA. For a description of the existing Irvine Coast SMCA, please refer to the discussion of the No Project alternative (existing MPAs) in Section 10.1 of this Draft EIR.

Proposed Modification of Take Regulations: Existing regulations allow recreational hook and line or spearfishing take of; lobster, rockfish, greenling, lingcod, cabezon, yellowtail, mackerel, bluefin tuna, kelp bass, spotted sand bass, barred sand bass, sargo, croaker, queenfish, California corbina, white sea bass, opaleye, halfmoon, surfperch, blacksmith, Pacific barracuda, California sheephead, Pacific bonito, California halibut, sole, turbot, and sanddab. Commercial take of spiny lobster is also allowed. These allowed uses would be discontinued, and would be replaced by regulations proposed for the Crystal Cove SMCA, described in Section 3.5.27 above. The exact regulatory changes resulting from this action would vary depending on which of regulatory options is selected.

Proposed Modification of Other Regulated Activities: The area subsumed by the proposed Crystal Cove SMCA would be subject to new regulations associated with that MPA; please refer to the description of Other Regulated Activities in Section 3.5.27 above for further details.

3.5.29 Laguna Beach SMCA and Laguna Beach SMR/SMCA

Classification: Proposed Replacement

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Proposed Modification of Boundaries: Boundaries around the existing Laguna Beach SMCA would be removed and replaced by the expanded Laguna Beach SMR proposed under the IPA. The SMR would also subsume the existing Heisler Park SMR and South Laguna Beach SMCA. The offshore boundaries of the proposed SMR would expand to deeper waters, increasing the maximum depth encompassed by the SMR from 136 feet, to 1,408 feet.

Five boundary options for the Laguna Beach SMR are presented in the proposed Project IPA to avoid conflicts with the existing Aliso Creek treatment facility outfall pipe that lies near the southern border of the SMR. These options (depicted graphically on Figure 3-5) also have implications for redesignating the MPA – or portions of the MPA – as an SMCA, as potential activities related to maintenance and operation of the outfall pipe are incompatible with an SMR designation. The boundary options are as follow:

1. Laguna Beach Boundary Option 1: Under this option, the designation of the proposed SMR would change to a non-fishing SMCA. The northern boundary of this SMCA originates just north of Emerald Bay and extends southward approximately 3.65 miles. The southern boundary extends due west from the mean high tide at the end of Seacliff Drive in Laguna Beach approximately 4.25 miles. The resulting Laguna Beach SMCA would encompass a total area of 9.71 square miles – 8.85 square miles greater than the area encompassed by the three existing MPAs (see Appendix A for detailed figures).
2. Laguna Beach Boundary Option 2: This option would divide Boundary Option 1 geographically into two MPAs: the SMR designation is retained except for 1.5 miles of the southernmost miles of coastline, which would be designated as a non-fishing SMCA. The resulting SMR would have an area of 6.26 square miles, and the SMCA 3.45 square miles (see Appendix A for detailed figures).
3. Laguna Beach Boundary Option 3: The northern boundary under this option, is identical to the description in Boundary Option 1; the southern boundary (shared with the northern boundary of Dana Point SMCA) is modified to exclude the pipe by moving the southeast corner northward. The resulting boundary would lie in a nearshore line perpendicular to shore, which would also enhance feasibility. The resulting SMR would have an area of 9.15 square miles (see Appendix A for detailed figures).
4. Laguna Beach Boundary Option 4: Under this option, both the northern and southern nearshore boundaries would be modified to be perpendicular to shore for enhanced feasibility. This SMR would have an area of 10.73 square miles (see Appendix A for detailed figures).
5. Laguna Beach Boundary Option 5: The northern and southern nearshore boundaries under this option are similar to Boundary Option 4: they are perpendicular to shore. However, the perpendicular-to-shore boundaries would extend to the offshore limits of

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state jurisdiction. The resulting SMR would have an area of 16.85 square miles (see Appendix A for detailed figures).

Proposed Modification of Take Regulations: Under the proposed regulations, the currently allowed limited recreational take of lobster and rockfish, greenling, lingcod, cabezon, yellowtail, mackerel, bluefin tuna, kelp bass, spotted sand bass, barred sand bass, sargo, croaker, queenfish, California corbina, white sea bass, opaleye, halfmoon, surfperch, blacksmith, Pacific barracuda, California sheephead, Pacific bonito, California halibut, sole, turbot and sanddab hook and line or by spearfishing gear and commercial take of lobster (14 CCR 632(b)(103)(B)) would be disallowed, and take of all living marine resources would become prohibited.

Proposed Modification of Other Regulated Activities: New regulations propose that:

1. Boats may be launched and retrieved only in designated areas and may be anchored within the conservation area only during daylight hours.
2. Operation and maintenance of artificial structures inside the conservation area be allowed pursuant to any required federal, state, and local permits, or as otherwise authorized by the Department (this proposed regulation would only apply under Boundary Options 3, 4, and 5).

3.5.30 Heisler Park SMR

Classification: Proposed Replacement

Proposed Modification of Boundaries: Existing boundaries would be eliminated; the Heisler Park SMR would be subsumed by the proposed Laguna Beach SMR. For a description of the existing Heisler Park SMR, please refer to the description of the No Project alternative (existing MPAs) in Section 10.1 of this Draft EIR.

Proposed Modification of Take Regulations: Existing prohibitions against the take of all living marine resources would remain in effect under the regulations proposed for the Laguna Beach SMR.

Proposed Modification of Other Regulated Activities: The existing restrictions on boat launching and retrieval to daylight hours would remain unchanged under the regulations proposed for the Laguna Beach SMR. New regulations would allow the operation and maintenance of existing artificial structures.

3.5.31 South Laguna Beach SMCA

Classification: Proposed Replacement

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Proposed Modification of Boundaries: The existing SMCA would be subsumed by the proposed Laguna Beach SMR. For a description of the existing South Laguna Beach SMCA please refer to the description of the No Project alternative (existing MPAs) in Section 10.1 of this Draft EIR.

Proposed Modification of Take Regulations: Existing regulations allowing recreational take of lobster and rockfish, greenling, lingcod, cabezon, yellowtail, mackerel, bluefin tuna, kelp bass, spotted sand bass, barred sand bass, sargo, croaker, queenfish, California corbina, white sea bass, opaleye, halfmoon, surfperch, blacksmith, Pacific barracuda, California sheephead, Pacific bonito, California halibut, sole, turbot and sanddab by hook and line or by spearfishing gear and commercial take of spiny lobster would be lifted, and would be replaced by regulations prohibiting the take of all living marine resources.

Proposed Modification of Other Regulated Activities: None.

3.5.32 Dana Point SMCA

Classification: Proposed Replacement

Proposed Modification of Boundaries: Boundaries of the existing Dana Point SMCA would be expanded substantially, and this MPA would subsume the existing Niguel SMCA. The proposed expansion of the Dana Point SMCA would cause this MPA to abut the Laguna Beach SMR. Depths within the MPA would range from 0 to 152 feet.

Due to the occurrence of an outfall pipe in the proposed Laguna Beach SMR, two boundary options for the Dana Point SMCA are presented for consideration in the proposed Project IPA. The boundary options (depicted graphically on Figure 3-5) are as follows:

1. Dana Point Boundary Option 1: This option is connected with Laguna Beach SMR Options 1, and 2. Under this option, the northern boundary would travel in a north-south direction from Laguna Beach, and the southern boundary would travel west from the southern boundary of the existing Dana Point SMCA. This option would result in an area of 3.45 square miles (see Appendix A for detailed figures).
2. Dana Point Boundary Option 2: This option is connected with Laguna Beach SMR Boundary Options 3, 4, and 5. The northern boundary would be moved northward and perpendicular to shore (as described in the Laguna Beach SMR Boundary Options above), while the southern boundary would remain unchanged from Dana Point Boundary Option 1. This option would result in an area of 3.95 square miles (see Appendix A to this Draft EIR for detailed figures).

Proposed Modification of Take Regulations: Existing regulations at 14 CCR 632(b)(107)(B) allow recreational take of lobster, rockfish (family *Scorpaenidae*), greenling, lingcod, cabezon, yellowtail, mackerel, bluefin tuna, kelp bass, spotted sand bass, barred

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sand bass, sargo, croaker, queenfish, California corbina, white seabass, opaleye, halfmoon, surfperch (family *Embiotocidae*), blacksmith, Pacific barracuda, California sheephead, Pacific bonito, California halibut, sole, turbot, and sanddab by hook and line or by spearfishing gear; and commercial take of spiny lobster. The proposed Project IPA would change these regulations to allow only:

1. Recreational take (below mean lower low-tide line) lobster, sea urchin, and hook and line or spearfishing of take of finfish.
2. Commercial take of coastal pelagic species by round haul net, and spiny lobster and sea urchin.

Due to the expanded size of the proposed Dana Point SMCA, two options are under consideration by the Commission to address potential conflicts with existing regulations. The options are:

1. Access Option A: Remove existing restrictions to entry into the intertidal zone, and scientific collecting oversight by the director of the Dana Point SMCA.
2. Access Option B: Retain existing restrictions to entry into the intertidal zone and scientific collecting oversight by the director of the Dana Point SMCA. This restriction would be limited to a defined area that corresponds to the area around the Dana Point Headlands.

Proposed Modification of Other Regulated Activities: New regulations would allow operation and maintenance of artificial structures inside the SMCA pursuant to any required federal, state and local permits, or as otherwise authorized by the Department.

3.5.33 Niguel SMCA

Classification: Proposed Replacement

Proposed Modification of Boundaries: Existing boundaries would be eliminated as the existing SMCA is subsumed by the proposed Dana Point SMCA. For a description of this existing SMCA, refer to the description of the No Project alternative (existing MPAs) in Section 10.1 of this Draft EIR.

Proposed Modification of Take Regulations: Existing regulations allow recreational take of lobster, and rockfish, greenling, lingcod, cabezon, yellowtail, mackerel, bluefin tuna, kelp bass, spotted sand bass, barred sand bass, sargo, croaker, queenfish, California corbina, white sea bass, opaleye, halfmoon, surfperch, blacksmith, Pacific barracuda, California sheephead, Pacific bonito, California halibut, sole, turbot and sanddab by hook and line or by spearfishing gear, and commercial take of spiny lobster. The proposed Project IPA would change these regulations to allow the recreational take of finfish by hook and line or by

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spearfishing; to allow the take of lobster and sea urchin below the mean lower low-tide line only; to allow the commercial take of coastal pelagic species by round haul net, and to allow the commercial take of spiny lobster and sea urchin.

Proposed Modification of Other Regulated Activities: None.

3.5.34 Doheny SMCA

Classification: Proposed Removal

Proposed Modification of Boundaries: Existing boundaries would be eliminated. For a description of this existing MPA refer to the No Project alternative (existing MPAs) in Section 10.1 of this Draft EIR.

Proposed Modification of Take Regulations: Existing regulations at 14 CCR 632(b)(109) prohibiting the take of all living marine resources except recreational take of chiones, clams, cockles, rock scallops, native oysters, crabs, lobster, ghost shrimp, sea urchins, mussels, and marine worms and finfish would be lifted.

Proposed Modification of Other Regulated Activities: None.

3.5.35 Doheny Beach SMCA

Classification: Proposed Removal with Option to Retain

Proposed Modification of Boundaries: Doheny Beach SMCA is an existing SMCA located in the City of Capistrano Beach that is proposed for removal under the proposed Project IPA. However, the California Department of Parks and Recreation has requested that the Commission consider retaining this existing SMCA. This existing SMCA has an area of 0.19 square miles, and an alongshore span running 1.2 miles. Depths within the SCMA range from 0 to 14 feet. Boundaries of this SMCA are depicted graphically on Figure 3-14. If this MPA is retained by the Commission, existing boundary regulations at 14 CCR 632(b)(108)(A) would be retained without modification.

Proposed Modification of Take Regulations: Existing regulations allow only the hook and line or spearfishing recreational take of lobster, rockfish, greenling, lingcod, cabezon, yellowtail, mackerel, bluefin tuna, kelp bass, spotted sand bass, barred sand bass, sargo, croaker, queenfish, California corbina, white sea bass, opaleye, halfmoon, surfperch, blacksmith, Pacific barracuda, California sheephead, Pacific bonito, California halibut, sole, turbot, and sanddab. Commercial take of spiny lobster is also currently allowed. Under the proposed Project IPA, these existing regulations would be lifted. If this MPA is retained by the Commission, existing take regulations (14 CCR 632(b)(108)(B)) would be retained without modification.

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Proposed Modification of Other Regulated Activities: None.

3.5.36 Buena Vista Lagoon SMP and Agua Hedionda SMP

Classification: Proposed Removal

Proposed Modification of Boundaries: Existing boundaries of these two SMPs would be eliminated. For a description of this existing MPA refer to the No Project alternative (existing MPAs), presented in Section 10.1 of this Draft EIR.

Proposed Modification of Take Regulations: At Buena Vista Lagoon, existing regulations prohibiting take of all living marine resources except the limited take of species other than kelp by hook and line would be lifted. At Agua Hedionda, existing regulations prohibiting the take of all living marine resources would be lifted.

Proposed Modification of Other Regulated Activities: None.

3.5.37 Batiquitos Lagoon SMP and Batiquitos Lagoon SMCA

Classification: Proposed Replacement

Proposed Modification of Boundaries: The existing Batiquitos Lagoon SMP would be expanded and redesignated as the Batiquitos Lagoon SMCA. The boundaries of the proposed SMCA would extend eastward of the Interstate Highway 5 Bridge, increasing the area encompassed by the MPA from 0.28 square mile to 0.48 square mile. Boundaries of the existing SMP and the proposed SMCA are depicted graphically on Figure 3-15.

Proposed Modification of Take Regulations: Existing regulations allow the recreational take of finfish by hook and line from shore (14 CCR 632(b)(112)). The proposed regulations prohibit take of all living marine resources. Batiquitos Lagoon is also the site of an existing Ecological Reserve designated by existing regulations at 14 CCR 630(b)(10).

Proposed Modification of Other Regulated Activities: Existing restrictions on boating, swimming, wading, and diving would be retained under the proposed regulations. Other restrictions pertaining to management activities for fish and wildlife, flood control and vector control, and authorized operation and maintenance activities (14 CCR 632(b)(112)(C-D)), would be modified to allow the following: operation and maintenance, habitat restoration, research and education, maintenance dredging, and maintenance of artificial structures inside the conservation area pursuant to any required federal, state, and local permits, or activities pursuant to 14 CCR 630, or as otherwise authorized by the Department.

3.5.38 Encinitas SMCA

Classification: Proposed Replacement

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Proposed Modification of Boundaries: The existing Encinitas SMCA would be subsumed by the proposed Swami's SMCA. For a description of this existing MPA, please refer to the description of the No Project alternative presented in Section 10.1 of this Draft EIR.

Proposed Modification of Take Regulations: Existing regulations allowing only take of finfish would be replaced by the regulations proposed for the Swami's SMCA. The proposed regulations would allow for recreational take of pelagic finfish and white sea bass by spearfishing, with a regulatory option under consideration to allow hook and line fishing from shore.

Proposed Modification of Other Regulated Activities: None.

3.5.39 Cardiff-San Elijo SMCA

Classification: Proposed Replacement

Proposed Modification of Boundaries: The existing Cardiff-San Elijo SMCA would be subsumed into the proposed Swami's SMCA. For a description of this existing MPA, refer to the description of the No Project alternative (existing conditions), presented in Section 10.1 of this Draft EIR.

Proposed Modification of Take Regulations: Existing regulations allowing only: recreational take of finfish, chiones, clams, cockles, rock scallops, native oysters, crabs, lobster, ghost shrimp, sea urchins, mussels, and marine worms; and commercial take (14 CCR 632(b)(114)(B)) would be replaced by the regulations proposed for the Swami's SMCA. The proposed regulations would allow only recreational take of pelagic finfish and white sea bass by spearfishing, with a regulatory option under consideration to allow hook and line fishing from shore.

Proposed Modification of Other Regulated Activities: None.

3.5.40 Swami's SMCA

Classification: Proposed Replacement

Proposed Modification of Boundaries: Existing MPA boundaries would expand as the proposed Swami's SMCA subsumes the existing Encinitas and Cardiff-San Elijo SMCAs. The proposed SMCA would decrease the alongshore span encompassed by the existing MPAs from 3.0 miles, to 2.68 miles, but the proposed SMCA greatly expands the area of protection offered by the MPA by extending the boundaries to the offshore limits of state jurisdiction. The existing MPAs have a combined area of 1.32 square miles and the proposed SMCA has an area of 9.7 square miles. As a result, the maximum depth within the MPA would increase from 59 feet, to 979 feet.

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Four boundary options for the Swami's SMCA are presented in the proposed Project IPA, as shown on Figure 3-7. The boundary options under consideration are:

1. Swami's Boundary Option 1: The boundaries under this option would originate adjacent to the Encinitas and San Elijo state beaches, and would extend due west to the offshore limits of state jurisdiction. This SMCA would have an area of 9.68 square miles (see Appendix A for detailed figures).
2. Swami's Boundary Option 2: The northern boundary would be moved northward to align with Cottonwood Creek, increasing the proposed area to 10.53 square miles (see Appendix A for detailed figures).
3. Swami's Boundary Option 3: The southern boundary would be moved southward to the edge of San Elijo State Beach, as recommended by the Department of Parks and Recreation. The area of the resulting SMCA would increase 11.81 square miles (see Appendix A for detailed figures).
4. Swami's Boundary Option 4: The northern boundary would be moved northward as in Option 2, and the southern boundary would be moved southward as in Option 3, increasing the area of the proposed SMCA to 12.66 square miles (see Appendix A for detailed figures).

Proposed Modification of Take Regulations: Proposed regulations would prohibit take of all living marine resources. However, the Commission is reviewing options based on recommendations from the Department of Parks and Recreation to consider the existing high level of recreational activities at the adjacent state beaches. The two take regulation options are:

1. Take Option 1: Allow recreational take of pelagic finfish including Pacific bonito and white sea bass by spearfishing.
2. Take Option 2: Same as Option 1, with the additional provision allowing recreational take by hook and line from shore, as requested by the Department of Parks and Recreation.

Proposed Modification of Other Regulated Activities: The proposed regulations would allow beach nourishment or other sediment management activities and operations and maintenance of artificial structures inside the conservation area pursuant to any required federal, state, and local permits, or as otherwise authorized by the Department.

3.5.41 San Elijo Lagoon SMP and San Elijo Lagoon SMCA

Classification: Proposed Replacement

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Proposed Modification of Boundaries: Existing San Elijo Lagoon SMP boundaries would remain unchanged, but the MPA would be redesignated as the San Elijo SMCA. Boundaries of this MPA are depicted graphically on Figure 3-15.

Proposed Modification of Take Regulations: Regulations currently allowing recreational take of finfish by hook and line from shore (14 CCR 632(b)(115)(B)) would be replaced by regulations prohibiting the take of all living marine resources.

Proposed Modification of Other Regulated Activities: Existing provisions restricting boating, swimming, wading, and diving would be retained under the proposed regulations. However, existing regulations outlined in 14 CCR 632(b)(115)(D) and (E) pertaining to management activities would be modified and replaced by new regulations allowing: operation and maintenance, maintenance dredging, habitat restoration including sediment deposition, research and education, and maintenance of artificial structures inside the conservation area pursuant to any required federal, state, and local permits, or activities pursuant to 14 CCR 630, or as otherwise authorized by the Department.

3.5.42 San Dieguito Lagoon SMP

Classification: Proposed Removal

Proposed Modification of Boundaries: Existing boundaries would be eliminated. For a description of this existing MPA refer to the No Project alternative (existing MPAs), presented in Section 10.1 of this Draft EIR.

Proposed Modification of Take Regulations: Existing regulations prohibiting take of living marine resources except for hook and line fishing in designated areas (14 CCR 632(b)(116)(B)) would be lifted.

3.5.43 San Diego Scripps SMCA and San Diego-Scripps Coastal SMCA

Classification: Proposed Replacement

Proposed Modification of Boundaries: The boundaries of the existing San Diego-Scripps SMCA would be expanded, and this MPA would be redesignated as the proposed San Diego-Scripps Coastal SMCA. The northern and southern boundaries of the existing SMCA would move farther north in the proposed SMCA, with offshore boundaries extending into deeper waters. The existing SMCA has an alongshore span of 0.5 mile and proposed SMCA would have an alongshore span of 1.14 miles. The maximum depth within the MPA would increase from 10 feet to 366 feet.

Lying just south of the proposed San Diego-Scripps Coastal SMCA is the proposed Matlahuayl SMR (see Section 3.5.44, below). Two boundary options for these adjacent

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MPAs are under consideration to prevent incompatibility of the of the Matlahuayal SMR designation with activities at Scripps Pier, which lies in between the two adjacent MPAs, The boundary options are depicted graphically on Figure 3-8 and are as follows:

1. San Diego-Scripps Coastal Boundary Option 1: The northern boundary would originate just north of La Jolla Farms, and the southern boundary would originate just north of the Scripps Pier. As a result, Scripps Pier would cut across the two MPAs diagonally, with the beginning of the pier within the Matlahuayl SMR, and the end within the San Diego-Scripps Coastal SMCA. The area of the SMCA under this option would be 1.42 square miles. This option is linked to Matlahuayl SMR Boundary Option 1.
2. San Diego-Scripps Coastal Boundary Option 2: Under this option, the northern boundary would be identical to Boundary Option 1. The southern SMCA boundary, however, would extend southward to encompass the entire pier. This would increase the area within the SMCA to 1.47 square miles. This boundary option is linked to the Matlahuayl SMR Boundary Option 2.

Proposed Modification of Take Regulations: Existing regulations at the San Diego-Scripps SMCA allow commercial and recreational take of finfish. Under the IPA these regulations would be replaced by the regulations proposed for the San Diego-Scripps Coastal SMCA, which would allow only the recreational take of coastal pelagic species – except market squid – by hook and line only.

Proposed Modification of Other Regulated Activities: Under existing regulations, the University of California and all officers, employees, and students were allowed to collect invertebrates and marine plants for scientific purposes without permits. Under the proposed regulations (see 14 CCR 632(b)(117)(C)), individuals would have to obtain a scientific collecting permit from the Department authorizing such take. Additional proposed regulations would allow the operation and maintenance of artificial structures inside the conservation area pursuant to any required federal, state, and local permits, or as otherwise authorized by the Department.

3.5.44 La Jolla SMCA and Matlahuayl SMR

Classification: Proposed Replacement

Proposed Modification of Boundaries: The existing La Jolla SMCA would be expanded and redesignated as the proposed Matlahuayl SMR. The existing SMCA has an alongshore span of 1.1 miles, and the proposed SMR would have an alongshore span of 1.21 miles and depths ranging from 0 to 331 feet. The proposed SMR is collocated with an existing ASBS and encompasses one existing research and monitoring program location. As discussed in Section 3.5.43 above, two boundary options are presented in the proposed Project IPA for

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this location to ensure compatibility with activities associated with Scripps Pier (see Figure 3-8). The proposed options are:

1. Matlahuayl Boundary Option 1: Under this option, the proposed Matlahuayl SMR would be designated as an SMCA instead, to allow for maintenance activities associated with the pier. The resulting SMCA would have an area of 1.06 square miles. This option is linked to San Diego-Scripps Coastal SMCA Boundary Option 1.
2. Matlahuayl Boundary Option 2: Under this option, the northern boundary of the proposed MPA would be moved southward to exclude the pier, and the MPA would be designated as an SMR. This option would result in a Matlahuayl SMR boundary encompassing 1.06 square miles, and is linked to San Diego-Scripps Coastal SMCA Boundary Option 2.

Proposed Modification of Take Regulations: The currently allowed commercial take of squid for bait by use of hand held scoop (due west of a line drawn due north from Goldfish Point) would be disallowed under the proposed regulations, and all take of living marine resources would become prohibited.

Proposed Modification of Other Regulated Activities: Existing regulations restricting boat launching and anchoring (14 CCR 632(b)(118)(C)) would be retained under the proposed regulations but would be modified to allow operation and maintenance of artificial structures inside the conservation area pursuant to any required federal, state, and local permits, or as otherwise authorized by the Department.

3.5.45 South La Jolla SMR and South La Jolla SMCA

Classification: Proposed Additions.

Proposed Modification of Boundaries: South La Jolla SMR and South La Jolla SMCA are proposed in an area of the SCSR with no existing MPAs, and the proposed boundaries would be newly established. The proposed South La Jolla SMR lies adjacent to and east of the proposed SMCA of the same name, and extends to the offshore limits of state jurisdiction. Depths within the proposed SMR range from 0 to 176 feet. The proposed South La Jolla SMCA is an offshore SMCA abutting the western boundary of the proposed South La Jolla SMR. Depths within the MPA range from 147 to 274 feet. The proposed onshore/offshore MPA complex has a shared northern and southern boundary.

Four boundary options for northern and southern boundaries of the South La Jolla SMR and South La Jolla SMCA MPA complex are under consideration to facilitate public understanding and compliance with the proposed boundary regulations and for enforcement feasibility. The four options (depicted graphically on Figure 3-9) are as follows:

1. South La Jolla Boundary Option 1: The protected area would be bounded by the mean high tide line and straight lines connecting latitude and longitude points. The areas of the

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proposed SMR and SMCA under this option would be 4.65 square miles and 2.67 square miles, respectively.

2. South La Jolla Boundary Option 2: Under this option, the northern boundary would be moved northward above the intertidal reef to align with visible landmarks (a stairway and Palomar Avenue). This would increase the areas of the SMR and SMCA proposed in Option 1 to 4.83 and 2.39 square miles, respectively.
3. South La Jolla Boundary Option 3: Under this option, the southern boundary would be moved southward to align with a major street (Missouri Street). This would increase the areas of the SMR and SMCA proposed in Option 1 to 4.87 and 2.34 square miles, respectively.
4. South La Jolla Boundary Option 4: Under this option, the northern boundary would move northward as described in Option 2, and the southern boundary would move southward as described in Option 3. This would increase the areas of the SMR and SMCA proposed in Option 1 to 5.05 and 2.46 square miles, respectively.

Proposed Modification of Take Regulations: New regulations would allow the recreational take of pelagic finfish, including Pacific bonito, by hook and line within the SMCA.

Proposed Modification of Other Regulated Activities: None.

3.5.46 Famosa Slough SMCA

Classification: Proposed Addition

Proposed Modification of Boundaries: Famosa Slough SMCA is proposed in an area of the SCSR with no existing MPA, and the proposed boundaries would be newly established. The proposed SMCA has an area of 0.03 square miles along the coast within the Famosa Slough estuary southward of the San Diego River channel. Boundaries of the proposed SMCA are depicted graphically on Figure 3-15.

Proposed Modification of Take Regulations: New regulations would prohibit take of all living marine resources.

Proposed Modification of Other Regulated Activities: The proposed regulations would allow habitat restoration, maintenance dredging, and operation and maintenance of artificial structures inside the conservation area pursuant to any required permits, or as otherwise authorized by the Department.

3.5.47 Mia J. Tegner SMCA and Cabrillo SMR

Classification: Proposed Replacement

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Proposed Modification of Boundaries: Boundaries of existing Mia J. Tegner SMCA would be expanded, and this MPA would be redesignated as the proposed Cabrillo SMR. The area of the existing Mia J. Tegner SMCA is 0.02 square miles. The boundaries of the proposed Cabrillo SMR are extend farther offshore, and encompass an increased area of 0.38 square miles, and a longer alongshore span running 1.26 miles. The maximum depth within the MPA would increase from 10 feet to 30 feet. Boundaries of the proposed Cabrillo SMR, as well as the SMCA proposed for replacement, are shown on Figure 3-15.

Proposed Modification of Take Regulations: Existing regulations allowing recreational and commercial take of finfish and commercial take of marine aquatic plants would be replaced by regulations prohibiting the take of all living marine resources.

Proposed Modification of Other Regulated Activities: None.

3.5.48 Tijuana River Mouth SMCA

Classification: Proposed Addition

Proposed Modification of Boundaries: The Tijuana River Mouth SMCA is proposed in an area of the SCSR with no existing MPA, and the proposed boundaries would be newly established. The proposed SMCA abuts the California – Mexico border and extends north up the coast 2.28 miles. The proposed SMCA has an area of 2.90 square miles, and depths ranging from 0 to 55 feet. Proposed boundaries are depicted graphically on Figure 3-15.

Proposed Modification of Take Regulations: New regulations would allow only:

1. Recreational take of coastal pelagic species except market squid by hand-held dip net.
2. Commercial take of coastal pelagic species except market squid by round haul net.

Proposed Modification of Other Regulated Activities: The proposed regulations would allow beach nourishment or other sediment management activities and operation and maintenance of artificial structures inside the conservation area pursuant to any required permits or as otherwise authorized by the Department.

3.5.49 Northern Channel Islands MPAs

The five northernmost Channel Islands (San Miguel, Santa Rosa, Santa Cruz, Anacapa, and Santa Barbara) contain a total of 13 existing MPAs, including the Anacapa Island SMR, Carrington Point SMR, Footprint SMR, Gull Island SMR, Harris Point SMR, Judith Rock SMR, Richardson Rock SMR, Santa Barbara Island SMR, Scorpion SMR, Skunk Point SMR, South Point SMR, Anacapa Island SMCA, and Painted Cave SMCA. These existing MPAs would be retained without modification, and are not a part of the currently proposed

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rulemaking. Descriptions of these existing MPAs are provided for informational purposes in Section 10.1 of this Draft EIR.

3.5.50 Special Closures in the SCSR

The SCSR currently contains three areas designated by the Commission as Special Closure Areas (SCAs). Although they do not constitute MPAs as defined by the Public Resources Code, SCAs are codified in the same regulatory section as MPAs (Title 14, part 632 of the California Code of Regulations) and are subject to somewhat similar provisions limiting certain human uses. Existing SCAs within the SCSR include the San Miguel Island Special Closure (14 CCR 632(b)(77)), the Anacapa Island Special Closure (14 CCR 632(b)(86)), and the Arrow Point to Lion Head Point (Catalina Island) Invertebrate Area Special Closure (14 CCR 632(b)(95)). The San Miguel Island and Anacapa Island closures would be retained without modification under the proposed Project, as these areas surround the northern Channel Islands. Regulations governing these special closures pertain to boating and urchin fishing at San Miguel Island, and to shallow-water trapping and protection of a brown pelican fledging area at Anacapa Island.

The existing Arrow Point to Lion Head Point (Catalina Island) Invertebrate Area Special Closure, located on Santa Catalina Island, would not be retained under the proposed Project IPA. However, the existing use restrictions prohibiting the recreational take of invertebrates have been incorporated into the proposed Project IPA's regulations for the Arrow Point to Lion Head Point (Catalina Island) SMCA, which would subsume the geographic area currently designated as an SCA. Thus, implementation of the proposed Project IPA would not lift the existing take restrictions within this area. The proposed Project IPA would not designate any new SCAs.

3.6 MANAGEMENT, ENFORCEMENT, AND MONITORING OF MPAs

As described previously, one of the stated goals of the MLPA is to ensure that MPAs within the SCSR have clearly defined objectives, effective management measures, and adequate enforcement, and are based on sound scientific guidelines. Management, enforcement, and monitoring of MPAs under the IPA would help to ensure that this goal is achieved.

3.6.1 Monitoring and Adaptive Management

The 1999 California Marine Life Protection Act (MLPA, Chapter 10.5 of the California Fish and Game Code, §2850–2963) directs the state to redesign California's system of marine protected areas (MPAs) to function as a more cohesive and effective network to protect the state's marine life, habitat, and ecosystems. The MLPA also requires the adoption of a Marine Life Protection Program that includes provisions for monitoring, research, and evaluation at selected sites to facilitate adaptive management of MPAs, and to ensure that the new system meets the goals outlined by the MLPA (California Fish and Game Code

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§2853(C)(3)). In regard to MPAs, the MLPA defines adaptive management as a management policy that seeks to improve management of biological resources, particularly in areas of scientific uncertainty, by viewing program actions as tools for learning. Actions shall be designed so that they will provide useful information for future actions, even if they fail. In addition, actions will be designed to emphasize monitoring and evaluation so that the interaction of different elements within marine systems may be better understood (California Fish and Game Code Section 2852(a)).

The proposed Project IPA, guided by statutory language in the MLPA, was designed to meet the following goals: protect the natural diversity and abundance of marine life, and the structure, function, and integrity of marine ecosystems; help sustain, conserve, and protect marine life populations, including those of economic value, and rebuild those that are depleted; improve recreational, educational, and study opportunities provided by marine ecosystems that are subject to minimal human disturbance, and manage these uses in a manner consistent with protecting biodiversity; protect marine natural heritage, including protection of representative and unique marine life habitats in California waters for their intrinsic values; ensure California's MPAs have clearly defined objectives, effective management measures, and adequate enforcement and ensure MPAs are based on sound scientific guidelines; ensure that the state's MPAs are designed and managed, to the extent possible, as a network. These goals were incorporated into MPA design guidelines, in addition to the following recommendations: lessen negative impact while maintaining value; take into account local resource use and stakeholder activities in the placement of MPAs, as well as the adjacent terrestrial environment and associated human activities.

The North Central Coast Marine Protected Areas Monitoring Plan (NCC Plan) was adopted by the Fish and Game Commission on April 7, 2010. The NCC Plan guides MPA monitoring within the North Central Coast study region, and represents a general model for the types of issues and the monitoring actions that are envisioned for the MPAs in the new state-wide network. The NCC Plan envisions monitoring biological impacts of MPAs on areas both inside and outside of MPAs. The NCC Plan also has been designed to assess the effects of consumptive activities (such as commercial fishing and recreational fishing) on MPAs and ecosystems, and inversely, any effects on consumptive uses by MPAs. Similarly, the NCC Plan is designed to assess the effects of non-consumptive uses (such as beach going, diving, kayaking, and wildlife viewing) on MPAs and ecosystems, and inversely, the effects of MPAs on non-consumptive uses. The NCC Plan is going to evaluate MPA design assumptions and expected outcomes to allow unexpected issues to be resolved through future management or regulatory actions. The size, shape, and spacing of established MPAs will be reviewed to see if they meet expected outcomes and in light of new scientific information. The allowed uses and restrictions will be reviewed to see if the ecosystem and social responses to MPA restrictions are as expected during the initial design of the MPA network. The NCC Plan monitoring activities are designed to incorporate stakeholders and expert scientists in the review and monitoring of the MPA network. The issues and concerns that

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were brought up during the development of the MPA network for the North Central Coast study region will be monitored to determine if these issues need addressing through management or regulatory changes. The cycle of MPA review envisioned is every 5 years.

A south coast regional MPA monitoring plan, based on the same framework used in the NCC Plan, would be adopted by the Commission at some point after the Commission takes action to revise the MPA regulations for the SCSR consistent with the MLPA. This plan is currently under development, and the first of a series of stakeholder workshops to gather input were held in July 2010. As in the adopted NCC Plan, it is envisioned that the South Coast Regional MPA monitoring plan would evaluate issues related to human uses inside and outside of the designated MPAs. Monitoring results would be compared to expected biological outcomes, and deviations from expected outcomes would be identified and analyzed. Any inconsistencies between the assumptions, expected outcomes, and conditions within the proposed Project IPA network would be identified. Potential issues regarding concentration of consumptive uses along MPA boundaries or areas adjacent to MPAs will also be reviewed, as well as impacts to adjacent areas and stakeholders. Should the performance of the MPA network (or of individual MPAs) be significantly different than expected (not realizing expected conservation and rebuilding of important fish populations, not lessening negative impact while maintaining value, etc.), the Act and the Master Plan provide the process and regulatory framework for adaptive management, allowing changes in the design or restrictions of the MPAs to meet the goals of the MLPA and Master Plan guidelines. In addition, regulatory or management changes could be applied to lessen observed environmental or socioeconomic side-effects, if consistent with MLPA goals. If warranted, regulatory decisions made during the present process could be reconsidered by the Commission based on results of monitoring or other considerations during the SCSR five year review.

3.6.2 Enforcement

The 2008 *Master Plan for Marine Protected Areas* (Department 2008) notes that a lack of law enforcement resources is one of the reasons existing MPAs fall short of their potential to protect resources (Fish and Game Code (FGC) Section 2851(a)). This lack of resources is not unique to the MPA context, and is true across all marine management activities in California. To remedy this, the MLPA requires that the Marine Life Protection Master Plan include recommendations for improving the effectiveness of enforcement practices. (FGC Sections 2856(a)(2)(I) and (J)). The proposed regulatory revisions were drafted with the intent that boundaries should be clear, well-marked where possible, recognizable, measurable, and enforceable. In addition, as described in Section 2.4.9 of this Draft EIR, the Department made recommendations to the Commission during development of the proposed Project IPA to improve public comprehension and enforceability of the proposed regulations.

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Increased use of cooperative agreements between agencies is encouraged to ensure adequate enforcement, as no single federal, state, or local agency has complete jurisdiction over the coastal and marine environment. Therefore, the Department works closely with the enforcement programs of multiple entities on matters of mutual enforcement interest, including the U.S. Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration (NOAA) Fisheries and Marine Sanctuaries, U.S. Coast Guard, National Park Service (NPS), and California Department of Parks and Recreation. Though these programs often provide financial or logistical support, they do not provide significant staff resources statewide, especially for offshore patrols necessary for MPA enforcement, or, patrols of areas not adjacent to their own facilities. As part of seeking new cooperative agreements as outlined by the 2008 *Master Plan for Marine Protected Areas*, the Department will make efforts to acquire more direct assistance from appropriate agencies. Effective enforcement of state and federal regulation within and around the MPAs will improve the likelihood for success of MPAs in conserving and protecting marine resources. For a more complete discussion of the methods and equipment used for enforcing the MPA regulations, please refer to Section 7.3 (Public Services) of this Draft EIR.

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**SECTION 4.0
DISCIPLINES EXCLUDED FROM DETAILED
ENVIRONMENTAL ANALYSIS**

The California Department of Fish and Game (Department) has conducted a preliminary review of known information on potential environmental impacts that may occur as a result of implementing the proposed Integrated Preferred Alternative (IPA) or alternatives. Some impacts have been deemed not likely to occur or are expected to be insignificant, and review of such environmental impact topics has been dismissed from consideration in this Draft Environmental Impact Report (EIR). This section describes the topics that have been dismissed from consideration, along with the basis for their dismissal.

4.1 AESTHETICS

California has declared that the Pacific Ocean and its rich marine living resources are of great environmental, economic, *aesthetic*, recreational, educational, scientific, nutritional, social, and historic importance to the people of California. (California Fish and Game Code §2851, *emphasis added*). It is the policy of the state to ensure the conservation, sustainable use, and, where feasible, restoration of California's marine living resources for the benefit of all the citizens of the state. The proposed Project IPA and alternatives are a in part specifically designed and expected to improve the environmental, economic, *aesthetic*, recreational, educational, scientific, nutritional, social, and historic resources of the state. Coastal Southern California contains highly scenic areas and a dense population that results in a large viewing audience at many coastal and marine locations within the south coast study region (SCSR). Approximately 2.5 million people participated in wildlife viewing, and more than 4 million people took photos at the beaches throughout the state in 1999 (Department 2009). Whale watching and wildlife viewing are also very popular in the SCSR due to the number of marine mammals that reside in and pass through the SCSR (Department 2009).

The proposed Project IPA and alternatives involve the promulgation of regulations defining areas where fishing and other uses may be restricted in order to provide protection to living marine resources. No activity that may negatively impact aesthetic resources – such as construction, demolition, grading, or other related activity – is being proposed or is likely to occur as a result of the proposed Project IPA or alternatives. The proposed Project IPA and alternatives are also not expected to result in the creation of new sources of substantial light or glare that would adversely affect daytime or nighttime views.

Most permanent visible changes that could be attributed to the proposed Project IPA or alternatives are expected to occur mainly beneath the sea surface. For example, as a result of the proposed Project, we expect to see an increase in the expanse of kelp beds and their associated fauna. The reestablishment of natural biological communities within MPAs, including reestablishment of kelp beds, is one of the goals of the Marine Life Protection Act.

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This reestablishment of marine biological communities is expected to produce positive impacts to scenic vistas and improve wildlife viewing opportunities of animals. The increase in marine plants and animals in the water may result in greater amounts of detritus washing ashore. However this impact is not expected to be significant because the proposed Project IPA and alternatives would not prohibit local jurisdictions from cleaning detritus – such as kelp wrack or other storm debris – from beach areas above the mean high tide line. Additionally, because kelp wrack and driftwood are common and naturally occurring components of a coastal visual setting, modest changes in the volume of these elements would not constitute a substantial change in the visual character of the affected beaches. In summary, no significant adverse aesthetic impacts are anticipated to result from the proposed Project IPA or alternatives.

4.2 AGRICULTURE AND FORESTRY RESOURCES

The site of action of the proposed Project IPA and alternatives is solely within state waters adjacent to the Southern California coastline and islands. Conventional, land-based agriculture such as raising of livestock or land-based farming, would not be affected by the proposed Project IPA or alternatives. No conflicts with agricultural zoning or conversion of farmland to non-agricultural uses would occur. No forest resources occur within the SCSR's marine environment. The proposed Project IPA and alternatives would therefore not impact agricultural resources or forests, and impacts to agricultural resources are not discussed in this Draft EIR.

The potential effects to aquaculture and kelp harvesting from the proposed Project IPA and alternatives are discussed in Section 5.0 of this Draft EIR (Consumptive Uses).

4.3 GEOLOGY AND SOILS

The SCSR includes unique geologic features such as rocky intertidal zones, beaches of varying grain sizes (gravel to fine-grained), rocky reefs, and underwater pinnacles. These features are the result of active tectonic processes, erosion, and wave and biological action in the surrounding area. These features provide a substrate for marine life and public viewing enjoyment. The proposed Project IPA and alternatives do not propose any actions or changes in regulation that would impact these resources or processes. Additionally, the proposed Project and alternatives would not expose people or structures to adverse effects and geologic processes. Therefore, the proposed Project IPA and alternatives would have no effect on geology or soils, and impacts to these resources are not discussed in this Draft EIR.

4.4 NOISE

The proposed Project IPA and alternatives regulate fishing and other activities, some of which produce noise. The proposed Project IPA and alternatives may result in vessels having to travel farther to reach open fishing grounds and this additional travel time may increase

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the noise duration from commercial and recreational fishing vessels. However, noise emissions from commercial and recreational fishing vessels have not been identified as a significant problem to coastal residents or beach goers. This is likely due to the high level of attenuation of noise level on the ocean, and lack of sensitivity by beachgoers and coastal residents to the noise levels generated by boat operation. Neither the proposed Project IPA nor alternatives are expected to result in the generation of excessive noise or would expose persons in the project vicinity to a substantial permanent increase in ambient noise levels or a substantial temporary or periodic increase in ambient noise. As such, the proposed Project IPA and alternatives are not expected to directly or indirectly generate significant noise-related impacts, and an analysis of noise impacts has been dismissed from discussion in this Draft EIR.

4.5 POPULATION AND HOUSING

The proposed Project IPA and alternatives consist of changes in allowable fishing and other uses within defined water along a portion of the California coast. Though these changes may result in economic impacts to commercial fishing interests and ocean-dependent fishing businesses, these impacts have been evaluated and minimized during the design of the proposed Project IPA and alternatives. The proposed Project IPA and alternatives are not likely to induce substantial population growth in the project area or cause a substantial change to the availability of housing in the project area and elsewhere. No substantial adverse impacts to population and housing are expected from the proposed Project IPA or alternatives, and analysis of such impacts has been dismissed from this Draft EIR. An evaluation of potential growth inducement from the Project is presented in Section 11.3 of this Draft EIR.

**SECTION 5.0
CONSUMPTIVE USES OF LIVING MARINE RESOURCE PRODUCTS**

This section characterizes the consumable goods and products (i.e., commercial kelp harvest, commercial aquaculture, and commercial fishing) that may be affected by the implementation of the proposed Project Integrated Preferred Alternative (IPA).

5.1 CEQA APPLICATION OF SOCIOECONOMIC FACTORS

The California Environmental Quality Act (CEQA) does not require consideration of direct economic or social factors in its impact analyses. The State CEQA Guidelines (Section 15131(a)) state, “[e]conomic or social effects shall not be treated as significant effects on the environment.” Therefore, no significance criteria for the proposed Project IPA’s socioeconomic consequences on commercial and recreational consumptive uses are established. CEQA directs that economic or social effects be addressed only when they cause a physical effect on the environment. This section discusses possible linkages between potential economic or social changes to commercial consumptive use, and associated indirect consequences that could result from revising existing marine protected areas (MPAs) and establishing new MPAs in the south coast study region (SCSR). Detailed analysis and description of methods used in this Draft Environmental Impact Report (EIR) can be found in the Ecotrust Report, *Summary of Potential Impacts of the Integrated Preferred Alternative and the Round 3 Revised South Coast Regional Stakeholder Group Proposals on Commercial and Recreational Fisheries in the South Coast Study Region* (Scholz et al. 2010).

While State CEQA Guidelines have requirements for discussion of terrestrial agricultural resources, there are no guidelines for assessment of aquaculture. Nonetheless, because these issues are of great importance to stakeholders in the region, the following discussion is presented to facilitate understanding of the potential effects of the MPAs on this issue.

5.2 ACTIVITIES SUPPORTING CONSUMPTIVE DEMAND OF MARINE RESOURCES

5.2.1 Commercial Fishing

Commercial fishing is a consumptive use of marine resources in the SCSR. The California Department of Fish and Game (Department) organizes California’s ports geographically into nine port complexes for the purposes of monitoring and compiling statistics on commercial fishery landings. The SCSR includes Santa Barbara (Santa Barbara and Ventura Counties), Los Angeles (Los Angeles and Orange Counties), and San Diego (San Diego County).

Major commercial fisheries within the SCSR include market squid, sea urchin, California spiny lobster, coastal pelagic finfish, spot prawn, and California halibut. The SCSR also

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includes kelp harvest areas and aquaculture leases. Commercial fishing and fishing vessels in the SCSR have declined from 1998 through 2007 (Department 2009, Culver et. al 2007).

Commercial fishermen in the SCSR deploy a variety of gear types, including round haul nets, hook-and-line, trawl, trap, entangling nets, diver, and hand capture (Department 2009). Fishery profiles including landings by market categories within the SCSR can be found in Appendix D of the *Regional Profile of the South Coast Study Region* (Department 2009), available online at http://www.dfg.ca.gov/mlpa/regionalprofile_sc.asp.

5.2.1.2 Kelp Harvesting and Aquaculture

5.2.1.2.1 Kelp Harvesting. Kelp harvest and aquaculture activities also occur in the SCSR. Administrative kelp bed areas in California waters are numbered, defined by compass bearings from known landmarks, and have applicable commercial regulations pertaining to the harvest of giant kelp and bull kelp (see the California Code of Regulations: CCR, Title 14, §165 and 165.5). The entire California coastline is divided into numbered administrative kelp beds, although not all areas currently contain kelp. Administrative kelp beds are designated as closed, leasable, leased, or open. Closed beds may not be harvested. Leased beds are exclusively harvestable by the lessee. Open beds may be harvested by anyone with a kelp harvesting license. Of the 48 kelp beds in the SCSR, 23 are open, 4 are closed, 20 are leasable, and 1 is currently leased.

Giant kelp is harvested from Imperial Beach in San Diego County, near the California/Mexico border, to Santa Cruz (Santa Cruz County). The Department has managed kelp harvesting since 1917. Regulations currently allow kelp to be cut no deeper than 4 feet beneath the surface. Kelp harvesting licenses are required for commercial-use harvesting, but do not restrict season or limit. In 2009, 33 kelp harvesting licenses existed in the SCSR (Department 2009). The SCSR holds an annual average of 36 licenses, and 30,570 tons of kelp is commercially harvested yearly. A small amount of edible seaweed/agar has been harvested at Santa Cruz Island (Department 2009).

5.2.1.2.2 Aquaculture. All aquaculture facilities in the SCSR occupy private lands or state-leased marine water bottoms (Department 2002). Individual owners must register aquaculture facilities with the Department by March 1 of each year. Land-based aquaculture operations occur at the Santa Barbara Harbor and at Aqua Hedionda Lagoon, and include raising abalone, mussels, keyhole limpets, and fishes (Department 2009).

The Department funds a marine hatchery through its Ocean Resources and Enhancement and Hatchery program. The primary function of the program is to provide juvenile white sea bass-rearing pens. These pens are located in Oxnard, San Diego, Mission Bay, Dana Point, Newport Beach, Huntington Harbor, Alamitos Bay, Santa Catalina Island, King Harbor, Marina Del Rey, Port Hueneme, and Santa Barbara (Department 2009).

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State Water Bottom Leases. Santa Barbara County has three active shellfish aquaculture leases. These sites grow oysters, clams, mussels, scallops, and abalone for commercial sale. Shellfish aquaculture operations with active state water bottom leases cover 106.7 acres within the SCSR (Department 2009).

An active water bottom lease must have time remaining on the lease period, currently meet planting and harvesting requirements as set forth in 14 CCR 237(i) and (j), and be approved by the California Fish and Game Commission (Commission). The boundary and acreage of a specified state water bottom parcel are defined in a lease, as well as the terms and conditions of usage of that area for a specified time. The annual cost is based on a rate per acre as a result of competitive bidding in a lease auction. The Commission must approve any changes to terms or conditions in the lease (Department 2009).

Thirty-six of the 106.7 acres leased are in use. Santa Barbara Mariculture Company uses 36 of 71.7 leased acres for farming rock, speckled, and Japanese scallops; manila clams; Pacific and Kumamoto oysters; and Mediterranean mussels. Culture practices include longline, rafts, rack and bag, longline on stakes, rack and tray, groundline and bag, bottom culture, and floats. Neushul Mariculture, Inc. uses 1 of 25 leased acres for algae cultivation. Eaglenet Sea Farms, Inc. uses none of the 10 leased acres for red abalone cultivation by anchored ocean habitats (Department 2009).

5.3 CONSEQUENCES FOR AQUACULTURE, KELP HARVEST, AND COMMERCIAL FISHING RESOURCE AVAILABILITY

Adaptive management is a part of the MLPA. The MLPA requires monitoring to determine whether its goals are being met. If the goals of the MLPA (see Section 3.2) are not being met, then either regulatory or management changes could occur to try and meet the goals.

5.3.1 Commercial Fisheries Displacement

Commercial fisheries that have the greatest potential to be affected by the proposed Project are those that occur primarily or significantly within the SCSR and target primarily resident, nonmigratory species, or species that are highly mobile but spawn and are harvested in nearshore waters. The nearshore waters along the coast contain large rocky reefs, kelp beds, and expanses of soft bottom that provide habitats for numerous species. These may include nearshore and shelf rockfishes, lingcod, cabezon, kelp greenling, California halibut, butterfish, jacksmelt, surfperches, squid, Dungeness crab, and rock crab (Department 2009).

The Ecotrust Report characterizes the spatial extent and relative importance of fishing grounds for 15 commercial fisheries in the SCSR including: California halibut (hook and line, and trawl); pelagics (northern anchovy and Pacific sardine); California spiny lobster; Cabezon, greenling, and rockfish (nearshore fishery hook and line); rock crab (nearshore fishery trap); sablefish (blackcod); sea cucumber (diving and trawl); spot prawn; market

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squid; swordfish; thornyhead; and red sea urchin. The Ecotrust Report collected spatial information in the summer and fall of 2008 from representative ports of call within the SCSR. The data was used to evaluate the potential socioeconomic consequences on the commercial fishing grounds under the proposed Project IPA, and is presented in Table 5-1. The proposed Project IPA identifies a maximum potential displacement of important commercial fisheries by area, from 47 percent (for both sablefish [blackcod] and thornyhead in San Pedro/Terminal Island, Dana Point, and Oceanside) to 0 percent (for spot prawn in Ventura). Maximum potential displacement of important commercial fisheries by value would vary from 44.9 percent (for thornyhead in Dana Point) to 0 percent (for nearshore fishery trap and spot prawn in Ventura, and rock crab in Port Hueneme and San Pedro). The proposed Project IPA would potentially affect 8.3 percent (by area) and 8 percent (by value) of the important fishing grounds in the SCSR.

Existing MPAs surrounding the northern Channel Islands and Santa Barbara Island, in the southern Channel Islands, would be retained without modification under the proposed Project IPA. No change in the existing status of fishing available areas would occur in that portion of the SCSR.

Some commercial fisheries may be disproportionately affected¹ by the proposed Project IPA (see Table 5-2). The disproportionate effects over-estimate the socioeconomic consequences, because the report does not account for the existing MPAs within the SCSR.

The data indicates that the nearshore trap fishery in Dana Point would be disproportionately affected in the proposed Project IPA.

¹ Disproportionately effected commercial fisheries were assessed in the Ecotrust Report by using a box plot analysis to identify outliers within each fishery (calculated using estimated effect on stated value of total fishing grounds minus the Channel Islands data). In a box plot analysis, outliers are defined as extreme values that deviate significantly from the rest of the sample.

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**TABLE 5-1
PERCENTAGE AREA AND VALUE OF TOTAL COMMERCIAL FISHING
GROUNDS AFFECTED, BY PORT**

Port/Fishery	Proposed Project IPA		Existing Condition (Alternative 0)	
	Area	Value	Area	Value
Santa Barbara				
California Halibut (Hook & Line)	9.1%	15.1%	3.7%	5.6%
California Halibut (Trawl)	3.1%	6.3%	0.0%	0.0%
Coastal Pelagics	NA	NA	NA	NA
Live Bait	NA	NA	NA	NA
California Spiny Lobster	9.8	9.7	5.8	3.4
N. Fishery (Hook & Line)	14.4	13.0	9.8	9.4
N. Fishery (Trap)	7.7	9.3	1.6	4.3
Rock Crab	9.5	10.2	3.9	4.0
Sablefish (blackcod)	NA	NA	NA	NA
Sea Cucumber (Dive)	15.9	12.6	10.4	9.9
Sea Cucumber (Trawl)	2.0	3.0	0.0	0.0
Spot Prawn	12.9	12.6	0.0	0.0
Market Squid	NA	NA	NA	NA
Swordfish	NA	NA	NA	NA
Thornyhead	NA	NA	NA	NA
Red Sea Urchin	13.3	8.1	7.2	6.6
Ventura				
California Halibut (Hook & Line)	14.0	9.6	9.2	7.0
California Halibut (Trawl)	NA	NA	NA	NA
Coastal Pelagics	NA	NA	NA	NA
Live Bait	NA	NA	NA	NA
California Spiny Lobster	1.8	1.3	0.1	0.0
N. Fishery (Hook & Line)	NA	NA	NA	NA
N. Fishery (Trap)	12.8	0.0	10.5	0.0
Rock Crab	1.8	3.5	1.8	3.5
Sablefish (blackcod)	NA	NA	NA	NA
Sea Cucumber (Dive)	14.6	14.5	11.7	0.3
Sea Cucumber (Trawl)	NA	NA	NA	NA
Spot Prawn	0.0	0.0	0.0	0.0
Market Squid	7.7	4.4	3.1	3.0

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**TABLE 5-1 (CONTINUED)
PERCENTAGE AREA AND VALUE OF TOTAL COMMERCIAL FISHING
GROUNDS AFFECTED, BY PORT**

Port/Fishery	Proposed Project IPA		Existing Condition (Alternative 0)	
	Area	Value	Area	Value
Swordfish	NA	NA	NA	NA
Thornyhead	NA	NA	NA	NA
Red Sea Urchin	NA	NA	NA	NA
Port Hueneme				
California Halibut (Hook & Line)	12.4	8.5	7.1	6.2
California Halibut (Trawl)	NA	NA	NA	NA
Coastal Pelagics	7.2	3.5	3.8	0.8
Live Bait	NA	NA	NA	NA
California Spiny Lobster	3.5	4.7	1.0	3.1
N. Fishery (Hook & Line)	15.7	20.8	7.0	0.2
N. Fishery (Trap)	6.3	1.3	0.0	0.0
Rock Crab	1.3	0.0	0.0	0.0
Sablefish (blackcod)	NA	NA	NA	NA
Sea Cucumber (Dive)	15.8	16.9	9.5	14.2
Sea Cucumber (Trawl)	NA	NA	NA	NA
Spot Prawn	25.6	26.1	25.6	26.1
Market Squid	9.4	5.3	4.0	2.9
Swordfish	NA	NA	NA	NA
Thornyhead	NA	NA	NA	NA
Red Sea Urchin	7.5	7.8	5.5	3.4
San Pedro/Terminal Island				
California Halibut (Hook & Line)	NA	NA	NA	NA
California Halibut (Trawl)	NA	NA	NA	NA
Coastal Pelagics	7.4	4.1	3.0	0.5
Live Bait	2.5	1.2	0.0	0.0
California Spiny Lobster	5.9	6.0	0.4	0.1
N. Fishery (Hook & Line)	14.6	12.7	8.6	6.7
N. Fishery (Trap)	5.9	7.2	0.0	0.0
Rock Crab	1.5	0.0	0.0	0.0
Sablefish (blackcod)	47.0	28.0	0.0	0.0
Sea Cucumber (Dive)	15.1	10.1	7.1	1.8

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**TABLE 5-1 (CONTINUED)
PERCENTAGE AREA AND VALUE OF TOTAL COMMERCIAL FISHING
GROUNDS AFFECTED, BY PORT**

Port/Fishery	Proposed Project IPA		Existing Condition (Alternative 0)	
	Area	Value	Area	Value
Sea Cucumber (Trawl)	NA	NA	NA	NA
Spot Prawn	4.2	1.3	0.0	0.0
Market Squid	8.3	4.4	3.6	2.2
Swordfish	NA	NA	NA	NA
Thornyhead	47.0	40.9	0.0	0.0
Red Sea Urchin	8.8	9.7	5.9	3.4
Dana Point				
California Halibut (Hook & Line)	NA	NA	NA	NA
California Halibut (Trawl)	NA	NA	NA	NA
Coastal Pelagics	NA	NA	NA	NA
Live Bait	5.1	6.3	0.0	0.0
California Spiny Lobster	4.6	8.5	0.0	0.0
N. Fishery (Hook & Line)	NA	NA	NA	NA
N. Fishery (Trap)	14.1	28.0	0.0	0.0
Rock Crab	10.8	9.7	0.0	0.0
Sablefish (blackcod)	47.0	28.0	0.0	0.0
Sea Cucumber (Dive)	NA	NA	NA	NA
Sea Cucumber (Trawl)	NA	NA	NA	NA
Spot Prawn	9.6	6.8	0.0	0.0
Market Squid	NA	NA	NA	NA
Swordfish	1.7	8.2	0.9	1.6
Thornyhead	47.0	44.9	0.0	0.0
Red Sea Urchin	4.3	3.0	0.0	0.0
Oceanside				
California Halibut (Hook & Line)	NA	NA	NA	NA
California Halibut (Trawl)	NA	NA	NA	NA
Coastal Pelagics	NA	NA	NA	NA
Live Bait	3.0	0.3	0.0	0.0
California Spiny Lobster	7.3	9.5	0.5	0.4
N. Fishery (Hook & Line)	NA	NA	NA	NA
N. Fishery (Trap)	7.1	2.2	0.0	0.0

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**TABLE 5-1 (CONTINUED)
PERCENTAGE AREA AND VALUE OF TOTAL COMMERCIAL FISHING
GROUNDS AFFECTED, BY PORT**

Port/Fishery	Proposed Project IPA		Existing Condition (Alternative 0)	
	Area	Value	Area	Value
Rock Crab	4.5	0.1	0.0	0.0
Sablefish (blackcod)	47.0	28.0	0.0	0.0
Sea Cucumber (Dive)	NA	NA	NA	NA
Sea Cucumber (Trawl)	NA	NA	NA	NA
Spot Prawn	8.5	12.9	0.0	0.0
Market Squid	NA	NA	NA	NA
Swordfish	NA	NA	NA	NA
Thornyhead	47.0	43.9	0.0	0.0
Red Sea Urchin	19.3	5.2	0.0	0.0
San Diego				
California Halibut (Hook & Line)	NA	NA	NA	NA
California Halibut (Trawl)	NA	NA	NA	NA
Coastal Pelagics	NA	NA	NA	NA
Live Bait	2.5	2.7	0.0	0.0
California Spiny Lobster	5.9	12.1	0.0	0.0
N. Fishery (Hook & Line)	4.8	8.0	0.0	0.0
N. Fishery (Trap)	5.9	12.1	0.0	0.0
Rock Crab	8.3	3.1	0.0	0.0
Sablefish (blackcod)	NA	NA	NA	NA
Sea Cucumber (Dive)	6.4	2.9	0.0	0.0
Sea Cucumber (Trawl)	NA	NA	NA	NA
Spot Prawn	12.2	12.7	0.0	0.0
Market Squid	NA	NA	NA	NA
Swordfish	0.8	0.8	0.1	0.1
Thornyhead	NA	NA	NA	NA
Red Sea Urchin	13.2	8.0	0.0	0.0

Source: Ecotrust, Scholz et al. 2010.

NOTE: NA = data not available.

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**TABLE 5-2
DISPROPORTIONATELY AFFECTED COMMERCIAL FISHERIES**

Port	Fishery	Estimated Effect on Stated Value of Total Fishing Grounds
Proposed Project IPA		
Dana Point	N. Fishery (Trap)	28.00%
Alternative 1		
Dana Point	N. Fishery (Trap)	29.30%
Oceanside	Red Sea Urchin	60.90%
Alternative 2		
Oceanside	Red Sea Urchin	38.70%
Alternative 3		
Dana Point	N. Fishery (Trap)	29.50%
Santa Barbara	California Halibut (Hook & Line)	16.20%

Source: Scholz et al. 2010.

**SECTION 6.0
PHYSICAL RESOURCES**

6.1 AIR QUALITY

This chapter describes the impacts on air quality that would result from the proposed Integrated Preferred Alternative (IPA). It also discusses federal and state ambient air quality standards and existing air quality conditions in the south coast study region (SCSR), discusses potential sensitive receptors, and describes the overall regulatory framework for air quality management in the SCSR. A discussion of global climate change and the proposed Project's contribution to greenhouse gas emissions is provided in Section 6.2 of this Draft Environmental Impact Report (EIR).

6.1.1 Regulatory Framework

6.1.1.1 Federal

The Federal Clean Air Act (CAA), enacted in 1970 and amended twice thereafter (most recently in 1990), establishes the framework for air pollution control. The CAA directs the United States Environmental Protection Agency (EPA) to establish national ambient air quality standards (NAAQS). The NAAQS are divided into primary and secondary standards. The former are set to protect human health within an adequate margin of safety; and the latter to protect environmental values, such as plant and animal life.

The CAA requires states to submit a state implementation plan (SIP) for areas in nonattainment for NAAQS. The SIP, which is reviewed and approved by the EPA, must demonstrate how the NAAQS will be achieved. Failing to submit a plan or secure approval could lead to denial of federal funding and permits. In cases where the SIP is submitted but fails to demonstrate achievement of the NAAQS, the EPA is directed to prepare a federal implementation plan. The applicable SIPs for the SCSR include the 2007 Santa Barbara County Clean Air Plan, the 2007 Ventura County Air Quality Management Plan, the 2007 South Coast Air Basin Air Quality Management Plan, the 2007 San Diego County Ozone Attainment Plan, and the 2004 Revision to the California State Implementation Plan for Carbon Monoxide.

6.1.1.2 State

The California Air Resources Board (CARB) and local air pollution control districts have responsibility for achieving the California ambient air quality standards (CAAQS), which are more stringent than the comparable NAAQS. The CAAQS are achieved through district-level air quality management plans that are incorporated into the SIP.

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The California Clean Air Act (CCAA) requires local and regional districts that are not attaining one or more of the CAAQS for ozone (O₃), carbon monoxide (CO), sulfur dioxide (SO₂), or nitrogen dioxide (NO₂) to expeditiously adopt plans specifically designed to attain these standards. Each plan must be designed to achieve an annual 5 percent reduction in district-wide emissions of each nonattainment pollutant or its precursors.

Recently enacted amendments to the CCAA impose additional requirements that are designed to ensure an improvement in air quality within the next 5 years. Local districts with moderate air pollution that did not achieve the “transitional nonattainment” status by December 31, 1997 must implement the more stringent measures applicable to districts with serious air pollution.

6.1.1.3 Local

Four air quality management agencies have jurisdiction in the SCSR. These are the Santa Barbara County Air Pollution Control District (SBCAPCD), the Ventura County Air Pollution Control District (VCAPCD), the South Coast Air Quality Management District (SCAQMD), and the San Diego County Air Pollution Control District (SDAPCD). The EPA-established NAAQS are enforced by the CARB and these districts. The CARB and the districts are responsible for ensuring that the CAAQS are met. The districts are also responsible for implementing strategies for air quality improvement and recommending mitigation measures for new growth and development.

The primary mechanism through which the air districts regulate the emissions of air pollution involves the issuance of permits to stationary sources of air pollution in accordance with the rules and regulations adopted by each district. The districts also review and coordinate projects with other local government agencies to reduce emissions associated with transportation. Each district has review procedures to identify and promote emissions reductions through the application of mitigation measures placed as conditions on specific projects.

Commercial fishing vessels, which are the focus of this section, are not directly regulated by any of the individual districts. Like other mobile sources, the emissions from their engines are subject to limits adopted at the federal or state level. In the SCAQMD, a program established under Regulation XVI—and specifically Rule 1631 that applies to fishing boats and similar vessels—encourages owners to reduce their emissions by replacing or modifying engines or through other procedures. Although these marine vessel owners are not directly regulated by SCAQMD, they can register and, in theory, sell their reductions under the SCAQMD Regional Clean Air Incentives Market (RECLAIM) program. The RECLAIM program allows specific permitted industrial and power generator operators to buy and sell oxides of nitrogen (NO_x) emissions or credits in a market. Over time, the SCAQMD

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Governing Board reduces the allowable NO_x emissions and the overall RECLAIM program is intended to achieve those reductions.

6.1.2 Environmental Setting

Climate along the coastline of California varies with warmer temperatures, less rainfall, and less extensive cloud cover in the southern portions of the state. California is divided into 15 air basins to better manage air pollution. The SCSR includes three air basins: the South Central Coast Air Basin (SCCAB), South Coast Air Basin (SCAB), and San Diego Air Basin (SDAB).

The SCSR extends along five coastal California counties: Santa Barbara, Ventura, Los Angeles, Orange, and San Diego. Santa Barbara and Ventura Counties are located within the SCCAB, which consists of the entirety of San Luis Obispo, Santa Barbara, and Ventura Counties. Within the SCCAB, three air districts have jurisdiction over air quality issues. The San Luis Obispo County Air Pollution Control District (SLOAPCD) has jurisdiction over San Luis Obispo County (SLOAPCD is located north of and outside the SCSR). The SBCAPCD has jurisdiction over Santa Barbara County, and the VCAPCD has jurisdiction over Ventura County.

Los Angeles and Orange Counties are located in the SCAB, which consists of the southwestern portions of Los Angeles and San Bernardino Counties, the western portion of Riverside County, and the entirety of Orange County. Within the SCAB, the SCAQMD has jurisdiction over air quality issues.

San Diego County is located in the SDAB, which consists of the entirety of San Diego County. Within the SDAB, the SDAPCD has jurisdiction over air quality issues.

These air basins include the California Coastal Waters (CCW) and stationary sources (e.g., oil and gas operations) regulated by the applicable AQMD. In 1983 CARB defined a boundary for the CCWs, within which pollutants, as from marine vessels, emitted offshore will be transported onshore. Each district defines the CCW boundary within their jurisdiction. California Health and Safety Code Section 39037.1 defines a marine vessel to mean any tugboat, tanker, freighter, passenger ship, barge, or other boat, ship, or watercraft, except those used primarily for recreation; however, SBCAPCD, VCAPCD, SCAQMD and SDAPCD all exempt from permit the types of marine vessels discussed as part of this project.

6.1.2.1 Sensitive Receptors

For air quality analysis, sensitive land uses are defined as locations where people reside or where the presence of air pollutant emissions could adversely affect the use of the land. Typical sensitive receptors include residents, school children, hospital patients, and the elderly. There are no sensitive receptors identified within state waters within the SCSR.

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6.1.2.2 Existing Air Pollution Concentrations

Existing air quality conditions in the SCSR can be characterized in terms of the ambient air quality standards established by the federal and state governments for several different pollutants. Federal standards have been established for seven pollutants:

- Carbon monoxide
- Lead
- Nitrogen dioxide
- Ozone
- Respirable particulate matter less than 10 microns in diameter (PM₁₀)
- Fine particulate matter less than 2.5 microns in diameter (PM_{2.5})
- Sulfur dioxide

California State standards include the federal pollutants, plus four more:

- Sulfates
- Hydrogen sulfide
- Vinyl chloride (chloroethene)
- Visibility reducing particles

Table 6.1-1 identifies the specific state and federal standards for these pollutants. The pollutants of greatest concern to the proposed project are described below. Toxic air contaminants (TACs), though not regulated, are also discussed.

6.1.2.2.1 Ozone. Ozone is a respiratory irritant that increases susceptibility to respiratory infections. It is also an oxidant that can cause substantial damage to vegetation and other materials. Ozone is not emitted directly into the air, but is formed by a photochemical reaction in the atmosphere. Ozone precursors, called reactive organic gases (ROG) and NO_x, react in the atmosphere in the presence of sunlight to form ozone. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summer problem in the SCSR. Ozone is considered a regional pollutant because the photochemical reactions take time to occur and result in high ozone levels often occurring downwind of the emission source. The SCSR is a potential receptor of regional pollutants from inland areas. Therefore, ozone conditions in the area may result from a combination of locally generated and transported emissions.

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**TABLE 6.1-1
AMBIENT AIR QUALITY STANDARDS APPLICABLE IN CALIFORNIA**

Pollutant	Averaging Time	California Standards ¹		Federal Standards ²		
		Concentration ³	Method ⁴	Primary ^{3,5}	Secondary ^{3,5}	Method ⁷
Ozone (O ₃)	1 hour	0.09 ppm (180 µg/m ³)	Ultraviolet photometry	—	Same as primary standard	Ultraviolet photometry
	8 hour	0.070 ppm (137 µg/m ³)	Ultraviolet photometry	0.075 ppm (147 µg/m ³)	Same as primary standard	Ultraviolet photometry
Respirable particulate matter (PM ₁₀)	24 hour	50 µg/m ³	Gravimetric or beta attenuation	150 µg/m ³	Same as primary standard	Inertial separation and gravimetric analysis
	Annual arithmetic mean	20 µg/m ³	Gravimetric or beta attenuation	—	Same as primary standard	Inertial separation and gravimetric analysis
Fine particulate matter (PM _{2.5})	24 hour	No separate state standard	No separate state standard	35 µg/m ³	Same as primary standard	Inertial separation and gravimetric analysis
	Annual arithmetic mean	12 µg/m ³	Gravimetric or beta attenuation	15.0 µg/m ³	Same as primary standard	Inertial separation and gravimetric analysis
Carbon monoxide (CO)	8 hour	9.0 ppm (10 mg/m ³)	Non-dispersive infrared photometry (NDIR)	9 ppm (10 mg/m ³)	None	NDIR
	1 hour	20 ppm (23 mg/m ³)	NDIR	35 ppm (40 mg/m ³)	None	NDIR
	8 hour (Lake Tahoe)	6 ppm (7mg/m ³)	NDIR	—	—	NDIR
Nitrogen dioxide (NO ₂)	Annual arithmetic mean	0.030 ppm (57 µg/m ³)	Gas phase chemiluminescence	0.053 ppm (100 µg/m ³)	Same as primary standard	Gas phase chemiluminescence
	1 hour	0.18 ppm (339 µg/m ³)	Gas phase chemiluminescence	0.100 ppm ⁸	None	Gas phase chemiluminescence
Sulfur dioxide (SO ₂)	Annual arithmetic mean	—	Ultraviolet fluorescence	0.030 ppm (80 µg/m ³)	—	Spectrophotometry (pararosaniline method)

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**TABLE 6.1-1 (CONTINUED)
AMBIENT AIR QUALITY STANDARDS APPLICABLE IN CALIFORNIA**

Pollutant	Averaging Time	California Standards ¹		Federal Standards ²		
		Concentration ³	Method ⁴	Primary ^{3,5}	Secondary ^{3,5}	Method ⁷
	24 hour	0.04 ppm (105 µg/m ³)	Ultraviolet fluorescence	0.14 ppm (365 µg/m ³)	—	Spectrophotometry (pararosaniline method)
	3 hour	—	Ultraviolet fluorescence	—	0.5 ppm (13,00 µg/m ³)	Spectrophotometry (pararosaniline method)
	1 hour	0.25 ppm (655 µg/m ³)	Ultraviolet fluorescence	—	—	—
Lead ⁹	30 day average	1.5 µg/m ³	Atomic absorption	—	—	—
	Calendar quarter	—	Atomic absorption	1.5 µg/m ³	Same as primary standard	High volume sampler and atomic absorption
	Rolling 3-month average ¹⁰	—	Atomic absorption	1.15 µg/m ³	Same as primary standard	High volume sampler and atomic absorption
Visibility reducing particles	8 hour	Extinction Coefficient of 0.23 per kilometer – visibility of ten miles or more (0.07–30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70%. Method: beta attenuation and transmittance through filter tape.		No federal standards	No federal standards	No federal standards
Sulfates	24 hour	25 µg/m ³	Ion chromatography	No federal standards	No federal standards	No federal standards
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m ³)	Ultraviolet fluorescence	No federal standards	No federal standards	No federal standards
Vinyl chloride ⁹	24 hour	0.01 ppm (26 µg/m ³)	Gas chromatography	No federal standards	No federal standards	No federal standards

¹ California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM₁₀, PM_{2.5}, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

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**TABLE 6.1-1 (CONTINUED)
AMBIENT AIR QUALITY STANDARDS APPLICABLE IN CALIFORNIA**

- ² National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM_{2.5}, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.
- ³ Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
- ⁴ Any equivalent procedure which can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.
- ⁵ National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
- ⁶ National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- ⁷ Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.
- ⁸ To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010).
- ⁹ The CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
- ¹⁰ National lead standard, rolling 3-month average: final rule signed October 15, 2008.

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6.1.2.2.2 Particulate Matter. Particulate matter consists of many different substances, including dust and smoke, suspended in air in the form of particles (solids or liquid droplets) varying widely in size. PM₁₀ can damage human health and retard plant growth. Health concerns associated with suspended particulate matter focus on those particles small enough to reach the lungs when inhaled. Particulate matter also reduces visibility and corrodes materials. Particulate matter emissions are generated by a wide variety of sources, including agricultural activities, industrial emissions, dust suspended by vehicle traffic and construction equipment, and secondary aerosols formed by reactions in the atmosphere.

6.1.2.2.3 Carbon Monoxide. Carbon monoxide (CO) is a public health concern because it combines readily with hemoglobin and reduces the amount of oxygen transported in the bloodstream. CO can cause health problems such as fatigue, headache, confusion, dizziness, and even death. Motor vehicles are the dominant source of CO emissions in most areas. High CO levels develop primarily during winter, when periods of light winds combine with the formation of ground-level temperature inversions (typically from evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

6.1.2.2.4 Toxic Air Contaminants. Many pollutants are identified as TACs because of their potential to increase the risk of developing cancer or their acute or chronic health risks. Individual TACs vary greatly in the risk they present. At a given level of exposure, one TAC may pose a hazard that is many times greater than another.

There are no state or federal standards for TACs. However, for TACs that are known or suspected carcinogens, the CARB has consistently found that there are no levels or thresholds below which exposure is risk-free. For certain TACs, a unit risk factor can be developed to evaluate cancer risk. For acute and chronic health risks, a similar factor called a hazard index is used to evaluate risk.

In the early 1980s, the CARB established a statewide comprehensive air toxics program to reduce exposure to air toxics. The Toxic Air Contaminant Identification and Control Act (Assembly Bill [AB] 1807, Tanner 1983) created California's program to reduce exposure to air toxics. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, Connelly 1987) supplements the AB 1807 program by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks. The TAC of most concern with regard to the proposed project is diesel exhaust, which was identified by the CARB as a TAC in October 2000 (CARB 2000).

6.1.2.3 Monitoring Data

The federal and state governments established ambient air quality standards for various pollutants. Existing air quality conditions in the SCSR can be characterized in terms of these standards (Table 6.1-1) and by monitoring data collected in the region. Monitoring data

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concentrations are typically expressed in terms of parts per million (ppm) or micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). The following monitoring stations are nearest to the applicable study region:

- Santa Barbara – El Capitan Beach Monitoring Station
- Ventura – Emma Wood State Beach Monitoring Station
- Los Angeles – Los Angeles International Airport (LAX) Monitoring Station
- San Diego – Beardsley Monitoring Station

Air quality monitoring data from these monitoring stations is summarized in Table 6.1-2. This data represents air quality monitoring data for the last three years for which complete data is available (2007–2009). As shown in Table 6.1-2, air monitoring stations in the SCSR reported exceedances of ozone and PM_{10} thresholds in recent years. The attainment status of these air basins is discussed below.

6.1.2.4 Attainment Status

If monitored pollutant concentrations meet state or federal standards over a designated period of time, the area is classified as in attainment for that pollutant. If monitored pollutant concentrations violate the standards, the area is considered in a nonattainment area for that pollutant. If data is insufficient to determine whether a pollutant is violating the standard, the area is designated unclassified. Generally, the CARB designates whether areas are in attainment of air quality standards by air basin or county.

6.1.2.4.1 South Central Coast Air Basin. The SBCAPCD is in attainment/unclassified for all federal standards. It is in nonattainment of California standards for 8 hour ozone and PM_{10} . The area is classified as attainment/unclassified for all other state standards (SBCAPCD 2010).

The VCAPCD is in nonattainment of the federal 8-hour ozone standard and is in nonattainment for state 1-hour ozone, 24-hour PM_{10} , annual average PM_{10} , and annual average $\text{PM}_{2.5}$. Nonattainment status is currently proposed for the state 8-hour ozone standard. The area is classified as attainment/unclassified for all other standards (VCAPCD 2010).

6.1.2.4.2 South Coast Air Basin. The SCAB is out of attainment for the federal and state standards identified in Table 6.1-3.

6.1.2.4.3 San Diego Air Basin. The SDAPCD is in nonattainment of the federal 8-hour ozone standard and is in nonattainment for state 1-hour ozone, 8-hour ozone, PM_{10} , and $\text{PM}_{2.5}$ standards. The area is classified as attainment/unclassified for all other standards (SDAPCD 2010a).

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**TABLE 6.1-2
SANTA BARBARA, VENTURA, SOUTH COAST, AND SAN DIEGO AMBIENT AIR QUALITY MONITORING DATA**

Pollutant Standards	El Capitan Beach (42370) ¹			Emma Wood State Beach (56433) ²			LAX (70111) ³			Beardsley (80142) ⁴		
	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008
Ozone												
Max 1-hr concentration (pphm)	8.2	9.5	8.3	8.1	8.4	8.3	6	8.7	8.6	8	9	9
National max 8-hr concentration (pphm)	6.3	7.9	6.9	7	7.8	7.1	5.4	7.4	7.5	7	7	7
State max 8-hr concentration (pphm)	6.4	8.0	6.9	7	7.9	7.1						
Number of days standard exceeded												
NAAQS 1-hr (12 pphm)	0	0	0	0	0	0	0	0	0	0	0	0
CAAQS 1-hr (9 pphm)	0	1	0	0	0	0	0	0	0	0	0	0
NAAQS 8-hr (8.5 pphm)	0	1	0	0	1	0	0	0	0	0	0	0
NAAQS 8-hr (7.5 pphm) ⁵							0	0	0			
CAAQS 8-hr (7.0 pphm)	0	1	0	0	1	1	0	1	1	0	0	1
Carbon monoxide (CO)												
Max 1-hr concentration (ppm)							3	3	4	5.3	4.4	3.5
Max 8-hr concentration (ppm)							2.3	2.4	2.5	3.3	3.0	2.6
Number of days standard exceeded												
NAAQS 1-hr (35 ppm)							0			0	0	0
CAAQS 1-hr (20 ppm)							0			0	0	0
NAAQS 8-hr (9 ppm)							0			0	0	0
CAAQS 8-hr (9.0 ppm)							0			0	0	0
Particulate matter (PM ₁₀)												
National max 24-hr concentration (µg/m ³)	39	227.8	55.7				35	96	50	71	55	58
National second-highest 24-hr concentration (µg/m ³)	35.8	72.4	49.9									
State max 24-hr concentration (µg/m ³)	39.9	233.7	57.1									

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**TABLE 6.1-2 (CONTINUED)
SANTA BARBARA, VENTURA, SOUTH COAST, AND SAN DIEGO AMBIENT AIR QUALITY MONITORING DATA**

Pollutant Standards	El Capitan Beach (42370) ¹			Emma Wood State Beach (56433) ²			LAX (70111) ³			Beardsley (80142) ⁴		
	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008
State second-highest 24-hr concentration ($\mu\text{g}/\text{m}^3$)	36.2	72.4	50.4									
National annual average concentration ($\mu\text{g}/\text{m}^3$)	17.7	23	21.8				27.7	25.6		34	30	29
State annual average concentration ($\mu\text{g}/\text{m}^3$)	18.3	23.7	22.4									
Number of days standard exceeded ($\mu\text{g}/\text{m}^3$)												
NAAQS 24-hr (150 $\mu\text{g}/\text{m}^3$)	0	1	0				0	0	0			
CAAQS 24-hr (50 $\mu\text{g}/\text{m}^3$)	0	2	1				0	2	0			
NAAQS annual average (50 $\mu\text{g}/\text{m}^3$)												
CAAQS annual average (20 $\mu\text{g}/\text{m}^3$)												
Particulate matter (PM _{2.5})												
National max 24-hr concentration ($\mu\text{g}/\text{m}^3$)							--	--	--	63	52	42
National second-highest 24-hr concentration ($\mu\text{g}/\text{m}^3$)												
State max 24-hr concentration ($\mu\text{g}/\text{m}^3$)												
State second-highest 24-hr concentration ($\mu\text{g}/\text{m}^3$)												
National annual average concentration ($\mu\text{g}/\text{m}^3$)							--	--	--	13	12	14
State annual average concentration ($\mu\text{g}/\text{m}^3$)												
Number of days standard exceeded												
NAAQS 24-hr (35 $\mu\text{g}/\text{m}^3$)												
NAAQS annual average (15 $\mu\text{g}/\text{m}^3$)												
CAAQS annual average (12 $\mu\text{g}/\text{m}^3$)												
Nitrogen dioxide (NO ₂)												

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**TABLE 6.1-2 (CONTINUED)
SANTA BARBARA, VENTURA, SOUTH COAST, AND SAN DIEGO AMBIENT AIR QUALITY MONITORING DATA**

Pollutant Standards	El Capitan Beach (42370) ¹			Emma Wood State Beach (56433) ²			LAX (70111) ³			Beardsley (80142) ⁴		
	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008
Max 1-hr concentration (ppm)	0.035	0.053	0.042				0.10	0.08	0.09	0.094	0.098	0.091
Annual average concentration (ppm)	0.006	0.006	0.006					0.014	0.0143	0.021	0.018	0.019
Number of days standard exceeded												
CAAQS 1-hr (0.18 ppm)	0	0	0				0					
NAAQS annual average (0.053 ppm)												
CAAQS annual average (0.030 ppm)												
Sulfur dioxide (SO ₂)												
Max 1-hr concentration (pphm)							2	2	2	3.4	1.8	0.4
Max 3-hr concentration (pphm)										3.0	1.0	0.2
Max 24-hr concentration (pphm)	0.2	0.1	0.3				0.6	0.9	0.5	0.9	0.6	0.8
Annual average concentration (pphm)	0	0	0.1					0.28	0.14	0.4	0.3	0.3
Number of days standard exceeded												
CAAQS 1-hr (25 pphm)												
NAAQS 3-hr (50 pphm)												
NAAQS 24-hr (14 pphm)												
CAAQS 24-hr (4 pphm)												
NAAQS annual average (3 pphm)												

^{1,2} CARB 2010a,b.

³ SCAQMD 2010.

⁴ SDAPCD 2010b.

⁵ Federal 8-hr standard was revised to 7.5 pphm on March 12, 2008.

ppm = parts per million; pphm = parts per hundred million; g/m³ = grams per meter cubed.

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**TABLE 6.1-3
SOUTH COAST AIR BASIN**

Pollutant	Federal Status ¹	State Standard ²
8-hr ozone	Severe 17 ³	Nonattainment
PM ₁₀	Serious	Nonattainment
PM _{2.5} 1997	Nonattainment	
PM _{2.5} 2006	Nonattainment	Nonattainment
CO	Attainment	Nonattainment

¹ Federal Designations are available at: <http://www.epa.gov/oar/oaqps/greenbk/anc12.html>.

² California State Designations are available at: <http://www.arb.ca.gov/desig/changes.htm#reports>.

³ Severe 17 means severe nonattainment with an attainment date of June 2021.

6.1.2.5 Class I Areas

Under the Federal Clean Air Act Amendments of 1977, Congress established a system for the prevention of significant deterioration to areas that were not classified as nonattainment. A classification system was implemented based on the allowable amounts of additional total suspended particulates and sulfur dioxide degradation that would be allowed for various areas. A Class I area has the greatest limitations; virtually any degradation is considered significant. The nearest California Class I area to the SCSR is the San Gabriel Wilderness Area.

6.1.3 Impact Analysis

6.1.3.1 Methodology

6.1.3.1.1 Commercial Fishing Vessels and Commercial Passenger Fishing Vessels – All Areas. One of the presumed effects of the Project as proposed is an increase in travel distance as some fishing vessels move to alternate areas in order to maintain their catch. An associated effect would be an increase in exhaust emissions from fishing vessel engines. The general method used in the analysis of this issue is to estimate these increased emissions based on an assumed increase in travel distance, and then compare the increases to thresholds used to define significant impacts by the affected air quality districts.

The challenge to modeling all project-induced commercial fishing vessel emission scenarios is it is not possible to predict all of the responses of individual fishermen to the proposed MPA network. Many factors influence the decision to go to sea on a given day, which impact the modeling emission scenarios. In some instances, appropriate fishing grounds may not occur immediately adjacent to the proposed MPA displacing a specific

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vessel(s), affecting transit distances. It is also possible that some vessels may transit to alternate fishing grounds at comparable distances to their current situation. The air emission analysis conservatively assumed that a portion of commercial fishing activities within a given fishing block were displaced by a distance equal to the combined alongshore span of any and all proposed MPAs that would affect the fishing block. The portion of commercial fishing vessels displaced was assumed to be equal to the percentage of the total fishing block area proposed to be protected by the proposed regulatory changes. For consistency with the North-Central Coast EIR, it was also assumed that the commercial vessels traveled at a speed of 18 miles per hour. Therefore, additional travel time in hours caused by the creation of MPAs was estimated as twice the total alongshore span (yielding round-trip distance) of any and all MPAs located within a given fishing block, divided by 18 miles per hour. The additional travel time was multiplied by the air emission factors provided in Table 6.1-4 that correspond to the size of the affected vessel(s). Resulting air pollutant emission estimates for the proposed Project are summarized in Table 6.1-5. The detailed calculation methodology is provided in Appendix C.

**TABLE 6.1-4
CATEGORY 1 HARBOR CRAFT EMISSION
FACTORS WITH CONTROLLED NO_x**

Minimum Power		Emission Factor (g/kWh)					Emission Factor (g/hph)				
kW	hp	NO _x	CO	HC	PM ₁₀	SO ₂	NO _x	CO	HC	PM ₁₀	SO ₂
0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
37	50	11	2	0.27	0.9	0.63	5.42	1.49	0.20	0.67	0.47
75	100	10	1.7	0.27	0.4	0.63	5.42	1.27	0.20	0.30	0.47
130	175	10	1.5	0.27	0.4	0.63	5.42	1.12	0.20	0.30	0.47
225	300	10	1.5	0.27	0.3	0.63	5.42	1.12	0.20	0.22	0.47
450	600	10	1.5	0.27	0.3	0.63	5.42	1.12	0.20	0.22	0.47
560	750	10	1.5	0.27	0.3	0.63	5.42	1.12	0.20	0.22	0.47
1,000	1,341	13	2.5	0.27	0.3	0.63	5.42	1.86	0.20	0.22	0.47

Sources: ICF 2006 and SBCAPCD 2002.
g/kWhr = grams per kilowatt-hour.
g/hph = grams per horsepower per hour.

6.1.3.1.2 Recreational Fishing. Emissions contributions resulting from potential project-derived changes in recreational fishing activities are qualitatively considered in the impact analysis. Though a substantial number of non-commercial vessels is located within the SCSR, information on the locations of these vessels, the trips taken by these vessels, and the types of fuel and engines used by these boats is not feasible to obtain and any impact analysis would have to make a number of speculative assumptions in order to

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**TABLE 6.1-5
SCREENING LEVEL PROPOSED PROJECT ESTIMATED DAILY
MAXIMUM AND ANNUAL TOTAL EMISSIONS FROM COMMERCIAL
AND COMMERCIAL PASSENGER FISHING VESSELS BY AIR DISTRICT**

	NO _x	CO	HC	PM ₁₀	SO ₂
SBCAPCD					
Daily max (lb/day)	7.1	0.9	0.3	0.3	0.6
Daily threshold (lb/day)	55		55		
Days threshold exceeded (#)	0	0	0	0	0
Annual total (ton/yr)	0.17	0.03	0.01	0.01	0.01
Annual threshold (ton/yr)	N/A	N/A	N/A	N/A	N/A
VCAPCD					
Daily max (lb/day)	0	0	0	0	0
Daily threshold (lb/day)	25	N/A	25	N/A	N/A
Days threshold exceeded (#)	0	0	0	0	0
Annual total (ton/yr)	0	0	0	0	0
Annual threshold (ton/yr)	N/A	N/A	N/A	N/A	N/A
SCAQMD					
Daily max (lb/day)	17.7	3.7	0.7	0.9	1.5
Daily threshold (lb/day)	55	550	55	551	150
Days threshold exceeded (#)	0	0	0	0	0
Annual total (ton/yr)	0.75	0.16	0.03	0.04	0.06
Annual threshold (ton/yr)	N/A	N/A	N/A	N/A	N/A
SDAPCD					
Daily max (lb/day)	10.9	2.3	0.4	0.6	0.9
Daily threshold (lb/day)	250	N/A	75	100	N/A
Days threshold exceeded (#)	0	0	0	0	0
Annual total (ton/yr)	0.44	0.09	0.02	0.02	0.04
Annual threshold (ton/yr)	N/A	N/A	N/A	N/A	N/A

Sources: SBCAPCD 2010, VCAPCD 2003, SCAQMD 2009, and SDAPCD 2010a.

¹ Threshold corresponds to the PM_{2.5} threshold.

lb/day = pounds per day; ton/yr = tons per year.

produce an emission estimate of marginal value. However, in general, engines used by a substantial portion of these vessels are gasoline-burning engines that achieve cleaner-than-required emissions performance due to implementation of the Carl Moyer Memorial Air Quality Standards Attainment Program. These vessels would have significantly less emissions per hour of operation than the diesel engines typically use by commercial

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vessels. Even if the recreational fleet doubled the number of trips and hours of the commercial fleet, the emissions expected to be produced as a result of the proposed Project IPA would be less than existing significance thresholds.

Furthermore, recreational fishing activity within the SCSR is assumed to not be substantially different as a result of the proposed project or its alternatives. While some popular recreational fishing spots would inevitably be located within proposed no take or restricted take MPAs, a substantial number are not at locations identified in the California Recreational Fisheries Survey (CRFS) and landing data/report cards (Department 2009). Increases in criteria pollutant emissions may occur on certain peak days when fishing conditions are favorable to a larger number of recreational anglers. However, this analysis considers it likely that for the most part, recreational fishermen will adjust their travel to destinations equally accessible versus electing to travel longer distances and travel times for a comparable fishing experience, particularly when weighed against the cost associated with travelling to a farther destination.

6.1.3.2 Significance Criteria

Based on the standards of significance from Appendix G of the State CEQA Guidelines, a project would result in a significant impact on air quality if it would:

- Conflict with or obstruct implementation of the applicable air quality plan
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)
- Expose sensitive receptors to substantial pollutant concentrations
- Create objectionable odors affecting a substantial number of people

In addition to the thresholds indicated above, which are applicable throughout the SCSR, the four air districts in the SCSR each have thresholds of significance for actions affecting the air basins within their respective jurisdictions. These thresholds are described below, and apply only to emissions proposed within the relevant air basin.

6.1.3.2.1 Santa Barbara County Air Pollution Control District. Emissions (from all project sources, both stationary and mobile) must be less than the daily trigger for offsets or Air Quality Impact Analysis set in the Santa Barbara County Air Pollution Control District's New Source Review Rule 1, for any pollutant, i.e., 55 pounds/day for ROC or

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NO_x; and 80 lbs/day for PM₁₀. There is no daily operational threshold for CO; it is an attainment pollutant (SBCAPCD 2010).

6.1.3.2.2 Ventura County Air Pollution Control District. The emissions limit is 25 lbs/day of NO_x or reactive organic compounds (VCAPCD 2003). Exceptions exist for the Ojai Planning Area and the City of Simi Valley, where the thresholds are 5 lbs/day and 13.7 tons/year, respectively, of reactive organic compounds or nitrogen oxides.

6.1.3.2.3 South Coast Air Quality Management District. Table 6.1-6 provides the SCAQMD air quality significance thresholds.

**TABLE 6.1-6
SCAQMD AIR QUALITY SIGNIFICANCE THRESHOLDS**

Pollutant	Construction ¹	Operation ²
NO _x	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM ₁₀	150 lbs/day	150 lbs/day
PM _{2.5}	55 lbs/day	55 lbs/day
SO _x	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day

Source: SCAQMD 2009.

¹ Construction thresholds apply to both the South Coast Air Basin and Coachella Valley (Salton Sea and Mojave Desert Air Basins).

² For Coachella Valley, the mass daily thresholds for operation are the same as the construction thresholds.

6.1.3.2.4 San Diego County Air Pollution Control District. The SCAPCD requires conformance to federal and state Ambient Air Quality Standards.

- The project will result in emissions that exceed 250 pounds per day of NO_x or 75 pounds per day of VOCs.
- The project will result in emissions of carbon monoxide that when totaled with the ambient air concentrations will exceed a 1 hour concentration of 20 parts per million (ppm) or an 8-hour average of 9 ppm.
- The project will result in emissions of PM_{2.5} that exceed 55 pounds per day.
- The project will result in emissions of PM₁₀ that exceed 100 pounds per day and increase the ambient PM₁₀ concentration by 5 micrograms per cubic meter (5.0 µg/m³) or greater at the maximum exposed individual.

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6.1.3.3 Environmental Impacts

The following sections discuss the significance criteria summarized in Section 6.1.3.2 and provide analysis of the proposed Project's potential to exceed these criteria.

Criterion AIR-1: Conflict with or obstruct implementation of the applicable air quality plan

A project is deemed inconsistent with air quality plans if it would result in population and/or employment growth that exceeds growth estimates included in the applicable air quality plan. Therefore, the proposed Project IPA needs to be evaluated to determine whether its MPAs would generate population and employment growth and, if so, whether that growth would exceed the growth rates included in the relevant air quality plans.

The proposed Project IPA would not result in an increase in population since it is not a growth-inducing project (for more information, please refer to Section 8.3 of this Draft EIR). Further, the proposed Project IPA would not result in a net increase in employment, as the proposed Project IPA would not propose activities that increase employment within the fishing industry. It is possible that displacement of fishing effort resulting from the proposed Project IPA, in conjunction with other existing fishery management regulations, may contribute to an existing declining trend in the number of fishing vessels. Based on this analysis, the proposed Project IPA would not conflict with or obstruct implementation of any of the applicable air quality plans. This impact would therefore be less than significant, and no mitigation is required.

Criterion AIR-2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation

Project-related air emissions would have a significant effect if they resulted in concentrations that create either a violation of an ambient air quality standard (as identified in Section 6.1.1) or contribute to an existing air quality violation. As described above, the air quality management districts have established significance thresholds to assess the impact on regional air quality. Emissions above these thresholds would be considered a significant impact. Analysis of air quality effects related to the proposed Project IPA are focused on long-term, operational effects, as there would be no construction-related effects associated with the proposed MPA network component.

The primary source of operational emissions associated with the proposed Project IPA would result from a change in marine vessel transit distances above the current practices due to displacement from MPAs. The effect of the proposed Project IPA would be to increase transit distances for commercial fishing vessels, resulting in a corresponding increase in combustion emissions. To determine if these increases would be significant,

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they are compared with the established thresholds of significance used by each air quality management district. At the screening level of analysis presented in Table 6.1-5, the proposed Project IPA would not violate any of these established significance thresholds.

Anticipated emissions in all of the air districts would remain below the thresholds used by the districts to define significant impacts, and implementation of the proposed Project IPA would not be expected to contribute substantially to any air standard violations. This impact would be less than significant, and no mitigation is required. However, several existing programs are available that involve reductions in NO_x emissions in fishing vessels, and these are formalized in the SCAQMD. Beyond compliance with federal and state emissions standards for engines, however, these programs are voluntary.

The RECLAIM program in the SCAQMD may provide additional incentive in the form of payments for emissions reductions, and the program should continue to be encouraged. While this program does not represent a mandatory mitigation measure, it would serve to further reduce this impact.

Criterion AIR-3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)

The primary source of operational emissions associated with the proposed Project IPA would result from a change in marine vessel transit distances above the current practices due to displacement from MPAs. Tables 6.1-7 through 6.1-9 show the relative magnitude of estimated Project emissions compared to annual average emissions for each affected air district. In general, emissions caused by the implementation of the proposed Project IPA are estimated to account for less than 1/1,000,000th of total air district emissions. Based on this analysis, the proposed Project IPA would not cause a violation of any air quality standard or contribute considerably to an existing or projected air quality violation. This impact would therefore be less than significant, and no mitigation is required.

Criterion AIR-4: Expose sensitive receptors to substantial pollutant concentrations

Certain residents, such as the very young, the elderly, and those suffering from certain illnesses or disabilities, are particularly sensitive to air pollution and are considered “sensitive receptors.” Examples of land uses where significant numbers of sensitive receptors are often found are schools, day care centers, parks, recreational areas, medical facilities, and rest homes and convalescent care facilities. Land use conflicts can arise when sensitive receptors are located next to major sources of air pollutant emissions.

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**TABLE 6.1-7
ESTIMATED ANNUAL AVERAGE EMISSIONS
COMPARED TO ESTIMATED PROJECT IPA EMISSIONS FOR THE
SOUTH COAST AQMD (TONS PER DAY)**

Stationary Sources	TOG	ROG	CO	NO _x	SO _x	PM	PM ₁₀	PM _{2.5}
Total stationary sources	210.54	109.16	48.46	56.72	16.17	36.14	24.32	15.58
Total area-wide sources	243.47	147.62	112.60	26.42	0.86	463.96	235.25	54.93
Total mobile sources	412.44	375.26	3,182.74	834.35	39.09	50.17	49.10	39.57
Grand total for South Coast AQMD	866.45	632.05	3,343.80	917.49	56.13	550.27	308.67	110.08
Estimated proposed Project IPA emissions for South Coast AQMD	NA	1.5E-5	8.7E-5	4.1E-4	3.6E-5	NA	2.1E-5	NA

Source: CARB 2008.

**TABLE 6.1-8
ESTIMATED ANNUAL AVERAGE EMISSIONS
COMPARED TO ESTIMATED PROJECT IPA EMISSIONS FOR THE
SANTA BARBARA COUNTY APCD (TONS PER DAY)**

Stationary Sources	TOG	ROG	CO	NO _x	SO _x	PM	PM ₁₀	PM _{2.5}
Total stationary sources	35.48	10.04	6.91	7.28	4.19	1.50	0.95	0.52
Total area-wide sources	24.09	10.59	31.97	2.11	0.02	36.30	20.72	7.24
Total mobile sources	19.28	17.63	136.58	80.59	29.38	5.80	5.60	5.21
Grand total for Santa Barbara County APCD	78.85	38.26	175.46	89.98	33.59	43.61	27.28	12.98
Estimated proposed Project IPA emissions for Santa Barbara County APCD	NA	1.5E-5	8.7E-5	4.1E-4	3.6E-5	NA	2.1E-5	NA

Source: CARB 2008.

No new major sources of pollution that would affect sensitive receptors are associated with the proposed Project. Additionally, the potential emission increases would occur offshore and not in close proximity to sensitive receptors. Therefore, the impact of the proposed Project IPA on sensitive receptors would be less than significant, and no mitigation would be required.

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**TABLE 6.1-9
ESTIMATED ANNUAL AVERAGE EMISSIONS
COMPARED TO ESTIMATED PROJECT IPA EMISSIONS FOR THE
SAN DIEGO COUNTY APCD (TONS PER DAY)**

Stationary Sources	TOG	ROG	CO	NO _x	SO _x	PM	PM ₁₀	PM _{2.5}
Total stationary sources	357.71	32.27	22.23	9.08	0.45	17.14	8.59	6.13
Total area-wide sources	58.25	35.76	28.07	2.73	0.22	184.85	94.52	16.10
Total mobile sources	97.14	88.60	773.86	167.75	4.08	11.68	11.42	9.32
Grand total for San Diego County APCD	513.10	156.64	824.16	179.56	4.75	213.68	114.53	31.55
Estimated project emissions for San Diego County APCD	NA	4.4E-5	2.5E-4	1.2E-3	1.0E-4	NA	6.0E-5	NA

Source: CARB 2008.

Criterion AIR-5: Create objectionable odors affecting a substantial number of people

The proposed Project is not anticipated to generate any objectionable odors affecting a substantial number of people. As discussed above, offshore vessel traffic patterns would not differ substantially from current patterns. Furthermore, offshore fishing vessels should not come into contact with a substantial number of people. Therefore, this impact would be less than significant, and no mitigation is required.

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6.2 GLOBAL CLIMATE CHANGE AND GREENHOUSE GAS EMISSIONS

This section describes the environmental setting for global climate change (GCC) and greenhouse gas (GHG) emissions as well as impacts on GCC and GHG emissions that would result from the project's integrated preferred alternative (proposed Project IPA). It also discusses the overall regulatory framework for GHG management in the south coast study region (SCSR).

6.2.1 Regulatory Framework

Regulations for GHG emissions exist at federal, state, and local levels. A brief synopsis of regulations derived from each of the aforementioned levels is provided below.

6.2.1.1 Federal Regulations

Several programs and initiatives at the federal level are aimed at identifying and reducing GHG emissions. Of these, the most important relative to activities that may relate to the proposed Project IPA are requirements to prepare GHG inventories, and the pending development of regulations by the U.S. Environmental Protection Agency (EPA) to limit GHG emissions from motor vehicles.

6.2.1.1.1 EPA Final Mandatory Reporting of Greenhouse Gases Rule. In response to the fiscal year (FY) 2008 Consolidated Appropriations Act (H.R. 2764; Public Law 110–161), EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule (a copy of which is available at <http://www.epa.gov/climatechange/emissions/ghgrulemaking.html>). The EPA Administrator (Administrator) signed the final rule on September 22, 2009 with an effective date of December 29, 2009. On October 30, 2009, the final rule was published in the Federal Register under Docket ID No. EPA-HQ-OAR-2008-0508-2278. The rule requires reporting of GHG emissions from large sources and suppliers in the United States, and is intended to collect accurate and timely emissions data to inform future policy decisions.

6.2.1.1.2 EPA Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Clean Air Act. On April 2, 2007, in *Massachusetts v. EPA*, 549 U.S. 497, the United States Supreme Court found that GHGs are air pollutants covered by the Clean Air Act. The Supreme Court held that the Administrator must determine whether or not emissions of GHGs from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the Administrator is required to follow the language of section 202(a) of the Clean Air Act.

On December 7, 2009, the Administrator made two findings regarding GHGs under Section 202(a) of the Clean Air Act:

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- **Endangerment Finding:** The Administrator finds that the current and projected concentrations of the six key well-mixed GHGs (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The Administrator finds that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare.

While these findings alone do not impose any requirements on industry or other entities, this action is a prerequisite to regulatory actions by the EPA, including but not limited to GHG emissions standards for light-duty vehicles. The initial focus of regulation is likely to be light-duty vehicles, and it is not yet known what, if any, additional restrictions may be imposed on internal combustion engines powering harbor craft-category vessels such as fishing boats. The Proposed Endangerment and Cause or Contribute Findings for GHG under the Clean Air Act were signed on April 17, 2009. On April 24, 2009, the final findings were published in the Federal Register under Docket ID No. EPA-HQ-OAR-2009-0171.

6.2.1.2 State Regulations

6.2.1.2.1 Executive Order S-3-05. signed by the Governor of the state of California¹ and available online at <http://gov.ca.gov/executive-order/1861/> (June 1, 2005) established statewide GHG emission reduction targets, as well as a process to ensure the targets are met. The reduction targets are 2000 levels by 2010; 1990 levels by 2020; and 80 percent below 1990 levels by 2050.

6.2.1.2.2 California Assembly Bill (AB) 32. the Global Warming Solutions Act of 2006, codifies the California GHG emissions target by directing the California Air Resources Board (CARB) to reduce the state's global warming emissions to 1990 levels by 2020.

AB 32 defines GHGs as carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), hydrochlorofluorocarbons (HFCs), and perfluorocarbons (PFCs). Except for the High Global Warming Potential (GWP) Refrigerant Management Program, AB 32 does not address other GHGs such as chlorofluorocarbons (CFCs) and HCFCs. This is due to the fact that non-Kyoto Protocol GHGs are being phased out by the Montreal Protocol of 1987. Other high GWP gases are being separately regulated by CARB through restrictions on the manufacturer and on the users. For the purposes of this GHG assessment, CO₂, CH₄, and N₂O GHGs will be taken into account.

The California Attorney General's Office (AGO) takes a large role in advocating the goal and objectives of AB 32 and the subsequent implementation steps via commenting on CEQA

¹ <http://gov.ca.gov/executive-order/1861/> (June 1, 2005).

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documents or litigation with lead agencies. Moreover, the AGO issued fact sheets with various mitigation measures that local agencies may consider to offset or reduce global warming impacts relative to CEQA and general plan development.

6.2.1.2.3 Senate Bill 97. (Dutton-CEQA-Greenhouse gas emissions), signed by the governor on August 24, 2007, directed the Office of Planning and Research to develop feasible mitigation for GHG emissions guidelines by July 1, 2009. On April 13, 2009, after public workshop and peer review, the Governor's Office of Planning and Research sent proposed amendments for State CEQA Guidelines to the Secretary of Natural Resources for promulgation. On December 30, 2009, the Natural Resources Agency adopted the State CEQA Guidelines amendments addressing GHG emissions. The California Office of Administrative Law filed the amendments with the secretary of state for inclusion in the California Code of Regulations on February 16, 2010. The amendments became effective on March 18, 2010 and changed sections of the existing guidelines including: the determination of significance as well as thresholds, statements of overriding consideration, mitigation, cumulative impacts, and specific streamlining approaches.

6.2.1.2.4 The State CEQA Guidelines. amendments require a lead agency to make a good-faith effort, based on the extent possible on scientific and factual data, to describe, calculate, or estimate the amount of GHG emissions resulting from a project. The amendments give discretion to the lead agency whether to:

1. Use a model or methodology to quantify GHG emissions resulting from a project, and which model or methodology to use; and/or
2. Rely on a qualitative analysis or performance-based standards.

Further, the amendments identify three factors that should be considered in the evaluation of the significance of GHG emissions:

1. The extent to which a project may increase or reduce GHG emissions as compared to the existing environmental setting
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project
3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions

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6.2.1.2.5 Executive Order S-01-07, signed by the Governor of the state of California² on January 18, 2007, established the Low Carbon Fuel Standard requiring a reduction in the carbon intensity of California's transportation fuels by at least 10 percent by 2020.

6.2.1.3 Local Regulations

On December 5, 2008, the South Coast Air Quality Management District (SCAQMD) Governing Board adopted the staff proposal for an interim GHG significance threshold for projects where the SCAQMD is lead agency (<http://www.aqmd.gov/ceqa/handbook/GHG/GHG.html>). The SCAQMD staff recommended consideration of the CARB 2008 interim GHG significance threshold, and applying the threshold to stationary source/industrial projects where the SCAQMD is the lead agency under CEQA.

6.2.2 Environmental Setting

GHGs play a critical role in the earth's radiation budget by trapping infrared radiation emitted from the earth's surface that could have otherwise escaped to space. Prominent GHGs contributing to this process include water vapor, CO₂, N₂O, CH₄, O₃, and certain HFCs. This phenomenon is known as the "greenhouse effect" and keeps the earth's atmosphere near the surface warmer than it would be otherwise and allows for successful habitation by humans and other forms of life. Increases in these gases lead to more absorption of radiation and warm the lower atmosphere further, thereby increasing evaporation rates and temperatures near the surface. Emissions of GHGs in excess of natural ambient concentrations are thought to be responsible for the enhancement of the greenhouse effect and to contribute to what is termed "global warming," a trend of unnatural warming of the earth's natural climate. Climate change is a global issue, and GHGs are global pollutants, unlike criteria air pollutants such as ozone precursors and toxic air contaminants (TACs), which are pollutants of regional and local concern.

Some GHGs such as CO₂ occur naturally, released by respiration from living organisms. CO₂ can also form from anthropogenic, or human-made, sources. Other GHGs are emitted solely from human activities, such as fluorinated gases. CO₂ is the most common of the six targeted GHGs. CO₂ is emitted anthropogenically by the combustion of fossil fuels; the rate of uptake of atmospheric CO₂ is inhibited when carbon sinks are depleted through deforestation. CH₄ is produced anthropogenically through the anaerobic decomposition of waste in landfills, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion. N₂O is anthropogenically generated as a result of soil cultivation practices, particularly the use of commercial and organic fertilizers, fossil fuel combustion, nitric acid production, and biomass burning. HFCs are primarily used as refrigerants, consisting of gas molecules containing hydrogen, fluorine, and carbon atoms. PFCs consist of a class of gases containing

² <http://gov.ca.gov/executive-order/5172/> (January 18, 2007)

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carbon and fluorine originally introduced as alternatives to ozone-depleting substances and typically emitted as byproducts of industrial and manufacturing processes. SF₆ is primarily used in electrical transmission and distribution systems. Though fluorinated gases are characterized by high global warming potentials, they exist in extremely small quantities in the sources of concern in the proposed Project IPA and their relative contribution to climate change is considered de minimis.

Recognition of the problem of GHGs and their contribution to global climate change, and the response to this problem, is occurring at all levels of government. The Intergovernmental Panel on Climate Change (IPCC) has been established by the World Meteorological Organization and United Nations Environment Programme to assess scientific, technical and socioeconomic information relevant for the understanding of climate change, its potential impacts, and options for adaptation and mitigation. The EPA is developing regulations to limit CO₂ emissions from motor vehicles. The state of California has taken several actions, outlined in Section 6.2.2.2 below, to identify and reduce GHG emissions. Without taking actions to control GHG emissions on a global scale, a variety of adverse effects are predicted. These effects are summarized by the California Climate Change Center (2006) as follows:

- Increasing temperatures, with an increase of up to 100 additional days with temperatures above 90°F in Los Angeles and 95°F in Sacramento
- Worsening effects of air pollution as higher atmospheric temperatures increase the rate of chemical reactions that produce ozone
- Decreasing Sierra Nevada snowpack, and associated decreases in the amount and reliability of California's water supply
- Increasing frequency of wildfires
- Rising sea levels with increases ranging from 22 to 35 inches by the end of the century, resulting in an increase in coastal flooding, and shrinking beaches

6.2.2.1 United States Greenhouse Gas Emissions

According to the EPA, United States GHG emissions in 2006 totaled 7,054.2 million metric tons (MMT) of carbon dioxide equivalent (CO₂e) (EPA 2008). Overall, total U.S. emissions have risen by 14.7 percent from 1990 to 2006. The primary GHG emitted by human activities in the United States was CO₂, representing approximately 84.8 percent of total GHG emissions. The largest source of CO₂, and of overall GHG emissions, was fossil fuel combustion. CH₄ emissions, which have declined from 1990 levels, resulted primarily from enteric fermentation associated with domestic livestock, decomposition of wastes in landfills, and natural gas systems. Agricultural soil management and mobile source fossil fuel combustion were the major sources of N₂O emissions. The emissions of substitutes for ozone-depleting substances and emissions of HFC-23 during the production of HCFC-22

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were the primary contributors to aggregate HFC emissions. Electrical transmission and distribution systems accounted for most SF₆ emissions, while PFC emissions resulted from semiconductor manufacturing and as a byproduct of primary aluminum production (EPA 2008).

6.2.2.2 California Greenhouse Gas Emissions

Worldwide, California is the twelfth- to sixteenth-largest emitter of CO₂ and is responsible for approximately 2 percent of the world's CO₂ emissions (California Energy Commission [CEC] 2006). Transportation is responsible for 41 percent of the state's GHG emissions, followed by the industrial sector (23 percent), electricity generation (20 percent), agriculture and forestry (8 percent), and other sources (8 percent) (CEC 2006). Emissions of CO₂ and N₂O are byproducts of fossil fuel combustion, among other sources. CH₄ emissions result from off-gassing associated with agricultural practices and landfills, among other sources. CO₂ sinks, are natural or artificial reservoirs that accumulate and store some carbon-containing chemical compound for an indefinite period, include uptake by vegetation (e.g., kelp regeneration) and dissolution into the ocean. California GHG emissions in 2002 totaled approximately 491 MMT CO₂e. As of 2008, California produced about 474 MMT CO₂e net or about 8 percent of the total United States production which was reported to be 6,016.4 MMT CO₂e net (CARB 2010, EPA 2010). The state has adopted goals to reduce emissions to 1990 levels, which were about 361 MMT CO₂e.

6.2.3 Impact Analysis

6.2.3.1 Methodology

As previously noted, GHG contaminant emissions tend to accumulate in the atmosphere because of their relatively long residence time. As a result, their impact is mostly independent of the point of emission. Therefore, GHG contaminant emissions are more appropriately evaluated on a regional, state, national, or global scale than on an individual project level. However, because the proposed Project IPA could potentially lead to changes that would increase GHG emissions, the potential emissions generated by the project have been evaluated. The methodology used to generate these estimates is the same as described for the air quality analysis in Section 6.1.

6.2.3.2 Significance Criteria

A project would result in a significant impact on air quality if it would:

- Generate greenhouse gas emissions, either directly or indirectly, that would have a significant impact on the environment; or,

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- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases

Consistent with the criteria presented above, the State CEQA Guidelines do not specifically identify a numeric threshold of significance for GHG impacts. However, the Guidelines (Section 15064.4(b)(2)) direct the lead agency to consider whether a project's emissions exceed a standard of significance that the lead agency determines applies to the project.

On October 24, 2008, at the request of OPR, CARB released a Preliminary Draft Staff Proposal (CARB 2008) containing recommendations regarding the appropriate significance criteria to use when evaluating GHG emissions and global climate change impacts under CEQA. In that document, CARB proposed tiered significance criteria for two types of projects: 1) industrial; and 2) commercial/residential. For industrial projects that are not exempt from CEQA under existing statutory or categorical exemptions, GHG impacts are presumed to be less than significant if the project meets CARB performance standards for transportation and construction-related emissions and the project, with mitigation, will emit no more than approximately 7,000 metric tons of CO₂ equivalent per year (CO₂e/yr) for operational emissions (excluding transportation) including the following sources:

- Combustion-related components/equipment
- Process losses
- Purchased electricity
- Water usage and wastewater discharge

In the absence of published thresholds specifically intended for preservation projects in the marine environment, the Department has conservatively opted to apply the industrial threshold values described above when evaluating the significance of the proposed Project's GHG emissions. Thus, any GHG emissions exceeding 7,000 metric tons of CO₂e/yr would be considered to constitute a significant impact on the environment.

6.2.3.3 Environmental Impacts

The following sections present the impacts of the proposed Project IPA with respect to the significance criteria presented above. Adaptive management is a part of the MLPA. The MLPA requires monitoring to determine whether its goals related to biological resources are being met. If the goals of the MPAs (see Section 2.4.1) and MLPA (see Section 3.2) are not being met, then either regulatory or management changes could occur to try and meet the goals.

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Criterion GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that would have a significant impact on the environment

Table 6.2-1 provide projected GHG emissions associated with displaced commercial vessels for the proposed Project IPA. All of these results, even at the screening level of assumptions used in the analysis (see Section 6.1 of this Draft EIR for methods), are very far below the threshold of 7,000 MT per year. Therefore, impacts of the proposed Project IPA relative to GHG emissions would be less than significant.

**TABLE 6.2-1
PROJECTED GREENHOUSE GAS EMISSIONS OF DISPLACED
COMMERCIAL VESSELS FOR THE PROPOSED PROJECT**

District	Annual Total (MT/yr)			
	CO ₂	N ₂ O	CH ₄	CO ₂ e
SBCAPCD	9.7	2.5E-4	7.0E-4	9.8
VCAPCD	0	0	0	0
SCAQMD	47.1	1.2E-3	3.4E-3	47.6
SDAPCD	27.4	7.0E-4	2.0E-3	27.6
Total	84.2	2.1E-3	6.1E-3	85.0

Criterion GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases

The proposed Project IPA would designate protected areas in the marine environment, which would increase GHG emissions somewhat due to the increased travel distances required for fishing vessels to reach open fishing grounds. However, the magnitude of this increase in emissions would be slight, as illustrated in Table 6.2-1. No plans, policies, or thresholds have been adopted for the purpose of reducing GHG emissions in California's offshore areas. Thus, the Project's impacts relative to this criterion would be less than significant.

6.2.3.4 Potential Global Climate Change Benefits of the Proposed IPA

One of the desired outcomes of the proposed Project IPA is to protect the natural diversity and abundance of marine life, and the structure, function, and integrity of marine ecosystems. An important ecosystem in the south coast is the giant kelp (*Macrocystis Pyrifera*) forest. The abundance of kelp varies seasonally over time and is affected by biotic and abiotic factors. Studies have shown that distribution and abundance of kelp beds are affected by climatic and oceanographic changes, abundances of grazers, fishing and other anthropogenic influences. Grazers, especially sea urchins, can play a large role in the abundance and distribution of kelp. Lobsters and California sheephead, which are commercially and recreationally harvested, play an important role in limiting urchin populations and, therefore

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indirectly affect the abundance of kelp (Department 2009). Should the establishment of MPAs result in a rebound of urchin predator populations, it is expected that kelp forests will expand and become more robust within MPAs. Kelp sequesters CO₂ into biomass through photosynthesis and it has a very rapid growth rate (up to 2 feet/day) (Clendenning 1960) and has been show to sequester 6.8 grams of carbon per square meter of Kelp forest per day (Towle and Pearse 1971) or approximately 10 metric tones per acre per year.

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6.3 WATER QUALITY

This section of the Draft Environmental Impact Report (EIR) discusses the water quality effects of the proposed Integrated Preferred Alternative (IPA). Included in this section is: an overview of the federal and state policies and regulations that govern water quality, discussion of the existing water quality conditions in the south coast study region (SCSR), and an evaluation of the Project's effects on water quality.

6.3.1 Regulatory Framework

Numerous federal and state laws, regulations, and policies are designed to protect water quality. These laws, regulations, and policies are summarized below; federal requirements are described first, followed by state requirements. As described in the Initial Statement of Reasons (ISOR) (Department 2010), there are existing activities and artificial structures such as wastewater outfalls, piers and jetties, maintenance dredging, and beach nourishment that occur throughout the south coast study region (SCSR). These activities are regulated by other federal, state, and local agencies, whose jurisdiction cannot be pre-empted through designation of Marine Protected Areas (MPAs) under Marine Life Protection Act (MLPA) of 1999. Of the 35 MPAs in the proposed Project IPA regulation, 23 have been identified as having various existing activities regulated by other agencies. These activities are addressed within the proposed Project IPA regulations to explicitly allow these regulated activities to continue under current permits.

6.3.1.1 Federal Law, Regulations, and Policies

6.3.1.1.1 Federal Water Pollution Control Act of 1972 (Clean Water Act) (33 U.S.C. 1251 et seq.). The Clean Water Act (CWA) is the principal statute governing water quality. The goal of the CWA is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. The CWA regulates both the direct and indirect discharge of pollutants into the nation's waters. The proposed Project IPA MPAs will be allowed to continue existing operations that may be permitted under the CWA. Sections of the CWA that may be applicable to the proposed project are:

- Section 301 of the CWA prohibits the discharge into navigable waters of any pollutant by any person from a point source unless it is in compliance with a National Pollution Discharge Elimination System (NPDES) permit.
- Section 311 of the CWA regulates the discharge of oil and other hazardous substances into navigable waters and waters of the contiguous zone, as well as onto adjoining shorelines, that may be harmful to the public or to natural resources. The CWA allows the federal government to remove the substance and assess the removal costs against the responsible party. Under the CWA, removal costs include those associated with the

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restoration or replacement of the natural resources damaged or destroyed as a result of a discharge of oil or a hazardous substance.

- Section 316(b) of the CWA of the CWA Requires that EPA ensure that the location, design, construction and capacity of the cooling water intake structures (CWIS) reflect the best technology available (BTA) to protect organisms from being killed or injured by impingement or entrainment. EPA divided the rule-making into three phases. EPA has asked the 5th Circuit Court to partially or completely remand Phase 2 and Phase 3 (<http://edocket.access.gpo.gov/2010/2010-17808.htm>, Accessed 8/9/10).
- Section 319 of the CWA addresses non-point sources of pollution. The 1987 amendments to the CWA authorized measures to address such pollution by directing states to develop and implement nonpoint pollution management programs (Section 319 of the act). States were encouraged to pursue groundwater protection activities as part of their overall nonpoint pollution control efforts.
- Section 401 of the CWA provides that projects that involve discharge or fill to wetlands or navigable waters must obtain certification of compliance with state water quality standards.
- Section 402 of the CWA establishes the NPDES permit program. The NPDES program control point source discharges and non-point source discharges that become point sources (e.g., stormwater run-off discharged by a publicly-owned treatment works (waste water treatment plant). Permits are typically issued by a state agency (in California, the Regional Water Quality Control Board [RWQCB]), and cannot exceed 5 years in duration. Permit compliance enforcement is shared between the state and the federal government.
- Section 404 of the CWA authorizes the U.S. Army Corps of Engineers (Corps) to issue permits for the disposal of dredged and fill material into navigable waters. Generally, projects that discharge dredged or fill material into waters including wetlands require Section 404 permits. Under the Corps' general policy, a project should:
 - Provide public benefits that outweigh foreseeable detriments
 - Not unnecessarily alter or destroy wetlands
 - Conserve wildlife
 - Be consistent with water quality standards
 - Protect historic, scenic, and recreational values
 - Not interfere with adjacent properties or water resources projects, and

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- Comply with approved coastal zone management programs¹

6.3.1.1.2 Rivers and Harbors Act of 1899. The federal Rivers and Harbors Act of 1899 (RHA) regulates development and use of the nation's navigable waterways. It prohibits the unauthorized obstruction or alteration of any navigable waters of the United States. As defined by the RHA, navigable waters include all waters that are:

- Subject to the ebb and flow of tides and/or
- Presently, historically, or potentially used for foreign or interstate commerce

Regulations implementing Section 10 of the RHA are coordinated with those implementing CWA Section 404. Specifically, the RHA regulates:

- Construction of structures in, under, or over navigable waters;
- Excavation or deposition of material in navigable waters; and
- All work affecting the course, location, condition, or capacity of navigable waters.

The RHA is administered by the Corps, typically in conjunction with Section 404 of the CWA. If a proposed activity falls under the authority of both CWA Section 404 and RHA Section 10, the Corps processes and issues a single permit. For activities regulated only under RHA Section 10, such as installation of a structure not requiring fill, permit conditions may be added to protect water quality during construction.

6.3.1.1.3 Coastal Zone Management Act of 1972 (16 U.S.C. 1451-1464). The purpose of the Coastal Zone Management Act (CZMA) is to preserve, protect, and restore or enhance the nation's coastal zones. The state of California has enacted the federally approved California Coastal Act (see Section 6.3.1.2, below).

Section 1456 of the CZMA requires that any federal action inside or outside of the coastal zone that affects any land or water use or natural resources of the coastal zone shall be consistent, to the maximum extent practicable, with the enforceable policies of approved state management programs. It states that no federal license or permit may be granted without giving the state the opportunity to concur that the project is consistent with the state's coastal policies. The associated regulations outline the consistency procedures.

6.3.1.1.4 Magnuson-Stevens Fishery Conservation and Management Act. The Magnuson-Stevens Fishery Conservation and Management (Magnuson-Stevens) Act establishes a management system for national marine and estuary fishery resources. The Act requires all federal agencies to consult with the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) regarding all actions

¹ 33 C.F.R. §320.4.

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or proposed actions permitted, funded, or undertaken that may adversely affect essential fish habitat (EFH). Essential fish habitat is defined as waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity. The legislation states that migratory routes to and from anadromous fish spawning grounds should also be considered EFH. Within the context of the Magnuson-Stevens Act, the phrase “adversely affect” refers to the creation of any impact that reduces the quality or quantity of EFH, and may include reductions in water quality. Federal activities that occur outside an EFH but that may nonetheless have an impact on EFH waters and substrate also must be considered in the consultation process. Under the Magnuson-Stevens Act, effects on habitat managed under the Pacific Salmon Fishery Management Plan must be considered as well.

The Magnuson-Stevens Act states that consultation regarding EFH should be consolidated, where appropriate, with the interagency consultation, coordination, and environmental review procedures required by other federal statutes, such as the National Environmental Policy Act (NEPA), CWA, and the federal Endangered Species Act. Essential fish habitat consultation requirements can be satisfied through concurrent environmental compliance requirements if the lead agency provides NOAA Fisheries with timely notification of actions that may adversely affect EFH and if the notification meets the requirements for EFH assessments.

6.3.1.1.5 National Marine Sanctuaries Act. The National Marine Sanctuaries Act prohibits the destruction, loss of, or injury to any sanctuary resource and any violation of the act, any regulations, or permits issued pursuant to the act. The Secretary of Commerce (Secretary) is required to conduct such enforcement activities as are necessary and reasonable to carry out the act. The Secretary may issue special use permits that authorize specific activities in a sanctuary to establish conditions of access to and use of any sanctuary resource, or to promote public use and understanding of a sanctuary resource.

The National Marine Sanctuaries Act also establishes liability for response costs and natural resource damages for injury to sanctuary natural resources. Under the National Marine Sanctuaries Act, the Secretary may undertake or authorize all necessary actions to prevent or minimize the destruction or loss of, or injury to, sanctuary resources, or to minimize the imminent risk of such destruction, loss, or injury. Furthermore, the Secretary shall assess damage to sanctuary resources. The act defines natural resource damages to include: 1) the cost of replacing, restoring, or acquiring the equivalent of a sanctuary resource; 2) the value of the lost use of the resource pending its restoration; 3) the cost of damage assessments; and 4) reasonable monitoring costs. The Secretary is required to use recovered response costs and damages to finance response actions and damage assessments to restore, replace, or acquire the equivalent of the injured sanctuary resource, and to manage and improve national marine sanctuaries.

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6.3.1.1.6 Estuary (Estuarine) Protection Act of 1968 (PL 90-454, as amended; 16 U.S.C. 1221 et seq.). The Estuary (Estuarine) Protection Act of 1968 established congressional policy on values of estuaries and the need to conserve their natural resources. The purpose of the act is to provide a means to protect, conserve, and restore estuaries in a manner that “adequately and reasonably” maintains a balance between the national need for protecting and conserving natural resources and natural beauty and the need to develop estuaries to further the growth and development of the nation.

6.3.1.1.7 National Park Act of August 19, 1916 (Organic Act), 16 U.S.C. 1, et seq.. The National Park Act of August 19, 1916 (16 U.S.C. 1 et seq.), also known as the Organic Act, created the National Parks Service (NPS) in the Department of the Interior. The NPS is charged with the promotion and regulation of the use of the federal areas known as national parks, monuments, and reservations, so as to conform with “the fundamental purpose to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment for the same in such manner and by means as will leave them unimpaired for the enjoyment of future generations.”

6.3.1.1.8 Marine Protection, Research and Sanctuaries Act (33 U.S.C. 1401 et seq.). The Marine Protection, Research and Sanctuaries Act (33 U.S.C. 1401 et seq.) regulates the ocean dumping of waste, provides for a research program on ocean dumping, and provides for the designation and regulation of marine sanctuaries. Often known as the Ocean Dumping Act, it regulates the ocean dumping of all material beyond the territorial limit (3 miles from shore) and prevents or strictly limits dumping material that “would adversely affect human health, welfare, or amenities, or the marine environment, ecological systems, or economic potentialities.”

6.3.1.1.9 National Wildlife Refuge System Administration Act of 1966 and National Wildlife Refuge System Improvement Act of 1997. The United States Fish and Wildlife Service (USFWS) owns and manages National Wildlife Refuges and bay waters totaling 30,000 acres. The National Wildlife Refuge System Administration Act of 1966 conserves and protects listed endangered and threatened species and migratory birds through protection and restoration of species’ habitats, and by managing uses, such as recreation, of refuge areas to prevent negative impacts to these species. The National Wildlife Refuge System Improvement Act of 1997 designates wildlife-dependent recreational uses involving hunting, fishing, wildlife observation and photography, and environmental education and interpretation as “priority general public uses.” When these activities are compatible with species protection goals (as determined by USFWS), they are welcome on refuges and receive priority over other uses. The San Diego National Wildlife Refuge Complex in the SCSR includes the following: Seal Beach National Wildlife Refuge, South Beach National Wildlife Refuge, Sweetwater Marsh National Wildlife Refuge, and Tijuana Slough National Wildlife Refuge.

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6.3.1.1.10 Oil Pollution Act of 1990 (33 U.S.C. 2701-2761). The Oil Pollution Act of 1990 (OPA) was passed to expand the government's ability to respond to oil releases and provide funding for those spill cleanups, and increase enforcement and penalties for non compliance. It also provided new requirements for contingency planning developed in the National Oil and Hazardous Substances Pollution Contingency Plan.

6.3.1.1.11 Executive Order 11990 – Protection of Wetlands. This federal Executive Order (1977, in furtherance of NEPA) protects wetlands and requires that all federal agencies minimize the destruction, loss, or degradation of wetlands, and preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities for: 1) acquiring, managing, and disposing of federal lands and facilities; and 2) providing federally undertaken, financed, or assisted construction and improvements; and 3) conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities (42 FR 26961, 3 CFR, 1977 Comp).

6.3.1.1.12 Other Federal Laws and Regulations That May Regulate Water Quality. Several other laws and their associated regulations may require protection of water quality. The goal of the federal Endangered Species Act (ESA) of 1973 is to conserve species populations that are endangered or threatened and therefore require special protection. It requires federal agencies to evaluate whether a listed species could be affected by a discretionary action, such as the granting of a permit. If a listed may be affected the federal agency must consult with the USFWS and/or NOAA before granting the permit or other approval, or initiating a discretionary action. For major construction activities, a biological assessment is required to assist in the determination of whether the proposed action is likely to adversely affect listed species and critical habitats. USFWS and/or NOAA Fisheries will issue a biological opinion including reasonable and prudent measures required to avoid potential impacts to listed species. For activities in aquatic environments these reasonable and prudent measures may include requirements to protect water quality (e.g., to minimize turbidity during the breeding seasons of certain fish species).

6.3.1.2 State Law, Regulations, and Policies

6.3.1.2.1 Public Trust Doctrine. The Public Trust Doctrine encompasses the notion that title to lands under navigable waters up to the high water mark is held by the state in trust for the people². The U.S. Constitution grants states sovereignty over their tide and submerged lands, and the Supreme Court established the states' duty to protect (in perpetuity) the public's interest in these areas³. The California Supreme Court has interpreted the range of

² The concept of a public trust resource originated in Roman law. Through U.S. federal and state constitutional and case law, the doctrine has been applied to these resources in the U.S. For a more detailed discussion of the evolution of public trust law in California, refer to the Public Trust Statements at the California State Lands Commission website: http://www.slc.ca.gov/Policy%20Statements/Policy_Statements_Home.htm.

³ *Illinois Central Railroad v. Illinois*, 1892. 146 U.S. 387. The Public Trust Doctrine has yet to be applied to federal lands and waters through statutes or case law.

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public interest values in these waterways to include general recreation activities such as swimming and boating, and preservation of lands in their natural state as open space, as wildlife habitat, and for scientific study.^{4,5}

State and local governments have two forms of authority to manage navigation that enable them to strike a balance between recreation and environmental needs: 1) control over development of tide and submerged lands that can affect navigability of waterways, and 2) recreational boating rules. Under the first category, the California State Lands Commission (SLC) manages public uses of navigable waters through its leasing program. When a public or private entity applies for a permit to lease tide and submerged lands, the SLC reviews the application to ensure that the proposed use (e.g., a marina or pier) will maintain the public benefits of the overlying navigable waters. Usually the city or county fulfills this review role because most tide and submerged lands are owned by local authorities through past legislative grants of state lands.

Under the second category, recreational boating rules in Section 660 of the California Harbors and Navigation Code empower local governments to establish ordinances that regulate navigation in waters within their jurisdiction through time-of-day restrictions, speed zones, special-use areas, and sanitation and pollution controls.⁶

6.3.1.2.2 Porter-Cologne Water Quality Control Act (Porter-Cologne). The Porter-Cologne Water Quality Act provides the state with broad jurisdiction over water quality and waste discharge, and also provides the state the authority to prepare regional Basin Plans to protect the state's water resources. Under the Porter-Cologne Water Quality Control Act and Section 401 of the federal CWA, the State Water Resources Control Board and the RWQCBs regulate discharges to surface waters (including wetlands), groundwater, and point and non-point sources of pollution. The Basin Plan designates existing and potential beneficial uses for each water body within its geographic region, sets numeric and narrative water quality objectives to protect the beneficial uses, and describes strategies and time schedules for achieving these water quality objectives.

The RWQCBs regulate all nonpoint source discharges under one of two statutory requirements: the NPDES Storm Water Permitting Program and the Coastal Nonpoint Pollution Control Program. The CWA Section 402 program is designed to regulate storm water and urban runoff (i.e., the nonpoint source discharges that become point sources).

⁴ *Marks v. Whitney*. 1971. 6 Cal.3d 251; *National Audubon Society v. Superior Court*. 1983. 33 Cal.3d 419; *People v. California Fish Co.* 1913. 166 Cal. 576.

⁵ Frank, R.M. 1983. "Forever Free: Navigability, Inland Waterways, and the Expanding Public Interest." *University of California, Davis Law Review*, 16:579. California case law also establishes a link between navigation and recreation, and verges on treating the two as interchangeable public interests.

⁶ Harbors and Navigation Code §660 (b); and *Personal Watercraft Coalition v. Marin County Board of Supervisors*. 2002. 100 Cal. App. 4th 129; and *People ex. rel. Younger v. County of El Dorado*, 96 Cal App.3d. 403.

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Virtually all other nonpoint sources are subject to the Coastal Nonpoint Pollution Control Program.

The RWQCBs' permit authority includes the issuance of waste discharge requirements and conditions on CWA Section 401 water quality certification authorizations. The water quality objectives for surface waters in the SCSR are established by the Water Quality Control Plans (Basin Plans) for Regions 3 (Central Coast), 4 (Los Angeles), 8 (Santa Ana), and 9 (San Diego). The standards represent maximum levels of pollutants, or acceptable ranges (for parameters such dissolved oxygen, temperature or pH) that allow beneficial uses of the water basin to continue unimpaired. The RWQCB has primary authority for ensuring that water resources are protected from degradation by pollutant discharges. To develop water quality standards that are consistent with the uses of a water body, each RWQCB attempts to classify historical, present, and future beneficial uses of the waters under its jurisdiction as part of the Basin Plan for its region. The Basin Plan is periodically reviewed and updated. Finally, each RWQCB is required to identify water bodies that do not meet water quality objectives pursuant to Section 303(d) of the CWA.

Beneficial uses of the major rivers and groundwater basins, along with narrative and numerical water quality objectives, are established in the Basin Plans. Beneficial uses of surface water in the Project area include municipal and domestic supply; agricultural supply; industrial process supply; industrial service supply; groundwater recharge; navigation; hydropower generation; contact and non-contact recreation; warm, freshwater habitat; cold, freshwater habitat; wildlife habitat; estuarine habitat; marine habitat; wildlife habitat; preservation of biological habitat; and commercial and sports fishing.

- The Water Quality Control Plan Ocean Waters of California (Ocean Plan) (SWRCB 2005) identified the following beneficial uses: The beneficial uses of the ocean waters of the State that shall be protected include industrial water supply; water contact and non-contact recreation, including aesthetic enjoyment; navigation; commercial and sport fishing; mariculture; preservation and enhancement of designated Areas of Special Biological Significance (ASBS); rare and endangered species; marine habitat; fish migration; fish spawning and shellfish harvesting.

6.3.1.2.3 SWRCB Regulations for CWA Section 316(b). The SWRCB adopted a policy for Section 316(b) of the CWA in May 2010, Use of Coastal and Estuarine Waters for Power Plant Cooling. The policy is not in effect pending review and approval of the State Office of Administrative Law.

The Policy establishes technology based standards to implement federal Clean Water Act section 316(b) and reduce the harmful effects associated with cooling water intake structures on marine and estuarine life. The Policy will apply to the 19 existing power plants (including

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two nuclear plants) that currently have the ability to withdraw over 15 billion gallons per day from the State's coastal and estuarine waters using a once-through cooling systems.

6.3.1.2.4 California Coastal Act (California Public Resources Code Sections 30000, et seq.). The California Coastal Act was enacted by the California State Legislature in 1976 to provide long-term protection of California's 1,100-mile coastline for the benefit of current and future generations. The Coastal Act created a partnership between the state (acting through the CCC) and local government (15 coastal counties and 58 cities) to manage the conservation and development of coastal resources through a comprehensive planning and regulatory program. New development in the Coastal Zone may require a permit from the CCC or the appropriate local government agency. The CCC also reviews and approves local coastal programs, which are the basic planning tools used by local governments to guide development in the Coastal Zone.

For all of the California coast, except San Francisco Bay, the CCC implements the federal Coastal Zone Management Act of 1972. The CCC is responsible for reviewing proposed federal and federally authorized activities to assess their consistency with the approved state coastal management program. The CCC developed the California Coastal Management Program pursuant to the requirements of the federal Coastal Zone Management Act of 1972. After NOAA Fisheries approved the California Coastal Management Program in 1977, all federal activities affecting Coastal Zone resources became subject to the CCC's regulatory jurisdiction. A federal agency must conduct its activities (including federal development projects, permits and licenses, and assistance to state and local governments) in a manner consistent with the California Coastal Management Program. The process established to implement this requirement is called a consistency determination for federal activities and development projects and a consistency certification for federal permits and licenses and federal support to state and local agencies.

6.3.1.2.5 Lempert-Keene-Seastrand Oil Spill Prevention and Response Act of 1990. In 1990, the California state legislature enacted the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act (California Government Code Chapter 7.4) and established the Harbor Safety Committee. The purpose of the Harbor Safety Committee is to prepare a Harbor Safety Plan that considers all vessel traffic to ensure safe navigation and operation of tankers, barges, and other vessels. Harbor Safety Plans exist for the Port of Los Angeles/Port of Long Beach Harbor Complex, Port Hueneme, and the Port of San Diego. The Harbor Safety Committee meets regularly to develop additional strategies to further safe navigation and oil spill prevention.

6.3.1.2.6 Public Resources Code, Division 6, Sections 6001, et seq. (California State Lands Commission Tide and Submerged Lands). The Public Resources Code, Division 6, gives the SLC jurisdiction and management authority over all ungranted tidelands, submerged lands, and the beds of navigable rivers, sloughs, lakes, etc. The SLC has certain

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residual and review authority for tide and submerged lands legislatively granted in trust to local jurisdictions (Public Resources Code §6301 and §6306). All tide and submerged lands, granted or ungranted, as well as navigable rivers, sloughs, etc., are impressed with the common law public trust, as discussed above.

6.3.1.3 Statewide Management Plans and Executive Orders

6.3.1.3.1 Ocean Plan. The Ocean Plan was adopted by the State Water Board in 1972 and amended most recently in 2005. The Ocean Plan sets forth standards to protect all ocean waters of California and prescribes programs to implement these standards. The standards include the designated beneficial uses of the ocean waters, narrative and numeric objectives to protect these uses, and the State's Antidegradation Policy. The program of implementation includes waste discharge limitations, monitoring, and enforcement. The Ocean Plan provides the basis for regulation of wastes discharged into the State's coastal waters, and applies to both point and nonpoint source discharges.

The Ocean Plan also describes requirements for management and design of systems discharging wastewaters to the ocean and effluent quality requirements for discharges. The Plan states that "areas of special biological significance" (ASBS) shall be designated by the State Board. In these areas, the maintenance of natural water quality conditions must be assured. Waste discharges to ASBS are prohibited unless the State Board finds that there would be no adverse impact to beneficial uses. The State Water Board and the six coastal Regional Water Quality Control Boards are responsible for reviewing the Ocean Plan water quality standards and for modifying and adopting standards in accordance with Section 303(c)(1) of the federal CWA and Section 13170.2 of the California Water Code.

The California Ocean Plan (SWRCB 2005) identified the following beneficial uses:

- The beneficial uses of the ocean waters of the State that shall be protected include industrial water supply; water contact and non-contact recreation, including aesthetic enjoyment; navigation; commercial and sport fishing; mariculture; preservation and enhancement of designated Areas of Special Biological Significance (ASBS); rare and endangered species; marine habitat; fish migration; fish spawning and shellfish harvesting.

6.3.1.3.2 Water Quality Control Plan for Control of Temperature in Coastal Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan). The Thermal Plan, which was adopted by the State Water Resources Control Board on January 7, 1971, and revised most recently on September 18, 1975, provides the state with specific water quality objectives for cold and warm interstate waters, coastal waters, enclosed bays, and estuaries. The State Water Resources Control Board and the RWQCBs administer this plan by establishing waste discharge requirements for existing and future discharges of elevated temperature wastes. Existing and future dischargers of thermal waste are required to

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conduct studies to define the effect of the discharge on beneficial uses and, for existing discharges, determine design and operating changes which would be necessary to achieve compliance with the provisions of the Thermal Plan. The RWQCBs may, in accordance with Section 316(a) of the federal Water Pollution Control Act of 1972, and subsequent federal regulations including 40 CFR Part 122, grant an exception to Specific Water Quality Objectives in the plan.

6.3.1.3.3 Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling.

On May 4, 2010 the State Water Resources Control Board, the statewide policy making and oversight body for the RWQCBs, adopted the Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling. The intent of the policy is to protect marine and estuarine life from the impacts of once-through cooling without disrupting the critical needs of the State's electrical generation and transmission system. The policy establishes technology-based standards to implement federal CWA Section 316(b) and reduce the harmful effects associated with cooling water intake structures on marine and estuarine life. The policy applies to the 19 existing power plants (including two nuclear plants) that currently have the ability to withdraw over 15 billion gallons per day from the state's coastal and estuarine waters using a single-pass system, also known as once-through cooling. Section 316(b) is implemented through NPDES permits, issued by the RWQCBs.

6.3.1.3.4 Water Quality Control Plan for Enclosed Bays and Estuaries Plan.

The Enclosed Bays and Estuaries Plan sets forth objectives for the protection of aquatic life and human health. This plan applies to discharges of toxic pollutants into the inland surface waters, enclosed bays, and estuaries of California subject to regulation under the State's Porter Cologne Act and the federal CWA. Such regulation may occur through the issuance of NPDES permits, the issuance or waiver of waste discharge requirements (e.g., for discharges of treated wastewater to land), or other relevant regulatory approaches. The goal of this policy is to establish a standardized approach for permitting discharges of toxic pollutants to non-ocean surface waters in a manner that promotes statewide consistency. The policy is intended as a tool to be used in conjunction with watershed management approaches and, where appropriate, the development of total maximum daily loads (TMDLs) to ensure achievement of water quality standards (i.e., water quality criteria or objectives, and the beneficial uses they are intended to protect, as well as the State and federal anti-degradation policies). This policy establishes implementation provisions for priority pollutant criteria promulgated by the Environmental Protection Agency (EPA) through the National Toxics Rule and through the California Toxics Rule, and for priority pollutant objectives established by the RWQCB in each Basin Plan.

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6.3.1.4 State Water Quality Protection Areas—Areas of Special Biological Significance

ASBSs were intended to afford special protection to marine life through prohibition of waste discharges within these areas. The RWQCBs were required to select areas in coastal waters which contain “biological communities of such extraordinary, even though unquantifiable, value that no acceptable risk of change in their environments as a result of man’s activities can be entertained.” Since 1983, the Ocean Plan has prohibited waste discharges to ASBS. Similar to previous versions of the Ocean Plan, the 2005 Ocean Plan (SWRCB 2005) states: “Waste shall not be discharged to areas designated as being of special biological significance. Discharges shall be located a sufficient distance from such designated areas to assure maintenance of natural water quality conditions in these areas.” There are currently a total of 34 ASBS statewide; 17 are located within the SCSR.

6.3.2 Environmental Setting

The MLPA SCSR extends for over 1,046 miles along the California coast, includes 2,351 square miles of ocean, and drains over 10,000 square miles from the 19 hydrologic units or major watersheds (See Table 6.3-1). The study area is located within the Southern California Bight (bight), an oceanic region bounded landward by the coast and seaward by the continental slope (Patton Escarpment). The bight is a region that includes coastal Southern California, the Channel Islands, and the local portion of the Pacific Ocean. This region is referred to as a bight because the characteristic north-south trending coastline found off much of western North America experiences a significant curvature or indentation along the coast of Southern California. The Pacific Ocean that occupies this region, from Point Conception in the north to just past San Diego in the south, and extending offshore of San Nicolas Island, is characterized by complex current circulation patterns. For the purposes of this Draft EIR, the bight is defined as the area between Point Conception in the north, Cabo Colonet, located south of Ensenada, Mexico to the south, outside of the Cortez and Tanner Banks to the west, and coastal watersheds to the east. The SCSR extends from Point Dume to Dana Point along the coast and includes the California Channel Islands and those Baja California Pacific Islands that lie within the bight.

Circulation patterns within the bight are more complex than elsewhere off the west coast of the United States. The south-flowing California Current, a well-described eastern boundary current, dominates flow in this region, and is strongest during summer, see Figure 6-1. The California Current branches shoreward and then poleward (north) in the bight, forming the California Countercurrent, and, at times, an eddy-like cyclonic circulation (i.e., the Southern California Eddy). The Southern California Eddy seasonal maximum is summer to early fall.

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**TABLE 6.3-1
MAJOR WATERSHEDS IN THE STUDY REGION**

Major Hydrologic Unit	Area (sq. mi.)	Major Hydrologic Unit	Area (sq. mi.)
South Coast ¹	375	San Luis Rey River ²	565
Pitas Point ³	22	Carlsbad ²	210
Ventura River ³	300	San Dieguito ²	350
Santa Clara-Calleguas ³	1,760	Penasquitos ²	170
Malibu ³	242	San Diego River ²	440
Los Angeles-San Gabriel ³	1,608	Pueblo San Diego ²	60
San Pedro Channel Islands ^{1,3}	156	Sweetwater River ²	230
Santa Ana River ¹	1,972	Otay River ²	160
San Juan ²	500	Tijuana River ²	470
Santa Margarita River ²	750		
Total			10,340

¹ Source: State Water Resources Control Board GIS layer.

² Source: SDRWOCB 2007.

³ Source: LARWOCB 1994.

The California Undercurrent, also strongest in summer, similarly exhibits poleward flow over the continental slope in this region. The strongest equatorward winds are found during spring along most of the California coast. At this time, the California Current moves closer to shore and accelerates, producing mainly equatorward flow in the bight. Thus, poleward flow in the bight experiences a minimum during spring when the California Current impinges on the bight, and a maximum in summer when the California Current moves further offshore and spreads out, allowing more water to shear from the California Current, promoting the flow of the California Countercurrent.

Winds in the bight are generally weaker but highly variable as compared to the rest of the California coast. Because of this, upwelling events within the bight tend to be limited to winter and early spring; local upwelling during summer, while strong elsewhere along the California coast, is minimal in the bight due to a large reduction in wind stress. Temporally and spatially variable local winds, as well as eight nearshore islands and numerous coastal promontories, submarine canyons, basins, and ridges introduce complexity to these large-scale circulation patterns, particularly in the form of sub-mesoscale or small-scale eddies that are typically under 31 miles in diameter (CSU Long Beach 2010).

Many areas within the SCSR have degraded water quality. However, on the whole, offshore water quality has improved in the last two decades because of enacted discharge regulations (California Cooperative Ocean Fisheries Investigations 2002). Water quality in the study region is affected by a wide range of pollution sources; both land-based and water-based

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sources exist. Urbanized areas are often associated with treated wastewater discharges that can contain both domestic and industrial wastes. Storm runoff from urbanized and non-urbanized areas can contain a variety of pollutants, with agricultural watersheds often contributing loads of pesticides and nutrients to nearshore waters (CCLEAN 2007). Land use varies considerably, from highly urbanized in Los Angeles County to more agricultural and open space in Ventura County, although there is an increasing trend towards urban residential and commercial land use (LARWQCB 1994). Los Angeles County continues to receive the poorest water quality reports for the state with the Los Angeles River outlet having “very poor water quality” in 2008 (Heal the Bay 2008). In addition, seven of the ten beaches with the highest water pollution in the state are located in the SCSR, with five of those in Los Angeles County (Department 2009a).

For purposes of the water quality evaluation, the SCSR was divided into seven subregions. These subregions were created to more easily present information on maps and are not related to the bioregions identified by the Science Advisory Team (SAT). Five primary factors affect offshore water quality issues: 1) point source wastewater (regulated industrial and municipal discharges), 2) non point source discharges (e.g., stormwater discharges), 3) harmful algal blooms, 4) contaminated sediment, and 5) oil and hazardous material spills. Other potential concerns include dredged material disposal, beach nourishment/sand mining, and releases from recreational and commercial vessels. The five primary concerns are described in more detail below.

6.3.2.1 Primary Water Quality Concerns in the Study Area

There are five primary factors affecting offshore water quality issues: 1) point source wastewater (regulated industrial and municipal discharges); 2) non point source discharges (e.g., stormwater discharges); 3) harmful algal blooms; 4) contaminated sediment; and 5) oil spills. These issues are described in more detail below.

6.3.2.1.1 Point Source Pollution. There are specific locations (point sources) where industrial pollution enters coastal waters; these are generally regulated by state or federal agencies. The origins of these point sources include municipal wastewater treatment and disposal systems and industrial sites, such as desalination plants, power plants, aquaculture sites, and research marine laboratories. There are 18 municipal wastewater treatment plants, three desalination plants, 12 “once-through” cooling power plants, and six other permitted discharge sites which include: aquaculture wastewater, marine lab waste seawater, refinery wastewater and treated sanitary waste from oil platforms. Another point source within the study region consists of outfalls for untreated stormwater. Only the municipal wastewater sites and the power plant cooling intakes are considered to have major effects on the aquatic system (Department 2009a). Figures 6-2 through 6-9 show the location of major point source discharges within the study area.

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Three existing desalination plants currently operate within the study area. In addition to the three existing desalination plants, the Poseidon Resources' Carlsbad Desalination Project was recently approved for construction. Furthermore, several other desalination plants are being proposed in the study region. Some of these sites may be co-located with power plant locations (Department 2009a).

6.3.2.1.2 Non-point Source Pollution. Non-point source pollution is the leading cause of degraded water bodies in Southern California and across the country (Department 2009a). Non-point pollution sources include urban runoff, resource extraction (offshore energy extraction, sand mining, drilling and pumping of petroleum products onshore), boats (recreational vessels, commercial vessels and cruise ships), and agriculture. Figures 6-10 and 6-11 show agricultural and urban land coverage in major watersheds that feed the SCSR. The transition in the region from open space/agricultural land uses to more urban land uses may further degrade water quality in the region. Land use issues are discussed in Section 8.3.

Resource extraction can cause erosion or sedimentation and leaching or discharge of harmful chemicals. There are a large number of active energy projects within and adjacent to the south coast study region as shown in Figures 6-8 and 6-9. Some of these projects may have effects on the marine ecology of the study region by impacting water quality, oceanographic patterns, habitat suitability, and other environmental conditions. Boats can affect water quality through discharge of fuels and oils, ballast water (non-native organisms), and biological wastes (untreated sewage from small boats).

In addition, some coastal features are naturally susceptible to erosion. These coastal features include headlands, coastal cliffs, and submarine canyons. During storm events, runoff transports pollutants and sediment into surface waters. Erosional processes provide sediment needed for coastal processes, as well as nutrients such as iron that are often limited in near-shore waters; however, increased sediment delivery results in disruption of biological communities due to the smothering of marine habitats and increasing turbidity of the nearshore water column (Department 2009a). The increase in impervious surfaces and flood control structures due to urbanization has increased sedimentation rates into the coastal waters (Department 2009a).

6.3.2.1.3 Algal Blooms. Certain species of phytoplankton and cyanobacteria pose threats to marine waters and associated life through rapid reproduction or release of toxins. Harmful algal blooms occur naturally in surface waters under the following conditions: elevated water temperature, high nutrient levels, and reduced water flow and circulation. Algal blooms can impact dissolved oxygen levels. In 2007, Southern California experienced a major bloom that caused historic levels of toxins in planktons, shellfish, and other wildlife (Department 2009a).

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6.3.2.1.4 Contaminated Sediments. The SCSR has a number of areas with contaminated sediments. Twenty-five of those sites have been designated as a superfund sites by the federal government. These sites are identified under the Comprehensive Environmental Response, Compensation and Liability Act as sites to be placed on the National Priorities List. A recent study conducted as part of the Southern California Bight Regional Monitoring Program looked at sediment throughout the region. Three hundred fifty nine sediment samples were taken from the following types of areas: onshore, offshore, embayments, estuaries, and publicly owned treatment works (i.e., sewage treatment plants). Most of the SCSR had contaminated sediment. The study found that 94 percent of all sediment samples contained at least one contaminant. The greatest dichlorodiphenyltrichloroethane (DDT) contamination was found in coastal areas near outfalls, where urban runoff was the probable source of contamination. Similarly, the highest concentrations of trace metals were in embayments, where there is minimal opportunity for contaminant flushing, as water circulation is restricted. In contrast, the Channel Islands experience constant ocean flow and quickly moving currents, such that this area had the least sediment contamination, in terms of both accumulation and concentration (Department 2009a). There are numerous on-going water quality monitoring efforts in the SCSR, some of which, such as the Southern California Bight Regional Monitoring Program, also include sediment quality. In the study region significant contamination was found in the sediments; the majority of the sediment did not have an adverse biological impact (Department 2009a). Additional information regarding current water quality monitoring efforts in the SCSR and the former Mussel Watch Program is provided in section 6.3.2.4.

Ocean Dredged Material Disposal Sites. Ocean dredged material disposal sites (ODMDS) are designated by the EPA and contain the materials derived from ocean dredging operations from local port districts, marinas and harbors, and federal navigational channels. The availability of suitable ocean disposal sites to support ongoing maintenance and capital improvement projects is important for the continued use and economic growth of the commercial and recreational areas in the region. Dredged material is not allowed to be disposed of in the ocean unless the material meets strict environmental criteria established by the EPA and U.S. Army Corps of Engineers.

There are currently 3 ODMDS sites within the SCSR. These sites are identified as LA-2, LA-3 and LA-5. The LA-2 ODMDS was designated as a permanent disposal site on February 15, 1991. The LA-2 site is located on the San Pedro Sea Valley about 5.9 nautical miles south-southwest of the entrance to Los Angeles Harbor. LA-3 ODMDS is a permanent disposal site located approximately 4.3 nautical miles offshore from Newport Bay. LA-5 ODMDS is a permanent disposal site located west of the San Diego Bay.

6.3.2.1.5 Oil and Hazardous Material Spills. The risk of spills is high in the SCSR due to heavy oil and hazardous material tanker traffic, dozens of oil platforms located off the coast, and pipelines running from platforms to onshore sites. Since the 1990s, there have been eight

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oil spills in both federal and state waters, all of which had an effect on water quality. The causes of these spills include pipeline breaks, platform accidents, a tanker accident, and in one instance the cause is unknown. For additional discussion of oil spills and other hazards and hazardous materials located within the SCSR, see Section 8.5.

6.3.2.2 Water Quality Summaries by Subregion

The following subsections present basic information and highlights regarding water quality in each of the seven subregions. As noted above, the subregions were created for the ease of displaying information on maps and are not related to the bioregions identified by the SAT.

The information was compiled as from a joint fact-finding effort with the South Coast Regional Stakeholder Group and their constituents. The information presented builds on information found in the Regional Profile and incorporates local knowledge gathered from stakeholders. While the information represent stakeholders' intimate knowledge of their region, they may not represent an exhaustive list of every activity or important area (e.g., uses/activities at each public access point, important recreational and/or commercial fishing areas). Three dredged material disposal sites (San Pedro, Los Angeles, and San Diego) are located within the SCSR, see Figure 6-12.

6.3.2.2.1 Point Conception to Rincon Point (Subregion 1). Subregion 1 begins at the most northern portion of the SCSR, which is also the northernmost portion of the bight. It covers 225 square miles, with 70 miles of coastline facing south with a slight west-to-southeast curve. Coal Oil Point, Goleta Point, and Santa Barbara Point are the major promontories in this subregion. The coast faces the Santa Barbara Channel and northern Channel Islands. Several coastal creeks, including Arroyo Burro, Mission Creek, Carpinteria Creek, and Rincon Creek, are found in this subregion, but no major rivers (Figure 3-10).

An upwelling center is located at Point Conception, which also marks the boundary where the cool California Current meets the relatively warmer California Countercurrent. During the upwelling season (March through September), cold, nutrient-rich waters are brought to the surface near Point Conception, the upwelling center, and move eastward along the western edge of the Santa Barbara Channel (Department 2009a). There are two existing MPAs in Subregion 1: Refugio state marine conservation area (SMCA) and Goleta Slough State Marine Park (SMP). The Halibut trawl grounds from around Gaviota State Park to Point Hueneme (past Rincon Point) are closed. The rockfish conservation areas that restrict commercial trawl and non-trawl fishing cross into the subregion in several areas, and the rockfish conservation area that restricts recreational fishing from March through December extends seaward from the 60-fathom (361-foot) depth contour throughout the subregion.

Water quality concerns for the subregion include impaired water bodies, major point sources, and oil seeps. The main impaired water bodies in the subregion are; Arroyo Burro Creek (pathogens), Arroyo Paredon (boron, nitrates [NO₃], toxicity), Cholame Creek (boron, fecal

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coliform), Mission Creek (pathogens, unknown toxic), Franklin Creek (NO₃), Carpinteria Creek (pathogens) and Rincon Creek (boron, toxicity) (Department 2009a).

The major point sources include five waste water treatment plants (Goleta, Santa Barbara, Montecito, Summerland, and Carpinteria treatment plants) discharging treated sanitary wastewater; desalination brine from Chevron U.S.A., Inc.'s Gaviota desalination plant; and aquaculture wastewater discharged by Cultured Abalone Inc. Oil seeps are especially common in the area between Coal Oil Point and Campus Point. An oil platform is also present in this subregion, and a marine oil terminal is present off Goleta.

6.3.2.2.2 Rincon Point to Point Dume (Subregion 2). Subregion 2 covers 177.7 square miles and 78.6 miles of coastline oriented northwest to southeast with freshwater input from the Ventura and Santa Clara Rivers. The northern half of Subregion 2 faces the Channel Islands. This configuration creates a channel which large pelagic species use as a transit corridor and where they congregate to feed. Prominent coastal features include: Pitas Point, Pierpont Bay, Ventura Harbor, Channel Islands Harbor, Port Hueneme, Middle Point, Laguna Point, Point Mugu, Sequit Point, and Point Dume. The majority of the subregion has soft substrate from 0 to 328 feet depth. Submarine canyons lie off Point Hueneme, Point Mugu, and Point Dume. The counter-clockwise circulating gyre called the Southern California Eddy is located in this area. There are two major rivers, the Ventura River and Santa Clara River and eight coastal watersheds in the subregion (Pitas Point, Ventura River, Buena Ventura, Santa Clara-Calleguas, Oxnard, Calleguas, Ventura Coastal Streams, and Santa Monica Bay) (Figure 3-11).

The subregion has one existing MPA, Big Sycamore Canyon State Marine Reserve (SMR), which is unique because it starts below the mean high-tide line and regulations restrict non-consumptive recreational uses (see Figure 3-11). The Halibut trawl grounds are closed from Rincon Point to Point Mugu with a break at Point Hueneme. The rockfish conservation area that restricts recreational fishing from March through December extends seaward from the 60-fathom (361-foot) depth contour throughout the subregion. The rockfish conservation areas that restrict commercial trawl and non-trawl fishing cross into the subregion in several areas. There is an intersection of recreational, trawl, and non-trawl rockfish conservation areas in the southern portion of the SCSR.

Water quality concerns for the subregion include impaired water bodies, major point sources, and oil seeps. The main impaired water bodies in the subregion are the Channel Islands Harbor (lead, zinc), Mugu Lagoon (endosulfan), Point Hueneme Harbor (DDT, polychlorinated biphenyls [PCB]), Santa Clara Estuary (chem A, coliform, toxaphene) and Ventura River Estuary (algae, eutrophic conditions, trash, coliform).

Major point sources include two power plants: (Ormond Beach Generating Station and Mandalay Bay Generation Station discharging cooling water, and three wastewater treatment

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plants (Oxnard, Camrosa and Ventura) discharging treated sanitary wastewater. Treated sewerage effluent into Santa Clara River and Santa Rosa Creek provides for perennial flow in those drainages. The Thousand Oaks wastewater treatment facility at the headwaters of Santa Rosa Creek discharges nutrient-rich waters. Dredge spoils from Ventura Harbor are disposed of within the Ventura Harbor in a “confined aquatic disposal” site cell constructed below the Navy portion of the harbor. An oil platform (Platform Gina) is also present in this subregion, 3.7 miles offshore from Port Hueneme.

6.3.2.2.3 Point Dume to Newport Beach (Subregion 3). Subregion 3 covers 283.8 square miles and 246.4 miles of coastline oriented northeast to southwest with only one major promontory: the Palos Verdes Headland. Between Point Dume and Palos Verdes Point lies Santa Monica Bay. The largest port complex in the United States, comprised of the Port of Los Angeles and the Port of Long Beach, is located in this subregion. There are three major rivers (Los Angeles River, San Gabriel River, and Santa Ana River) and five coastal watersheds (Santa Monica Bay, Dominguez Channel, Los Angeles River, San Gabriel River, and Santa Ana River) in Subregion 3 (Figure 3-12).

The marine bottom in this subregion is mostly soft bottom in the subtidal zone north and south of Palos Verdes. Two submarine canyons at Point Dume and Redondo Beach anchor the two ends of Santa Monica Bay, and upwell clean water and nutrients. Two deep marine canyons lie off Orange County: Newport Canyon, which starts at the Newport Pier, and the San Gabriel Canyon off Huntington Beach. Most of the subregion is soft substrate under 323 feet deep, except off Palos Verdes Point where there are depths of more than 656 feet, and off Point Vicente where depth reaches 0.5 mile in state waters. White Point on the Palos Verdes peninsula has a unique intertidal and shallow subtidal vent community with the filamentous sulfide bacteria *Beggiatoa* at the base of its food chain. While sulfide bacteria are also found at oil seeps, White Point is unique in that the other vents are co-located with oil seeps.

The subregion has six existing MPAs: Abalone Cove SMP, Point Fermin SMP, Bolsa Chica SMP, Upper Newport Bay SMP, Robert E. Badham SMCA, and Irvine Coast SMCA (see Figure 3-12). The rockfish conservation area that restricts recreational fishing from March through December extends seaward from the 60-fathom (361-foot) depth contour throughout the subregion. The rockfish conservation areas that restrict commercial trawl and non-trawl fishing cross into the subregion in several areas. There is an intersection of recreational, trawl, and non-trawl rockfish conservation areas at Point Dume and Palos Verdes Point. Commercial fishing using set lines, trammel or gill nets, and handlines with more than 15 hooks attached to any one fishing line and one fishing line attached to another fishing line has been prohibited in Santa Monica Bay within 1 mile of the mainland shore (Department 2009a). Traps are banned from most areas of the bay. Finfish and hagfish traps may not be used within 750 feet of any piers, jetties, and breakwaters, but are allowed outside that area, pursuant to sections 9001 and 9001.7(g) of the California Fish and Game Code. Spot prawn

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traps are also allowed in Santa Monica Bay (see sections 9001 and 9015 of the Fish and Game Code). Commercial take of rock crabs and lobster is also not allowed; see the California Code of Regulations (CCR) at 14 CCR 122(a)(2) and section 8282 of the California Fish and Game Code. There is also a restricted area south of Marina del Rey Harbor.

Water quality concerns for the subregion include impaired water bodies, major point sources, and oil seeps. Beach nourishment is also conducted. The main impaired water bodies in the subregion are Malibu Lagoon (DDT, PCBs), Marina Del Rey Harbor (DDT and Dieldrin), Los Angeles/Long Beach Harbors (DDT, PCBs, and sediment toxicity), Alamitos Bay (fecal coliform), and other estuaries and lagoons (Department 2009a).

Malibu Beach and Surfrider Beach have historically had dozens of beach-site days receive posted warning for nonpoint source pollution with both non-human and human fecal contamination (Department 2009a). There have been frequent beach closures in the Huntington Beach area as well in recent years due to fecal coliform contamination of unknown origin, also the Santa Ana river mouth is listed by the state of California as a hotspot for bacterial contamination.

Major point sources include power plants, waste water treatment plants, the Montrose Chemical Superfund Site (sediment contamination), a refinery, and oil platforms. There are four power plants (AES Huntington Beach, Scattergood Generating Station, El Segundo Generating Station, and AES Redondo Beach Generating Station) and three major wastewater outfalls in the subregion (Orange County, Hyperion, and Los Angeles County sanitary treatment plants). El Segundo discharges refinery wastewater. Oil platforms Esther and Eva also treated sanitary waste from oil platform operations. For years, the Montrose Chemical Company years released DDT and PCB into the Southern California marine environment. In this subregion, the soft-bottom areas adjacent to White's Point and other locations at the Palos Verdes Peninsula are among the most severely impacted.

6.3.2.2.4 Newport Beach to Agua Hedionda (Subregion 4). Subregion 4 covers 176.6 square miles and 108.2 miles of coastline oriented northwest to southeast with major promontories being Dana Point and San Mateo Point. The California Countercurrent runs along the coast. The subregion includes five coastal watersheds (Santa Ana River, San Juan, Santa Margarita, San Luis Rey, and Carlsbad) and five major rivers (Santa Ana River, San Juan Creek, San Mateo Creek, Santa Margarita River, and San Luis Rey River). The majority of the subregion is soft substrate from 0 to 328 feet. The area north of Dana Point is deeper, and two submarine canyons run south from Newport Beach.

The existing MPAs in the subregion are: Upper Newport Bay SMP, Robert E. Badham SMCA, Crystal Cove SMCA, Irvine Coast SMCA, Heisler Park SMR, Laguna Beach SMCA, South Laguna Beach SMCA, Niguel SMCA, Dana Point SMCA, Doheny SMCA,

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Doheny Beach SMCA, and Agua Hedionda Lagoon SMR (see Figure 3-15). There are three ASBSs (Newport Beach Area of Special Biological Significance, Irvine Coast Area of Special Biological Significance, and Heisler Park Area of Special Biological Significance). The Rockfish Conservation Area that restricts recreational fishing from March through December extends seaward from the 60-fathom (361-foot) depth contour throughout the subregion. The rockfish conservation areas that restrict commercial trawl and non-trawl fishing cross into the subregion in several areas. There is an intersection of recreational, trawl, and non-trawl rockfish conservation areas in the northern portion of the subregion and along the outside of the southern portion. Point Loma and La Jolla both have no-take areas. Other protected areas include the Buena Vista Lagoon Ecological Reserve, Crystal Cove Underwater Park, and the Bureau of Land Management's National Coastal Monument (all offshore rocks are protected). Restricted areas exist off Camp Pendleton.

Water quality concerns for the subregion include impaired water bodies (including areas with bacterial contamination) and major point sources. Beach nourishment is also conducted. The main impaired water bodies in the subregion are Newport Harbor and Bay, Oceanside Harbor, San Luis Rey River Mouth, Buena Vista Lagoon, Agua Hedionda Lagoon, Anaheim Bay (Dieldrin, Ni, PCBs, sed. toxicity), Balboa Beach (DDT, Dieldrin, PCBs), Huntington Harbor (Chlordane, copper [Cu], lead [Pb], nitrogen [Ni], pathogens, PCBs, sed. toxicity); and other estuaries and lagoons. The north end of Dana Point Harbor and Doheny Beach are recognized by the state of California as bacterial contamination hotspots from both local and watershed-related sources. Two power plants (San Onofre Nuclear Generation Station Units 1, 2, and 3, and Encina Power Plant), and four major wastewater treatment plant outfalls (Oceanside, Aliso, SERRA, and Dana Point) are located in this subregion. Local runoff from development all along the Laguna shoreline is considered a major source of habitat degradation in the nearshore area.

6.3.2.2.5 Agua Hedionda to California/Mexico Border (Subregion 5). Subregion 5 covers 203.3 square miles and 187.64 miles of coastline oriented north to south with the major promontories Point La Jolla and Point Loma. Prominent coastal features include: Teramar Reef/Point, Encinitas Point, La Jolla Bay, Goldfish Point, Point La Jolla, Seal Rock, Bird Rock, False Point, Point Medanos, Mission Bay Channel and Mission Bay, Point Loma, and San Diego Bay (see Figure 3-14). San Diego Bay is the third-largest bay/estuary complex in California, and the largest in Southern California. There are significant differences in the community composition of San Diego Bay as compared to other Southern California bays. San Diego Bay is unique in that it is the northernmost range for many tropical/subtropical fish. The southward-moving California Current bends shoreward near San Diego and northward along the bight as the California Countercurrent. Along the San Diego County coast the current changes direction for weeks at a time.

Most of the subregion waters are at depths of less than 328 feet. There is a submarine canyon off Agua Hedionda Lagoon in Carlsbad, and a submarine canyon reaches the nearshore area

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near La Jolla. “Del Mar Ridge,” a hard-bottom shelf, in depths of 125 feet to over 300 feet, is from 1 to 3 miles offshore Del Mar. There are eight coastal watersheds (Carlsbad, San Dieguito, Los Peñasquitos, San Diego, Sweetwater, Pueblo San Diego Bay, Otay, and Tijuana) and seven major rivers (Escondido Creek, San Dieguito River, San Diego River, Sweetwater River, Otay River, and Tijuana River) in Subregion 5.

Water quality concerns for the subregion include impaired water bodies (including areas with bacterial contamination) and major point sources. Beach nourishment is also conducted. The main impaired water bodies in the subregion are Batiquitos Lagoon, San Elijo Lagoon (eutrophic, coliform, sediment/silt), San Dieguito Lagoon, Los Peñasquitos Lagoon (sediment/silt), back corners of Mission Bay (eutrophic, Pb, coliform), San Diego Bay (Cu, sediment toxicity, zinc [Zn], polynuclear aromatic hydrocarbons [PAHs], PCBs, coliform), Sweetwater Marsh, the Tijuana Estuary (eutrophic, coliform, Pb, Low DO, Ni, pesticides, thallium, trash, turbidity), Agua Hedionda Lagoon (coliform, sediment/silt), Santa Margarita Lagoon (eutrophic), and other smaller estuaries and lagoons, as well as Shelter Island Yacht Harbor (high copper load in sediments), Chollas Creek area (high E.coli counts), East Mission Bay near Hilton Hotel (elevated E.coli, low oxygen); Children’s Pool (high fecal coliform from hauled-out Harbor Seals). During large rainstorms the treatment plant for the outfall from Tijuana is commonly overrun, the river becomes contaminated and the beaches north and south must be closed, including Elijo Lagoon and the Tijuana River Estuary. Other non-point sources include dredging activities and beach nourishment. Finally, the US Navy (which has facilities at North Island Naval Air Station, Naval Amphibious Base Coronado, and Naval Base San Diego) and Air Force have a large presence at San Diego and conduct many maneuvers and training exercises, some of which may impact water quality.

Major point sources include five sanitary wastewater treatment plant outfalls (San Elijo, Point Loma, South Bay, Carlsbad and Tijuana) and a power plant (Chula Vista Power Plant). Heated water from Chula Vista Power Plant may provide refuge for green turtles and sub-tropical/tropical fishes during colder winter months. In addition, the Scripps Institution of Oceanography discharge marine lab and public aquarium waste seawater. At Imperial Beach, the Tijuana sewage outfall spills out into 90 feet of water above the border and has a visible discharge.

There are eight existing MPAs in this subregion: Batiquitos Lagoon SMP, Encinitas SMCA, Cardiff-San Elijo SMCA, San Elijo Lagoon SMP, San Dieguito Lagoon SMP, San Diego-Scripps SMCA, La Jolla SMCA, and Mia J Tegner SMCA (see Figure 3-14). Other protected areas include San Diego-La Jolla Underwater Park (this park includes an ASBS); Scripps Shoreline Underwater Reserve; San Diego-La Jolla Ecological Reserve and ASBS; and large Restricted Area from Point Loma south and offshore, South Bay Marine Biological Study Area, Sweetwater Marsh National Wildlife Refuge, and Tijuana River National Estuarine Research Reserve.

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The rockfish conservation area that restricts recreational fishing from March through December extends seaward from the 60-fathom (361-foot) depth contour throughout the subregion. The Rockfish Conservation Areas that restrict commercial trawl and non-trawl fishing cross into the subregion in several areas. There is an intersection of recreational, trawl, and non-trawl rockfish conservation areas at the study region boundary in the northern portion of Subregion 5 that continues south outside the study region boundary.

6.3.2.2.6 Northern Channel Islands (Subregion 6). Subregion 6 covers 645.22 square miles and 190.8 miles of coastline divided between San Miguel, Santa Rosa, Santa Cruz, and Anacapa Islands. The islands face the mainland to the north and are oriented east-west. Anacapa Island is closest to the mainland at a distance of about 11 miles. Channel Islands National Park includes all four islands.

San Miguel, Santa Rosa, and the western portion of Santa Cruz islands are bathed in the cooler, nutrient-rich waters of the California Current and are more characteristic of the Oregonian biogeographic province. The east portion of Santa Cruz and Anacapa islands are bathed in warmer waters of the California Countercurrent. Over half the study area is soft substrate at 98 to 328 feet depth, hard substrate occurs from 0 to 98 feet around the islands. Each island is a watershed, and there are no major rivers in the subregion. The only water quality concern in Subregion 6 is due to the oil seeps north of Anacapa Island and near Chinese Harbor on Santa Cruz Island. There are no impaired water bodies or major point sources in the subregion.

There are multiple existing MPAs in Subregion 6: Richardson Rock SMR, Judith Rock SMR, Harris Point SMR, South Point SMR, Carrington Point SMR, Skunk Point SMR, Painted Cave SMCA, Gull Island SMR, Scorpion SMR, Footprint SMR, Anacapa Island SMCA, Anacapa Island SMR. Other managed areas include San Miguel Island Special Closure, Anacapa Island Special Closure, Channel Islands National Marine Sanctuary (six nautical miles off the coast of each island). The entire region is included in an Area of Special Biological Significance. The Rockfish Conservation Area that restricts recreational fishing from March through December extends seaward from the 60-fathom (361-foot) depth contour throughout the subregion. The rockfish conservation areas that restrict commercial trawl and non-trawl fishing circle the islands. There is an intersection of recreational, trawl, and non-trawl RCAs surrounding these four islands.

6.3.2.2.7 Southern Channel Islands (Subregion 7). Subregion 7 covers 642.4 square miles and 162.6 miles of coastline divided between Santa Barbara, Santa Catalina, San Nicolas, and San Clemente islands. Santa Barbara is the peak of a larger submerged bank. San Nicolas is situated on a similar offshore bank. Both islands are mostly rocky and support diverse marine life. Santa Catalina is located between the Santa Monica-San Pedro basin and the Catalina Basin and supports warm-water species. San Clemente has a relatively shallow slope to the west and a much steeper slope to the east, and also supports warm-water species.

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The deepest point in the study region is located off the northwest corner of San Clemente Island. San Nicolas Island is located between these warm-water sites and cold-water sites, like Santa Barbara Island. Farnsworth Bank is the only completely submerged pinnacle in the study region. About a third of the area is hard substrate from 99 to 656 feet depth and a quarter of it is soft substrate from 656 to 9,843 feet depth. Santa Catalina and San Clemente Islands have very steep bathymetry near their coastlines, with extensive cliff-like submerged topography that descends to deep basins within state waters. Each island is a watershed, and there are no major rivers in the subregion.

Water quality concerns in Subregion 7 are due to impaired water bodies include Avalon Beach (fecal coliform) and Catalina Harbor), and several major point sources. The point sources are the Avalon Wastewater Treatment Plant (treated sanitary wastewater), Pebbly Beach Desalination Plant (desalination brine), USC Wrigley Institute Marine Science Center (marine lab waste seawater), San Nicolas Island Navy desalination plant (desalination brine), San Clemente Island Wastewater Treatment Plant (treated sanitary wastewater) and San Nicolas Island west end (spent uranium) (Department 2009a).

There are four existing MPAs in Subregion 7: Santa Barbara Island SMR, Catalina Marine Science Center, Farnsworth Bank SMCA, and Lover's Cove SMCA (see Figure 3-13). There are also four ASBSs: Santa Barbara Island, San Nicolas Island and Begg Rock, San Clemente Island, and Santa Catalina Island (4 subareas). state waters around Santa Barbara Island are part of the Channel Islands National Marine Sanctuary (to six nautical miles offshore). The U.S. Navy limits access around San Nicolas and San Clemente islands, including some areas that are permanently closed. Other managed or protected areas include the Arrow Point to Lion Head Special Closure, Avalon City Underwater Park (extends from Lovers Cove east of Avalon to the west side of Hamilton Cove half a mile above Casino Point) on Santa Catalina Island, and a marine reserve that extends from Ring Rock east of Avalon Harbor to the east break wall.

Cowcod Conservation Area overlaps San Nicolas and Santa Barbara Islands. The Rockfish Conservation Area that restricts recreational fishing from March through December extends seaward from the 60-fathom (361-foot) depth contour throughout the subregion. The Rockfish Conservation Areas that restrict commercial trawl and non-trawl fishing circle Santa Catalina and San Clemente islands. There is an intersection of recreational, trawl, and non-trawl Rockfish Conservation Areas around Santa Catalina and San Clemente islands. The shoreward side of Santa Catalina Island is closed to most other forms of commercial fishing, especially lobster (FGC 8258) and purse seine (FGC 8754, 8755) (Department 2009a).

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6.3.2.3 Impaired Water Bodies in the South Coast Study Region

As described above, there are numerous impaired water bodies in the SCSR, all associated with discharges from land in Subregions 1 through 5. The list of impaired water bodies in the state was established by the State Water Resources Control Board as mandated by §303(d) of the federal CWA. An impaired water body is a body of water that does not meet established water quality standards. States are required to work towards resolving problems associated with the listed water bodies. Typically, a TMDL is developed for each constituent for which the water body is impaired. A TMDL determines the total amount of the pollutant/stressor (e.g., pathogens, sediment, nutrients) that the water body can receive and still meet water quality standards. As part of the TMDL process, the sources of each pollutant are identified. The TMDL then allocates the allowable loading among all point and nonpoint sources to the water body and establishes an implementation plan to ensure that the allocations and water quality standards are achieved (Department 2009a).

Based on data from 2006, the study region has a far greater number of water bodies designated as impaired than other MLPA study regions in the state (see Figures 6-2 through 6-7). There are a total of 314 identified impaired water bodies within the study region. Eighty TMDLs have been established in the study region. There are 21 impaired water bodies and one TMDL in the South Coast Hydrologic Unit, which is the only unit within the Central Coast RWQCB (Region 3) that is located in the study region. The Los Angeles RWQCB (Region 4) has the most impaired water bodies in the study region with 161 water bodies deemed impaired; it also has the most TMDLs in the study region with a total of 36 TMDLs. The Santa Ana RWQCB (Region 8) has 33 impaired water bodies and 14 TMDLs. The San Diego RWQCB (Region 9) has the second highest number of impaired water bodies, with 99 listed on the 303(d) list and 29 TMDLs in place. Appendix X includes four tables that show impaired water bodies in each of the regional water quality control boards that fall within, or drain into the SCSR (Department 2009a).⁷

6.3.2.4 Water Quality Monitoring Programs

Information on water quality in the south coast region is available from a large number of sources. There is overlap in the areas monitored and types of parameters monitored. The data are of varying quality. The following are some of the regional water quality monitoring programs that exist or have existed in the south coast study region.

6.3.2.4.1 Southern California Bight Regional Monitoring Program. The Southern California Bight Regional Monitoring Program is a regional monitoring program with

⁷ Other information provided in the appendix is the type of pollutants or stressors involved, the general source of impairment, and the status of TMDLs for each location. More information on these water bodies, including GIS data and in-depth information on pollutants, sources, and TMDLs, is available at http://www.waterboards.ca.gov/water_issues/programs/tmdl/303d_lists2006_epa.shtml.

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standardized data collection methods to assess and analyze sediment conditions, water quality and contaminant input sources for Southern California. This regional effort involves local, state and federal entities and is coordinated by the Southern California Coastal Water Research Project (SCCWRP). The SCCWRP is a research institute focusing on the coastal ecosystems of Southern California from watersheds to the ocean. The SCWRRP is a joint-powers public agency comprised of 14 public agencies:

- California State Water Resources Control Board
- US Environmental Protection Agency Region IX
- Ocean Protection Council
- California Regional Water Quality Control Board, Los Angeles Region
- California Regional Water Quality Control Board, Santa Ana Region
- California Regional Water Quality Control Board, San Diego Region
- City of Los Angeles
- Los Angeles County Sanitation Districts
- Orange County Sanitation District
- City of San Diego
- Ventura County Watershed Protection District
- Los Angeles County Flood Control District
- Orange County Public Works
- County of San Diego

Four assessments have been completed (1994, 1998, 2003, and 2008). The methods, data collection, and results require the participation of a diverse network of citizens and scientists. The information developed is vetted by a multi-party review. This regional monitoring effort was established when the National Research Council identified the need to better coordinate and link up local monitoring efforts. More information about the Bight Monitoring Program can be found at online see References section (Bight Monitoring Program 2010).

6.3.2.4.2 Stormwater Monitoring Coalition. The Stormwater Monitoring Coalition is a collaborative program of Southern California stormwater management agencies to better align monitoring efforts, create consistency, provide technical guidance and tools, and share information. Stormwater Monitoring Coalition participants include: the Counties of Orange, Los Angeles, and San Diego; Ventura County Watershed Protection District; Cities of Long Beach and Los Angeles; State Water Resources Control Board, Regional Water Quality

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Control Boards Los Angeles, Santa Ana Region and San Diego Regions; EPA Region 9; Southern California Coastal Waters Research Project; and CalTrans.

6.3.2.4.3 Surface Water Ambient Monitoring Program. The Surface Water Ambient Monitoring Program (SWAMP) is a statewide surface water quality monitoring effort between the State Water Resources Control Board, Regional Water Quality Control Boards, and other monitoring efforts. Information on SWAMP can be found online (SWRCB 2010a). Until 2003, the State Mussel Watch Program and Toxic Substance Monitoring Program were conducted as part of the SWAMP. State Mussel Watch Program was a site-specific monitoring program in place for over twenty years that sampled mussels and clams to detect and assess the existence of toxic substances. This effort ended in 2003. During its existence, it focused data collection on water bodies with known or suspected water quality problems. The Toxic Substance Monitoring Program existed for 27 years. That program was also site-specific and sampled fish and other aquatic specimens from known or suspected impaired water bodies. Specimens were analyzed for trace elements, pesticides, and organic compounds, such as PCBs.

An on-going effort through the SWAMP is the Clean Water Team, a citizen monitoring effort out of the State Water Resources Control Board to collect information on water quality, fish habitat, bird populations, and stream health. Data collected by this program are available online (SWRCB 2010b).

6.3.2.4.5 Beach Closures, Postings, and Rain Advisories. Beach closures, postings, and rain advisories are direct indicators of the negative impacts to water quality, and consequently beneficial uses, at beaches. Beach monitoring was mandated by the state of California beginning in 1999. Weekly monitoring is required between April and October for beaches with more than 50,000 visitors annually or located adjacent to storm drains flowing during the summer. The waters are tested for coliform, including fecal and enterococcus bacteria. Whereas beach closures prohibit water contact due to sewage spillages, beach postings are advisories that the public not contact water based on monitoring information that indicates high bacteria levels. Rain advisories are a preventative measure put in place that warns people not to swim during a rain event or for three days after a rainstorm due to predictions of poor water quality. Seven local (city or county) ocean water programs are responsible for regularly sampling beaches and sewage outfalls in the study region to monitor bacteria levels. The local monitoring programs include:

- County of Santa Barbara, Environmental Health Services, Ocean Monitoring Program
- County of Ventura, Environmental Health Division, Ocean Water Quality Monitoring Program
- County of Los Angeles, Department of Public Health, Ocean Water Monitoring Program
- City of Los Angeles, Department of Public Works, Environmental Monitoring Division

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- City of Long Beach, Health and Human Services, Water Quality Program
- County of Orange, Health Care Agency, Environmental Health Division, Ocean Water Protection Program
- County of San Diego, Department of Environmental Health, Beach and Bay Program

In addition, the City of Dana Point, in collaboration with the Southern California Coastal Water Research Project, and the University of California, Berkeley conducted monitoring in 2007 and 2008 to assess the source and level of concern associated with bacteriological contamination at Doheny State Beach.

6.3.3 Significance Criteria

6.3.3.1 Criteria for Determining Significance

The project would be considered to have a potentially significant effect on water quality if it would:

- Violate any water quality standards or waste discharge requirements; or,
- Otherwise substantially degrade water quality.

6.3.4 Environmental Impacts

The California Environmental Quality Act (CEQA) requires assessment of potential impacts of a project on the environment. Consequently, this section evaluates the potential effect of designating new MPAs, modifying the boundaries of existing MPAs, and deleting MPAs on water quality in the study region.

The process leading up to the development of the proposed Project IPA considered numerous factors in the selection and placement of proposed and modified MPAs. MPAs were located based on biological and other criteria consistent with the MLPA and secondarily in areas where water quality discharges were minor or did not occur (Department 2009b). In addition, the proposed Project IPA, as described in the ISOR, would allow existing regulated ongoing discharges/activities (e.g., aquaculture, publicly owned treatment works, maintenance dredging, habitat restoration, beach nourishment) to continue in the MPAs, and existing structures (e.g., fishing piers and jetties) to remain in the MPAs (see Figures 6-2 through 6-7). The proposed Project IPA would not modify the existing permitted discharges or water quality related activities regulated by other agencies as stated below (Department 2010).

“Pre-existing activities and artificial structures including but not limited to wastewater outfalls, piers and jetties, maintenance dredging, and beach nourishment occur throughout the heavily urbanized southern south coast study region. These are activities that may result in incidental take. However, these activities are regulated by

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other federal, state and local agencies, whose jurisdiction cannot be pre-empted through designation of MPAs under MLPA. These activities are specified within the proposed MPA regulations to make explicit that these regulated activities are allowed to continue under current permits.”

Further, the proposed Project IPA described in the ISOR (Department 2010) allows for monitoring and research as required by regulatory agencies or conducted for scientific research, as follows:

“Monitoring includes sampling of water, sediments, and marine organisms using a variety of methods. Since monitoring and research is permissible in all MPA designations, the proposed regulation adds a general provision to 14 CCR 632(a), to clarify that this activity is authorized in all MPAs pursuant to a scientific collecting permit.”

In addition the guidance used to evaluate the MPA proposals specifically recommended the following:

“For the MPA network design, the SAT recommends including areas already designated as areas of special biological significance (ASBS) because these areas benefit from the protection beyond that offered by standard waste discharge restrictions. The SAT recommends avoiding location of poor or threatened water quality, including:

- Major cooling water intake sites for power plants
- Municipal sewage and industrial outfalls
- Areas that are significantly impacted by a variety of pollutants from large industrial or developed watersheds.” (Department 2009c)

Adaptive management is a part of the MLPA. The MLPA requires monitoring to determine whether its goals are being met (see Section 3.2). If the water-quality-related goals of the MLPA are not being met, then either regulatory or management changes could occur to try and meet the goals.

Criterion WQ-1: Violate any water quality standards or waste discharge requirements.

The regional goals of the South Coast MLPA are consistent with the Ocean Plan goals and other statewide and regional water quality policies. The South Coast MLPA provides protection of ocean resources and other uses consistent with the beneficial uses designated in the Ocean Plan (the beneficial uses are listed in Section 6.3.1.2). Under the proposed Project IPA expansion of the existing MPA network would also be consistent with the wildlife and marine habitat beneficial uses designated by the RWQCBs basin plans for the SCSR.

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The designation of the MPAs would not conflict with existing water quality standards or permitted discharges for the existing uses in the SCSR. There would be no impacts to currently permitted discharges because under the proposed MPA regulations currently permitted uses would be allowed to continue. The MLPA does not provide the Department regulatory authority over water quality discharges; however, the MPAs have been located in areas some distance from regulated discharges to ensure that water quality within the MPAs is suitable for the beneficial uses to the degree feasible.

Existing discharges or activities such as routine maintenance, dredging, habitat restoration, research and education, maintenance of artificial structures, publicly owned treatment works, superfund sites, beach nourishment, non-point source stormwater, municipal and industrial wastewater discharges, marine research and scientific collecting, water quality monitoring, and operation and maintenance of existing facilities in the proposed MPAs would continue under the proposed Project IPA pursuant to any required federal, state, and local permits, or activities pursuant to Section 630, Title 14, CCR, or as otherwise authorized by the Fish and Game Commission (Commission). The previous clarifying language in the ISOR has been included in the MPA regulations for sites where possible conflicts could occur. Further, should presently unknown conflicts be identified in the future the MPA Master Plans adaptive management strategy would result in these conflicts being reviewed and if feasible or necessary, mitigated.

Mitigation: No mitigation would be required.

Criterion WQ-2: Otherwise Substantially Degrade Water Quality.

Implementation of the proposed regulatory changes would have the potential to cause water quality impacts by changing the use patterns of recreational users of the SCSR's marine environment. Boating-related activities can cause water pollution from antifouling paint, sewage, spills, wastewater, and trash (Department 2009a). There is a relatively high level of existing boating and shipping activities in the SCSR. A large commercial fishing fleet as well as recreational fishing community (including shore-based, private boaters and "party boat" operations), major ports in Long Beach Harbor and San Diego Bay, as well as numerous marinas currently exist in the SCSR.

The effect of non-consumptive recreational users is expected to be relatively small when compared to the primary water quality concerns as described in 6.3.2.1. Such users could include those engaged in sailing, motor boating, scuba diving, wading, kayaking, and swimming. Potential water quality impacts associated with shifts in non-consumptive uses could result from increased use of motor boats and more time spent on the water as a result of users needing to travel farther to reach suitable locations for their activities and from allowing uses in areas that are currently restricted however these impacts are not expected to substantially degrade water quality, because non-consumptive use that does not have the

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potential for take is not affected by this regulation would still be allowed to continue. For non-consumptive recreational uses not dependent on motor boats, the addition or modification of an MPA would not affect water quality.

Shifts in non-consumptive uses involving motor boats, such as motor boating, jet skiing, water skiing or tubing, scuba diving with motor boat support, or use of motor boats to access bird watching, due to changes in locations could have a minor localized effect on water quality. If these recreational uses were displaced by designation of a new MPA(s) and/or changes in regulations at an existing MPA, these uses could require travel to a more distant location. The increased travel distance could lead to a small increase in the potential for the discharge of petroleum products or other pollutants to surrounding water through routine or improper operation of a vessel, or accidents en route. However, these effects are anticipated to be very minor when compared to the existing background levels of boating and shipping activity in the SCSR, as well as effects of existing discharges into the SCSR (see Section 6.3.2.1.2). Alternate sites could also become more crowded, leading to slight increase in the risk of collisions. As described in Section 8.5, Hazards, the potential increase in accidents due to overcrowding or longer transit times is considered to be less than significant.

Shifts in boating associated with prohibition of consumptive uses would be similar to those described above, although more consumptive users are likely to be displaced due to the new regulations. The actual locations selected by displaced users and associated incremental travel time and/or increase in risk of collisions cannot be predicted; however, they are expected to be slight. Areas of high boat density fishing activity already occur within the SCSR during sand bass spawning season on the Huntington Beach flats and at times near smaller artificial and natural reefs along the SCSR. Should high fish densities occur along the edges of MPAs then these areas may attract fisherman and may become crowded during times of increased fish bite. The Commission does not expect this to result in significant impacts to water quality (T. Napoli personal communication 2010).

Where existing MPA designations would be removed or reduced in size, and would therefore allow non-consumptive or consumptive uses involving motor boats in formerly protected areas, the potential for the discharge of petroleum products or other pollutants to waters in the newly open area would increase slightly. This impact would be less than significant, and no mitigation is required.

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6.4 MINERAL RESOURCES

This section describes energy and mineral resources in the vicinity of marine protected areas (MPAs) in the Proposed Project Integrated Preferred Alternative (IPA), describes the existing regulatory framework controlling mineral resource activities, and evaluates the impacts that the proposed Project IPA may have on these resources. Potential impacts to energy and mineral resources created by the proposed Project IPA are based on an analysis of a change from existing conditions.

6.4.1 Regulatory Framework

Primary federal, state and local laws and regulations related to offshore mineral leases are described below (California Coastal Commission [CCC] 1999; County of Santa Barbara Planning and Development Energy Division [CSBPDED] 2010a).

6.4.1.1 Federal

6.4.1.1.1 Outer Continental Shelf Lands Act of 1953 (43 U.S.C. sec. 1331). The Outer Continental Shelf Lands Act of 1953 (OCSLA) established that the submerged lands and resources of the outer continental shelf (OCS) “appertained to the United states and [were] subject to its jurisdiction, control and power of disposition.” The OCSLA authorized the Secretary of the Interior to lease these federal offshore lands for mineral exploration, development, and production, and limited state involvement in the federal program. The OCS is defined by the OCSLA as “all submerged lands lying seaward of state coastal waters (3 miles offshore) that are under U.S. jurisdiction.” Congress amended the OCSLA in 1978 to require the Department of the Interior to better balance the need for expeditious development of the OCS with the need to protect the offshore marine and coastal environment, and required preparation of environmental impact statements for offshore development.

The Submerged Lands Act of 1953 (43 U.S.C. §§ 1301 et seq.). The Submerged Lands Act of 1953, 43 U.S.C. §§ 1301 et seq., delegates to the state the authority to regulate activity in its waters. This act defines each state’s seaward boundary as “a line three geographical miles distant from its coast line” (43 U.S.C. § 1312) and grants to each state title to and ownership of lands beneath navigable waters within that boundary and natural resources within such waters (43 U.S.C. § 1311(a)). (Note: a nautical mile is 6,087 feet in length, approximately 10 feet longer than a geographic mile). Along with title, the Submerged Lands Act also grants each state authority to manage these lands and natural resources. Although the statutory language addresses only submerged lands and natural resources, the Supreme Court has referred to the Submerged Lands Act as granting to the states authority over “lands and waters.” *United States v. California* (1978) 436 U.S. 32, 36-37. Following this language, other courts have held that that the Submerged Lands Act grants the states regulatory authority “over the waters above the submerged lands.” *Barber v. State of Hawai’i* (9th Cir. 1994) 42 F.3d 1185, 1190; *see also* *Murphy v. Department of Natural Resources* (1993) 837

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F. Supp. 1217, 1221. (Pursuant to this consistent judicial interpretation, the act grants to the state regulatory control over activities in waters within the state's seaward boundary, generally 3 nautical miles).

6.4.1.1.2 Coastal Zone Management Act of 1972 (16 U.S.C. 1451 et seq.). In 1972, Congress passed the federal Coastal Zone Management Act of 1972 (CZMA) to encourage effective state management of coastal development, including but not limited to oil and gas activities, and its associated environmental impacts. The CZMA provided federal funding to support state coastal zone management programs that met certain policy objectives (e.g., protection of the marine environment and wetlands, and orderly development of offshore energy resources). The CZMA also established a unique federal/state coordinated regulatory process known as “consistency review,” which grants coastal states which elect to participate in the CZMA program the ability to regulate federal activities that affect their coastlines (including OCS oil and gas activities). Accordingly, California pursued certification of the California Coast Act of 1976 as a “coastal zone management plan” sanctioned under the CZMA. The National Oceanic and Atmospheric Administration (NOAA) certified the California Coastal Management Plan (CCMP) in 1978, giving the state consistency review authority over federal activities that affect the California coastal zone.

6.4.1.1.3 Deepwater Port Act of 1974 (33 U.S.C. sec. 1501–1524 amended 1984, 1990, 1995, 1996). This Act establishes a licensing system for ownership, construction, and operation of deepwater ports, that is, manmade structures located beyond the U.S. territorial sea. It sets out conditions that applicants for licenses must meet, including minimization of adverse impact on the marine environment and submission of detailed plans for construction and operation of deepwater ports. Additionally, the act authorizes and regulates the location, ownership, construction, and operation of deepwater ports in waters beyond the territorial limits of the U.S.; provides for the protection of the marine and coastal environment to prevent or minimize any adverse impact which might occur as a consequence of the development of such ports; protects the interests of the U.S. and those of adjacent coastal states in the location, construction, and operation of deepwater ports; and protects the rights and responsibilities of states and communities to regulate growth, determine land use and otherwise protect the environment in accordance with law. As amended in 1996, this act promotes the construction and operation of deepwater ports as a safe and effective means of importing oil into the U.S. and transporting oil from the OCS while minimizing tanker traffic and associated risks, and promotes oil production on the OCS by affording an economic and safe means of transportation to the U.S. mainland.

6.4.1.1.4 Title 18 of the Code of Federal Regulations. Title 18 of the Code of Federal Regulations (CFR) addresses the Federal Energy Regulatory Commission (FERC). FERC is an independent agency that regulates the interstate transmission of electricity, natural gas, and oil. FERC also reviews proposals to build liquefied natural gas (LNG) terminals and

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interstate natural gas pipelines as well as licensing hydropower projects. Additional FERC responsibilities are outlined in the Energy Policy Act of 2005.

6.4.1.1.5 Title 30 of the Code of Federal Regulations. In 1981, OCS development responsibilities of the Bureau of Land Management and the USGS were consolidated into one federal agency under the Department of the Interior (DOI) by Title 30 of the CFR, establishing the Minerals Management Service (MMS). In 1982, the Federal Oil & Gas Royalty Management Act mandated the protection of environment and conservation of federal land in the process of building oil and gas facilities. The Secretary of the Interior designated the MMS as the federal agency that manages the nation's natural gas, oil, and other mineral resources on the OCS. As of June 18, 2010, the MMS has been renamed the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) and is undergoing restructuring. Additionally, the passage of the Energy Policy Act of 2005 gave BOEMRE the authority to develop wave, wind, current, and other renewable energy projects on the OCS. The agency also collects, accounts for, and disburses revenues from federal offshore mineral leases and from onshore mineral leases on federal and Native American lands.

6.4.1.2 State

6.4.1.2.1 Tidelands Leasing Act of 1921. The Tidelands Leasing Act of 1921 asserted the state's sovereign authority over all minerals on state lands and the marginal sea (Chapter 303, Statutes of 1921). Thus, the State Surveyor General could issue prospecting permits and oil leases for state lands in coastal waters with a 5 percent royalty provision. This Act also prohibited offshore exploration on lands fronting municipalities plus one mile on either side. All oil extraction operations under these leases were conducted from piers. The Oil Pollution Act of 1924 prohibited oil discharges in the marginal seas.

6.4.1.2.2 State Lands Act of 1938 and the Cunningham-Shell Act of 1955. California enacted the State Lands Act in 1938, which established the California State Lands Commission (SLC) and assigned to it exclusive jurisdiction over all state-owned tide and submerged lands. In 1955, California enacted the Cunningham-Shell Act, which amended the 1938 State Lands Act and added more detail on leasing of submerged lands under the jurisdiction of the SLC. Both Acts are codified in Division 6 of the Public Resources Code.

The 1955 act limited the application of general leasing to submerged lands along the coast from the City of Newport Beach to a point six miles south of Oceano. Specific scenic lands in portions of Los Angeles, Santa Barbara, and San Luis Obispo Counties were excluded. The remainder of the coast was also excluded from leasing. This act established the basic parameters under which the majority of the state's offshore leases were issued. As deep-water offshore platforms become more economically viable, the Cunningham-Shell Act provided for the construction of these platforms for drilling and exploration.

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6.4.1.2.3 California Coastal Act of 1976. The California Coastal Commission (CCC) was established by voter initiative in 1972 (Proposition 20) and later made permanent by the Legislature through adoption of the California Coastal Act of 1976 . This act established the permanent CCC (California Public Resources Code, Division 20). In partnership with coastal cities and counties, the CCC plans and regulates the use of land and water in the coastal zone and in state waters. Development activities, which are broadly defined by the Coastal Act to include (among others) construction of buildings, divisions of land, and activities that change the intensity of use of land or public access to coastal waters, generally require a coastal permit from either the CCC or the local government if it has a CCC-approved Local Coastal Program.

The CCC has permit authority over offshore oil and gas development and other mineral extraction activities in state waters (i.e., out to three nautical miles). The CCC's standard review of such development is Chapter 3 of the Coastal Act, which contains policies that specifically address oil and gas development. These include standards for addressing geological conditions, consolidation of facilities, use of subsea wells to protect aesthetics, subsidence, water quality impacts, and vessel traffic. Chapter 3 also includes other oil spill, water and air quality, safety, commercial and recreational fishing, marine and land resource, public access, and recreation policies that must be considered in such development proposals. The Coastal Act also provides an override provision allowing for the approval of coast-dependent industrial facilities (e.g., development, structures, etc.), that are not otherwise consistent with the policies of the Coastal Act (Coastal Act § 30260). However, these facilities can only be developed if alternative locations are infeasible or more environmentally damaging, denying the project would hurt the public's welfare, and adverse environmental effects are mitigated to the maximum extent feasible.

6.4.1.3 Local

Local counties regulate energy sector development (oil and gas development in particular) in the OCS through regulatory controls on onshore facilities with offshore elements such as platforms, wells, and pipelines. Local regulatory controls and guidelines include local coastal plans, zoning ordinances, development codes, and comprehensive plan policies, among others.

6.4.2 Environmental Setting

Mineral resources within the south coast study region (SCSR) include oil and natural gas for energy uses, sand and gravel for beach nourishment and construction needs, and salts used for food and industrial purposes. Each of these resources as well as mineral leasing is further described below. A primary data source used during preparation of this section is MarineMap, a web-based decision support tool for planning in the marine environment (MarineMap Consortium 2010).

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6.4.2.1 Oil and Natural Gas

California's oil development began onshore in the 1860s and rapidly expanded through the 1900s. Early offshore development started with wooden piers extending from developed onshore oil fields, and the first California tidelands oil well was drilled in 1896 in Santa Barbara County. Within 10 years, there were approximately 400 wells on the beach and just offshore. At the time, coastal oil development was regulated only by private individuals and companies. Wasteful and polluting drilling practices were endemic (CCC 1999). In 1915, the California legislature created the Division of Oil and Gas (now the Division of Oil, Gas, and Geothermal Resources) to encourage efficient recovery and end wasteful extraction processes. Extraction of crude oil and natural gas from underground reservoirs continues today within offshore lease areas in Southern California.

The SLC lists 28 active offshore oil- and gas-producing platforms in the SCSR. Oil and natural gas derived from the offshore platforms (both state and federal leases) are transported through state waters to onshore marine terminals by underwater pipelines located within designated pipeline corridors.

Marine tanker ships and barges are also used to transport crude oil to the terminals from non-platform sources (see Section 8.4 for discussion of vessel traffic). The SLC has identified 43 marine oil terminals in the Southern California area located near Santa Barbara (decommissioned Cojo Bay and Gaviota, Santa Barbara, and Ellwood terminals), Ventura County (Port Hueneme and Mandalay Bay terminals), Los Angeles/Long Beach Harbor (El Segundo, Cenco, and 24 other terminals within the harbors), and San Diego County (Carlsbad and 8 other terminals within San Diego Harbor) (SLC 2010d). In general, the crude oil transported to onshore terminals is processed into gasoline and other petroleum products by local Southern California refineries, and the natural gas is used to power local electricity-generating plants (Perry 2009).

Further details regarding oil and gas leases and offshore platforms in the SCSR are provided below. Coastal energy projects within the SCSR, including oil platforms and marine terminals, are illustrated in Figures 6-8 and 6-9.

6.4.2.1.1 State Leases and Offshore Platforms, Wells and Pipelines. The State Lands Act of 1938 granted the SLC exclusive jurisdiction over state-owned submerged lands, including the issuance of leases. Prior to the 1969 oil spill off Santa Barbara, the SLC had leased over 150,000 acres of submerged lands, comprising 58 leases (CCC 1999). After the oil spill, the SLC established a moratorium on drilling, including on established leases where oil and gas production had not been established. This moratorium was not all-inclusive and portions of the coast remained unprotected until the California Coastal Sanctuary Act of 1994 placed a comprehensive ban on new oil and gas leasing. Despite the long-term ban on new

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leasing in the state, drilling and production have continued on existing leases from existing drilling and production platforms.

Nine offshore platforms in the SCSR are located in state waters (Culwell 1997; SLC 2010b). None are located within existing or proposed MPAs. The nine platforms include the following:

- Santa Barbara Channel (two platforms):
 - Platform Holly
 - Rincon Island

Platform Holly is located approximately 2 miles offshore Santa Barbara County in state lease PRC 3242. Oil and gas from the platform are transported to an onshore processing plant at Ellwood via a pipeline. The Naples SMCA is located several miles west of the platform and its associated pipeline and the onshore facility. Rincon Island is an artificial island in state lease PRC 1466 located approximately 3,000 feet offshore Rincon Beach in Ventura County. Rincon Island is an oil and gas production facility connected to the mainland by a causeway. No MPAs are proposed near Rincon Island.

Nautical chart data (MarineMap Consortium 2010) also indicate that a variety of other offshore wells and associated pipelines are found in state waters in the Santa Barbara Channel. Those found in MPAs associated with the proposed Project IPA include two wells in the proposed Pt. Conception SMR, two pipelines in the proposed Kashtayit SMCA, and three wells and two associated pipelines in the proposed Campus Point SMCA.

- San Pedro Bay/Long Beach Harbor (seven platforms):
 - Oil Islands Grissom, White, Chaffee, and Freeman (artificial islands)
 - Platforms Ester, Eva, and Emmy

Four artificial oil islands were constructed in Long Beach Harbor after the City of Long Beach's oil contractor won approval in 1965 to drill the offshore extension of the Wilmington oil field. The oil islands have been well designed to mask the sights and sounds of drilling and production activities and to beautify the infrastructure. Disguised by hundreds of palm trees, cleverly designed oil rigs that resemble attractive high rise condominiums, and even tall waterfalls, most do not know their true function. The islands were named after four astronauts who were killed early in the nation's space program (<http://webcoist.com/2010/03/16/fuels-paradise-thums-islands-help-big-oil-look-good>).

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Platforms Esther, Eva and Emmy are located southeast of the oil islands in state leases 3095, 3033, and 425, respectively, between 1.2 and 1.8 miles offshore Seal Beach and Huntington Beach in Orange County. Emmy was built in 1963, Eva in 1964 and Esther in 1990. Oil and gas pipelines from Platform Eva and other platforms in federal waters come ashore at the existing Bolsa Chica SMP. An oil pipeline from Platform Emmy comes ashore approximately 0.5 mile southeast of the SMP while and an oil pipeline from Platform Esther comes ashore approximately 3.75 miles northeast of the SMP (California Department of Conservation (CDC) 2000).

Eight decommissioned platforms are also located within the SCSR. The platforms consisted of steel structures and one artificial island. With the exception of Platform Hazel, portions of which were left in place, the steel structures were reportedly removed and their leases quitclaimed (CSBPDED 2010a). Available maps suggest none of these decommissioned facilities were located in existing MPAs or MPAs proposed by the proposed Project IPA (CSBPDED 2010a, MarineMap). The decommissioned wells are listed below with their respective year of abandonment:

- Santa Barbara Channel (seven platforms decommissioned):
 - Platforms Harry (1974); Herman and Helen (1988); Hilda, Hazel, Hope, and Heidi (1996 through 1999)
- San Pedro Bay (one platform decommissioned):
 - Belmont Island (artificial island) (2002) (SLC 2010c)

In addition to the platforms, a number of power cables and intra-field and field-to-shore pipelines have been decommissioned in place (Department 2009a).

6.4.2.1.2 Federal Leases and Offshore Platforms, Wells, and Pipelines. Federal offshore leasing takes place on the OCS, which commences three geographical miles seaward of the national coastline, including three miles seaward of the coastline of offshore islands. Seventy-five federal oil and gas leases are situated offshore the tri-counties of Ventura, Santa Barbara, and San Luis Obispo and an additional four are situated offshore Orange County. No MPAs can be located in federal leases, although pipelines from platforms in federal waters can pass through MPAs if they are designated appropriately to allow necessary maintenance and operations.

Platforms within federal waters adjacent to the SCSR consist of 19 steel structures (see Figures 6-8 and 6-9; BOEMRE 2010; County of Santa Barbara Planning and Development Energy Division 2010 a–b):

- Santa Barbara Channel (15 platforms):

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- Platforms Heritage, Harmony, Hondo, A, B, C, Hillhouse, Henry, Houchin, Hogan, Habitat, Grace, Gilda, Gail, and Gina

Currently, offshore platforms Hermosa, Harvest and Hidalgo, located west of Point Conception just outside the SCSR produce and process oil and gas from the Point Arguello Unit. Pipelines are used to transport oil and gas produced and processed offshore to onshore terminal facilities. Approximately 16 miles of the easterly flowing oil and gas pipelines parallel the coast from their landfall near Point Conception. The onshore pipelines are located adjacent to the Refugio State Marine Conservation Area (SMCA).

Platforms Heritage, Harmony and Hondo are located within federal waters in leases 182, 190, and 188. Oil and natural gas pipelines from these platforms are located adjacent to the existing Refugio SMCA where they reach landfall.

Platforms A, B, C, Hillhouse, Henry, Houchin, Hogan, and Habitat are located in the Pitas Point Unit offshore of the city of Carpinteria in leases 166, 240, 241 and 234. Pipelines from these platforms come onshore at Venoco's Carpinteria plant. None of these platforms or pipelines are within or adjacent to existing MPAs or MPAs proposed by the proposed Project IPA (CSBPDED 2010a, MarineMap).

- San Pedro Bay/Long Beach Area off Orange County (4 platforms):

- Platforms Edith, Ellen, Elly, and Eureka

Currently, offshore platforms Edith, Ellen, Elly and Eureka, located in the Beta oil field approximately 8.5–10.5 miles south of Long Beach produce and process oil and gas. The Beta oil field includes federal leases POCS 296, 300, 301, and 306. Near Huntington Beach, oil and gas pipelines from these platforms traverse through or pass very close to the Bolsa Chica State Marine Park (SMP) (CDC 2000; MarineMap).

6.4.2.2 Sand and Gravel

Sand and gravel reach the ocean via streams and from the erosion of coastal cliffs, headlands, and wave cut platforms. This coarse sediment is distributed by wave and longshore currents forming beaches and large waves and rip currents carrying sediment offshore. Accumulation of coarse sediment varies from a few feet thick on some beaches to thousands of feet thick near the marine shelf edge.

Based on available public information, no active sand and gravel mining operations are identified within the SCSR (Perry 2009; RAC 1995).

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6.4.2.2.1 Beach Nourishment. Beach replenishment is another activity associated with the use of sand and gravel deposits within the SCSR. Two commonly used methods of beach replenishment are scoop dredging and hydraulic or suction dredging. Scoop dredging involves using a large, porous clamshell shovel to excavate sediment from shallow water. This approach is mainly employed to dig deep channels for large-ship access to harbors or for river passages. Hydraulic dredging, much like a water vacuum, uses large pumps on a barge to suck a water/sand mixture from the ocean floor. The mix is pumped onshore through large-diameter pipes. The pipe outfall is strategically located on a shoreline where the mix discharges from the end of the pipe, with sand settling onto the beach and water flowing back to the ocean (Perry 2009).

Local authorities in charge of beach replenishment activities include the Beach Erosion Authority for Clean Oceans and Nourishment (BEACON), and the San Diego Association of Governments (SANDAG). BEACON is a California Joint Powers agency established in 1992 to address coastal erosion, beach nourishment and clean oceans within the California coast from Point Conception to Point Mugu. The member agencies of BEACON include the counties of Santa Barbara and Ventura as well as the coastal cities of Santa Barbara, Goleta, Carpinteria, Ventura, Oxnard, and Port Hueneme. BEACON prepares and implements sediment management plans for the area between Point Conception and Point Mugu (BEACON 2010).

SANDAG and the California Coastal Sediment Management Workgroup prepared a Coastal Regional Sediment Management Plan in 2009 for regional management of beaches within San Diego County. The plan was developed to inform the public and decision-makers on sand deficits and related issues within the region, and proposes solutions for existing sediment management problems along the coast. Insufficient sediment or sand volumes exist along the San Diego County shoreline, leading to coastal erosion, narrowing of beaches, damage to infrastructure, habitat degradation, and reduced recreational and economic benefits. SANDAG is composed of 18 cities and counties in the San Diego area, and serves as the forum for regional decision-making. SANDAG is represented by mayors, council members, and county supervisors from each of the region's local governments (SANDAG 2010).

Two of the proposed MPAs, Campus Point SMR and Goleta Slough SMCA, are located near BEACON's Goleta Beach Nourishment Demonstration Project and the Goleta Beach Long Term Master Plan Project. Three of the proposed MPAs, Batiquitos Lagoon SMCA, San Elijo Lagoon SMCA, and Swami's SMCA, are located near SANDAG's Regional Beach Sand Project II. According to MarineMap, offshore sources of sand for beach nourishment are located in several MPAs proposed by the proposed Project IPA, including, for example, the Swami SMCA and the Tijuana River Mouth SMCA. Onshore receiver sites are located immediately adjacent to the Swami and Tijuana River Mouth SMCAs at Moonlight State

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Beach and Border Field State Park, respectively, and an onshore receiver site is located at Corona Del Mar State Beach immediately adjacent to the Crystal Cove SMCA.

Regulatory approvals and permits needed for beach nourishment activities vary greatly by location and jurisdiction. Such projects may require compliance with the California Environmental Quality Act (CEQA) or the National Environmental Policy Act (NEPA), and typically require a Coastal Development Permit from the CCC or local government with an approved Local Coastal Plan. Additionally, they may require permits from agencies such as the U.S. Army Corps of Engineers, pursuant to its authority under Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act.

The California Fish and Game Commission (Commission) does not have authority to permit or prohibit beach nourishment in the marine or estuarine environment and the MLPA cannot supersede otherwise lawful activities that are not within the authority of the Commission to regulate (Department 2009b).

6.4.2.3 Salt

Salts form naturally in protected lagoons and estuaries where ocean water circulation is limited or lacks an open, constant connection to the ocean. Non-circulating water warms in these shallow areas and evaporates, leaving salt deposits. The main salt-producing region within the SCSR is the Western Salt Works located at the south end of the San Diego Bay, where artificial ponds along edges of the bay are alternately filled with ocean water and allowed to partially evaporate. This process concentrates salts into dense brine. The brine is pumped into a separation plant and the salts are isolated and packaged (Perry 2009).

6.4.2.4 Mineral Leases

Development of solid mineral resources on state lands, particularly precious metals and industrial minerals, is managed by the SLC, Mineral Resources Management Division. Although several solid minerals such as gold and talc are mined in California, there are no known solid mineral resources in the proposed Project IPA area (California Natural Resources Agency 2010).

6.4.2.5 Geothermal Resources

Geothermal resources or geothermal fields are not present within the SCSR in either federal or state waters (CDC 2001).

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6.4.3 Impact Analysis

6.4.3.1 Methodology

Impacts to mineral resources were assessed by determining whether MPA-regulated activities would be incompatible with existing and planned uses within and adjacent to the SCSR, or be inconsistent with applicable plans, regulations, and ordinances. The specific thresholds of significance evaluated for mineral resources impact analysis are provided below.

6.4.3.2 Criteria for Determining Significance

The proposed Project IPA would result in a significant impact on mineral resources if it would:

- a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

6.4.3.3 Environmental Impacts

Criterion MR-1: Loss of Availability of a Known Mineral Resource of Value to the Region and the Residents of the State

Based on a review of online oil and gas lease information (e.g., MarineMap Consortium 2010, CDC 2001, and CSBPDED 2010a) no MPAs within the proposed Project IPA are located over existing oil and gas production facilities, including offshore platforms. Further, there has been a ban on issuing new state oil and gas leases in state tidelands since 1989 (later incorporated into the California Coastal Sanctuary Act in 1994), and continued federal moratoria on new OCS oil and gas leasing activities off the California coast since 1990 (CCC 1999). Moreover, the proposed Project IPA allows existing mineral recovery facilities and product distribution systems to operate within the conditions of their current permits and leases, and proposed MPAs allow operation and maintenance of existing facilities. As a result, the proposed Project IPA will have no effect on the availability of oil and gas resources. There are several MPAs that contain offshore wells and associated pipelines not associated with platforms and not within mapped active leases; these wells and pipelines may not be active. Regardless, the proposed Project IPA would allow any operations or maintenance activities to occur within conditions of current permits or leases.

Based on available public information, no active sand and gravel mining operations are identified within the SCSR (Perry 2009; California Natural Resources Agency 1995).

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Therefore, the proposed Project IPA will have no effect on the availability of sand and gravel.

Based on a review of existing information (e.g., MarineMap Consortium 2010, Perry 2009, City of San Diego 2007), the primary salt-producing facility in the SCSR consists of onshore diked evaporation ponds located within the South San Diego Bay Unit of the San Diego National Wildlife Refuge. No MPAs are proposed in San Diego Bay and the proposed Project IPA would have no impact to salt-producing facilities.

The proposed MPA regulations will have no adverse effect on beach nourishment activities even though, for example, the proposed Campus Point SMR and Goleta Slough SMCA are located near BEACON's Goleta Beach Nourishment Demonstration Project and the Goleta Beach Long Term Master Plan Project and the proposed Batiquitos Lagoon SMCA, San Elijo Lagoon SMCA, and Swami's SMCA are located near SANDAG's Regional Beach Sand Project II. The proposed MPA regulations allow maintenance dredging, habitat restoration, research and education, maintenance of artificial structures, and operation and maintenance of existing facilities pursuant to required permits or authorization by the Department. Moreover, the California Fish and Game Commission does not have authority to permit or prohibit beach nourishment in the marine or estuarine environment (Department 2009b). As a result, the proposed Project IPA would have no effect on beach nourishment projects.

Based on a review of the 2002 Geothermal Map of California (DOGGR 2002), no geothermal resources or geothermal fields are present within the SCSR and the proposed Project would have no effect on such resources.

Based on a review of Perry (2009) and California Natural Resources Agency (1995), there are no known solid mineral resources or active sand and gravel mining operations identified within the SCSR.

Based on the above considerations, implementation of the proposed Project IPA is not expected to result in a loss of availability of known mineral resources of value to the region and the residents of the state.

Mitigation: No mitigation is required since no impacts are anticipated.

MR-2: Loss of Availability of a Locally-Important Mineral Resource Recovery Site Delineated on a Local General Plan, Specific Plan, or Other Land Use Plan

As discussed above in MR-1, MPAs for the proposed Project IPA are located offshore and are not located over existing oil and gas production facilities or active leases, salt-producing facilities, or geothermal resource areas and there are no known solid mineral resources or active sand and gravel mining operations identified within the proposed Project IPA. Several proposed MPAs will encompass offshore sites used to provide sand for beach nourishment

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and are immediately adjacent to several onshore beach nourishment receiver sites, but the Commission does not have authority to permit or prohibit beach nourishment in the marine or estuarine environment and the MLPA cannot supersede otherwise lawful activities that are not within the authority of the Commission to regulate (Department 2009b). Finally, there is a ban on issuance of state leases offshore and since 1990 there has been a moratorium on issuance of new oil and gas leases in federal waters.

Based on the above, the proposed Project IPA will have no effect on locally important mineral resource recovery sites delineated on a local general plan, specific plan, or other land use plan.

Mitigation: No mitigation is required since no impacts are anticipated.

**SECTION 7.0
BIOLOGICAL RESOURCES**

7.1 INTRODUCTION

This section of the Draft Environmental Impact Report (EIR) provides information on biological resources located in the south coast study region (SCSR). Policies and regulations at the federal, state, and local levels that influence biological resources are also discussed. Impacts to biological resources that may result from the proposed Integrated Preferred Alternative (IPA) are identified. Mitigation measures to avoid, minimize, or compensate for these potentially significant impacts will be presented.

7.1.1 Regulatory Framework

Laws and Regulations pertaining to species and habitat protection and management are described below.

7.1.1.1 Federal Laws, Regulations or Policies

7.1.1.1.1 Federal Endangered Species Act. The Federal Endangered Species Act (ESA) protects fish and wildlife species that have been identified by the United States Fish and Wildlife Service (USFWS) or National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries) as threatened or endangered. Endangered refers to species, subspecies, or distinct population segments that are in danger of extinction through all or a significant portion of their range. Threatened refers to species, subspecies, or distinct population segments that are likely to become endangered in the near future. The ESA is administered by the USFWS and NOAA Fisheries. In general, NOAA Fisheries is responsible for protection of ESA-listed marine species and anadromous fishes, whereas listed, proposed, and candidate wildlife and plant species are under USFWS jurisdiction. The ESA was preceded by the Lacey Act of 1900, the Bass Act of 1926, the Migratory Bird Act of 1918, the Endangered Species Preservation Act of 1966, and the Endangered Species Conservation Act of 1969. Amendments to the 1973 ESA were made in 1978, 1979, 1982, and 1988.

7.1.1.1.2 Marine Mammal Protection Act. All marine mammals are protected under the Marine Mammal Protection Act (MMPA). It prohibits, with certain exceptions, the take of marine mammals in U.S. waters and by U.S. citizens on the high seas, as well as the importing of marine mammals and marine mammal products into the U.S.

7.1.1.1.3 Migratory Bird Treaty Act. The Migratory Bird Treaty Act (MBTA) (16 United States Code [USC] Section 703) enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and former Soviet Union and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. It establishes seasons and

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bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs (16 USC 703; 50 CFR 10, 21). Most actions that result in taking or permanent or temporary possession of a protected species constitute violations of the MBTA. Examples of permitted actions that do not violate the MBTA are the possession of a hunting license to pursue specific game birds, legitimate research activities, display in zoological gardens, bird-banding, and other similar activities. The USFWS is responsible for overseeing compliance with the MBTA, and the U.S. Department of Agriculture's Animal Damage Control Officer makes recommendations on related animal protection issues. Take under the MBTA is also a state law violation (California Fish and Game Code 3513).

7.1.1.1.4 Federal Sustainable Fisheries Act. The Sustainable Fisheries Act (Public Law 104-297) of 1996 reauthorized and amended the Magnuson Fishery Conservation and Management Act (now Magnuson-Stevens Fishery Conservation and Management Act). The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) was initially enacted in 1976 to define fisheries jurisdiction within federal waters and create the NOAA structure for federal fisheries management. The revisions provided in the 1996 law brought major changes to requirements for preventing overfishing and revitalizing depleted fisheries, mostly through the scientific management and reporting conducted via fisheries management reports.

7.1.1.1.5 Federal Pacific Coast Groundfish Regulations. Federal jurisdiction over Pacific Coast groundfish was established by the Magnuson-Stevens Act of 1976 and implemented in 1982 with the adoption of the initial Pacific Coast Groundfish Fishery Management Plan (Groundfish FMP) (Pacific Fishery Management Council 2008). The Groundfish FMP, which was most recently amended in 2005, seeks to provide a balance between conservation, prevention of overfishing, and maximization of the fisheries' resources. The plan covers 88 species of fish, including sharks, roundfish, groundfish, and flatfish; sets limits on harvest levels; establishes policies for periodic review and revision of regulatory requirements and limitations; and outlines programs for rebuilding depleted stocks. Management considerations such as licensing and permitting, size and bag limits, and net restrictions are outlined for commercial and recreational activities.

Highly migratory species (HMS) are fish that move great distances in the ocean to feed or reproduce. In their migrations, they may pass through the waters of several nations and the high seas. Their presence depends on ocean temperatures, availability of food, and other factors. Highly migratory species are sometimes called "pelagic," which means they do not live near the sea floor, or "oceanic," which means they live in the open sea. They are harvested by U.S. commercial and recreational fishers and by foreign fishing fleets. Only a small fraction of the total harvest of most stocks is taken within U.S. waters.

The Pacific Fishery Management Council (Council) recently developed an FMP for West Coast HMS fisheries. The FMP covers north Pacific albacore, yellowfin, bigeye, skipjack,

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and northern bluefin tunas; common thresher, pelagic thresher, bigeye thresher, shortfin mako, and blue sharks; striped marlin and Pacific swordfish; and dorado (also known as dolphinfish or mahi-mahi). Because these species migrate across international boundaries, they are mainly managed through regional organizations such as the Inter-American Tropical Tuna Commission, which includes countries catching HMS in the Eastern Pacific.

The Department of State, along with NOAA Fisheries, takes a lead role in negotiations at the international level. The Council provides a way for domestic constituents to channel management recommendations to the international level.

Coastal pelagic species include northern anchovy, market squid, Pacific bonito, Pacific saury, Pacific herring, Pacific sardine, Pacific (chub or blue) mackerel, and jack (Spanish) mackerel. “Pelagic” means these fish live in the water column as opposed to living near the sea floor. They can generally be found anywhere from the surface to 1,000 meters (547 fathoms) deep. Five of these species (Pacific sardine, Pacific mackerel, market squid, northern anchovy, and jack mackerel) are managed under the Council’s coastal pelagic species Fishery Management Plan.

Market squid, which make up the largest portion of the coastal pelagic species fishery, are fished at night with the use of powerful lights that attract the squid to the surface. They are either pumped directly from the sea into the hold of the boat or caught with an encircling net.

Coastal pelagic species are found in the Exclusive Economic Zones (EEZ) of Canada, Mexico, and the U.S., as well as in international waters outside the U.S. EEZ. Within the U.S. EEZ, sardines are caught by U.S. commercial fisheries, by party and charter boats, and by anglers. The coastal pelagic species FMP was recently amended to include krill species and to prohibit their harvest.

7.1.1.1.6 Essential Fish Habitat. The Magnuson-Stevens Act defines essential fish habitat (EFH) as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” NOAA Fisheries guidelines state that “adverse effects from fishing may include physical, chemical, or biological alterations of the substrate, and loss of, or injury to, benthic organisms, prey species and their habitat, and other components of the ecosystem.” The coastal pelagic EFH includes habitats for five species: Pacific sardine (*Sardinops sagax*), Pacific mackerel (*Scomber japonicus*), northern anchovy (*Engraulis mordax*), jack mackerel (*Trachurus symmetricus*), and market squid (*Loligo opalescens*). The Pacific Coast groundfish EFH includes habitats for 83 species of groundfish. The EFH for Pacific Coast groundfish is defined as the aquatic habitat necessary to allow for groundfish production to support long-term sustainable fisheries and for groundfish contributions to a healthy ecosystem. Descriptions of groundfish EFH for each of the 83 species and their life stages result in more than 400 EFH identifications. When these EFHs are taken together, the groundfish EFH includes all waters from the mean higher high water line and the upriver

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extent of saltwater intrusion in river mouths, along the coast of Washington, Oregon, and California seaward to the boundary of the exclusive economic zone (EEZ). Under the law of the sea, an exclusive economic zone (EEZ) is a sea zone over which a state has special rights over the exploration and use of marine resources. It stretches from the seaward edge of the state's territorial sea out to 200 nautical miles from its coast. The seven "composite" EFH identifications are as follows: estuarine, rocky shelf, non-rocky shelf, canyon, continental slope/basin, neritic zone, and the oceanic zone.

Pacific salmon EFH includes habitat for three species of Pacific salmon (*Oncorhynchus* sp.): Chinook (*O. tshawytscha*), Coho (*O. kisutch*), and Puget Sound pink salmon (*O. gorbuscha*). Puget Sound, Coho, and Chinook salmon EFH does not occur in the SCSR. The EFH for these salmon includes the waters and substrate necessary for salmon production to support a long-term sustainable salmon fishery. In the estuarine and marine areas, salmon EFH extends from the nearshore and tidal submerged environments within state territorial waters to the full extent of the EEZ. The Pacific salmon EFH also includes all streams, lakes, ponds, wetlands, and other currently viable water bodies and most of the habitat historically accessible to salmon.

Habitat areas of particular concern (HAPCs) are described in the regulations as subsets of EFH that are rare, particularly susceptible to human-induced degradation, especially ecologically important, or located in an environmentally stressed area. These include estuaries, canopy kelp, seagrass, and rocky reef habitats. Although designated HAPCs are not afforded additional protection under the Magnuson-Stevens Act, potential impacts on HAPCs are considered in consultation regarding federal projects that may affect designated HAPCs.

7.1.1.1.7 Essential Fish Habitat Closures Areas. In June 2006, EFH protection measures were amended to include implementation of discrete area closures for specific gear types. Closure areas were identified by the Pacific Fishery Management Council with the intention of minimizing adverse effects of fishing on groundfish EFH, and included EFH, HAPC, and EFH conservation areas. Of these, only the EFH conservation areas are closed to specific types of fishing.

7.1.1.1.8 Non-trawl and Trawl Rockfish Conservation Areas. The coast wide commercial rockfish (*Sebastes* sp.) conservation area (RCA) was established in January 2003 by NOAA Fisheries to protect and assist in rebuilding of stocks of lingcod (*Ophiodon elongatus*) and seven species of rockfishes. Within the RCA in the SCSR, take and possession of federal groundfish species and ocean whitefish (*Caulolatilus princeps*) is prohibited with the following gear types: trawl nets, traps, hook and line gear (including longline gear), set gill and trammel nets, and spear. Trawl and non-trawl RCAs vary seasonally and regionally. Effective protection equivalent to that of a marine protected area (MPA) occurs where the RCA is closed year-round to particular gear types.

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7.1.1.1.9 Cowcod Conservation Areas.¹ The first stock assessment of cowcod (*Sebastes levis*) was completed in 1999, the results of which led to cowcod being declared “overfished.” Soon after, management measures were taken by both state and federal agencies to curb the catch of cowcod statewide. In the Southern California Bight (bight), access to the shelf has been restricted by implementation of depth-based Cowcod Conservation Areas. The Cowcod Conservation Areas, implemented in 2001 (Title 14 of the California Code of Regulations Section 27.28(d)), prohibit most bottom-fishing deeper than approximately 20 fathoms (36 m). The bight is the area where cowcod are most abundant, where adult habitat is most common, and where catches are highest.

The closed area includes a 4,200-square-mile area off the Palos Verdes Peninsula extending southwards about 90 miles and westward another 50 miles. A smaller area, the “43-fathom spot,” which lies 40 miles offshore of San Diego and extends northward and offshore to cover 100 square miles, was also designated as part of the closure area.

Cowcod are also managed as a no-retention fishery (i.e., take is prohibited) in the commercial and recreational sectors statewide. Catches after 2000 are less than one metric ton per year, indicating that the effort to minimize cowcod catch has been effective. At no time may rockfish, lingcod (*Sebastes levis*), and associated species (cabezon [*Scorpaenichthys marmoratus*], greenlings of the genus *Hexagrammos*, California scorpionfish [*Scorpaena guttata*], California sheephead [*Pimelometopon pulchrum*], and ocean whitefish) be taken or possessed while fishing in waters 20 fathoms or greater in depth as described by general depth contour lines in the Cowcod Conservation Areas.

7.1.1.2 State Laws, Regulations, or Policies

7.1.1.2.1 California Endangered Species Act. Under the California Endangered Species Act (CESA), the Department has jurisdiction over threatened or endangered species that are formally listed by the state. The CESA is similar to the ESA both in process and substance, with the intention of providing additional protection to threatened and endangered species in California. The CESA does not supersede the ESA, but operates in conjunction with it. Species may be listed as threatened or endangered under both acts, in which case the provisions of both state and federal laws apply, or under only one act. Under the ESA, habitat

¹ Title 14 of the California Code of Regulations Section 27.50. Cowcod Conservation Areas for recreational fisheries are defined as waters which are 20 fathoms in depth and deeper within each of the following two areas. Area 1, generally located around Santa Barbara and San Nicholas Islands and southward (Department 2010g), is an area south of Point Conception that is bound by straight lines connecting the following points in the order listed: 33°50' N, 119°30' W. long.; 33°50' N, 118°50' W.; 32°20' N, 118°50' W; 32°20' N, 119°37' W; 33°00' N, 119°37' W; 33°00' N, 119°53' W; 33°33' N, 119°53' W.; 33°33' N, 119°30' W; 33°50' N, 119°30' W. Area 2, generally located southeast of San Clemente Island (Department 2010g), is a smaller area west of San Diego that is bound by straight lines connecting the following points in the order listed: 32°42' N, 118°02' W.; 32°42' N, 117°50' W; 32°36' 42" N, 117°50' W; 32°30' N, 117°53'30" W; 32°30' N, 118°02' W; 32°42' N, 118°02' W (Department 2010h).

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is protected, while under CESA it is not. Also, independent of the CESA, state law has established “protected” status for certain statutorily identified birds (California Fish and Game Code 3511), mammals (FGC 4700), reptiles and amphibians (California Fish and Game Code 5050), and fish (California Fish and Game Code 5515).

7.1.1.2.2 California Marine Life Management Act. The Marine Life Management Act (MLMA) (Assembly Bill 1241; Statutes of 1998, Chapter 1052) was enacted to promote sustainable marine fisheries, primarily through fishery management plans (FMPs) based on the best readily available scientific and other relevant information. Rather than assuming that exploitation should continue until damage has become clear, the MLMA shifts the burden of proof toward demonstrating that fisheries and other activities are sustainable. Also, rather than focusing on single fisheries management, the MLMA requires an ecosystem perspective including the whole environment. FMPs are prepared by the Department and submitted with implementing regulations for review and approval by the California Fish and Game Commission (Commission). FMPs have been prepared for abalone (*Haliotis* spp.), herring, squid, white seabass (*Atractoscion nobilis*), and nearshore fisheries.

7.1.1.2.3 Recreational Rockfish Conservation Areas. Current California recreational fishing regulations for popular groundfishes limit catch within particular depth zones (specified regionally). These regulations leave certain areas within state waters restricted from fishing year-round. Although most essential groundfish habitat conservation areas are primarily outside of state waters, as of March 31, 2010, the southern management area has severely restricted take of recreational groundfish for following species: canary rockfish (*Sebastes pinniger*), cowcod, and bronzespotted (*Sebastes gilli*) and yelloweye rockfishes (*Sebastes ruberrimus*). The southern management area also contains cowcod conservation areas in which fishing for federally-managed groundfish species is closed year round.

7.1.1.2.4 Ocean Sport Fishing Regulations. The Commission sets hunting and sport fishing regulations including seasons, bag limits, methods and areas of take. Rules are subject to change year to year, and regulations are easily accessible from the Commission. Species that are regulated by ocean sport fishing regulations include many species of finfish, invertebrates, mollusks, crustaceans, and marine plants (Department 2010h).

7.1.1.2.5 California Fish and Game Commission Fishing Regulations. The Commission regulated sport and commercial fishing activities within the SCSR. These regulations are codified in the California Code of Regulations, Title 14. Natural Resources. The regulations are summarized in the Commercial Fishing Digest and Ocean Sport Fishing regulations booklet. The booklets include catch limits for species or species groups, size limits, seasonal closures, area closures (including a list of all state MPAs), gear restrictions, and depth restrictions. Regulations for groundfish species—including rockfish, cabezon, greenlings, and lingcod—are listed for each of five groundfish management areas along the coast. The recreational fisheries for lingcod, rockfish, sub-groups of rockfish, California scorpionfish,

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cabezon, kelp and rock greenlings, California sheephead, ocean whitefish, and other federal groundfish may close early if the annual harvest guideline for any one species or species group is met or is expected to be met prior to the end of the year.

7.1.1.2.6 State Fishery Management Plans.

Abalone Recovery and Management Plan. Severe declines in abalone abundance resulted in total closure of recreational and commercial abalone fishing south of San Francisco, and there are serious concerns about the potential for extinction of the white abalone. The Abalone Recovery and Management Plan (ARMP) was adopted by the Commission in December 2005. The ARMP provides a cohesive framework for the recovery of depleted abalone populations in Southern California, and for the management of the northern California recreational fishery and future fisheries. All of California's abalone species are included in this plan: red abalone (*Haliotis rufescens*), green abalone (*H. fulgens*), pink abalone (*H. corrugate*), white abalone (*H. sorenseni*), pinto abalone (*H. kamtschatkana*, including *H. k. assimilis*), black abalone (*H. cracherodii*), and flat abalone (*H. walallensis*). A recovery and management plan for these species is needed to manage abalone fisheries and prevent further population declines throughout California, and to ensure that current and future populations will be sustainable. The ARMP includes: a) an explanation of the current scientific knowledge of the biology, habitat requirements, and threats to abalone; b) a summary of recovery goals, including alternative conservation and management goals and activities; c) alternatives for allocating harvest between recreational and commercial abalone harvesters; d) an estimate of time and costs required for meeting interim and long-term recovery goals for each species; e) an estimate of the time necessary to meet interim recovery goals, and a description of triggers for review and amendment of strategies; and f) a description of objective, measurable criteria by which to determine whether the goals and objectives of the recovery strategy are being met (Department 2005a).

Abalone take is prohibited in all of the SCSR. The north coast (north of the mouth of San Francisco Bay) is open for the take of red abalone; abalone report cards are required for everyone taking or attempting to take abalone. Abalone report cards (but not fishing licenses) are now required for people under 16 years of age and for those taking abalone on free fishing days. This regulation change will improve the Department's accounting of abalone taken in the fishery.

Market Squid Fishery Management Plan. The commercial market squid (*Loligo opalescens*) fishery is one of the most important in the state of California in terms of landings and revenue. The fishery generates millions of dollars to the state annually from domestic and foreign sales. In addition to supporting the commercial fishery, the market squid resource is an important forage item for seabirds, marine mammals, and other fish taken for commercial and recreational purposes. It is also important to the SCSR marine recreational fishery as a popular bait species. In 2001, the legislature approved SB 209 (Sher), Chapter

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318, Statutes of 2001, which established permanent management authority of the market squid fishery to the Commission. The statutes also require the Commission to manage the squid fishery under the guidelines set forth by the MLMA. The goals of the Market Squid Fishery Management Plan (Market Squid FMP) are to manage the market squid resource to ensure long-term resource conservation and sustainability, and to develop a framework for management that will be responsive to environmental and socioeconomic changes. The Market Squid FMP establishes the management program for California's market squid fishery and procedures by which the Commission will manage the market squid resource (Department 2005b).

Nearshore Fishery Management Plan. The Nearshore Fishery Management Plan (Nearshore FMP) is placed within the context of the MLMA goals, objectives, policies, and mandates. The Department developed a set of goals and objectives for management of the nearshore fishery through the Nearshore FMP. The five goals are to: ensure long-term resource conservation and sustainability; employ science-based decision-making; increase constituent involvement in management; balance and enhance socioeconomic benefits; and identify implementation costs and sources of funding. Each goal is accompanied by objectives, all of which are based directly upon the MLMA.

Nineteen species of nearshore finfish are management under the Nearshore FMP. The species chosen depended on criteria such as changes in catch levels, special biological characteristics, and special habitat needs.

Management measures are developed for each species, including ways to prevent overfishing, rebuild depressed stocks, ensure conservation, and promote habitat protection and restoration (Department 2002a).

White Seabass Management Plan. White seabass are recovering off California from low population levels in the mid to late 1900s. The current recovery is occurring under management designed to provide for moderate harvests while protecting young white seabass and spawning adults through seasonal closures, gear provisions, and size and bag limits. Concern over the decline in white seabass landings and conflict between recreational and commercial fishermen over this resource resulted in legislation requiring the development of a White Seabass Fishery Management Plan (WSFMP). The plan was developed in 1995 through the cooperative efforts of academic and federal fishery scientists, consultants, and fishery constituents. It was subsequently adopted by the Commission in 1996; however, regulations to implement the WSFMP were not adopted at that time. California enacted the MLMA in 1998, granting broader regulatory authority to the Commission for specified commercial fisheries, including white seabass. The MLMA declared that the WSFMP shall remain in effect until amended, but it must be brought into conformance with the MLMA on or before January 1, 2002. This deadline was later extended in order to incorporate the recommendations of the peer review panel. Long-term research goals include development of

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more sophisticated stock assessments and models, expansion of hatchery-reared white seabass studies, collection and analyses of more socioeconomic data, cooperative research with Mexico, and implementation of an ecosystem-based management approach (Department 2002b).

California Spiny Lobster Fishery Management Plan. The Department is working to identify resources and partners that will help develop a California Spiny Lobster Fishery Management Plan (lobster FMP). The Department is considering the California spiny lobster (*Panulirus interruptus*) because it is a key species that supports important recreational and commercial fisheries in the Southern California marine ecosystem. An FMP for lobster also provides an opportunity to integrate any new MPAs on the south coast, implemented under the MLPA, with the management of the species. The plan would eventually be considered by the Commission.

7.1.2 Environmental Setting

The SCSR includes unique ecosystems and encompasses habitats and species that are important for regional marine biodiversity, sustainable resource use, and natural heritage. The Southern California Bight hosts a wide diversity of species, including at least 481 species of fish, 492 species of algae, 4 species of seagrass, 4 species of sea turtles, 195 species of birds, at least 33 species of cetaceans, 7 species of pinnipeds, and over 5,000 species of invertebrates. Several of these species have special status under California and/or the ESA, including white abalone (*Haliotis sorenseni*), tidewater goby (*Eucyclogobius newberryi*), green sea turtles (*Chelonia mydas*), California brown pelicans (*Pelecanus occidentalis californicus*), California least terns (*Sternula antillarum brownii*), Southern sea otters (*Enhydra lutris nereis*), and Guadalupe fur seals (*Arctocephalus townsendi*) (Department 2009a).

This diverse assemblage of species reflects the wide range of habitats in the SCSR. These habitats include the following: deep ocean basins; offshore islands and ridges; estuarine and intertidal environments; biogenic habitats, such as kelp forests and seagrass beds, which host numerous species; and geologic processes, such as oil seeps, that create unique ecological conditions. Some habitats, such as soft-bottom kelp beds which have existed off Santa Barbara County, are found in few other places in the world. A dynamic oceanographic context further increases the biological complexity of the bight, with complicated current patterns, upwelling, retention zones, freshwater plumes, and the interaction of warm and cold biogeographic regimes all playing a role. These unique species, habitats, and oceanographic conditions have contributed to the establishment of several state and federal management areas within the SCSR. Nearly half of the existing state MPAs in California are located within the SCSR as well as 31 state parks (Department 2009a).

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Ecological reserves are established to provide protection for rare, threatened, or endangered native plants, wildlife, aquatic organisms, and specialized terrestrial or aquatic habitat types. Public entry and use of ecological reserves shall be compatible with the primary purposes of such reserves, and subject to the following applicable general rules and regulations, except as otherwise provided for in the special area regulations.

The regulations for ecological reserves can be found in California Code of Regulations Title 14, Section 630, and in Fish and Game Code Section 1580–1586. These regulations are different from those for MPAs. In cases where removal of an MPA designation occurs in an area overlain by an ecological reserve, a change in MPA protection will not result in loss of ecological reserve protections. The following ecological reserves are located within the SCSR (Department 2010f):

- Agua Hedionda Lagoon
- Ballona Wetlands
- Batiquitos Lagoon
- Bolsa Chica Wetlands
- Goleta Slough
- San Dieguito Lagoon
- San Elijo Lagoon
- Upper Newport Bay

Three areas managed by the National Park Service (NPS)—the Santa Monica Mountains National Recreation Area (established in 1978), the Cabrillo National Monument (established in 1913), and the Channel Islands National Park (established in 1980)—are also located within, or adjacent to, the SCSR. In particular, the Channel Islands have been recognized for their unique ecological conditions. Anacapa and Santa Barbara islands were established as National Monuments in 1938 and in 1949; 1 nautical mile around each of these islands was included within the monument boundary. In 1977, the Channel Islands National Monument was designated by United Nations Educational, Scientific, and Cultural Organization (UNESCO) as a part of the International Man and Biosphere Reserve program. In 1980, Anacapa, Santa Barbara, Santa Rosa, Santa Cruz, and San Miguel islands and 1 nautical mile surrounding each of the islands were designated as Channel Islands National Park. Also in 1980, the Channel Islands National Marine Sanctuary was established. Additionally, the Tijuana River National Estuarine Research Reserve and the Tijuana Slough National Wildlife Refuge were designated a Ramsar site, or wetland of international importance, in 2005. It is one of only 24 Ramsar sites in the United States (Department 2009a).

There are several national wildlife refuges located within the SCSR, including Seal Beach National Wildlife Refuge, San Diego Bay National Wildlife Refuge, and Tijuana Slough National Wildlife Refuge. The National Wildlife Refuge System, managed by the USFWS, is a system of public lands and waters set aside to conserve America’s fish, wildlife and plants (USFWS 2010).

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7.1.2.1 Ecosystems and Habitats

Ecosystems and habitats in the SCSR include intertidal zones, rocky reefs, sandy or soft ocean bottoms, kelp forests, submarine canyons, seagrass beds, underwater pinnacles, and seamounts. Seamounts do not occur within state waters, and other habitats, such as pinnacles, are not well mapped. Unique habitats and features also exist within the SCSR such as purple hydrocoral, elk kelp, oil seeps, and shallow hydrothermal vents (Department 2009a).

Habitats found within the SCSR are illustrated on Figures 7-1 through 7-12, and quantified in Tables 7.1-1 and 7.1-2.

**TABLE 7-1
DEPTH ZONES IDENTIFIED BY THE MLPA
MASTER PLAN SCIENCE ADVISORY TEAM**

Meters (m)	Fathoms (Fm)	Feet (Ft)
Intertidal	Intertidal	Intertidal
Intertidal to 30 m	Intertidal to 16 fm	Intertidal to 98 ft
30 m to 100 m	16 fm to 55 fm	98 ft to 328 ft
100 m to 200 m	55 fm to 109 fm	328 ft to 656 ft
Greater than 200 m	Greater than 109 fm	Greater than 656 ft

Source: Department 2009a.

Note: All depth figures above and throughout this document have been converted from the SAT guidelines, which are provided in meters. The above numbers have been converted from meters and are rounded to the nearest whole number. For reference, 1.00 m = 0.55 fm = 3.28 ft.

**TABLE 7-2
DEPTH ZONE AS A PERCENT OF SOUTH COAST STUDY REGION**

Depth Zone	Area (Mi ²)	Percentage of Study Region
Intertidal to 98 feet (0 to 16 fm)	702.75	29.89%
98 to 328 feet (16 to 55 fm)	933.37	39.70%
328 to 656 feet (55 to 109 fm)	275.29	11.71%
656 feet and deeper (109 fm and deeper)	438.49	18.65%

Source: Department 2009a.

7.1.2.1.1 Depth Categories. Based on information about fish depth distributions in California, the MLPA Master Plan Science Advisory Team (SAT) has recommended categorizing habitats as they are represented in the depth zones identified in Table 7-1.

The intertidal zone includes habitats such as sandy beaches, rocky shores, tidal flats, and coastal marsh that are subject to periodic tidal inundation. In the 0- to 98-foot depth zone,

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light penetrates to support photosynthetic activity. Beyond 98 feet, light penetration diminishes and different assemblages of species occur. The 328–656-foot depth zone is the approximate depth of the shelf-slope break, which is an area of high diversity characterized by both shelf and slope assemblages. At 656 feet and below, the continental slope drops down to the abyssal plain where deep sea communities occur.

Several of the seven habitats mentioned in the MLPA occur in only one depth zone, while others may occur in several depth zones. The area of each depth zone range within the SCSR is provided in Table 7-2, based on the Department (Department 2008b) delineation of depth zones using Geophysical Data System 91m resolution data. Most of the SCSR is less than 328 feet in depth, although there are significant portions that are deeper, especially on the edges of the basins and canyons of the bight. Subregion 1 (the Santa Barbara coast) is the shallowest portion of the SCSR, with a maximum depth of 911 feet. Subregion 7 (the southern Channel Islands) is the deepest portion of the SCSR, with a maximum depth of 3,938 feet off the northeast corner of San Clemente Island. A number of deeper basins lie between the Channel Islands, outside of state waters, the deepest of which lies between Santa Cruz, San Nicolas, and Santa Barbara Islands (Department 2009a).

7.1.2.1.2 Intertidal Zones. The shoreline represents a transition zone between the marine and terrestrial environments and includes many important intertidal ecosystems and communities. Intertidal zones that have been mapped as linear features along the coastline include rocky shores, sandy beaches, tidal flats, coastal marsh along the shores of estuaries and lagoons, and manmade structures such as piers, jetties, and seawalls. Sandy beaches dominate the shoreline although rocky areas also are present, especially on the Channel Islands. Marsh and tidal flat habitats are less common in the SCSR and generally found in sheltered bays and estuaries. The amount of area of shoreline habitats within the SCSR is summarized in Table 7-3 (Department 2009a).

7.1.2.1.3 Rocky Shores. Rocky shore habitats and their associated ecological assemblages make up less than 25 percent of the SCSR shoreline (not including manmade hardened shorelines). Along the mainland coast, rocky shores are relatively rare and are mostly found in the vicinity of headlands such as Point Conception, Palos Verdes, La Jolla Point, and Point Loma. In contrast, much of the shoreline of the eight Channel Islands is dominated by rocky coast. Exposed rocky cliffs and platforms are the most common types of rocky shores, whereas sheltered rocky shores are relatively rare. The amount of shoreline habitat within the SCSR is summarized in Table 7-4 (Department 2009a).

Rocky intertidal communities, from the splash zone to the lower intertidal zone, vary in composition and structure with tidal height and wave exposure and with underlying geology. Mussel beds (*Mytilus* spp.), algal beds (*Endocladia muricata*, *Hesperophycus californicus*, *Silvetia compressa*, and many other species), and surfgrass (*Phyllospadix* spp.) are distributed patchily along rocky shores and support high biodiversity as these organisms

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**TABLE 7-3
TOTAL HABITAT BY TYPE OCCURRING IN STATE WATERS
IN THE STUDY REGION AND STATEWIDE**

Habitat	Amount in Study Region	% of SCSR Area	Amount in State Waters	% of State Waters Area
Total area (area, sq mi)	2,350.88		6,947	
Total shoreline (length, mi)	1,046.45		2,826.5	
Shoreline habitats (length, mi) ¹				
Intertidal: rocky shores	280.72	26.83%	944	33.40%
Intertidal: sandy beaches	379.63	36.28%	1,293.5	45.76%
Intertidal: coastal marsh	59.49	5.69%	320.3	11.33%
Intertidal: tidal flats	28.76	2.75%	280.3	9.92%
Hard and Soft Bottom Habitats and Canyon (Area, sq mi)²				
Total hard- and soft-bottom and canyon habitat	1,667.54		6,947	
Rocky habitat 0–98 feet	111.73	4.75%	209.1	3.01%
Rocky habitat 98–328 feet	47.79	2.03%	233.7	3.36%
Rocky habitat 328–656 feet	3.89	0.17%	139.3	2.01%
Rocky habitat >656 feet	2.16	0.09%	144.2	2.08%
Total rocky habitat (all depths)	165.57	7.04%	726.2	10.45%
Soft bottom habitat 0–98 feet	437.18	18.60%	2,023.3	29.12%
Soft bottom habitat 98–328 feet	672.06	28.59%	3,033.7	43.67%
Soft bottom habitat 328–656 feet	158.39	6.74%	385.4	5.55%
Soft bottom habitat >656 feet	234.34	9.97%	593.7	8.55%
Total soft bottom (all depths)	1,501.97	63.89%	6,036.1	86.89%
Underwater pinnacles	NA		NA	
Estuarine and Nearshore Habitats (Area, sq mi)				
Kelp 2005	30.4	1.29%	42.2	0.60%
Kelp 2004	31.1	1.32%	45.5	0.70%
Kelp 2003	26.3	1.12%	49.3	0.70%
Kelp 2002	13.1	0.56%	36.6	0.50%
Kelp 1999	11.6	0.49%	23	0.30%
Kelp 1989	17.8	0.76%	53.6	0.80%
Average kelp	21.7	0.92%	41.7	0.60%
Estuary	42.95	1.83%	148.5	2.10%
Seagrass: surfgrass (Length, mi, % of shoreline)	72.43	6.92%	NA	

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**TABLE 7-3 (CONTINUED)
TOTAL HABITAT BY TYPE OCCURRING IN STATE WATERS
IN THE STUDY REGION AND STATEWIDE**

Habitat	Amount in Study Region	% of SCSR Area	Amount in State Waters	% of State Waters Area
Seagrass: eelgrass ³	4.69	0.20%	41.7	0.60%
Oceanographic Habitats				
Upwelling center ⁴	1 major center at Point Conception		5 major centers	
Retention area	Gyre within Southern California Bight acts as a retention zone		NA	
Freshwater plume	Coastal river mouths		NA	

Source: Department 2009a.

1. Shoreline percentages may add up to more than 100 percent since more than one type can be present in a given location. Not all shoreline types, such as hardened shorelines, are listed here. Please see below for a list of all shoreline types and their distances in the SCSR.
2. Substrate data represent a union of data collected by Rikk Kvitek from the Seafloor Mapping Lab at California State University Monterey Bay, Fugro Pelagos Incorporated, United States Geological Survey (USGS), Ocean Imaging, and the San Diego Association of Governments (SANDAG).
3. Eelgrass data is comprised of mapped eelgrass in bays and estuaries and does not include areas of eelgrass on the open coast, for which only simple presence/absence data are available.
4. Upwelling occurs when surface waters, driven offshore by prevailing westerly winds, are replaced by deep, cold, nutrient-rich waters that flow up over the continental shelf to the surface. Major upwelling centers in the state include: Cape Mendocino, Point Arena, Davenport, Point Sur, Point Conception.

create structure to which larval organisms can settle and juveniles can find protection from predators and harsh environmental conditions. Such areas are sometimes characterized as “biogenic habitats.” In addition, intertidal boulders, platforms, cliffs, and tidepools are home to many species of snails, algae, barnacles, mussels, anemones, crabs, sea stars, and fish. Also, the mostly rocky shores of the Channel Islands and sandy beaches near rocky points on the mainland coast host a number of rookery/haulout sites for pinnipeds, including harbor seals (*Phoca vitulina richardsi*), California sea lions (*Zalophus californianus californianus*), and Northern elephant seals (*Mirounga angustirostris*), as well as colony/roosting areas for seabirds, including pigeon guillemots (*Cepphus Columba*), pelagic cormorants (*Phalacrocorax pelagicus*), Brant’s cormorants (*Phalacrocorax penicillatus*), and Xantus’s murrelets (*Synthliboramphus hypoleucus*) (Department 2009a).

The following rocky shore types have been mapped in the SCSR by NOAA for the Environmental Sensitivity Index program (Department 2009a):

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**TABLE 7-4
SUMMARY OF THE AMOUNT OF SHORELINE HABITATS IN SCSR**

Shore Type	Length in Study Region (mi)	Percentage of Total Shoreline in SCSR
Exposed rocky cliffs	125.4	12.0%
Wave cut rocky platforms	150.6	14.4%
Exposed wave cut platforms in bedrock	4.1	0.4%
Sheltered rocky shores	0.6	0.1%
Fine to medium grained sand beaches	246.3	23.5%
Coarse-grained sand to granule beaches	59.5	5.7%
Mixed sand and gravel beaches	29.2	2.8%
Gravel beaches	105.8	10.1%
Salt marshes	59.5	5.7%
Exposed tidal flats	20.4	2.0%
Sheltered tidal flats	14.3	1.4%
Sheltered manmade structures	191.4	18.3%
Exposed seawall (manmade)	12.4	1.2%
Riprap (manmade)	135.4	12.9%
Total shoreline length in SCSR	1,046.45	100%

Source: Department 2009a.

- **Exposed Rocky Cliff:** A steep intertidal zone (greater than 30 degrees slope) with little width and little sediment accumulation. Strong vertical zonation of intertidal communities; barnacles, limpets, mussels, and algae are key species groups associated with exposed rocky cliffs. Over half of the rocky shoreline in the SCSR falls into this category.
- **Wave-cut Rocky Platform:** Includes flat rocky bench of variable width with irregular surface and tidepools. The shore may be backed by scarp or bluff with sediments or boulders at base. There may be some sediment accumulation in pools and crevices. Habitat supports rich tidepool and intertidal communities; barnacles, limpets, rockweed, mussels, turfweed (*Endocladia muricata*), and surfgrass are key species groups associated with wave-cut rocky platforms. Nearly half of the rocky shoreline in the SCSR falls into this category. A small amount, near Point Conception, is cut into bedrock.
- **Sheltered Rocky Shores:** This describes bedrock shores of variable slope (cliffs to ledges) that are sheltered from wave exposure. Algae, sea anemones, barnacles, and snails are key species groups associated with sheltered rocky shores. Sheltered rocky shores (not including manmade hardened shoreline) are rare in Southern California and exist in limited locations on Santa Cruz and Santa Catalina islands.

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7.1.2.1.4 Sandy Beaches. Over one third of the SCSR is covered by sandy shorelines with the majority of the mainland coast dominated by nearly continuous sandy beaches. Sandy beach communities are structured in large part by grain size, slope of the beach, and wave energy. Most Southern California beaches are made up of fine-grained sand, however a significant number of coarse-grained gravel beaches exist on the Palos Verdes headland. Beaches with intermediate-sand-grain sizes also exist throughout the SCSR. Beaches are dynamic systems that change with wind and waves; generally, sand is eroded from beaches in the winter and re-deposited in the summer, resulting in annual changes in beach slope and width. Seasonal fluctuations in sand abundance are affected by the creation of hardened shores and of sand-retention structures such as groins. Sandy beaches also change over time, and these long-term changes and erosion rates are also affected by what backs the beach. Beach nourishment, the intentional addition of sand to beaches, occurs within the SCSR in several locations. A variety of invertebrates live in the sand and in wracks of decaying seaweed and other detritus on the sand surface, although accumulation of these materials is moderated in many locations. Snails, bivalves, crustaceans, insects, spiders, isopods, amphipods, and polychaetes are among the organisms that inhabit sandy beaches, and several serve as food sources for larger vertebrates, including the federally endangered western snowy plover. Other species, including the western snowy plover and California least tern and many pinnipeds, utilize sandy beaches for resting or rearing young. Sandy beaches play a central role in the lifecycle of some fish species, such as the California grunion (*Leuresthes tenuis*), which lays its eggs on Southern California beaches throughout the SCSR (Department 2009a).

Beach types in the SCSR have been mapped as linear shoreline features and classified based on grain size (Department 2009a):

- **Fine- to Medium-grained Sand Beach:** A flat, wide, and hard-packed beach which undergoes significant seasonal changes in width and slope. Upper beach fauna are scarce; lower beach fauna include sand crabs. These beaches make up nearly one-fifth of the SCSR and a large percentage of the mainland shore.
- **Coarse-grained Sand Beach:** A moderate-to-steep beach of variable width with soft sediments. It may be backed by dunes or cliffs; fauna are scarce. These beaches are less abundant in the SCSR than fine-grained and gravel beaches. They are often located near river mouths and estuaries.
- **Mixed Sand and Gravel Beach:** A moderately sloping beach with a mix of sand and gravel, possibly including zones of pure sand, pebbles, or cobbles. The sand fraction of such beaches may be transported offshore in winter. More stable substrata support algae, mussels, and barnacles. This is the least abundant beach type in Southern California, occurring mostly in the Channel Islands and in isolated pockets on the mainland coast.

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- **Gravel Beach:** A beach composed of sediments ranging from pebbles to boulders, often steep and with wave-built berms. Lower stable substrata host attached algae and small invertebrates. Gravel beaches, including boulder beaches, make up approximately one-tenth of the shoreline in the SCSR, occurring on the mainland as well as offshore islands, with large portions on Palos Verdes, Santa Catalina, and San Clemente. Although intertidal boulder fields are included with gravel beaches, they can be ecologically similar to rocky intertidal habitats.

7.1.2.1.5 Coastal Marsh and Tidal Flats. Coastal marshes support high levels of productivity and provide habitat for many species. Marshes also regulate the amount of fresh water, nutrient, and sediment inputs into the estuaries and improve water quality through filtration and other natural mechanisms (such as plant uptake). The position of marshes throughout the SCSR along estuarine margins and their dense stands of persistent plants also make them essential for stabilizing shorelines and for storing floodwaters during coastal storms. Vegetation patterns and dominant species in coastal brackish marshes vary with salinity, which is defined by precipitation patterns and changes in freshwater inputs. Tidal flats and marshes occur throughout the SCSR and are often associated with coastal creeks and rivers as well as bays and estuaries (e.g., Santa Clara River, Upper Newport Bay, and San Diego Bay). Constituting less than three percent of the SCSR, these sandy or muddy expanses that are exposed during low tides provide important foraging grounds for shorebirds due to the abundance of invertebrates such as clams, snails, crabs, and worms. The following shoreline types have been mapped as linear features of the coastline (Department 2009a) (see Table 7-4):

- **Salt Marshes:** Intertidal areas with emergent salt marsh vegetation. The width of marsh varies from a narrow fringe to extensive areas and provides important habitat for a variety of species. Salt marsh occurs throughout the SCSR, including Carpinteria, Point Mugu, upper Newport Bay, Bolsa Chica, and numerous other estuaries within the SCSR.
- **Exposed Tidal Flats:** Include intertidal flats composed of sand and mud, occurring in bays and lower sections of rivers. The presence of some wave exposure generally results in a higher presence of sand than in sheltered tidal flats. Sediments in tidal flats are generally water saturated with the presence of infaunal community that attracts foraging shorebirds. Exposed tidal flats are used by birds as roosting sites. Exposed tidal flats are generally more abundant than sheltered tidal flats in the SCSR.
- **Sheltered Tidal Flats:** Include intertidal flats composed of silt and clay, such as mudflats. Present in calm-water habitats and sheltered from wave exposure, they are frequently bordered by marsh. Soft sediments support large populations of worms, clams, and snails, making them important foraging grounds for migrating shorebirds. Sheltered tidal flats are relatively rare in the SCSR.

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- **Hardened (Human-built) Shorelines:** Nearly one-third of the SCSR shoreline is composed of jetties, seawalls, and other manmade structures. Shorelines in and around major ports and harbors, especially the ports of Long Beach and San Diego, tend to be dominated by this shoreline type (Department 2009a).

7.1.2.1.6 Estuaries and Lagoons. Estuaries form at the mouths of rivers and streams where freshwater and saltwater meet. Specific characteristics of estuaries vary based on salinity. This salinity may change seasonally and over longer timeframes depending upon freshwater inputs and creation or removal of barriers between the estuary and the open coast. Two kinds of estuaries exist within the SCSR: bodies of water that are permanently or semi-permanently open to the ocean, and bodies of water that are seasonally separated from the sea by sand bars. The latter of these types, known as “barbuilt estuaries,” generally have a low level of freshwater inputs and are referred to as “lagoons.” Estuaries in the SCSR contain open water and soft-bottom habitats, as well as coastal marsh and tidal flats and eelgrass beds. The SCSR contains at least a portion of nearly 40 estuaries and lagoons. The largest estuaries in the SCSR include Anaheim Bay, Newport Bay, and San Diego Bay, which are large systems with significant habitat diversity, including mudflats, shallow areas, and deeper channels. Several other estuaries, such as Mugu Lagoon and Bolsa Chica Wetlands, are relatively large, while most other estuaries and lagoons are under 0.5 square miles in area. Many of these smaller estuaries are seasonally closed to tidal influence by sand bars. The southern portion of the SCSR, particularly from the Long Beach waterfront to the California/Mexico border, has a number of medium- to small-sized estuaries and lagoons. The aerial extent of estuaries in the entire SCSR totals 36.6 square miles, or 1.6 percent of the region. The location and extent of some estuaries and lagoons have changed in recent years as a result of coastal restoration projects. Estuarine restoration projects within the SCSR that have occurred in recent years include efforts within Mugu Lagoon, the Ballona Wetlands, Malibu Lagoon, Bolsa Chica Wetlands, and the Tijuana River Estuary, among others. Throughout the SCSR, especially in the vicinity of major ports and harbors, areas that were historically estuaries have been lined with seawalls, riprap, and other manmade structures (Department 2009a).

Estuaries and lagoons are productive coastal ecosystems that play a key role as nursery habitat for many coastal invertebrates and fish. Estuaries in the SCSR tend to have low freshwater inputs, and therefore generally lack freshwater and anadromous species, such as salmon. Exceptions include small runs of Pacific lamprey as well as small runs of federally endangered Southern California steelhead (*Oncorhynchus mykiss irideus*). In addition, some estuaries host striped mullet, the only species in California to live mostly in freshwater and only return to the ocean to breed. Key species that spend most of their lives in Southern California estuaries include Pacific staghorn sculpin (*Leptocottus armatus*), bay blenny (*Hypsoblennius gentilis*), bay pipefish (*Syngnathus leptorhynchus*), arrow goby (*Clevelandia ios*), cheekspot goby (*Ilypnus gilberti*), shadow goby (*Quietula y-cauda*), as well as California killifish (*Fundulus parvipinnis*), spotted bass (*Micropterus punctulatus*), barred

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sand bass (*Paralabrax nebulifer*), and several species of anchovy (*Engraulis* spp.) and the federally endangered tidewater goby (*Eucyclogobius newberryi*). Species that utilize estuaries seasonally, or for part of their life cycle, include topsmelt (*Atherinops affinis*), California halibut (*Paralichthys californicus*), yellowfin croaker (*Umbrina roncador*), stingray (*Dasyatis* spp.), sharks, and several species of perch and turbot. In addition, coastal bays and estuaries in the region, such as the Tijuana River Estuary, San Diego Bay, Bolsa Chica Wetlands, Mission Bay, and Mugu Lagoon, are important parts of the Pacific Flyway and host thousands of shorebirds and waterfowl on their migrations. Since estuaries and lagoons provide important habitat linkages between marine, aquatic, and terrestrial habitats, their condition is closely tied to the condition of the surrounding watershed. Estuaries provide critical ecosystem services such as filtering sediments and nutrients from the watershed, stabilizing shorelines, and providing flood and storm protection. Estuaries are also utilized for many recreational activities such as fishing, boating, kayaking, wildlife viewing, and interpretation/education activities. The following are brief descriptions of some of the major estuaries and lagoons within the SCSR (Department 2009a):

- **Devereux Lagoon (Slough):** This lagoon and associated finger sloughs are part of 70 acres of wetland habitat inside the 117-acre Coal Oil Point Reserve owned by the University of California Natural Reserve System. The University of California, Santa Barbara's (UCSB) Long Range Development Plan designates the Coal Oil Point Reserve as an Environmentally Sensitive Habitat Area. As a part of the University of California Natural Reserve System, the area is reserved for habitat and wildlife preservation, public education, and academic research. The slough is tidally influenced only during short periods in the winter. A beach berm forms at the mouth of the slough during drier months. Five estuarine fish species are known to occur in the lagoon as well as several special-status coastal birds: common loon (*Gavia immer*), American white pelican (*Pelecanus erythrorhynchos*), brown pelican, double-crested cormorant (*Phalacrocorax auritus*), white-faced ibis (*Plegadis chihi*), osprey (*Pandion haliaetus*), southern bald eagle (*Haliaeetus leucocephalus*), northern harrier (*Circus cyaneus*), peregrine falcon (*Falco peregrinus anatum*), snowy plover (*Charadrius alexandrinus nivosus*), California gull (*Larus californicus*), elegant tern (*Thalasseus [Sterna] elegans*), and black tern (*Chlidonias niger*).
- **Goleta Slough:** Goleta Slough is a small estuary that is part of a larger fragmented wetland area around the UCSB campus and the Santa Barbara Municipal Airport. Within the wetlands area is approximately 101 acres of salt marsh, 15 acres of mudflat, and 4 acres of salt flat. Extensive areas of the historic marsh below the high tide line are isolated from tidal influence by berms and dikes. Tidal flooding is limited to the south-central portion of the slough, extending into several of the major tributaries. A beach berm is mechanically breached periodically to maintain tidal flooding. Fish species in the slough are predominately grunions (which spawn near the mouth), killifish, topsmelt, arrow goby, and mosquitofish (*Gambusia affinis*). Twenty special-status bird species

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have been identified: California brown pelican, southern bald eagle, peregrine falcon, snowy plover, sandhill crane (*Grus canadensis*), common loon, American white pelican, double-crested cormorant, whitefaced ibis, fulvous whistling-duck (*Dendrocygna bicolor*), harlequin duck (*Histrionicus histrionicus*), northern harrier, golden eagle, osprey, longbilled curlew (*Numenius americanus*), California gull (*Larus californicus*), elegant tern (*Thalasseus elegans*), and black skimmer (*Rynchops niger*), Belding's savannah sparrow (*Passerculus sandwichensis beldingi*), and California horned lark (*Eremophila alpestris actia*). The Goleta Slough Management Committee, composed of agency representatives, property owners, and public interest groups, has been established to make recommendations and review the Goleta Slough Ecosystem Management Plan and its ongoing implementation.

- **Carpinteria Salt Marsh:** This salt marsh and associated reserve are located in Santa Barbara County, due west of the city of Carpinteria, and 20 miles east of the UCSB campus. The total habitat area for the entire reserve is 230 acres, of which the University of California owns 120 acres. This reserve includes an estuary, extensive wetland and channel habitats, and some upland habitats. The reserve supports many sensitive plants, such as the salt marsh bird's-beak, and bird species such as the light-footed clapper rail (*Rallus longirostris levipes*) and Belding's Savannah Sparrow. It is also an important regional nursery area for California halibut (*Paralichthys californicus*) and other marine and estuarine fish. As part of the Ash Avenue Restoration Project, an on-site interpretative center, a teaching amphitheater, and a nature trail have been provided to enhance public outreach at the Carpinteria Salt Marsh Nature Park.
- **Mugu Lagoon:** Mugu lagoon is part of a wetlands area owned by the U.S. Navy and is within the Point Mugu Naval Air Warfare Weapons Station. The lagoon comprises 287 acres of open water, 128 acres of tidal flats, 40 acres of tidal creeks, and 944 acres of tidal marsh. The tidal connection is through an inlet in the barrier beach, which migrates seasonally. The tidal prism is described as large relative to the volume of water remaining in the lagoon at low tide. Fish surveys collected 18 species, with topsmelt, California killifish, mosquitofish, arrow goby, staghorn sculpin, and arroyo chub occurring most frequently. The following special-status birds have been reported within the lagoon: Pacific loon (*Gavia pacifica*), ashy storm-petrels (*Oceanodroma homochroa*) and black storm-petrels (*Oceanodroma melania*), American White and California brown pelicans, double-crested cormorant, least bittern, white-faced ibis, fulvous whistling-duck, harlequin duck, Barrow's goldeneye (*Bucephala islandica*), osprey, bald eagle, northern harrier, Swainson's hawk (*Buteo swainsoni*), peregrine falcon, sandhill crane, long-billed curlew, laughing gull (*Leucophaeus atricilla*), California gull, elegant tern, black tern, black skimmer, Xantus's murrelet, rhinoceros auklet (*Cerorhinca monocerata*), large-billed savannah sparrow (*Passerculus rostratus*), and tricolored blackbird (*Agelaius tricolor*). Harbor seals use the beach and sand bars near the lagoon mouth for hauling out

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and pupping. Several wetlands restoration projects have been undertaken by the Navy in the lagoon since 1995.

- **Malibu Lagoon:** The California Department of Parks and Recreation owns the Malibu Lagoon, which is located at the mouth of a canyon where Malibu Creek meets the Pacific Ocean, and comprises 28 acres of estuarine open water, tidal channels, and mudflats. An additional 18 acres of salt marsh are adjacent to the lagoon. Year-round flow, caused by irrigation water inputs, creates a higher summer water level than would occur naturally. Treated wastewater is discharged upstream of the lagoon as well, although it is prohibited during the dry season (April through November). A number of estuarine species, including California grunion, as well as endangered Southern California steelhead and tidewater gobies, utilize the estuary. Special-status birds, including the California brown pelican, California least tern, Double-crested Cormorant, California Gull, western snowy plover, and Elegant Tern, have been reported from the lagoon. Restoration efforts are underway to increase tidal circulation, create additional islands for bird usage, and expand salt marsh habitat.
- **Ballona Wetlands:** The Ballona Wetlands are adjacent to Marina Del Rey in Los Angeles County. The Ballona Wetlands are divided into three areas totaling 543 acres in size, although historically the wetlands covered over 2,000 acres. The Ballona Wetlands are divided by Ballona Creek and several major roads. There is also a Freshwater Marsh, built between 2001 and 2003 as part of mitigation for a nearby development project, on the southeastern edge of the wetlands. Ballona Creek is channelized through the wetlands; the sides are lined with concrete, paving stones, and riprap, although the channel bottom is not armored. The Ballona Creek watershed drains 130 square miles. Approximately 170 species of plants, 44 species of fish, and numerous bird species are found in and around the wetlands. California least terns and Peregrine Falcons, both endangered species, forage at Ballona Wetlands, while many other species of birds make their home there. Extensive restoration efforts have taken place in the wetlands in recent years, and continue today. Much of the area was recently designated the Ballona Wetlands Ecological Reserve by the Commission. Public access to the wetlands includes bike and walking trails.
- **Anaheim Bay:** Anaheim Bay is one of the largest estuaries in Southern California, with a total of 956 acres. Designated as a National Wildlife Refuge in 1972, this relatively undisturbed salt marsh is highly productive and has provided for rapid growth of some fish species. Fish species found within the bay include topsmelt, goby, anchovy, killifish, California grunion, and pipefish. Special-status birds found within the bay include California least tern and light-footed clapper rail, brown pelican, double-crested cormorant, western snowy plover, California gull, and elegant tern. The establishment of the U.S. Naval Weapons Station at Seal Beach has limited non-military access to the area and contributed to the preservation of this wetland. Dredging of the mouth of the bay has allowed for tidal flow.

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- **Bolsa Chica Wetlands:** Bolsa Chica historically encompassed 2,300 acres of tidally influenced wetlands and large expanses of freshwater wetlands, but this area has been greatly altered over the last 100 years. The Bolsa Chica Wetlands are located in the unincorporated portion of Orange County, surrounded by the city of Huntington Beach, and bordered to the west by the Pacific Coast Highway. Beginning in 1899, much of the historical marsh area had been removed from tidal influence through the construction of a dam, duck hunting ponds, oil drilling pads, and attendant access roads. However, in 2006 nearly 600 acres of Bolsa Chica were returned to tidal flow as the result of the construction of a new ocean inlet. The new inlet was part of a \$148-million restoration project begun in 2004. Inner and Outer Bolsa Bays are not connected to the newly restored wetland. Outer Bolsa Bay is directly connected to Huntington Harbor. Inner Bolsa Bay is owned by the Department and designated as an ecological reserve. The Bolsa Chica Ecological Reserve, which includes Inner Bolsa Bay, has a controlled tidal regime (through the use of flood gates to Outer Bolsa Bay), which fluctuates around mean sea level. A total of 18 different species of fish have been identified in the Outer Bolsa Bay; topsmelt and arrow gobies are the most abundant. California killifish, bay pipefish, Pacific staghorn sculpin, longjaw mudsuckers, diamond turbot, California grunion, and California halibut are also present. Forty-one fish species have been identified in the newly restored full tidal basin. Special-status bird species include: the common loon, American white pelican, California brown pelican, double-crested cormorant, reddish egret (*Egretta rufescens*), elegant tern, white-face ibis, light-footed clapper rail, western snowy plover, long-billed curlew, California gull, California least tern, black tern, elegant tern, black skimmer, and northern harrier. A state marine park exists within this wetland, in addition to the Bolsa Chica Ecological Reserve.
- **Huntington Beach Wetlands Complex:** The complex is located in Orange County near the mouth of the Santa Ana River. The entire complex includes the 168-acre muted tidal Newport Slough, which connects to the ocean through the tidal prism of the Santa Ana River. The Huntington Beach Wetlands Conservancy owns 118 acres of wetlands between the Santa Ana River and Newland Street. These wetlands are divided into parcels and include Talbert Marsh, Brookhurst Marsh, Magnolia Marsh, Newland Marsh, and the Waterfront Wetlands. The restored Talbert Marsh, 25 acres in extent, is the only portion of the wetlands complex connected directly to the ocean through an inlet on Huntington State Beach, and it serves as a refuge for hundreds of species of birds, fish, and other wildlife.
- **Upper Newport Bay:** Upper Newport Bay is located in the town of Newport Beach and receives water from a 154-mile watershed with San Diego Creek and Santa Ana-Delhi Channel draining into the bay. Many different habitat types exist in Upper Newport Bay, including brackish marshes, riparian zones, upland, open water, and mud flats. The diversity of these habitat types helps support a broad and diverse group of species. Upper Newport Bay is considered one of the most important birding sites in North America;

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approximately 200 resident birds inhabit the bay and another 30,000 birds may rest there during migratory season. The Upper Newport Bay Ecological Reserve was established in 1975 and consists of 752 acres of open space, and is managed by the Department. The Community-Based Restoration and Education Program was established in Upper Newport Bay to address environmental degradation within the estuary, including pollution from nonpoint and point sources and siltation. This program has initiated water quality monitoring, annual clean-up events, exotic weed eradication, and habitat restoration efforts.

- **San Mateo Creek and Lagoon:** San Mateo Creek is one of the few undammed creeks in Southern California, making it one of the few creeks where Southern California steelhead can be found. San Mateo Creek flows 22 miles from its headwaters to the Pacific Ocean where it exits just south of the city of San Clemente. At the mouth of San Mateo Creek lies the San Mateo Lagoon, located in the San Onofre State Park. The lagoon is a blind estuary protected from the Pacific Ocean by a sandbar that is breached only after heavy storms. A restoration project to return a sustainable population of Southern California steelhead to the creek has been initiated with funding from Proposition 12, passed in 2000.
- **Agua Hedionda Lagoon:** Agua Hedionda Lagoon is 388 acres in size and located in the city of Carlsbad. The associated 29-square-mile watershed drains into the lagoon via Aqua Hedionda Creek and Buena Creek. The lagoon hosts a number of species, including 81 species of birds, 91 species of fish, and at least 76 benthic invertebrate taxa. The lagoon has been divided into three sections due to transportation infrastructure of Interstate 5. Culverts connect the three sections of the lagoon. The Encina Power Plant, owned by NRG Energy, is situated along the southern edge of the two outermost lagoon sections. The power plant is permitted to withdraw up to 860 million gallons of seawater per day from the lagoon for once-through cooling. There is also a commercial aquaculture facility, Carlsbad Aquafarm, which uses the outer lagoon for growing oysters, mussels, clams, and other seafood, and the Hubbs Sea World Research Institute operates a lab facility on the northern edge of the lagoon which produces hatchery-reared white seabass for ocean enhancement. A portion of the inner lagoon is considered an impaired water body, as it exceeds standards for Coliform bacteria and sediment. The mouth of the lagoon is periodically dredged to maintain tidal flow.
- **Batiquitos Lagoon:** Batiquitos Lagoon is a tidal wetland situated between Carlsbad and Encinitas and is home to 185 bird species, 65 fish species, and a diverse group of marsh, wetland, and upland plants. This coastal lagoon includes upland, intertidal, and openwater habitats. The lagoon is 610 acres in size and associated with a particularly large watershed of 55,000 acres, which drains into the lagoon. As part of a mitigation plan with the Port of Los Angeles, the Batiquitos Lagoon Enhancement Project has been established in recent years, and restoration efforts took place from 1994 to 1997, which

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focused on removing sediment buildup, restricting further fine sediment deposition, and reestablishing tidal flow into the lagoon.

- **San Elijo Lagoon:** The San Elijo Lagoon is a shallow-water estuary located between Solana Beach and Encinitas which supports a well-established community of 319 species of birds, 23 species of fish, 20 species of amphibians and reptiles, and 400 different plants. An 80-square mile watershed drains into the lagoon, mainly via Escondido Creek. The lagoon has been altered by the construction of the railroad, Pacific Coast Highway, and Interstate 5, which all run through the wetland and divide it into restricted basins. Over time, land alteration, reductions in water circulation, loss of tidal flow, and increasing pollution from land uses has resulted in environmental impacts in the lagoon. Through a joint public-private partnership with the County of San Diego, state and federal agencies, and a local conservancy, the 1,000-acre San Elijo Lagoon Ecological Reserve was established in 1983. A need for restoration was identified in the early 1990s and efforts have included periodic dredging and reestablishment of tidal flow.
- **San Dieguito River Mouth Estuary:** The San Dieguito Lagoon is part of the San Dieguito River system, which is located in central San Diego County in the city of Del Mar. The lagoon extends to the Del Mar Beach, although it is often closed off by the beach berm. The watershed drainage area is 346 square miles. Surrounding land uses include undeveloped land (greatest area), open space, and urban areas (least area). Land-use impacts on San Dieguito Lagoon include urban runoff, historic sewage outfalls (closed in 1974), and sedimentation infill. Various restoration efforts have taken place to improve the health of the lagoon's ecosystem, including dredging sediment deposits to increase tidal flushing and keep the river outlet open to the ocean.
- **Los Peñasquitos Lagoon:** Los Peñasquitos Lagoon is 636 acres in size and located north of San Diego in between the cities of La Jolla and Del Mar. The majority of this lagoon is set aside as a state preserve and part of Torrey Pines State Natural Reserve. Approximately 60,000 acres of watershed drain into the lagoon from Carmel Creek and Los Peñasquitos Creek, as well as other small tributaries. Shallow channels, open water, marshes, mudflats, and tidal flats are the major habitats within the lagoon, which supports a broad range of plants, fish, birds, and invertebrates. Los Peñasquitos Lagoon has been degraded over the years due to various land-use changes and development that impeded tidal flow from Highway 1, and local railroad and sewer system development. Two sewage outfalls drain into Los Peñasquitos Lagoon. Urban runoff has contributed to degraded water quality while sedimentation has reduced ocean flow. In response to the anthropogenic impacts on this lagoon's ecosystem, an enhancement program was developed in 1983. This program was able to make open-space land acquisitions, dredge to restore tidal flow, restore habitat, and restore water flow under the infrastructure.
- **San Diego Bay:** San Diego Bay encompasses 22 square miles and is the third-largest bay-estuary system in the state of California, after San Francisco Bay and Humboldt Bay. San Diego Bay contains a number of diverse habitats, including tidal flats, salt marsh,

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and eelgrass beds, especially in the southern portion of the bay. These habitats support many fish species, including anchovy, topsmelt, stingray, bat ray, sand bass, and grunion. Eelgrass beds in San Diego Bay also support the threatened Pacific seahorse (*Hippocampus ingens*) and endangered green sea turtle (*Chelonia mydas*). Several federally listed bird species also utilize the bay, including California least tern, Light-footed Clapper Rail, California brown pelican, Least Bell's Vireo, and the western snowy plover. Sweetwater Marsh, located adjacent to the southern portion of San Diego Bay, encompasses 316 acres of habitat and is designated as a National Wildlife Refuge. The marsh is one of very few locations where salt marsh bird's beak grows.

- **Tijuana River Estuary:** The 2,500-acre estuary was established as a National Estuarine Research Reserve in 1981 and a Wetland of International Importance by the Ramsar Convention in 2005. The estuary is surrounded by the cities of Tijuana, Imperial Beach, and San Diego, and 75 percent of its watershed is in Mexico. Over 370 bird species use the Tijuana River Estuary, which is a key stopover location on the Pacific Flyway. These bird species include the endangered lightfooted clapper rail, California least tern, least Bell's vireo and the California brown pelican. The Tijuana River Estuary is highly variable due to extreme changes in streamflow between wet and dry years. The habitats found within the estuary include beaches, dunes, mud flats, salt marshes, and riparian zones. The estuary is home to at least 29 species of fish, including longjaw mudsucker, California killifish, and arrow goby. The Tijuana River Estuary has had problems with water quality and sedimentation and continues to be threatened by urban, agricultural, and industrial pollutants contained in inflows from the watershed.

7.1.2.1.7 Seagrass Beds. Seagrass habitats are extremely productive ecosystems that support an abundant and biologically diverse assemblage of aquatic fauna. The most common type of seagrass in estuaries and sheltered coastal bays in California is eelgrass (*Zostera marina*). A second variety of eelgrass occurs along the open coast in Southern California, *Zostera pacifica*. Eelgrass is a flowering plant that can form extensive and dense beds which provide a variety of important functions. The long leaves and dense, matted root system of eelgrass beds help prevent erosion and maintain stability in nearshore areas by slowing down water flow, which consequently enhances sediment accumulation and increases recruitment of animal species. Eelgrass beds also provide refuge, foraging, breeding, or nursery areas for invertebrates, fish, and birds. Eelgrass beds are known to be located in protected estuaries and bays throughout the SCSR (e.g., San Diego Bay, Newport Bay, Mission Bay, and Mugu Lagoon historically). Eelgrass beds are also located along the mainland coast and have been found at six of the eight Channel Islands (Santa Rosa, Santa Cruz, Anacapa, San Nicolas, Santa Catalina, and San Clemente islands). The distribution of seagrass along the SCSR has been mapped as linear segments that total 4.69 square miles, or 0.2 percent of the SCSR area, though this figure under-represents the amount of eelgrass present in the SCSR as it does not include open coast eelgrass beds (Department 2009a).

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The most common type of seagrass along the open coast is surfgrass (*Phyllospadix* spp.), also a flowering plant, which forms beds that fringe rocky coastline areas from the zero-tide level to approximately ten to fifteen feet below the zero-tide level. Surfgrass habitat in the SCSR is not well mapped, although its distribution has been mapped by Woodward-Clyde Consultants (1982) as linear segments that total 72 miles, or 6.9 percent of the shoreline, located mostly off the northern Channel Islands as well as off Point Conception, and along the San Diego County coast. Surfgrass serves as an important nursery habitat for a variety of fish and invertebrates, including the California spiny lobster (*Panulirus interruptus*), and as habitat for algae (Department 2009a).

7.1.2.1.8 Kelp Forests. Two different types of kelp forests occur in the state; giant kelp (*Macrocystis pyrifera*) and bull kelp (*Nereocystis lutkeana*), identified as separate habitats for the purposes of this document since each type of kelp forest hosts distinguishable assemblages of organisms. Except for a few records from San Miguel Island, bull kelp does not occur in Southern California; however, the related deepwater elk kelp (*Pelagophycus porra*) occurs at depths of 60–270 feet on rock and sand along the mainland (e.g., Point Loma) and at several of the Channel Islands (Santa Catalina, San Clemente, Santa Barbara, and Santa Cruz). Other kelps typically are smaller or low-lying and may be referred to as understory canopy kelps. These include palm kelps (*Eisenia arborea*, *Pterygophora californica*), boa kelp (*Egregia menziesii*), and oarweeds (*Laminaria* spp., *Agarum fimbriatum*). Giant kelp makes up the most well-known type of kelp forest in the SCSR (Department 2009a).

Giant kelp forms dense canopy areas that are utilized by many kinds of marine life. Giant kelp forests generally form over rocky substrate, thus they are somewhat limited within the SCSR. Areas of particular kelp abundance include Point Conception, Coal Oil Point, Point Dume, Palos Verdes Point, La Jolla Point, Point Loma, and the vicinity of the offshore islands, most notably San Miguel, Santa Rosa, San Nicolas, and San Clemente islands. Giant kelp forests within the SCSR are well mapped at fine-scale resolution. Total kelp abundance in the SCSR has ranged from a low of 12 square miles in 1999, to a high of 31 square miles in 2004. Kelp harvesting is allowed within the SCSR and regulated by the Department (Department 2009a).

Abundance of kelp varies seasonally over time and is affected by biotic and abiotic factors. Studies have shown that distribution and abundance of kelp beds are affected by climatic and oceanographic changes, abundances of grazers, and fishing and other anthropogenic influences. Grazers, especially sea urchins, can play a large role in the abundance and distribution of kelp. Urchin populations can be directly affected by predation by animals such as sea otters, by urchin fishing, and by higher ocean temperatures which may promote disease development or physiological stress which increases mortality. Lobsters and California sheephead, which also are commercially fished, play an important role in limiting urchin populations and, therefore, indirectly affect the abundance of kelp. Sea otters, a major

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urchin predator, are found only in small numbers in the SCSR. Reefs denuded of kelp by sea urchins (e.g., at Santa Barbara, Anacapa, and Santa Cruz islands) would probably return to productive kelp forests in the presence of sea otters or by high recruitment and increased abundance of larger individuals of other urchin predators such as California sheephead (Department 2009a).

Kelp forests are among the most productive marine habitats along the coast of California providing habitat, feeding grounds, and nursery areas for many species of fishes and invertebrates. Juveniles of many nearshore rockfish species occur in the mid-water or upper kelp canopy. Juveniles and adults of many nearshore rockfish species, as well as cabezon, greenlings, lingcod, and many other species, associate with bottom habitats in kelp forests. Giant kelp also provides nutrient subsidies to sandy beaches as wrack washed in tides, forming the basis of the detritus food chain for beach invertebrates and shorebirds (Department 2009a).

While most giant kelp is established on hard or rocky substrate, which allows newly-formed haptera (root-like structure) to attach, there have been documented cases of kelp utilizing polychaete worm tubes as substrate in the soft sediment. After such kelp organisms die, the attached holdfast remains, leaving a substrate for more kelp to grow from. Large giant kelp beds of this nature have grown in the nearshore water off of Santa Barbara County, and existed there until the early 1980s. After large storm events from the 1982/1983 El Niño, most of the giant kelp was ripped out of this area and this unique soft sediment kelp community was nearly wiped out. Subsequent restoration attempts were performed in this area.

During the 1950s and 1960s, forests of giant kelp that were once productive off Orange, San Diego, and Los Angeles counties began to deteriorate. Several factors may have contributed to this decline: pollution from domestic and industrial wastes, increased water turbidity from urban runoff, increased sea urchin grazing caused by a reduction in predators, storms, and low nutrients and high temperatures caused by El Niño conditions. In an attempt to reverse the decline of Southern California kelp forests, various kelp restoration projects have occurred in: Del Mar, in San Diego County; Newport Beach, Laguna Beach and at Reef Point in Orange County; along the inside of the Long Beach Breakwater, the Palos Verdes Peninsula, and Escondido Beach in Los Angeles County; and Carpinteria Reef, Tajiguas Kelp Habitat, and Gaviota and Hope Ranch in Santa Barbara County (Department 2009a).

As of 2008, three organizations have active kelp-restoration projects in the SCSR: Santa Monica Baykeepers works to restore kelp in Escondido Beach in Malibu and the Palos Verdes Peninsula, the Aquarium of the Pacific has been active in restoring Crystal Cove State Park and Laguna Beach sites, and MBC Applied Environmental Sciences has been restoring sites at Laguna Beach in Orange County. Several techniques have been used to reestablish and restore kelp beds that have either been lost or destroyed by natural or

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manmade processes. Some of these techniques include sea urchin control, kelp transplanting, competitive seaweed control, suitable substrate addition, using concentrated sporophyll bags to seed the restoration site, and securing plants into the sediment. Kelp also can be restored or introduced into areas through the use of properly designed artificial reefs. Artificial reefs, such as those at Mission Beach, Topanga, and Pitas Point may be designed to provide habitat for kelp. All three reefs listed above have produced kelp canopies. In 1999, Southern California Edison constructed an extensive experimental reef designed to recruit and sustain kelp canopies off San Mateo Point as part of an agreement to mitigate for canopies lost due to the operation of the San Onofre Nuclear Generating Station. This experiment proved to be successful and led to a larger reef which was completed in 2008. The reef was constructed with quarry rock from Santa Catalina Island and spans approximately 150 acres. This reef was designed specifically to mimic natural reefs (Department 2009a). See Figures 7-7 through 7-12 for additional information on kelp habitat coverage within the SCSR.

7.1.2.1.9 Purple Hydrocoral. Although not typically considered a habitat type, the SAT has included Purple hydrocoral on a list of key and unique habitats for the SCSR (Department 2009a). Little-known colonies of purple hydrocoral (*Stylaster californicus* [*Allopora californica*]) inhabit subtidal depths (up to 315 feet) from Vancouver Island (Canada) to central Baja California (Mexico). Hydrocoral colonies occur on current-swept rocky reefs and pinnacles. These purple or pink-red hydrocorals resemble small branching tropical staghorn coral (to 53 cm). Sessile, filter-feeding adults produce planktonic larvae with limited dispersal. Slow-growing (approximately 0.8 cm per year) colonies may live well over 30 years. At least four obligate commensals are supported by the hydrocoral colonies: two polychaetes, one snail, and one barnacle (Department 2002c).

Since this hydrocoral keeps its purple color when dried, it has been commercially harvested in the past for sale in shell shops. The fishery is presently closed and purple hydrocoral is a protected species. The slow growth and limited dispersal of the purple hydrocoral suggests that it may be particularly sensitive to disturbance and fishery pressure. Colony branches are easily broken by anchors and divers. Purple hydrocoral has no known predators. However, colonies are susceptible to overgrowth by algae or smothering by sedimentation. Purple hydrocoral is rare, at least within scuba diving depths. Its abundance in deepwater is largely unknown, although U.S. Department of the Interior, Bureau of Land Management (BLM) surveys assessed abundances at Tanner and Cortes Banks, south of San Nicolas Island (Department 2002a), while Love et al. (2010) surveyed this species at Farnsworth Bank, west of Santa Catalina Island. The latter study found a wide variety of fishes typical of nearshore Southern California reefs present in an area heavily colonized by purple hydrocoral.

7.1.2.1.10 Sandy/Soft Bottoms. Soft-bottom habitats are the predominant habitat on the continental shelf and slope throughout the SCSR. Nearshore and offshore environments include soft-bottom habitats in areas that range from flat expanses to slopes and basin areas. Soft-bottom habitats vary depending on the type of sediment; sediments made up of silt and

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clay are high in organic carbon, and polychaetes and gastropods dominate the infauna. By comparison, sediment composed mainly of sand particles has less organic carbon and the most common infauna are ostracods, amphipods, and pelecypods. Soft-bottom habitats can be highly dynamic in nature as sediments shift due to wave action, bottom currents, and geological processes (Department 2009a).

Soft-bottom habitats are more common, yet less diverse than hard-bottom habitats at all depth zones, covering over 60 percent of the entire SCSR. Soft-bottom species are generally bottom-dwelling invertebrates and fishes, and many have special adaptations for the habitat, such as flattened bodies and concealing coloration. The distribution of species in soft-bottom habitats is approximately 80 percent crustaceans, 10 percent microbenthos, 5 percent demersal fish, and 5 percent macrobenthos. In shallow waters, marine communities are less diverse in wave-influenced, ripple-marked sand habitats compared to calm-water, stable sand bottoms that can host a variety of invertebrates and fishes within and above the sand, as well as algae attached to worm tubes and eelgrass beds providing biogenic habitat. In deeper soft-bottom habitats, the population density lowers with depth, while the standing crop increases with depth; this makes for unique species assemblages at the various depths. Anthropogenic discharge has been associated with the degraded health and quality of soft-bottom habitat and studies have found demersal fish are negatively impacted by outfall discharge (Department 2009a).

7.1.2.1.11 Hard Bottom/Rocky Reefs. Hard-bottom habitats (also called rocky reefs) are much less common than soft substrata in the SCSR at all depth zones, covering about seven percent of the SCSR. The species that associate with hard bottoms differ greatly with depth and type of substratum; the amount of topographic relief changes with gravel, cobble, boulders, and smooth rock outcrop. Rocky reefs provide hard substratum to which kelp and other algae can attach in the nearshore zone (<100 feet depth). In addition, many invertebrates such as deep sea corals, sea fans, sponges, and anemones require hard substratum for attachment in deeper waters. In addition to attached organisms, the structural complexity of rocky reefs provides habitat and protection for mobile invertebrates and fish. Hard-bottom habitats in each depth zone are considered to be separate habitats due to differences in associated species. In addition, the ecological assemblages associated with rocky habitats also can be influenced by the type of rock, as for example, sedimentary versus granitic reefs, or size of substrata, such as cobble versus boulder. Rocky reefs in each of these geologically different zones support distinct ecological assemblages.

A number of artificial reef structures exist within the SCSR. These artificial reefs are designed to mimic rocky reef habitats and have been constructed from a variety of materials (Department 2009a).

7.1.2.1.12 Natural Oil Seeps. Natural oil seeps are found offshore in the bight from Point Conception to Huntington Beach. These seeps are not rare off Southern California, although

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they occur nowhere else in state waters (Department 2009a). In the area of Coal Oil Point, Santa Barbara County, seepage has been estimated to occur at a rate of 50 to 70 barrels of oil per day. In general, the oil released from seeps is moved by currents and wind to the shoreline, either on the mainland coast, or the Channel Islands. Studies have shown no lasting detrimental effect on the marine environment from these natural oil seeps (Department 2009a).

While oil seeps were not considered a habitat type in previous MLPA study regions, the SAT has included them on a list of key and unique habitats for the SCSR, and benthic communities and environmental conditions around oil seeps are considered to differ from those in surrounding areas (Department 2009a). For example, old tar mounds surveyed by a remotely operated vehicle off Point Conception were found to be heavily colonized by invertebrates and resembled reef communities found on submarine rock outcrops (Lorenson et al. 2007).

7.1.2.1.13 Underwater Pinnacles. Pinnacles are vertical rocky features that are scores of feet in diameter and height, with a cone-shaped geometry. Pinnacles can be distinguished from large boulders by their geologic origin. Pinnacles are generally a product of in-place erosional processes acting on rocky outcrops, while boulders are the result of erosional processes in other locations and resulting movement of large rocks. Pinnacles are located in state waters along the SCSR, especially near the Channel Islands, but have not been well mapped; they can be important bathymetric features that attract certain fish and invertebrate species. Pinnacles in the SCSR are not categorized separately from other hard-bottom habitats (Department 2009a).

7.1.2.1.14 Submarine Canyons. Several submarine canyons are located within the SCSR. The most important canyons are located in waters near Point Hueneme, Point Mugu, Point Dume, Santa Monica Bay, Palos Verdes Point, Huntington/Newport Beach, La Jolla, and at the Channel Islands. Submarine canyons provide areas of high bathymetric complexity, support unique deep water communities, and affect local and regional circulation patterns. Submarine canyon habitats receive sediment and detrital material from adjacent shallow areas and act as conduits of energy to deeper offshore habitats. Canyons provide habitat for young rockfish and flatfish that settle in nearshore waters to grow and move offshore as adults. In addition, concentrations of forage species found near submarine canyons are important for seabirds and marine mammals (Department 2009a).

7.1.2.1.15 Offshore Rocks and Islands. Southern California has several large offshore islands, as well as numerous offshore rocks, that play a significant role within the SCSR. Eight major islands, as well as many smaller rocks and islets, are located within the SCSR. While offshore rocks and islands are not identified as separate habitats, these areas do represent unique areas within the SCSR. Some of these islands and offshore rocks are described below.

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The Channel Islands. The Channel Islands comprise two distinct biogeographic regions. In the first of these, San Miguel, Santa Rosa, and San Nicolas islands, and the west side of Santa Cruz Island are bathed in the cooler, nutrient-rich waters of the California Current. In the other bioregion, the east end of Santa Cruz Island and Anacapa, Santa Barbara, Santa Catalina, and San Clemente islands are bathed in the warmer waters of the California Countercurrent and share a unique suite of associated species. The four northern Channel Islands—San Miguel, Santa Rosa, Santa Cruz, and Anacapa—and Santa Barbara Island in the southern Channel Islands, and their surrounding waters out to 1 nautical mile were designated as a National Park, and waters surrounding the islands up to 6 nautical miles offshore were designated as a National Marine Sanctuary in 1980 (Department 2009a).

A network of MPAs encompassing the historical reserve was established in state waters in 2003. The MPAs were expanded into federal waters in 2006 and 2007. There are 11 marine reserves and 2 marine conservation areas in state and federal waters around the 4 northern Channel Islands and Santa Barbara Island. MPAs encompass approximately 21 percent of the Channel Islands National Marine Sanctuary, leaving 79 percent open to consumptive recreational and commercial activities regulated by state and federal agencies (Department 2008b). The proposed Project IPA and alternatives do not include any changes to the existing Northern Channel Islands MPAs and Santa Barbara Island MPA.

Waters surrounding the Channel Islands are utilized by a number of consumptive and non-consumptive users. Consumptive and nonconsumptive uses are discussed in detail in the MLPA SCSR Regional Profile. Non-consumptive ocean activities are also popular in the Channel Islands; they include kayaking, whale watching, wildlife viewing, diving, and snorkeling (Department 2009a). Short descriptions of the islands are illustrated below.

- **San Miguel Island:** A part of Santa Barbara County, San Miguel is the westernmost of the Channel Islands and is 14.5 square miles in size. The U.S. Navy owns San Miguel Island, and manages it jointly with the Channel Islands National Park. It is closest of the Channel Islands to Point Conception. A large marine mammal haulout exists at Point Bennett and seabird breeding colonies reside at Prince Island, Castle Rock, and Richardson Rock. The island is surrounded by submerged pinnacles covered with invertebrates. Intertidal habitats surrounding San Miguel Island include significant amounts of sand habitat.
- **Santa Rosa Island:** A part of Santa Barbara County, Santa Rosa is the second largest of the Channel Islands at about 83 square miles in size. A large reef lies on the north side of the island at Talcott Shoal. The island is known for coastal terraces, sandy beaches, and the largest coastal lagoon in the Channel Islands, as well as a Torrey pine (*Pinus torreyana*) grove onshore. Sandy beaches on Santa Rosa provide breeding habitat for the western snowy plover (Department 2009a).

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- **Santa Cruz Island:** A part of Santa Barbara County, Santa Cruz is the largest of the Channel Islands at over 96 square miles in size. The island lies in a transition zone between cool waters of the California Current and warm waters of the California Countercurrent. There are large sea caves along cliffs on the island and a high degree of recreational use due to a large number of anchorages (Department 2009a).
- **Anacapa Island:** Anacapa Island, which lies within Ventura County, is the Channel Island closest to the mainland coast at a distance of 12 miles. It is just over 1 square mile in size. Giant sea bass aggregate on the north side of the island and California brown pelican, Xantus's Murrelet, and Western Gull have breeding colonies on the island. In addition, 130 sea caves on Anacapa provide nesting sites for many birds. Anacapa Island and its surrounding waters receive a high degree of recreational use (Department 2009a). In 1978, a small, no-take marine reserve was established by the state of California on the north side of Anacapa Island in an area protected by National Park regulations since 1968 (Department 2008b).
- **Santa Barbara Island:** A part of Santa Barbara County, Santa Barbara Island is the smallest of the Channel Islands at 639 acres (about one square mile). The island hosts a California sea lion rookery and over 11 species of breeding seabirds, including California brown pelican and Xantus's murrelet (Department 2009a).
- **Santa Catalina Island:** Is an area of Los Angeles County located 22 miles offshore of Los Angeles. Santa Catalina Island is approximately 75 square miles in size. Santa Catalina Island is one of three islands in the archipelago that is not part of the Channel Islands National Marine Sanctuary. However, it is an important visitor location with several permanent settlements, including Avalon and Two Harbors. Macrofauna around Santa Catalina Island are warm-water species, unlike the northern Channel Islands, where cold-water species are more typical. The island's Catalina Harbor is the largest offshore salt marsh of the seven marshes found along the islands in the SCSR. Intertidal habitats surrounding Catalina Island include 35 percent bedrock, 50 percent boulder beach, and 15 percent sand habitats (Department 2009a).
- **San Nicolas Island and San Clemente Island:** Both San Nicolas and San Clemente islands are owned by the U.S. Navy, and are about 22 square miles and 57 square miles in size, respectively. While both islands are more remote than the other six Channel Islands, their waters are utilized by both commercial and recreational fishing operations. The deepest point in the SCSR is located off the northwest corner of San Clemente Island. Aside from Santa Catalina Island, San Clemente is the only other island with macroinvertebrate communities dominated by warm-water species; intertidal habitats there include 69 percent bedrock, 17 percent boulder beach, and 14 percent sand. San Nicolas Island, located between the warm- and cold-water currents, has different macrofauna at various sites around the island. Intertidal habitats around San Nicolas Island include rock as well as significant amounts of sand (35 percent of the shoreline)

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(Department 2009a). There are two military closures on San Clemente Island where the designation and allowed uses have not been specified (MarineMap Consortium 2010).

Other Rocks/Islets. Statewide, over 20,000 islands, rocks, exposed reefs, and pinnacles are included in the California Coastal National Monument and managed by the BLM. The monument was designated by presidential proclamation in January of 2000 and extends along the entire California coast (1,100 miles). The monument was designed to protect the biological and geologic values of offshore rocks and islets and the important forage and breeding grounds of associated marine birds and mammals (Department 2009a).

7.1.2.1.16 Oceanographic Currents. The primary habitat for the SCSR's living marine resources is the California Current system. The California Current system is constantly changing in response to weather systems, seasonal heating and cooling processes, interannual episodes such as El Niño/La Niña events, and longer term or regime-scale climatic changes. The California Current is one of the world's major eastern boundary currents, has its origin in the mid-latitude west-wind-drift region of the North Pacific, and could be considered an equatorward-growing, surface extension of the North Pacific Current. The core of the California Current normally lies about 90 to 130 miles offshore of the shelf break, or continental margin. The fauna and productivity of the California Current system are heavily dependent upon the input of cool, low-salinity, high nutrient and plankton-rich waters from the mid-latitude North Pacific. The system has a sub-surface, poleward current (the Davidson Current) that is often at a maximum just offshore of, and somewhat deeper than, the shelf break. In the fall, poleward flow often extends to the surface in the southern portion of the California Current and surface poleward flow is not uncommon in the nearshore region over much of the system. The advection of warm, high-salinity, low-nutrient and plankton-poor water from the sub-tropics is largely responsible for the warm water flora and fauna and lower productivity characteristic of the nearshore region south of Point Conception (Department 2001).

Like other eastern boundary currents, the California Current has extensive coastal upwelling that is primarily driven by spring and summer winds resulting from temperature gradients between the relatively cool sea surface and the warming continental land mass. Equatorward winds, offshore Ekman transport, and coastal upwellings occur nearly all year off of Baja California and the offshore region of Southern California; however, within the bight, wind velocities are lower and offshore transport is much reduced. Wind velocities and upwelling are variable but tend to be at a maximum in the spring to early summer in the region between Point Conception (34.5°N) and the Oregon border (42°N). The duration and strength of upwelling-favorable winds diminishes northwards. Off the state of Washington (48°N) upwelling is relatively minor and is largely restricted to the late spring to early fall; winter storms there result in intense downwelling events. Downwelling events diminish in both magnitude and seasonal duration to the south; below Point Conception they are uncommon and usually of minor magnitude (Department 2001).

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Climatic fluctuations ranging from strong storms to seasonal cycles to El Niño/La Niña events to decadal changes or regime shifts alter the physical, chemical, and biological environment of California's marine waters. The average monthly sea surface temperatures (SST) in California waters range from a minimum of approximately 52 degrees Fahrenheit in February off northern California to a maximum of about 68 degrees Fahrenheit in August off Southern California. The pattern of sea surface temperatures in the California Current varies from a clearly latitude-dependent situation in the late winter, with isotherms being nearly east-west in orientation, to the distinct upwelling pattern of cold water near the shore and warmer water offshore in the late summer. Most of the area has mild winter SSTs, and cool summer SSTs caused by the summer upwelling. This results in a very small seasonal variation in SST, no more than 4 to 7 degrees Fahrenheit during the year. In contrast, the inter-annual variation in SSTs can be as large as the normal summer/winter difference; off San Francisco SST is colder during the summer in cold years than it is during the winter in warm years (Department 2001).

7.1.2.1.17 El Niño/La Niña Processes. El Niño is a term that describes large-scale changes in the atmospheric pressure system, trade winds, and sea surface temperatures of the entire tropical Pacific that occur at approximately three to four-year intervals. The cold water portion of the cycle is now referred to as La Niña. This cyclic process has traditionally been measured by the southern oscillation index, which is the difference between the atmospheric pressure at Tahiti (an approximation of the South Pacific High) and the atmospheric pressure at Darwin, Australia (near the Tropical Pacific Low). The southern oscillation index is therefore a measure of the variability of the atmospheric circulation in the South Pacific. The effects of El Niño events in California include reduced input of cold, nutrient-rich waters from the north and increased advection of warm, nutrient-poor waters of subtropical and tropical origin into the Southern California area. There may or may not be a reduction in upwelling-favorable winds; however, nutrient input to the surface waters from upwelling is decreased due to reduced nutrients in the subsurface waters and a depressed thermocline. Thus, during El Niños the California Current becomes more sub-tropical, and warm-water organisms enter the system in greater numbers. During La Niñas the environment is more sub-arctic and cold water organisms are favored (Department 2001).

7.1.2.1.18 Oceanographic Habitats. Oceanographic features such as upwelling centers, retention areas, and freshwater plumes have significant effects on ecological assemblages, productivity, recruitment, and a number of other biogeographic characteristics. The SCSR is within the bight, which is part of the west-coast-wide California Current system. However, the strong prevailing northerly winds that characterize the California Current system are found offshore in the bight, west of the islands and well away from the mainland coast – resulting in the absence of upwelling in the bight. The core of the California Current passes the bight west of the Channel Islands. The bight exhibits a counter-clockwise circulation comprising the southward California Current along the outer edge of the bight and the northward Southern California Countercurrent closer to the mainland. This Southern

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California Countercurrent brings warmer, low-chlorophyll waters into the bight, but also entrains recently upwelled waters from the Ensenada upwelling center (about 50 miles south of the U.S./Mexico border) (Department 2009a).

The circulation of the bight is largely driven by the winds offshore. In spring, winds are found closer to the coast leading to a tendency for southward flow through bight and coastal upwelling. As spring turns to summer, winds in the bight weaken but remain strong offshore, leading to a westward (offshore) migration of upwelling that is due to the wind-driven Ekman divergence now found mid-bight.

There is a surface divergence in the bight due to the strong offshore Ekman transport associated with northerly winds over the outer bight. An upward flux of deeper waters is expected, evident in the shallow thermocline found throughout the bight and a variety of features in which sub-thermocline waters are observed breaking the surface. Cold surface temperatures are observed in the wakes of many islands, as well as in headland wakes at Point Dume, Palos Verdes, and Point Loma – and more extensive upwelling is observed at times along the mainland coast. While a subsurface chlorophyll maximum characterizes much of the bight, surface chlorophyll plumes are visible nearshore, specifically downstream of upwelling sites (Department 2009a).

Circulation at depth is dominated by the California Undercurrent, which flows northward along the continental slope. The California Undercurrent is strongest in summer and fall and can be seen breaking the surface where the shelf is narrow. The northern end of the bight is characterized by intense upwelling at Point Conception, a major upwelling center at the end of the wind-driven coastal upwelling region that characterizes the central and northern California coast. This current separates from the mainland at Point Conception and flows past the westernmost Channel Islands, immersing San Miguel and Santa Rosa islands in cold nutrient-rich waters. At times this current will curve into the Santa Barbara Channel, transporting cold water along the northern shores of San Miguel, Santa Rosa and Santa Cruz islands. Thus, the Santa Barbara Channel and northern Channel Islands represent a dynamic region where two oceanographic regimes meet—cold northern waters mixing with warm southern waters—and the western end of the channel is characterized by strong fronts. The mainland coast is characterized by a warm westward flow, leading to a cross-channel shear in currents. In summer, one will often see the persistent Santa Barbara Channel Eddy (Department 2009a).

Over the shelf along the mainland south of the Santa Barbara Channel, water tends to flow southward, in contrast to the up-coast currents offshore and in the channel. Given the topographic complexity of the bight, one can expect topographic flow features such as island wakes and headland wakes. Santa Monica Bay exhibits clockwise mean circulation, with northward flows along the shelf edge and southward currents nearshore. Wind shadows can yield areas of warmer surface temperatures and stronger stratification (e.g., west of Santa

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Catalina Island). In contrast, the dynamics of current wakes can yield localized upwelling of cold waters, as discussed above (e.g., southwest of Palos Verdes) (Department 2009a).

This general bight circulation is not constant. Seasonal fluctuations have been described above, generally increasing in intensity through the summer. During winter, the region experiences southerly wind events and downwelling during the passage of cold fronts, although winds turn to westerly behind the cold front and this results in down-coast (southward) transport of runoff plumes. During fall, the relaxation of winds along the coast north of Point Conception is more frequent and one observes westward flow through the Santa Barbara Channel and up the mainland coast past Point Conception. The strongest northward flow around Point Conception is observed in El Niño years, when bight waters may be transported north to San Francisco. Internal tides are also important, given the shallow thermal stratification in this region. Over the inner shelf, this internal tidal energy is typically seen as packets of higher frequency internal waves that lead to cold sub-thermocline waters swashing shoreward and breaking the surface nearshore. This process has been shown to be important in nearshore larval dispersal, nearshore productivity and nearshore water quality (Department 2009a).

Surface waves in the bight are typically small, but they can be large at specific places and times. While much of the bight is sheltered from northerly swell generated in the storms in the northern Pacific, large swells generated at lower latitudes or during storms in the austral winter in the southern Pacific may enter and influence much of the bight. The Santa Barbara coast is well sheltered by the Channel Islands offshore and, likewise, the island coasts facing the mainland are characterized by low wave forcing (Department 2009a).

Circulation within harbors, bays and lagoons is important in shaping habitat and in the dispersal of larvae, eggs, and spores.

The larger bays in the region are best classed as low-inflow estuaries throughout the long dry season, with long-residence inner waters. The outer bays are typically well flushed by tides, and enhanced by thermal exchange in some bays. The smaller bar-built estuaries are typically closed in the dry season, with minimal hydrological links to the ocean via groundwater fluxes through the sand bar (Department 2009a).

7.1.2.2 Habitat Restoration Activities

Human degradation and water pollution impairs the breeding grounds for many species of sea life, and are substantial contributing factors to species decline. Impacts to coastal-dependent species include declines in the species' populations, reproductive problems, birth defects, behavioral changes, and increased susceptibility to disease. Healthy aquatic habitats depend upon the activities that occur nearby. Land use practices, population densities, point and nonpoint source discharges, agriculture, urbanization, industry, and recreation all influence the water quality and habitat of a specific locality or region (Department 2001).

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A number of efforts and initiatives are underway in the state to begin to curtail impacts and improve the quality and quantity of California's marine and estuarine habitats. These efforts include greater regulation of point and nonpoint source discharges, improved identification of toxic areas, increased emphasis on beneficial reuse opportunities for dredged materials, reduction of the frequency and extent of oil spills, development and coordination of large-scale water quality and habitat monitoring and assessment programs, restrictions on the import of non-indigenous species in ballast water, and increased marine habitat restoration and enhancement projects (Department 2001).

Habitat restoration efforts include, but are not limited to: fostering the growth of native plant species, removing invasive species, restoring estuarine substrata, restoring historical creek flow, beach nourishments, fisheries restoration, and reestablishing tidal exchange. The general goal of restoration projects is to bring the environment back to a natural, or pre-disturbance, condition. However, in practice, the outcomes of restoration projects are generally unpredictable, and such projects may require occasional maintenance (Department 2009a).

A large restoration tool used in the SCSR is the creation of artificial reefs to restore kelp beds. In the SCSR, there are at least 30 artificial reefs designed to mimic rocky reef habitats and to provide habitat for kelp. Artificial reefs can be constructed from a variety of materials such as sunken automobiles (Paradise Cove in 1958) and boxcars (Redondo Beach in 1958). Other efforts utilized tires or sunken ships, which proved less successful. Quarry rock and concrete boxes have been used in the most recent efforts and have been shown to attract and concentrate marine species. Since 1980, many of these quarry rock/concrete reefs have been constructed, including artificial reefs at Pendleton, Carlsbad, near the California/Mexico border (international artificial reef), Bolsa Chica, and Mission Bay. The most significant artificial reef project in recent years is the San Onofre Nuclear Generation Station Mitigation Project, offshore from San Clemente in Orange County. In 1999, an experimental reef covering an area of over 22 acres was completed and monitoring for the project began. Currently, expansion of this initial reef is underway with the expected size being 150 total acres (Department 2009a).

Potential benefits of artificial reefs include creation of new habitat and the potential to increase localized fish stocks. However, artificial reefs may also pose risks to marine ecosystems. Studies have found that artificial reefs can actually decrease fish stocks because the fishing effort increases around the reef. All these considerations are taken into account before an artificial reef can be placed in the ocean. An artificial reef cannot be constructed until it has gone through an extensive permit process. Proposed artificial reef projects must demonstrate how they minimize adverse environmental impacts (Department 2009a). Artificial reefs are discussed in Fish and Game Code Sections 6420–6425.

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7.1.2.3 Invasive Species

Invasive species are the second-largest threat to rare, threatened, or endangered species nationwide, second only to habitat destruction (Department 2001). Commercial fisheries nationwide are seeing significant impacts on local fish populations from invasive marine life. Indeed, coastal systems, including tidal flats and salt marshes, have been particularly susceptible, possibly because they are typically high-stress, species-poor environments. California water agencies have expressed alarm at the “potentially devastating” impacts that invasive species can have on California’s waters (Department 2001). Unlike threats posed by most chemical or other types of pollution, biological pollution by invasive species normally will have permanent impacts, as they are virtually impossible to eradicate once established. Specific environmental threats from invasive organisms include consumption of natives and their food sources, genetic dilution of native species through cross-breeding, alteration of the physical environment, introduction of non-native parasites and diseases, and poisoning of native species through bioaccumulation of toxics that are passed up the food chain (Department 2001). Introduced species may out-compete or alter local habitats to such an extent that they make it impossible for native species to survive. Introduced species are often predators, competitors, or parasites, and many introduced species can cause or carry disease. Regardless of the direct or indirect nature of the effect, non-native or nonindigenous aquatic species (NAS) can significantly impact human health, devastate fishery and aquaculture resources, and severely disrupt habitat and ecosystem stability (Department 2008a).

The discharge of ships’ ballast water from foreign ports is currently the single largest source of coastal, aquatic invasive species. However, in California, the fouling vector is most often attributed to the introduction of species to the state. In major ports and waters adjacent to ports, it is impossible to distinguish between fouling due to recreational boats and fouling due to commercial ships. Statewide, 165 species were probably introduced via fouling. Among those 165 species, 153 (93 percent) had both recreational boats and commercial ships as possible sources of introduction. Further assessment of the role of recreational boat fouling as an NAS vector is needed. Ballast water, however, is still a major vector of introductions. Ship ballast water discharge was the second largest category of potential vectors. This, in combination with impacts from fouling from ships’ hulls, indicates that shipping plays a substantial role in dispersal of species (Department 2008a).

A survey found that 53 to 88 percent of the aquatic invasive species introduced into San Francisco Bay in the last decade originated in ballast water discharges, and there is evidence that the number of ballast-related introductions of aquatic invasive species is steadily growing. According to estimates by the San Francisco Estuary Institute, between a half-billion and one billion gallons of ballast water are discharged into the San Francisco Bay/Delta Estuary each year by ships arriving from foreign ports. Aquaculture, unintentional introductions via recreational vehicles, deliberate introductions (i.e., to establish a fishery),

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and importation of live marine organisms for human consumption, bait, pets, or research are other important vectors of aquatic invasive species (Department 2001).

The Department has conducted numerous large-scale field surveys of California coastal waters that indicate all major harbor areas in California have received significant introductions of non-native or NAS. Each major commercial harbor area of the state has between 40 and 190 NAS and another 15 to 138 species that are possibly introduced via obscure or unknown sources. San Francisco Bay had more NAS (190) than any other estuary or harbor. Substantial numbers of introduced species were also found in the smaller ports and bays. Two broad-scale field surveys of the outer coast revealed only nine introduced species, far fewer than in estuaries. The majority of the species introduced to California appear to be native to the northwest Atlantic, the northwest Pacific and the northeast Atlantic. The number of species with unknown origins is substantial, and indicates a need for further research (Department 2008a).

Studies have shown that Southern California has the highest number of introduced species, especially compared to northern and central California bays and harbors. The two phyla with the highest number of introduced species from the epifaunal and infaunal samples were arthropoda (25 introduced species) and chordata (18 introduced species). The only phylum in which introduced species were identified from the water column surveys was arthropoda, which had 11 introduced zooplankton species (Department 2008a).

In Southern California, one main invasive species is a tropical seaweed (*Caulerpa taxifolia*). The invasive green algae dubbed the “killer algae,” was discovered in the waters of Southern California off Carlsbad in early 2000. Native to tropical waters, it became popular in the aquarium trade in the late 1970s and either escaped or was released into the Mediterranean Sea in the mid-1980s. It is now widespread throughout much of the northwestern Mediterranean. It appears that the algae found off Southern California is a clone of the released Mediterranean plant, and can grow in deeper and colder waters than the tropical populations. Its impacts have been compared to unrolling a carpet of astroturf across the sea bed. In areas where it has become well-established, it has caused economic and ecological devastation by overgrowing and eliminating native seaweeds, seagrass reefs, and other communities. Other problematic introduced algae include invasive wakame (*Undaria pinnatifida*; Department 2008d), invasive Japanese seaweed (*Sargassum muticum*; Department 2008d), and *S. filicinum*. In Southern California, the alga poses a major threat to eelgrass meadows and other benthic environments that are essential to the survival of native invertebrates, fish, and aquatic birds. If the alga spreads from the coastal lagoons to the nearshore reefs, it could inhibit the establishment of juveniles of many species, including kelp and the biota associated with kelp beds. Efforts to destroy this patch of algae have involved tarping off the area and injecting chlorine under the tarp (Department 2001).

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7.1.2.4 Areas of Biodiversity Significance

Spatial data is available to begin identifying specific locations in the SCSR that have high biodiversity significance based on the guidelines provided in the master plan framework and on results of regional scientific research and mapping efforts. Specific locations can be identified using existing maps, by overlaying relevant data layers, or conducting more sophisticated GIS analysis. Data showing areas of biodiversity are shown on Figures 7-13 through 7-18 (Marine Bird Breeding Colonies), Figures 7-19 and 7-20 (Marine Mammal Haulouts and Rookeries), and Figures 7-21 through 7-26 (Areas of Fish Biodiversity). The following is a partial list of types of areas that have regional biodiversity significance (Department 2009a):

- Areas where numerous habitats are found in close proximity and areas with unique combinations of habitats
- Areas of high bathymetric complexity which provide topographic relief and a variety of habitats in close proximity
- Rocky substrata in all depth zones, since rocky habitat is much less common than soft bottom habitat and is important for many species
- Rocky intertidal shores, especially wave-cut rocky platforms (which provide habitat at diverse tidal elevations), boulder fields, and rare sheltered rocky shores
- Sandy beaches utilized by California grunion, California least tern, western snowy plover, and other species, including areas above mean high tide
- Large kelp beds and nearshore rocky reefs
- Large or open estuaries (e.g., Anaheim Bay, Bolsa Chica, Mission Bay, San Diego Bay, and the Tijuana River Estuary) with eelgrass beds, tidal flats, and coastal marsh
- Marine areas off headlands, especially those with kelp forests
- Offshore islands and associated habitats
- Islets, offshore rocks, and underwater pinnacles
- Submarine canyons, which create areas of complex bathymetry
- Marine areas which offer retention adjacent to upwelling centers, especially those with kelp forests and rocky reefs
- Areas of smaller-scale, localized upwelling
- Areas of known species spawning aggregations and aggregations of juvenile individuals
- Seabird colonies and marine mammal rookeries and haulouts
- Areas of high seabird or fish diversity and/or density and abundance

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7.1.2.5 Special-status Species

Some species within the SCSR have been designated with a special status under either state or federal laws or regulations. Both the California state and federal endangered species acts provide special protections for a variety of fish, invertebrates, marine mammals, birds, and plants. Marine mammals are also afforded protection under the Marine Mammal Protection Act, and migratory seabirds and shorebirds in the SCSR are protected under the Migratory Bird Treaty Act. Direct take of some species has been prohibited by laws separate from the above acts and these laws are found in various section of the California Fish and Game Code. In addition, the Department maintains a list of taxa they are interested in tracking, regardless of the legal or protection status of that taxa. This list of “species at risk” or “special-status species” are those taxa considered to be of greatest conservation need. The Department has also designated certain vertebrate species as “Species of Special Concern” because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction. Not all “Species of Special Concern” have declined equally; some species may be just starting to decline, while others may have already reached the point where they meet the criteria for listing as a “threatened” or “endangered” species under the state and/or federal endangered species acts. The section below includes descriptions of several special-status species that exist within the SCSR. A more comprehensive list of these species is included in Appendix E (Department 2009a).

7.1.2.5.1 Plants.

Salt Marsh Bird’s Beak. Salt marsh bird’s beak (*Cordylanthus maritimus* ssp. *maritimus*) grows in the higher reaches of coastal salt marshes to intertidal and brackish areas influenced by freshwater input. The interaction between tidal flows and local surface and subsurface freshwater flows is complex and important to the species’ survival. It is designated as an endangered species at both the state and federal levels. The population of this species has declined due to loss of habitat and non-native plant competitors. Historically, salt marsh bird’s beak was widespread in coastal salt marshes from Morro Bay in San Luis Obispo County to San Diego County and northern Baja California. Presently, it occurs only in scattered sites at fewer than 10 salt marshes. Half of the original occurrences are now extirpated. In California, it is currently found at the Tijuana River Estuary and Sweetwater Marsh in San Diego County, Upper Newport Bay and Anaheim Bay in Orange County, Ormond Beach and Mugu Lagoon in Ventura County, Carpinteria Marsh in Santa Barbara County, and Morro Bay in San Luis Obispo County. Salt marsh bird’s beak is found in the Department’s Upper Newport Bay Ecological Reserve (Department 2009a). It is both a federally- and state-listed endangered species. Additionally, it is included in the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants on list 1B.2 (fairly endangered in California).

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Ventura Marsh Milk-vetch. Ventura marsh milk-vetch (*Astragalus pycnostachys* var. *lanosissimus*) is a short-lived, herbaceous perennial in the pea family (*Fabaceae*). It is both a state and federally listed endangered species. Historically, Ventura marsh milk-vetch occurred in back dune habitat, coastal meadows, and near coastal salt marshes from Ventura County to Orange County. Over the last century six historical occurrences have been known to exist. Ventura marsh milk-vetch was extirpated from these sites and was, therefore, thought to be extinct until a U.S. Fish and Wildlife Service biologist rediscovered it in June 1997 at a proposed development site. Today, this single population of Ventura marsh milk-vetch is the only known population to exist near the city of Oxnard, Ventura County, California. However, one source has reported Ventura marsh milk-vetch in the Ballona Wetlands (Department 2009a). It is listed by the state of California and the federal government as endangered. Additionally, it is included in the CNPS Inventory of Rare and Endangered Plants on list 1B.1 (seriously endangered in California).

Gambel's Water Cress. Gambel's water cress (*Nasturtium gambelii*) is a rhizomatous herb in the mustard family (*Brassicaceae*). It is both a state and federally listed endangered species. Additionally, it is included in the CNPS Inventory of Rare and Endangered Plants on list 1B.1 (seriously endangered in California). Gambel's water cress is threatened by habitat loss and erosion. It occurs in freshwater and brackish marshes in Santa Barbara, Los Angeles, and Orange counties (CNPS 2010). Species accounts exist from the late 1800s and early 1900s and are located in close proximity the SCSR in Cienega in the Los Angeles basin, Huntington Beach, and near the City of Santa Barbara where all previously existing populations are extirpated (CNPS 2010).

7.1.2.5.2 Gastropods.

Black Abalone. Found from Oregon to southern Baja California, the black abalone (*Haliotis cracherodii*) inhabits rocky intertidal areas (to depths of 20 feet in Southern California), often within the high energy surf zone. Adult black abalones congregate on rocks and in tidepools. Black abalone populations in Southern California remain severely depressed since the closure of the fishery in 1993. Black abalone density around San Clemente Island is approximately one abalone per 30,020 feet squared, or less than 0.1 percent of historic levels, with no evidence of recruitment. However, recent evidence shows some recruitment at San Nicolas and Santa Cruz islands. Current restoration research efforts have been focused on finding some sort of genetic-based disease resistance to withering syndrome, a disease that has devastated once-abundant black abalone populations, and successful captive propagation of the species for recovery out-planting. Black abalone is currently listed as a species of concern by the National Marine Fisheries Service (NOAA Fisheries). A draft black abalone status review report released by NOAA stated that black abalone is in danger of extinction throughout its range unless effective measures to counter the effects of withering syndrome are found. Black abalone was listed as an endangered species under the ESA as of February 13, 2009 (74 FR 1937) (Department 2009a).

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White Abalone. Ranging from Point Conception to central Baja California, Mexico, white abalone (*Haliotis sorenseni*) usually inhabit depths greater than 75 feet. They prefer deep rocky bottoms from 60 to 200 feet often associated with deep living kelp beds, such as *Pelagophycus porra* or elk kelp beds. They feed on bacteria, diatoms, and kelp. Baby abalone recruitment trackers deployed at Santa Cruz Island have been monitored at least once a year since their deployment in 2004, but no white abalone have yet been seen. A 2007 research cruise around Anacapa Island, Santa Barbara Island, and the east end of Santa Cruz Island found no live white abalone. White abalone is the first marine invertebrate to receive federal protection under ESA.

7.1.2.5.3 **Fish.**

Great White Shark. The great white shark (*Carcharodon carcharias*) is protected by the Department in all California waters since Jan. 1, 1994 through Assembly Bill 522 (AB 522).

This bill makes legislative findings and declarations regarding the importance of white sharks in maintaining the overall health and stability of California's marine ecosystem, and prohibits the take of white sharks for commercial or recreational purposes.

AB 522 allows the take of white sharks for scientific research or live display under permits issued by the Department of Fish and Game, and provides that white sharks may be taken incidentally by commercial fishing operations using set gill nets, drift gill nets, or roundhaul nets. Prohibits the severing of the pelvic fin from the carcass until after the shark is brought ashore.

This law was extended and amplified in 1997 (SB-144) to outlaw all directed efforts to lure Great Whites by any means in State waters.

Southern California Steelhead. Steelhead (*Oncorhynchus mykiss*) are an anadromous form of rainbow trout and historically a popular gamefish in California. Steelhead migrate to the ocean where they usually spend 2–6 years before returning to freshwater to spawn. Though the age at first migration varies, and can be as young as less than one year, some steelhead never migrate to the ocean. Known spawning populations of steelhead are found in coastal rivers and streams from San Mateo Creek in north San Diego County to the Smith River near the Oregon border. The present distribution of steelhead in California has been greatly reduced from historical levels. The decline of California steelhead appears to be part of a more prevalent west coast steelhead decline. This decline prompted NOAA Fisheries to list nearly all of California's steelhead populations under the Endangered Species Act. Statewide, the major factors contributing to steelhead decline in California include freshwater habitat loss and degradation, which has resulted mainly from three factors: inadequate stream flows, blocked access to historic spawning and rearing areas due to dams, and human activities that discharge sediment and debris into watercourses (Department 2009a).

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Southern California steelhead (*Oncorhynchus mykiss irideus*), the evolutionarily significant unit located within the SCSR (NOAA Fisheries 2005), are listed as an endangered species by the ESA. In addition, they are listed as a California Species of Special Concern by the Department. Southern California steelhead were formerly found in coastal drainages as far south as the Santo Domingo River in northern Baja California and were present in many streams and rivers of Southern California including San Mateo Creek (San Diego County), Malibu Creek (Los Angeles County), and Ventura River (Ventura County). As of 2005, the anadromous form of Southern California steelhead appears to be completely extirpated between the Santa Monica Mountains and the Mexican border except for a small population in San Mateo Creek in northern San Diego County (NOAA Fisheries 2005). Major adverse impacts to Southern California steelhead include fish migration barriers (dams and culverts, such as the Rindge Dam and Crag's Road crossing in Malibu Creek), urbanization, water impoundment and diversion, and invasive plant species (Department 2009a).

Giant Sea Bass (Black Sea Bass). Within California, giant sea bass (*Stereolepis gigas*), or black sea bass are rarely found north of Point Conception. Adult giant sea bass seem to prefer the edges of nearshore rocky reefs at depths of 35 to 130 feet. Giant sea bass reach a maximum size of 7 feet and 563 pounds. Estimated growth rates suggest that they take six years to reach 30 pounds, 10 years to reach 100 pounds, and 15 years to reach 150 pounds. Male fish have been observed to be mature at 40 pounds, and females at 50 to 60 pounds. Giant sea bass are susceptible to overfishing and suffered serious decline in numbers because they grow slowly and mature at a relatively old age (Department 2009a).

A 1981 law prohibited the take of giant sea bass for any purpose, with the exception that commercial fishermen could retain and sell two fish per trip. This law was amended to one fish per trip in 1988, and only if incidentally caught by gill or trammel net. Incidental mortality of giant sea bass was probably further reduced with the banning of inshore gillnets from state waters. Although the California population of giant sea bass remains well below historical levels, recent evidence indicates that giant sea bass may be staging a comeback. Currently, giant sea bass may not be taken by recreational anglers in California waters. All fish taken incidentally by recreational fishing activities must be immediately returned to the waters where taken (Department 2009a). Giant sea bass are a protected species in the state of California and have been labeled critically endangered by the International Union for the Conservation of Nature.

Tidewater Goby. The tidewater goby (*Eucyclogobius newberryi*), which is endemic to California, is distributed in brackish-water habitats along the California coast from Cocklebur Canyon in San Diego County to the Tillas Slough in Del Norte County. Historical ranges spread farther south to Agua Hedionda Lagoon within San Diego County. Tidewater goby is federally listed as an endangered species, although the 5-year review by the Ventura Fish and Wildlife Office in September 2007 recommended changing this listing to threatened. Tidewater goby feed on invertebrates and generally live 1 year. In addition,

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they are listed as a California Species of Special Concern by the Department. They reproduce throughout the year resulting in constant variability in local abundance and making accurate population estimates difficult. They are threatened by habitat loss or degradation and predation by native and exotic predators (Department 2009a).

Garibaldi. The garibaldi (*Hypsypops rubicundus*), California's official state marine fish, ranges from Monterey Bay to Guadalupe Island, Baja California. Garibaldi are territorial, sometimes using the same nest site for several years, and do not migrate. Their diet consists mainly of invertebrates. Garibaldi can range from shallow subtidal areas to depths of 95 feet. No commercial or recreational take of garibaldi is allowed, and current populations are in good condition (Department 2009a). Garibaldi is a protected species in the state of California.

7.1.2.5.4 **Reptiles.**

Sea Turtles. Four species of sea turtles (superfamily *Chelonioidea*) occur within the bight: green (*Chelonia mydas*), loggerhead (*Caretta caretta*), olive ridley (*Lepidochelys olivacea*), and leatherback (*Dermochelys coriacea*) turtles. Sea turtles spend most of their time at sea, and come ashore to nest on beaches. Sea turtles are not common within state waters of Southern California, although they are regularly sighted in the warm water effluent channel of the San Diego Gas and Electric Power Company in San Diego Bay. Green turtles forage in San Diego Bay. The San Gabriel River also has a small colony of green turtles, attracted by the warm-water effluent from the Los Angeles Department of Water and Power's Haynes Generating Station. Green turtles feed primarily on algae and seagrasses. Sightings of loggerhead, olive ridley, and leatherback turtles are rarer (Department 2009a). The loggerhead, olive ridley, and green sea turtle have been listed as threatened under the ESA. The leatherback sea turtle is listed as endangered under the ESA.

7.1.2.5.5 **Birds.**

Bald Eagle. The bald eagle (*Haliaeetus leucocephalus*) has historically nested on the Channel Islands, but disappeared completely by the 1960s. In 1980, a program to reintroduce bald eagles to Santa Catalina Island began through a partnership between federal and state agencies and nonprofit organizations. Those efforts have translocated dozens of bald eagles to Santa Catalina Island as chicks or eggs from wild nests on the mainland or from captive breeding. In 2002, the Channel Islands National Park and The Nature Conservancy began a successful reestablishment program for bald eagles. Sixty-one juvenile eagles were introduced to the park between 2002 and 2006. The first successful bald eagle nests occurred in 2006 on Santa Cruz Island. American bald eagles nest near bodies of open water and have a diverse diet consisting of fish, small mammals, birds, mollusks, and crustaceans. In 2007 they were delisted from the ESA and their current protection comes from the Bald and Golden Eagle Act. They remain listed as endangered by the California ESA and fully

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protected by the Department. On the west coast, they can be found from Baja California to Alaska. Within the SCSR, bald eagle prey includes rockfish, surfperch, cabezon, midshipman, California sheephead, bocaccio, gulls, California mussels, limpets, and other bivalves. On the Channel Islands, adults bring bocaccio and other rockfish, halfmoon, white seabass, California sheephead, topsmelt, other fish, gulls, and mammals back to the nest for juvenile eagles (Department 2009a).

American Peregrine Falcon. The American peregrine falcon (*Falco peregrinus anatum*) breeds from Alaska to Labrador, southward to Baja California and other parts of northern Mexico, and east across central Arizona through Alabama. In California, the American peregrine falcon is an uncommon breeder or winter migrant throughout much of the state. Active nests have been documented along the coast north of Santa Barbara, in the Sierra Nevada, and in other mountains of northern California. As a transient species, the American peregrine falcon may occur almost anywhere that suitable habitat is present (Garrett and Dunn 1981). In the Americas, the species winters from southern Alaska to Tierra del Fuego in southernmost South America (AOU 1998). Peregrine falcons in general use a large variety of open habitats for foraging, including tundra, marshes, seacoasts, savannahs, grasslands, meadows, open woodlands, and agricultural areas. Sites are often located near rivers or lakes (AOU 1998; Brown 1999; Snyder 1991). The diet of the American peregrine falcon primarily consists of birds that, while most are pigeonsized, can be as small as hummingbirds or as large as small geese (White et al. 2002). The principal cause of the American peregrine falcon population decline was the use of organochlorine pesticides, especially DDT and its metabolite DDE, which interfered with their calcium metabolism and resulted in eggs with thin shells that were easily broken (USFWS 2003). This species is a fully protected by the Department.

Ashy Storm-petrel. The total population size of the ashy storm-petrel (*Oceanodroma homochroa*) is less than 10,000 pairs and declining. Ashy storm-petrels feed on larval fish, squid, and zooplankton, and forage on the edges of upwelling zones and in waters just seaward of the continental slope. They generally nest in rocky crevices, such as those found around sea caves in the Channel Islands (Department 2009a). This species is currently considered a California Bird Species of Special Concern (breeding), priority 2 due to its population or range size being greatly reduced or its population or range size is moderately reduced and threats are projected to greatly reduce the taxon's population in California in the next 20 years. It is also considered a federal species of concern.

Belding's Savannah Sparrow. Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) is found from Goleta south to El Rosario, Baja California. They were listed by the Department as endangered in 1974. They occupy coastal saltmarshes and estuaries where pickleweed (*Salicornia* spp.) is dominant. They eat a variety of crustaceans as well as seeds of pickleweed and may forage in other nearby habitats, including along rock jetties. This

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species breeds at Point Mugu, the Ballona Wetlands, Upper Newport Bay, and Bolsa Chica Estuary, among other locations (Department 2009a).

Black Storm-petrel. Pitman and Speich (1976) discovered the only known breeding site for black storm-petrel (*Oceanodroma melania*) in the United States on Sutil Island, an islet off Santa Barbara Island, in 1976. Only one nest was found, but an estimated 10 birds were heard in the vicinity, and the maximum number of breeding pairs was thought to be 10–15. The population may have been present previous to the discovery, and was estimated at 25 breeding pairs in later surveys. Black storm-petrels are most common in the warm coastal waters of the bight over the continental shelf off central California. They forage in surface waters near shore at thermal fronts adjacent to upwellings, tide rips, shelf-break fronts, and other areas of high ocean productivity. Their diet probably consists of small fish, crustaceans, and squid (Department 2009a). This species is listed as a California Bird Species of Special Concern (breeding).

California Brown Pelican. The California brown pelican (*Pelecanus occidentalis californicus*) was formerly listed as endangered under the ESA and CESA, but was removed from the lists in 2009. The California brown pelican was also protected as endangered under the California ESA, but officially delisted in November 2009. This species is fully protected species under §3511 of the Fish and Game Code and the Migratory Bird Treaty Act.

In California, the California brown pelican usually nests on two of the Channel Islands in Southern California: West Anacapa and Santa Barbara islands. Nest sites generally occur on the ground or in low shrubbery of steep coastal slopes on small islands, isolated from ground predators and human disturbance. California brown pelicans utilize local vegetation to build nests of sticks, grasses, and other debris each year. The majority of their diet is fish, primarily captured by plunge diving. California brown pelicans feed close to shore, primarily in shallow (<492 feet depth) waters of estuaries and the continental shelf, usually within 12.5 miles of shore. Their diet in the Channel Islands consists almost exclusively of small schooling fish; in particular, northern anchovy (*Engraulis mordax*) and Pacific sardine (*Sardinops sagax*). They also roost in groups during the day, on sand bars or jetties, or on manmade structures such as piers and docks. North American populations underwent dramatic declines during the 1960s and early 1970s due to eggshell thinning induced by dichloro-diphenyl-dichloroethylene (DDE), the primary metabolic breakdown product of the pesticide dichloro-diphenyl-trichloroethane (DDT). Although populations have recovered substantially from these declines, there is considerable interannual variation in productivity as related to prey availability, disturbance at colonies, and disease outbreaks. Breeding effort, productivity, and survival are lower during El Niño events. Nesting success on Santa Barbara and Sutil Island has been very high, with over 2,000 young chicks fledged from 2001 to 2003 (Department 2009a).

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California Least Tern. The California least tern (*Sternula antillarum browni*) is the subspecies of least terns nesting along the west coast of North America, from Baja California, Mexico, to San Francisco Bay. California least terns establish nesting colonies on sandy soils with little vegetation along the ocean, lagoons, and bays. Their nests are shallow depressions lined with shells or other debris. California least terns are generally present at nesting areas between mid-April and late September, often with two waves of nesting during this time period. California least terns feed on California killifish, sculpins, surfperch, silverside smelt, anchovy, Northern anchovy, Pacific saury (although not in years when other food is abundant), cabezon, and rockfish. Beach-nesting adults feed juvenile grunion and other small fish to their chicks. This species was listed as endangered by the U.S. Secretary of the Interior in 1970 and the Commission in 1971 due to a population decline resulting from loss of habitat, and is fully protected by the Department. It is also listed as endangered by the ESA. A survey in 2007 estimated 6,744 to 6,989 California least tern breeding pairs, which established nests, and produced 2,293 to 2,639 fledglings at 48 documented locations. Numbers of nesting California least terns were not uniformly distributed across all sites. Camp Pendleton, Naval Base Coronado, Los Angeles Harbor, and Batiquitos Lagoon represented 55 percent of the breeding pairs while Venice Beach, Camp Pendleton, Huntington Beach and Naval Base Coronado produced 52 percent of the fledglings (Department 2009a).

Coastal California Gnatcatcher. The coastal California gnatcatcher (*Polioptila californica californica*) occurs in coastal Southern California and Baja California year-round. The coastal California gnatcatcher typically occurs in or near sage scrub habitat which is composed of relatively lowgrowing, dryseason deciduous and succulent plants (Bontrager 1991). Their diet is primarily composed of spiders but is also composed of wasps, bees, and ants (Burger et al. 1999). Their population has declined due to widespread destruction of its coastal scrub habitat (Atwood 1990). The coastal California gnatcatcher is listed as threatened by ESA and as a Species of Special Concern by the Department.

Elegant Tern. Although thousands of elegant terns (*Thalasseus [Sterna] elegans*) from Mexico spend the summer and fall along the California coast, the only breeding colonies in the United States are at Bolsa Chica, Pier 400 at Terminal Island, and the salt work dikes at the south end of San Diego Bay. A limited breeding colony in the United States makes the elegant tern highly vulnerable to extirpation in this part of its range. Human disturbance at nesting sites also threatens the population. Elegant terns feed primarily on fish, such as topsmelt and anchovy, and forage in bays and protected areas (Department 2009a). This species is listed as a federal species of concern and is listed on the Department's Watch List.

Double-crested Cormorant. Double-crested cormorants (*Phalacrocorax auritus*) are found throughout the bight, although in Southern California they breed only on the Channel Islands. The Channel Islands' populations declined due to eggshell thinning from DDE contamination and, to some extent, human disturbance at nest sites, but the population is currently

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considered stable-to-increasing in California. Double-crested cormorants live in both fresh and saltwater environments. They eat primarily fish such as sardines and herring (Department 2009a). This species is listed on the Department's Watch List.

Golden Eagle. In North America, the golden eagle (*Aquila chrysaetos*) breeds locally from northern Alaska eastward to Labrador and southward to northern Baja California and northern Mexico. Golden eagles breed from late January through August with peak breeding occurring in March through July. Nest construction in Southern California occurs in fall and continues through winter (Dixon 1937). The species winters from southern Alaska and southern Canada southward through the breeding range (Grinnell and Miller 1944). The golden eagle requires rolling foothills, mountain terrain, and wide arid plateaus deeply cut by streams and canyons, open mountain slopes and cliffs, and rock outcrops (Zeiner et al. 1990). The food supply for this species includes medium to large mammals such as rabbits, hares, and squirrels, and it will also feed on reptiles, birds, and sometimes carrion (Olendorff 1976; Johnsgard 1990). A major threat to this species is human disturbance in the form of habitat loss as well as human development and activity adjacent to golden eagle habitat. Accidental deaths attributed to increased development include collisions with vehicles, power lines, and other structures; electrocution; hunting; and poisoning (Franson et al. 1995). The golden eagle is fully protected by the Department.

Light-footed Clapper Rail. The light-footed clapper rail (*Rallus longirostris levipes*) is distributed throughout coastal salt marsh habitat from Santa Barbara County, California to San Quintín Bay, Baja California, Mexico. They occur in approximately 24 California marshes where they are usually year-long residents, usually nesting in pickleweed (*Salicornia* spp.). They are omnivorous and opportunistic foragers that have a diet that includes insects, spiders, and isopods. Within its historical range the amount of suitable habitat has been severely reduced by conversion of its preferred saltmarsh habitat for other uses (USFWS 1979). This species is listed as endangered by ESA and CESA and is also listed as a fully protected species by the Department.

Osprey. Although ospreys (*Pandion haliaetus*) are found within the SCSR, few nesting locations exist in the area. Ospreys have been seen through the summer months at such former or potential nesting areas as Newport Bay (Orange County), and Buena Vista Lagoon (San Diego County). The removal of nesting trees, degradation of river and lake environmental quality, boating, and shooting may have contributed toward the decline of ospreys, which disappeared from Southern California before pesticides were introduced. Ospreys have a large global range, including every continent but Antarctica. They feed almost exclusively on fish, and nest near bodies of water. Some ospreys migrate to South America for the winter but do not nest there. Ospreys are protected under the Migratory Bird Act and are listed on the Department's Watch List, but are not currently listed as a species of special concern in California (Department 2009a).

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Western Snowy Plover. The western snowy plover (*Charadrius alexandrinus nivosus*) occurs throughout the SCSR, and its breeding range extends from Baja California, Mexico, to southern Washington State. During the winter, western snowy plovers are found on beaches, estuarine sand, and mud flats, and in manmade salt ponds; during the breeding season (March through September) they nest on beaches. Western snowy plovers feed on invertebrates in the wet sand and surf-cast kelp, and occasionally on insects from low-growing plants. The May 2006 coastal U.S. range-wide breeding season survey estimated 1,879 individuals with 1,719 of those birds seen in California (USFWS 2007). Human harassment and direct destruction of nest sites and breeding habitat, expanding predator populations, and introduced species contributed to the decline of western snowy plovers (Department 2009a). Poor reproductive success resulting from human disturbance, predation, and inclement weather combined with permanent or long-term loss of nesting habitat to urban development and the encroachment of introduced beach grass, has led to the decline in active nesting colonies as well as an overall decline in the breeding and wintering population of the western snowy plover along the Pacific coast of the United States. In Southern California, the very large human population and the resultant beach recreation activities by humans have precluded the western snowy plover from breeding on historically used beach strand habitat. As a result of these factors, the Pacific coast population of the western snowy plover was federally listed as a species threatened with extinction March 5, 1993 (58 Federal Register 12864). In addition, the western snowy plover is a California Species of Special Concern.

Xantus's Murrelet. Xantus's murrelet (*Synthliboramphus hypoleucus*) consists of two races. The northern race (*S. h. scrippsi*) is a fairly common breeder on the Channel Islands, while the southern race (*S. h. hypoleucus*) is a rare visitor to the southern offshore waters of California. For successful breeding Xantus's murrelet requires rocky, undisturbed islands with productive marine waters nearby. Larval fish are an important part of their diet, particularly northern anchovies (Department 2005c). This species is a federal species of concern and is listed as threatened by CESA.

Willow Flycatcher. The willow flycatcher (*Empidonax traillii*) consists of four or five subspecies. The different subspecies of willow flycatcher each occupy distinct breeding ranges and have subtle differences in color and morphology (Sogge et al. 1997), and possibly vocalizations. The southwestern willow flycatcher (*E. t. extimus*) is the subspecies present within the SCSR. In California, its breeding range extends from the Mexican border north and inland to the City of Independence in the Owens Valley east of the Sierra Nevada, to the South Fork Kern River in the San Joaquin Valley and coastally to the Santa Ynez River in Santa Barbara County (Craig and Williams 1998). The number of southwestern willow flycatchers in California has been estimated at approximately 200, recorded at 22 locations within 13 drainages (Finch et al. 2000). The southwestern willow flycatcher is a riparian-obligate species restricted to complex streamside vegetation. Native broadleaf-dominated and mixed native/exotic are the primary habitats used by southwestern willow flycatcher in California (Sogge et al. 1997). Willow flycatchers are insectivores and forage by aerially

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gleaning prey (capturing insects, for example, while hovering) from trees, shrubs, and herbaceous vegetation or by hawking (capturing in flight) larger insects (Ettinger and King 1980; Sanders and Flett 1989). The decline of southwestern willow flycatchers is primarily due to loss, fragmentation, and degradation of suitable riparian habitat resulting from urbanization, recreation, water diversion and impoundments, channelization, invasive plant species, overgrazing by livestock, and conversion of riparian habitat to agricultural land (USFWS 2002; Sedgwick 2000). The willow flycatcher is listed as endangered by the CESA, while the southwestern willow flycatcher is additionally listed as endangered by ESA.

7.1.2.5.6 Pinnipeds.

Harbor Seal. Harbor seals (*Phoca vitulina*) are widely distributed in the coastal areas of the northern Pacific and northern Atlantic. Harbor seals in the eastern Pacific range from the Pribilof Islands in Alaska to Isla San Martin off Baja California. Between the Mexican and Canadian borders, harbor seals have been managed as three separate stocks, one of which is the stock off California. After passage of the Marine Mammal Protection Act in 1972, harbor seal abundance grew rapidly until 1990, when stocks leveled off. There has been no net population growth in California since 1990. In 2002 the population was estimated at 27,863 animals. The southern Channel Islands have the largest concentration of harbor seals in California. The seals are year-round residents at most of the haulout sites, but their abundance varies seasonally, the highest numbers of seals being present during the breeding season (March-June) and the molt (June-July). San Nicolas Island, Point Conception, Mugu Lagoon, and Point Mugu are home to some of the largest haulout sites. Harbor seals also haul out on buoys, jetties, floating docks, and in harbors. Harbor seals eat a wide variety of pelagic and benthic prey, including small schooling fishes such as northern anchovy, many species of flatfishes, bivalves, and cephalopods. In Southern California, harbor seals were found to eat mostly rockfish, octopus, spotted cusk-eel, and plain midshipman (Department 2009a). In 1972, the MMPA made it illegal to hunt or harass any marine mammal, including seals, in U.S. waters. According to the MMPA, all seals and sea lions in U.S. waters are under the jurisdiction of NOAA Fisheries.

California Sea Lion. The range of the California sea lion (*Zalophus californianus*) extends from the Pacific coast of Baja California to southern British Columbia. These animals breed primarily on offshore islands in the southern part of their range from the Gulf of California to San Miguel Island. California sea lions can be seen around Santa Cruz, Anacapa, San Miguel, and Santa Rosa islands, and Seal Rocks at Santa Catalina Island. California sea lions also haul out on buoys, jetties, floating docks, and in harbors. In the late 1920s, only 1,000–1,500 California sea lions were counted on the shores of California. Since a general moratorium on hunting marine mammals was imposed with passage of the MMPA, the population has grown substantially to a current estimate of 237,000–244,000 animals. California sea lions are opportunistic feeders on a variety of prey, especially seasonally abundant schooling species such as Pacific hake, northern anchovy, Pacific sardine, spiny

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dogfish, and market squid. They tend to feed in cool upwelling waters of the continental shelf (Department 2009a).

Northern Elephant Seal. Elephant seals (*Mirounga angustirostris*) are found from Baja California to the Gulf of Alaska and Aleutian Islands, and the current population is over 150,000 animals. Elephant seals haul out two times per year, during the breeding season, December through March, and during the molt, April through August. They migrate north to feeding grounds twice a year. Most breeding sites are also molting haulout sites. In the SCSR, Northern elephant seal haulout sites are on San Miguel, San Clemente, Santa Rosa, Santa Barbara, and San Nicolas islands. Juvenile seals also haul out in high numbers at these traditional sites during the fall preceding the breeding season. When not on land, Northern elephant seals spend most of their time under water, and probably feed on deep-water, bottom-dwelling marine species such as rockfish, market squid, swell sharks, and ratfish. Pups feed on fish, squid, and small sharks (Department 2009a). This species is “fully protected” under the Fish and Game Code (§4700), which means that this species cannot be taken or possessed in California without a permit from the Commission.

Guadalupe Fur Seal. Guadalupe fur seals (*Arctocephalus townsendi*) are listed as threatened under the California ESA and ESA, fully protected by the Department, and depleted under the MMPA. The Guadalupe fur seal is a pelagic species throughout most of the year, occurring in Pacific Ocean waters from Isla de Guadalupe, Mexico, to the Channel Islands of Southern California. When ashore, this seal occupies rocky caves and crevices and sandy beaches. Breeding occurs solely on Isla Guadalupe from May to July. Male seals are occasionally observed on rocky beaches of the southern Channel Islands. It is believed that Guadalupe fur seals feed in deep waters on species of krill, squid, and small schooling fish. The most recent population estimate of 7,408 fur seals was made in 1994. Counts taken between 1954 and 1994 suggest that the rate of population growth as of 1994 was approximately 14 percent (Department 2009a).

In 1985 the Guadalupe fur seal was listed as threatened under the ESA. In addition, it is considered to be “depleted” and a “strategic stock” under the MMPA. Under the ESA and MMPA, NOAA Fisheries is responsible for the management and recovery of most marine mammal species including the Guadalupe fur seal. Even though it is required under the ESA, no recovery plan for this species has been prepared, nor has a recovery team been established. This species is fully protected under the Fish and Game Code (§4700), which means that this species cannot be taken or possessed in California without a permit from the Commission. In addition, this species is protected under the CESA. Under CESA, the Department is responsible for conserving, protecting, restoring, and enhancing endangered and threatened species and their habitat. Currently, no state-managed fisheries are known to be negatively impacting this species. The Department does not have any active research, management, or conservation programs for the Guadalupe fur seal.

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7.1.2.5.7 Fissipeds.

Southern Sea Otter. Once ranging from northern California to Japan to Punta Abreojos in Baja California Sur, southern sea otters (*Enhydra lutris nereis*) are rare within the SCSR and occur mostly along California's central coast. California sea otters are federally listed as a threatened species under the ESA. Additionally, this species is fully protected under the Fish and Game Code (§4700). The statewide population of sea otters was drastically reduced during the 18th and 19th centuries due to commercial hunting, and has been generally increasing from as few as 50 individuals in 1914. From 1987 to 1990, an effort was made to relocate 139 southern sea otters to San Nicolas Island. Because fewer than 25 sea otters were observed around the island 9 years after the last translocation, this effort was considered a failure. In 2003, however, 33 individuals were observed around San Nicolas Island. Sea otters in California rarely eat fish. Their diet is made up almost entirely of large invertebrates, including abalones, crabs, sea urchins, clams, snails, mussels, octopus, barnacles, scallops, sea stars, chitons, and worms. Current sightings of sea otters within the SCSR are relatively rare. Sightings of juvenile males and adult males are becoming more common in the northern portion of the SCSR. Male sea otters come south to feed, but return north to breed, and their movements are being monitored by surveys conducted by the U.S. Geological Survey. The coast south of Point Conception was identified as an "otter free" management zone in 1986 at the same time San Nicolas Island was identified as a translocation zone. Sea otters in the "no-otter" zone are subject to non-lethal removal. The USFWS released a biological opinion in 2000 stating that the continued, passive expansion of the sea otter's range was necessary for its survival and recovery. Currently, sea otters are not being removed, and the containment program is under review. A final Environmental Impact Statement was produced in 2009.

7.1.2.5.8 Cetaceans. The bight hosts a rich diversity of cetacean species (order *Cetacea*), with at least 33 species occurring within the SCSR. Blue whales (*Balaenoptera musculus*), humpback whales (*Megaptera novaeangliae*), and gray whales (*Eschrichtus robustus*) enter the SCSR following migration routes between warm southern waters and cold northern waters. Blue whales can be spotted from June to December as they migrate north. Gray whale northward and southward migrations overlap and animals can be seen heading both north and south off Southern California in January and February. Humpback whales (*Megaptera novaeangliae*; federally endangered) can be seen from spring until early fall, and their total United States west coast population is estimated at 597 individuals. Several other species vary seasonally in their abundance, with Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), Risso's dolphin (*Grampus griseus*), and northern right whale dolphins (*Lissodelphis borealis*) more common in winter, and finback whales (*Balaenoptera physalus*) occurring more in the summer. Bottlenose dolphins (*Tursiops truncatus*) forage for bottom fish year-round in Santa Monica Bay. Common cetaceans found in the SCSR include gray whale, humpback whale, blue whale, finback whale (*Balaenoptera physalus*), sperm whale (*Physeter macrocephalus*), Baird's beaked whale (*Berardius bairdii*), and Minke

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whale (*Balaenoptera acutorostrata*), bottlenose dolphins, shortbeaked common dolphins (*Delphinus delphis*), and long-beaked common dolphins (*D. capensis*) (Department 2009a). Special status cetacean species whose ranges extend into the SCSR include the North Pacific right whale (*Eubalaena japonica*; federally endangered), sei whale (*Balaenoptera borealis*; federally endangered), sperm whale (*Physeter catadon* [*P. macrocephalus*]; federally endangered), and killer whale (*Orcinus orca*; federally endangered) (NOAA Fisheries 2010). All cetaceans are protected under the MMPA, and many are also protected under the ESA (Department 2009a).

7.1.2.6 Species Likely to Benefit from MPAs

The MLPA requires that species that are likely to benefit from MPAs be identified. The identification of these species will contribute to the identification of habitat areas that will support achieving the goals of the MLPA and inform MPA monitoring. The SAT assembled, reviewed, and refined the list of species likely to benefit the SCSR; this list is included as Appendix C. Species were considered if they met the following criteria:

- They occur in the SCSR.
- They are taken directly or indirectly in commercial or recreational fisheries.
- They have life history characteristics that make them more conducive to protection by MPAs, such as sedentary behavior, long life spans, slow growth, or associations with habitats that need additional spatial protection. An MPA would be expected to increase the species abundance or spawning biomass if the species is at an abnormally low abundance or abnormally low size frequency (i.e., below the range of natural fluctuations).

7.1.2.6.1 Depleted, Depressed, or Overfished Species.

Fish.

Groundfish (rockfishes, flatfishes, etc). The federal Pacific Coast Groundfish Fishery Management Plan, implemented by the Pacific Fishery Management Council in 1982, includes more than 90 species of bottom-dwelling marine fishes. Species and species groups managed under the Pacific Coast Groundfish Fishery Management Plan include all rockfishes occurring in the northeast Pacific Ocean (about 60 species), sablefish, thornyheads, lingcod, Dover sole and other flatfishes (not including California or Pacific halibut), Pacific whiting, and some sharks and rays. For federally managed fisheries, any stock assessed to be between 25 percent and 40 percent of unfished biomass is managed under “precautionary zone” management, where harvest rates are reduced to slow the depletion rate. Species currently managed under precautionary zone measures include cabezon, petrale sole, sablefish, and the California portion of the west coast blue rockfish and lingcod stocks (Department 2009a).

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The Pacific Fishery Management Council adopted new rebuilding analyses for seven rockfish species (*Sebastes* spp.) that are, or were previously, designated as “overfished” (less than 25 percent of their unexploited spawning population size remains). All seven of these species are known to occur in the SCSR, but only four of these commonly occur: bocaccio, cowcod, and canary and widow rockfishes. Cowcod are found from Baja California to Oregon, while bocaccio, widow rockfish, and canary rockfish ranges extend to Alaska. Juvenile bocaccio tend to settle in kelp beds after their pelagic larval stage and move to deeper rocky reefs (60 to 1,550 feet) as adults. Most adult bocaccio live at depths of 250 to 750 feet. Juvenile canary rockfish also tend to stay closer to the surface before moving to deeper benthic habitats as adults. In Southern California, canary rockfish are most abundant around depths of 500 feet, but go as deep as 900 feet. Widow rockfish juveniles stay near the surface after their pelagic larval stage, and move to deeper waters as adults. Most widow rockfish occur in depths of 450 to 750 feet but have been found as deep as 1,050 feet. Adult widow rockfish of the same size class tend to move together from area to area, and show seasonal movement among adjacent grounds. Cowcod juveniles prefer fine clay and soft sediment including oil platform shell mounds, oil pipelines, and other complex substrate at depths of 132 to 740 feet. Adult fish move to rocky reefs and isolated outcroppings from 300 to 1,620 feet but are most common around 495 feet. All four of these species of rockfish take years to reach reproductive maturity. The rebuilding process for most “overfished” rockfish species to reach healthy population levels is expected to require many years to decades. The commercial fishery for these species is generally regulated by a combination of depth-based area closures, trip limits, restricted access, gear restrictions, and in-season adjustments to prevent catches from exceeding harvest limits. The recreational fishery for these species is also regulated using depth-based area closures, bag limits, gear restrictions, and seasons (Department 2009a).

Southern California Steelhead. See Section 7.1.2.5.3.

Giant Sea Bass. See Section 7.1.2.5.3.

Great White Shark. See Section 7.1.2.5.3.

Gastropods. Gastropods are the most successful class of mollusks, by number of species. The earliest gastropods are known from Early Cambrian rocks more than 500 million years old, like most other orders of shelled animals. Gastropod shells consist of one piece that grows in a coiled pattern, the organism moving into larger chambers in the shell as it becomes larger.

Abalone. Seven species of abalone (*Haliotis* spp.) are found in California: red, white, black, green, pink, pinto, and flat. The Department applies the term “depleted” to five species of abalone within the SCSR. Two of these, the black and white abalone, are discussed in Section 7.1.2.3, Special-status Species. The California Legislature closed the commercial and recreational abalone fishery south of San Francisco Bay in 1997 due to a decline in the

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populations and the progression of disease. The Commission adopted the Abalone Recovery and Management Plan (ARMP) in December 2005. The ARMP outlines restoration strategies for depleted abalone stocks in central and Southern California and describes the management approach to be used for northern California red abalone and eventually for other recovered abalone stocks (Department 2009a). For more detailed information on black abalone (*Haliotis cracherodii*) and white abalone (*Haliotis sorenseni*), see Section 7.1.2.3, Special-status Species.

Red Abalone. These abalones, whose range extends from Oregon into Baja California, are exclusively subtidal in Southern California, and associated with rocky kelp habitat. The ARMP allows for the potential reopening of abalone fisheries at specific locations, such as San Miguel Island. Accordingly, the Department has initiated the necessary evaluation of San Miguel Island red abalone to help inform future decisions by the Commission, and has appointed members of an Abalone Advisory Group to support this work. Assessment surveys began in 2005 as part of the initial task of monitoring population recovery under the draft ARMP. Populations at Santa Rosa, Santa Cruz, and San Miguel islands do not yet meet the size range recovery criterion outlined in the ARMP.

Pink Abalone and Green Abalone. Both these species are found on open coast shallow rocky habitat from Point Conception to Bahia Magdalena, Baja California, Mexico. Pink abalone and green abalone feed on algae, and pink abalone are found at greater depths than green abalone, which center around 10 to 20 feet deep. There has been recent reproduction and recruitment success for green abalone; however recovery will take considerable time. A study off Point Loma found many pink abalone recruits, although the source of the recruits is unknown and the density of the population is much lower than the minimum spawning density needed for the population to persist. The Department began an aggregation study of pink and green abalone to monitor their growth rates, movement, and survival at Santa Catalina, San Clemente, and Santa Cruz islands in summer 2008. Surveys for pink and green abalone were conducted mostly at Anacapa and Santa Cruz islands, and revealed low densities of abalone. Higher densities of pink abalone were found at the east side of Santa Cruz Island. These densities were below the level of recovery.

Pinto and Threaded Abalone. Pinto abalone is uncommon in both southern and northern California, making up less than 1 percent of the population. Threaded abalone is the least common of the abalone species found off California and is rarely found north of San Diego County. Sea urchin divers reported a population of pinto abalone and a population of threaded abalone in the SCSR adjacent to Scripps Institute of Oceanography. Both species were not a major component of then commercial and recreational fisheries in California.

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7.1.2.6.2 Fished Species of Interest.

Fish.

Nearshore Finfish. The Department uses the term “finfish” to define fish that are aquatic vertebrates of the super class Pisces, breathing by gills throughout life, and having limbs in the form of fins. The California Nearshore Fishery Management Plan (2002) guides the management of 19 nearshore finfish species: rockfishes (black, black-and-yellow, blue, brown, calico, China, copper, gopher, grass, kelp, olive, quillback, and treefish), cabezon, California scorpionfish, kelp and rock greenlings, California sheephead and monkeyface prickleback. The first 16 of these 19 species are also included in the federal Pacific Coast Groundfish Fishery Management Plan (Department 2009a).

A restricted access program began in 2003 for the commercial nearshore fishery that affected the take of 10 nearshore species. The shallow nearshore group consists of black-and-yellow, China, gopher, grass, and kelp rockfishes; kelp and rock greenlings; California scorpionfish; California sheephead; and cabezon. A total statewide participant capacity goal of 61 permits was specified for these 10 species, although as of 2007, 186 permits remain with 155 of the permits actively fished (i.e., annual landings of permit species exceeded 100 pounds). A restrictive permit program also began for eight species of deeper nearshore rockfishes: black, blue, brown, calico, copper, olive, quillback, and treefish. Black rockfish is uncommon in the SCSR. The number of permits for these species decreased from 292 in 2003 to 239 permits in 2007 with 105 of the permits actively fished (i.e., annual landings of permit species exceeded 100 pounds) (Department 2009a).

California Sheephead. The California sheephead (*Semicossyphus pulcher*) occurs on nearshore rocky reef and kelp forests, and is found to depths of 280 feet. With the exception of 1982-1983 El Niño, the population seems to increase during El Niño conditions and this is reflected in increased recruitment. Although California sheephead range from Monterey Bay, California to the Gulf of California, Mexico, it is not common north of Point Conception. California sheephead begin life as female with older, larger females developing into secondary males. Female sexual maturity may occur in 3 to 6 years and fish may remain female for up to 15 years. While not clear, it is thought that the timing of the transformation to males involves population sex ratio as well as size of available males; sometimes it does not occur at all. California sheephead show high site fidelity and a small home range, but increase their movement range with warmer seasonal waters. California sheephead feed mainly on invertebrates including urchins and other echinoderms, mussels, clams, gastropods, crabs, spiny lobster, barnacles, squid, bryzoans, and polychaetes. The California sheephead is targeted by sport divers, anglers, and the live fish commercial industry. The recreational catch is regulated by seasonal depth closures, daily bag limit, and a minimum size limit. The commercial fishery is also regulated by an annual commercial allocation, broken into two-month cumulative trip limits and minimum size limit (Department 2009a).

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California Scorpionfish. The California scorpionfish (*Scorpaena guttata*) is a valuable commercial fish in Southern California. For many years, the fishery experienced a long decline, with peak catches of 223,000 pounds in 1925 and fluctuating catches thereafter. However, the rise of the live fish fishery in the 1990s led to the fishery's resurgence, as this species' bright red color and hardness after capture has made it a favorite target. Today, about 85 percent of the commercial California scorpionfish catch goes to the live fish fishery. Catches in 1998 totaled about 75,000 pounds valued at \$175,000. Most fish are taken in traps or by hook-and-line.

California scorpionfish are a moderately important part of the sport fishery in Southern California. They are taken primarily from party boats and private vessels, and occasionally from piers and jetties, mostly from Point Mugu southward.

California scorpionfish are easily distinguished from most other California fishes. They are a relatively heavy-bodied species, with strong head and fin spines, ranging in color from red to brown, often with purple blotches and always covered with dark spots. They reach a length of 17 inches. This species can be found in tide-pool depths to about 600 feet (usually in about 20–450 feet) from Santa Cruz to southern Baja California, and in the northern part of the Gulf of California. Preferring warmer water, the species is common as far north as Santa Barbara. While they are most abundant on hard bottom (such as rocky reefs, sewer pipes and wrecks), they are also found on soft-sediment habitats.

White Seabass. The white seabass (*Atractoscion nobilis*) is the largest member of the croaker family (*Sciaenidae*) in California, capable of reaching lengths over five feet and weights in excess of 90 pounds. White seabass range from Magdalena Bay, Baja California, Mexico to the San Francisco Bay area. They are also found in the northern Gulf of California, Mexico. Genetic data indicates that the white seabass population may be composed of several reproductive stocks. Fisheries related data suggests that the center of the white seabass population may have shifted southward since the inception of the fishery and presently appears to be off central Baja California (Department 2009a).

White seabass aggregate nearshore and around coastal islands to spawn. Spawning occurs from March to August and peaks in May, the majority of spawning events occurring over the two-hour period following sunset. Larvae have been collected from Santa Rosa Island, California to Magdalena Bay, Baja California. California Cooperative Oceanic Fisheries Investigations data collected between 1950 and 1978 revealed larval white seabass concentrations along the inshore areas of Sebastian Viscaïno and San Juanico Bays, Baja California, indicating that considerable spawning occurs off central Baja California. Kelp forest habitat is particularly important to white seabass spawning aggregations (Department 2009a).

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Young-of-the-year white seabass inhabit shallow coastal waters (12 to 30 feet deep) where they associate with drift algae along sandy ocean bottoms. Most juveniles between 1 and 3 years old occur in shallow, open coastal areas with a very small portion entering bays. Older juveniles are caught off piers and jetties and around beds of giant kelp. Adult white seabass occupy a wide range of habitats including kelp beds, rocky reefs, offshore banks, and sandy bottoms. White seabass mainly feed on highly mobile coastal pelagics such as herring, anchovies, and squid (Department 2009a).

Today, catches of white seabass are concentrated in the nearshore waters of the bight including the Channel Islands. Regulations covering white seabass include a minimum size limit (28 inches), closed seasons, bag limits, and fishing gear restrictions. Beginning in 1983, the Department initiated the Ocean Resources Enhancement and Hatchery Program to test the feasibility of raising white seabass for population enhancement. Over one million juvenile white seabass have been released into the wild, and the Department has verified over 100 legal-sized tag returns. Recent evidence indicates that the white seabass fishery in Southern California is returning due mainly to the nearshore commercial gill net ban that went into effect in 1994 (Department 2009a).

California Halibut. California halibut (*Paralichthys californicus*) is an important nearshore flatfish species in both the commercial and recreational fisheries of central and Southern California. California halibut prefer soft-bottom coastal habitats in depths less than 300 feet, and are greatest in abundance in depths of 100 feet or less. California halibut spawn in nearshore areas from approximately February to July. Fertilized eggs float in the upper 98 feet of the water column shoreward of the 250-foot isobath. At 30 days post-fertilization, the eggs hatch and the yolk-sac larvae emerge. The larvae are planktonic and they are typically concentrated in the upper 65 feet of the water column shoreward of the 250-foot isobath, although they have been collected from the sea surface down to a depth of 250 feet. The transformation of halibut larvae into juvenile fish coincides with their settlement in both nearshore protected habitats (i.e., bays and estuaries) and exposed open coast areas of Southern California approximately 20 days post-hatching (Department 2009a).

The adult halibut diet consists of nearshore finfish such as Pacific sardine, white croaker, and market squid. California halibut can grow to five feet in total length and weigh as much as 72 pounds. Results from extensive tagging studies conducted by the Department indicated juvenile and adult halibut remain localized within an 8-mile range but larger adult fish are known to travel over 200 miles. Their results also indicated halibut movement was conducted parallel to the coast line, and northward migrations were of significantly greater distances than southward. However, tagged halibut recaptures south of the international boundary with Mexico may have gone unreported, limiting our knowledge of southward migrations (Department 2009a).

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California halibut is taken commercially using three types of gear: bottom trawl, set gillnet, and hook-and-line. Gill and trammel nets are prohibited in state waters along the mainland within the SCSR and in waters less than 420 feet deep or within 1 nautical mile, whichever is less, around the Channel Islands. Currently, the mesh size must be at least 8.5 inches to harvest California halibut. Bottom trawling is prohibited in all state waters, except within the California Halibut Trawl Grounds. These trawl grounds are located in certain state waters not less than 1 mile from mainland shore from Point Conception (Santa Barbara County) to Point Mugu (Ventura County). Recreational anglers target halibut from shore and boat-based modes including Commercial Passenger Fishing Vessels (CPFVs), private and rental boats, and kayaks (Department 2009a).

Kelp Bass. Kelp bass (*Paralabrax clathratus*) is one of the most important recreationally fished nearshore species in the SCSR. The most productive California fishing areas for kelp bass in recent years have been off Point Loma and La Jolla in San Diego County, Dana Point and Laguna Beach in Orange County, Santa Catalina Island and Horseshoe Kelp in Los Angeles County, and around the Channel Islands in Santa Barbara and Ventura Counties. Kelp bass are targeted exclusively by sport anglers; the commercial harvest of this species has been illegal since 1953. Kelp bass are typically found in shallow water (surface to 150 feet) being closely associated with high relief structure, including kelp forests and rocky reefs. Kelp bass range throughout the water column, but seem to concentrate between 8 and 70 feet. Early tag-and-recapture studies showed little movement for the majority of tagged kelp bass and concluded that if they move at all, it is to nearby rocky reefs or short distances to gather into breeding assemblages. Acoustic tracking studies conducted at Santa Catalina Island revealed that kelp bass had relatively small home ranges and stayed in the same general area throughout the one year study. However, movement patterns of kelp bass can vary, as tagging studies in the northern portion of the bight indicated that kelp bass were quite mobile with some fish traveling as far as 50 miles. Kelp bass are carnivorous ambush predators, feeding on a variety of small fish and invertebrates, including other kelp bass, pipefishes, flatfishes, blacksmith, surfperch, crabs, squid, polychaetes, tunicates, and hydrozoans. Department surveys show that anglers catch a large number of age-classes, indicating a stable spawning population (Department 2009a).

Barred Sand Bass. Barred sand bass (*Paralabrax nebulifer*) have consistently ranked among the top 10 species in the Southern California marine sport fish catch. The major barred sand bass fishing sites include the Silver Strand, Del Mar, and San Onofre in San Diego County; Huntington Flats area off Orange County; the inshore portion of northern Santa Monica Bay off Pacific Palisades and Santa Monica in Los Angeles County; and the Ventura Flats area off northern Ventura County. Barred sand bass are targeted exclusively by sport anglers; the commercial harvest of this species has been illegal since 1953. Although lacking some of the sporting qualities of kelp bass, barred sand bass are much more susceptible to hook-and-line gear and are somewhat easier to catch. Sport anglers target large spawning aggregations of barred sand bass, which form over soft-bottom habitat at depths

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between 60 and 120 feet from June through August. Barred sand bass chiefly inhabit the shallow waters near the Southern California mainland and are rare north of Point Conception. While barred sand bass occur as deep as 600 feet, they are typically caught in depths less than 90 feet. Young sand bass are abundant in very shallow water (5 to 30 feet). Barred sand bass are usually closely associated with sand/rock interfaces of rocky reefs, kelp and seagrass beds, and artificial structures and are rarely found out over sandy expanses during non-spawning periods. Department tagging studies have revealed that barred sand bass are capable of movements of from five to 40 miles. Results from a recent acoustic tracking study of barred sand bass movements at Santa Catalina Island indicated they had small home ranges and that individuals remained in their home ranges throughout the one-year study. These results suggest that some barred sand bass may spawn within home ranges, while others migrate to large spawning areas. Barred sand bass are carnivorous ambush predators, feeding on a variety of small fish and invertebrates including surfperch, sardines, anchovies, midshipman, crabs, clams, and squid (Department 2009a).

Surfperch. The surfperch family (*Embiotidae*) comprises a colorful set of fish that are fished primarily by recreational anglers. Surfperch ranks in the top ten most popular species in terms of the number of fish landed (kept and/or released) by recreational anglers fishing ocean waters. Surfperch also support a comparatively minor hook-and-line commercial fishery. Barred, redbtail, and calico surfperch may not be taken commercially south of Point Arguello. The barred surfperch (*Amphistichus argenteus*) is the primary species taken by recreational beach anglers in the SCSR. Barred surfperch are found along sandy beaches near sources of food and cover such as piers and jetties. Several species of surfperch prefer similar habitat while others prefer rocky reefs or kelp beds. Surfperch are usually found in 60 feet or less, although the pile perch and rubberlip surfperch will go to depths of 150 feet, and barred surfperch have been found as deep as 240 feet. Surfperch stay near the shoreline in relatively shallow water, making them vulnerable to coastal development and pollution (Department 2009a).

California Grunion. The grunion (*Leuresthes tenuis*) is a member of the New World silversides family, Atherinopsidae, along with the jacksmelt and topsmelt. They normally occur from Point Conception, California, to Point Abreojos, Baja California, but are now being found farther north to Monterey Bay, San Francisco Bay and Tomales Bay. These northern populations may not be self-sustaining, but rather occasionally re-colonized from Southern California populations. Genetic data indicate recent colonization in the northern sites and mobility between southern spawning sites. They inhabit the nearshore waters from the surf to a depth of 60 feet. Limited tagging studies indicate they are non-migratory, but neither do they show site fidelity. Spawning occurs from March through August, and occasionally in February and September. Peak spawning is late March to early June. The eggs are deposited during the highest tides of the month and incubate in the sand during the lower tide levels, safe from the disturbance of wave action, and hatch during the next high tide series about 10 days later. Despite local concentrations, grunions are not abundant within

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California. The most critical issue facing the grunion resource is the loss of spawning habitat caused by beach erosion, harbor construction, beach manipulation, and pollution. Grunions are not a commercially targeted species but make up a small portion of the commercial “smelt” catch. Sport fishers with a sport fishing license may take grunion using only their hands. There is no bag limit, but grunion may only be taken from June through March (Department 2009a).

Nearshore Sharks and Rays. Nearshore sharks and rays (Class *Chondrichthyes*) occur in shallow waters and utilize bays and estuaries as nursery sites. These species tend to grow slowly, live many years, and have low reproductive rates. In the eastern Pacific, Pacific angel sharks (*Squatina californica*) are found from southeastern Alaska to the Gulf of California and from Ecuador to Chile. Pacific angel sharks are bottom-dwelling species found at depths of three to over 600 feet. They are often found in sandy, soft bottoms between rocky reefs, and are sometimes taken in the commercial California halibut trawl fishery and discarded as bycatch. According to tagging studies, Pacific angel sharks often stay in the same vicinity as tagged, although angel sharks tagged at the islands did tend to move around the islands. Pacific angel sharks eat mostly queenfish, blacksmith and market squid. The Pacific angel shark fishery is regulated with gear restrictions and a minimum size limit. Sport and commercial fishermen take nearshore sharks and rays throughout California, except for the shovelnose guitarfish, which is rare north of Monterey Bay. Take of many shark, skate, and ray species occurs as bycatch, so some species are possibly taken and discarded in trawl and other fisheries because of their low value. Although not targeted by sport or commercial fishermen, the spiny dogfish probably makes up a significant amount of the bycatch in some fisheries. Bat rays are commonly taken by sport and commercial fishermen, and then discarded. Leopard sharks are primarily found in bays, estuaries, and shallow nearshore waters where they are easily taken by sport fishermen. Declines in the Pacific angel shark, thresher shark, spiny dogfish and soupfin shark fisheries were observed prior to effective management by the Department. Threats other than targeted fishing and bycatch include loss of nursery habit and illegal take of pups for marine aquaria trade (Department 2009a).

Invertebrates.

Market Squid. The market squid (*Loligo opalescens*) is found from Baja California, Mexico to Alaska. During the day, they are usually found at depths from 325 to 2,000 feet. They migrate to the top 325 feet of water at night. Spawning market squid aggregate over sandy areas from October to May in Southern California. Paralarvae are dispersed from spawning grounds and are found mostly inshore, but their later migration patterns are unknown. Juvenile squid feed on copepods and euphasiids like krill, but as adults eat fish, polychaete worms, squid, and crustaceans. Little is known about their population status, but it is suggested that their stock is replaced annually, and their life span is about 250 days. The commercial fishery for market squid is one of the largest in California, both by volume and value. Traditional fishing areas for squid are found within the Monterey Bay region of

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California north to Año Nuevo and the Farrallon Islands (northern fishery) and in the SCSR around the Channel Islands (southern fishery) including Santa Catalina Island. The southern fishery season operates during the fall and winter. The Commission adopted the Market Squid Fishery Management Plan in 2005. It established a restricted access program, which mandated permits for vessels participating in the fishery, a series of fishery control rules, and a seasonal harvest guideline of 107,047 metric tons (about 235.9 million pounds) (Department 2009a).

Red Sea Urchin. The red sea urchin (*Strongylocentrotus franciscanus*) is an echinoderm (along with sea stars) which feeds primarily on algae, including kelp. They are found from Baja California to Alaska in relatively shallow water (low-tide line to 300 feet). Red sea urchins prefer rocky ground near kelp and seaweeds. Sea urchins can dramatically reduce kelp abundance, creating urchin barrens. Red sea urchins are harvested for their roe, which is sold mostly as an export product to Japan, although recent years have seen a shift from export to domestic uses. Statewide landings of red sea urchins in 2007 were 11.2 million pounds, with 9.6 million pounds landed in Southern California, an amount near the long-term average. The statewide catch has remained in a relatively narrow range from 10.7 to 14.0 million pounds since 2002. A small amount of recreational take of sea urchins occurs from tide pool areas. The red sea urchin fishery is a restricted-access fishery with 300 permit holders, of whom about 120 are active divers (Department 2009a).

Rock Crab. Rock crabs are found from Baja California, Mexico to British Columbia, Canada and are found in low intertidal waters to depths of 300 feet or more. The commercial catch is made up of three species: the yellow rock crab (*Cancer anthonyi*), the brown rock crab (*C. antennarius*), and the red rock crab (*C. productus*). Upon landing, all three species are often categorized as “unspecified rock crab” (*Cancer* spp.) in catch statistics presented in this document. Brown and red rock crabs prefer rocky reefs, while yellow rock crabs prefer open sand or soft-bottom habitat. Rock crabs feed on a variety of invertebrates. Rock crabs have been known to move several miles, but no migration pattern or large-scale movement is apparent. Santa Barbara Harbor accounted for almost 68 percent of the fishery landings for this species between 2000 and 2007. Other notable rock crab ports are Avila-Port San Luis (north of the SCSR), Oxnard, Ventura, Redondo Beach, San Pedro, and the San Diego area ports. The commercial fishery, a limited entry fishery, has size restrictions and requires a valid general trap permit and either a southern or northern rock crab permit. The recreational fishery also has size restrictions and a bag limit of 35 crabs per day (Department 2009a).

California Spiny Lobster. California spiny lobsters (*Panulirus interruptus*) range from Manzanillo, Mexico to Monterey Bay. Adult spiny lobsters prefer rocky areas and are found from the intertidal zone to depths of 240 feet or more. Spiny lobster larvae drift with the current up to 350 miles offshore and to depths of over 400 feet. Adult lobsters forage at night, and feed on a variety of algae, fishes, and invertebrates, including urchins, snails, mussels, and clams. The commercial fishery for California spiny lobster uses baited traps that

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are individually buoyed and deployed along the mainland coast from Point Conception to the California border with Mexico and at all the Channel Islands. A large recreational fishery also thrives, involving skin and scuba divers, and anglers with hoop nets. The fishery is strongly influenced by the weather and El Niño and La Niña events. The commercial fishery is regulated with size limits, a season, gear requirements (escape ports on traps for undersized lobster), and permits. Recreational fishers are regulated with size limits, a season, daily bag limits, and gear regulations. Fishing intensity tends to be highest at the start of the season (in the fall) when fishing efficiency is the highest. The Commission approved a lobster report card in order to provide data on total recreational catch. The lobster report card has been required of all recreational lobster hunters, regardless of age or gear type, starting the fall of 2008 (Department 2009a).

CALobster, a research collaboration of commercial fishermen and marine biologists from UCSB, collects data on local lobster catches. CALobster strives to advance fishery research and management by fostering collaboration among scientists and fishermen. As part of these collaborative efforts, CALobster conducts studies in which lobster are tagged, released, and eventually recaptured. The studies provide information about where lobsters go and how fast they grow. The data may be valuable for understanding how marine reserves affect the lobster fishery, developing lobster population models, and integrating marine reserves into stock assessments. The researchers use traps to monitor California spiny lobster around the eastern Channel Islands. They deploy commercial lobster traps inside, nearby, and approximately 2 miles away from four reserves. Every trapped lobster is measured and then released with a numbered tag, which stays attached even after the lobster molts. The short-term goals of CALobster are to determine:

1. Sizes of spiny lobster and population age structure inside versus outside reserves
2. Number of lobster per trap inside versus outside reserves
3. Movement patterns near reserve borders and over greater distances

CALobster has determined that lobster populations inside reserves have higher proportions of large individuals; traps inside reserves consistently had equal or higher yields than traps outside; and recaptures suggest most movement is less than 0.7 mile, but some lobsters move long distances (Department 2008b).

Sea Cucumbers. The California sea cucumber (*Parastichopus californicus*), also known as the giant red sea cucumber, and the warty sea cucumber (*P. parvimensis*) are fished commercially in California. Both ranges extend south to Baja California, Mexico and north to Alaska and Monterey Bay respectively. The warty sea cucumber inhabits the low intertidal zone to 90 feet, the California sea cucumber to 300 feet. Sea cucumbers feed on organic detritus, sea stars, and small organisms in the nearshore rocky environment. Sea cucumbers move about 12 feet per day, but without pattern. The warty sea cucumber is fished almost

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exclusively by divers, and populations at fished sites have declined due to fishing mortality. The California sea cucumber is caught principally by trawling in federal waters adjacent to Southern California. Special permits to fish for sea cucumbers commercially were required beginning with the 1992–1993 fishing season. No significant sport fishery for sea cucumbers exists in California, and sport fishing regulations forbid their take in nearshore areas in depths less than 20 feet (Department 2009a).

Kellett's Whelk. The Kellett's whelk is a large subtidal snail (*Kelletia kelletii*) which occurs intertidally and is common subtidally to 230 feet on rocky reefs, gravel bottoms, kelp beds, and sand from Isla Asuncion, Baja California, Mexico to Monterey Bay. Spawning occurs in the spring, and during spawning the snails aggregate into groups of up to 20 individuals. The species is harvested commercially; Los Angeles and Orange County ports received over half the Kellett's whelk landings in 2006 followed by San Diego, Santa Barbara, and Ventura County ports. Although not one of the top five invertebrate fisheries by landings, the Kellett's whelk fishery is growing rapidly. No regulations exist regarding harvest of this species, except that Kellett's whelks cannot be taken within 1,000 feet from the shore unless it is incidental take by lobster and/or rock crab traps (Department 2009a).

7.1.2.7 Ecological Linkages/Associations

Watersheds and coastal waters have many complex ecological linkages/associations. Watersheds carry freshwater, nutrients, and sediments to bays, estuaries, and the ocean. In Southern California, growth of urban areas has significantly changed the nature of many watersheds. Many rivers and streams (e.g., the Los Angeles River) have been channelized, which has impacted the transport of sediment, nutrients, and pollution to coastal environments. Numerous smaller streams and rivers flow into small estuaries in which mixing and dilution occur. Many of the estuaries, bays, coastal lagoons, and remaining wetlands have high importance relative to their small size and the number of resident and migrating species associated with them. Studies have shown that some species, including flatfish, rely on intricate associations between estuarine and coastal environments during different life stages. Some examples of critical ecological associations along the SCSR are described below for selected marine species (Department 2009a).

7.1.2.7.1 Marine Fish. Species such as sole, sablefish, hake, and rockfish live as adults on the continental shelf and slope or in submarine canyons. They produce pelagic larvae that recruit to estuaries, bays, kelp forests, rock outcrops, and cobble fields. Eelgrass beds are important for spawning and juvenile habitat for certain species, such as shiner perch and barred sand bass. The structure of eelgrass beds provides protection from predation for juvenile invertebrates and fishes. Bat rays, leopard and smoothhound sharks, plainfin midshipman, staghorn sculpin, several surf perch, jacksmelt, and topsmelt mate and bear their young in estuarine habitats.

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7.1.2.7.2 Anadromous Fish. This type of fish produces eggs and juveniles in fresh water. The juveniles then pass through estuarine environments to mature at sea and return through the estuaries as adults to migrate upstream in coastal rivers to reproduce. Rivers within the SCSR once supported large numbers of anadromous species. However, due to degradation of watersheds and freshwater ecosystems and the presence of barriers to fish passage, stocks of native anadromous fish, such as steelhead trout, are limited in Southern California.

7.1.2.7.3 Catadromous Fish. Members of this type of fish live in fresh water, but travel to marine environments to breed. Some estuaries in Southern California, such as the Ballona Wetlands, host striped mullet, one of the few catadromous species that exists in California.

7.1.2.7.4 Shorebirds and Waterfowl. This category of birds includes such species as Black-bellied plover, Black-necked stilts, killdeer, and ruddy ducks, and special-status species such as California least tern, western snowy plover and Belding's savannah sparrow. They inhabit coastal lagoons, estuaries, and salt marshes as well as areas near sandy beaches. Large numbers of shorebirds and diving ducks are attracted to eelgrass beds, where they feed on the eelgrass, fish, and invertebrate eggs and young. Many bird species use salt marshes, shallow intertidal flats, and lagoons during their annual migrations. The estuaries, bays, and sandy beaches of coastal California form part of the Pacific Flyway, one of the four principal bird migration routes in North America.

7.1.2.7.5 Marine Mammals. This category includes such species as California sea lions, northern elephant seals, harbor seals, and other marine fissipeds. These species have many haulout sites, as well as a few rookeries on secluded rocks and sand beaches, tidal flats, and estuaries in the SCSR.

7.1.2.7.6 Coastal and Estuarine Vegetation. This category includes plants such as macroalgal mats, cordgrass (*Spartina foliosa*), and pickleweed (*Sarcocornia pacifica*). For example, macroalgal mats composed primarily of *Macroystis*, *Ulva*, and *Enteromorpha* spp., may be carried on tides or currents to the open ocean, where they provide shelter and food for numerous organisms, notably juvenile fishes. Eventually, these mats may wash up on shore, where they supply nutrients to sandy beach and rocky intertidal communities.

7.1.3 Impact Analysis

Adaptive management is a part of the MLPA. The MLPA requires monitoring to determine whether its goals related to biological resources are being met. If the goals of the MPAs (see Section 2.4.1) and MLPA (see Section 3.2) are not being met, then either regulatory or management changes could occur to try and meet the goals.

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7.1.3.1 Methodology

The potential impacts to the SCSR biological resources by the proposed Project IPA were evaluated qualitatively, based on MPA establishment, modification, or removal.

7.1.3.2 Criteria for Determining Significance

The proposed Project IPA would result in a significant impact on biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

7.1.3.3 Environmental Impacts

Potential Impact BIO-1: Adverse Impacts on Marine Species Populations and Habitats Outside MPAs from Displacement and Congestion of Fishing Effort Outside MPAs

The proposed Project IPA would not have a substantial adverse effect on any riparian habitat or other sensitive natural community (e.g., federally protected wetlands as defined by Section 404 of the Clean Water Act) identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

Although implementation of state marine reserves (SMRs) and to a lesser extent state marine conservation areas (SMCAs) would reduce congestion of commercial and recreational

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fishing within those boundaries, continued commercial and recreational fishing activities would likely shift to areas outside of MPA boundaries. Fishing effort may become concentrated outside MPAs for several reasons. One reason is that MPAs may cause existing users to find alternate fishing grounds, leading to a possible concentration of existing fishing effort into surrounding waters. Alternately, effort may be attracted to the edges of MPAs in order to benefit from potential increases in catch or catch per unit effort. It is possible that either of these types of congestion could lead to negative population and habitat impacts outside the MPAs boundary (Department 2002c).

In 2003, a network of MPAs was established in the waters around the Northern Channel Islands. A 5 year review of these MPAs was presented to the Commission in 2008. Included in this review was a Department study on the impacts that MPAs had on CPFV effort and catch. The report used CPFV logbook data (1998–2006) before and after the Northern Channel Island MPAs were established. Results indicated that fishing effort increased in some areas and decreased in others. However, no trends were found suggesting that MPAs were directly responsible for losses or gains in catch over this time period and that fishing regulations and environmental conditions likely played larger roles in changes in recreational catch (Department 2008c). While the Department study did not detect any changes in recreational catch outside MPAs, other studies from different locations have reported increases in recreational and commercial catch. From 1985 to 2001, all new Florida records for black drum, and most records for red drum, have been for fish caught adjacent to the Merritt Island refuge (Roberts et al. 2001). Four years after closed areas were established on the Georges Bank, scallop (*Placopecten magellanicus*) biomass increased 14-fold within the closed areas (Murawski et al. 2000). Satellite tracking of vessels shows that scallop fisheries are now concentrated near reserves, and total landings are 150 percent of 1994 levels. McClanahan and Kaunda-Arara (1996) found a 110 percent enhancement of catch per unit effort in fishing grounds close to the Mombasa Marine National Park in Kenya. Ratikin and Kramer (1996) found highest catches and catch per unit effort inside the Barbados Marine Reserve and catches increased outside the reserve along a gradient approaching the boundary from both the north and the south. Russ and Alcalá (1996) found a gradual increase in densities of fish outside Apo Island reserve in the Philippines.

Data from existing reserves show that, in spite of the increased effort around reserves, the abundance of targeted species is highest in reserves and declines in proportion to distance from reserves. If the concentrated fishing effort around reserves caused local declines, the abundance of targeted species would be high within and distant from reserves, but low at the edges of reserves. Numerous reserves have been studied worldwide and this pattern has not been detected (e.g., Roberts and Hawkins, 2000). Thus, the positive effects of reserves on abundance appear to surmount any potential negative effects of displacement or concentration of boats around reserves (Department 2002c).

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Displaced or concentrated fishing effort at the edges of reserves also could impact habitat quality around reserves. If concentrated fishing at the edges of reserves reduces habitat quality, one would expect a corresponding decrease in abundance and diversity of species adjacent to reserves. As indicated above, this trend is not observed at the edges of reserves, which consistently support higher abundance and diversity of fishes and invertebrates than other sites distant from reserves. No published data on existing MPAs have shown negative environmental impacts due to displacement and compaction of fishing effort (Department 2002c).

The MPAs in the proposed project could contribute to increasing biomass, individual size, and reproductive potential of organisms, particularly for species with low dispersal and high reproduction. The broad scale ecosystem protection afforded to habitats within the proposed MPAs can also lead to increased resilience, further protecting biodiversity and associated ecosystem services. The proposed project includes all habitat types in all bioregions, encompassing at least some portion of the ranges of most species of interest. The MPAs in the proposed project could help sustain various fished populations, and provide areas of significantly higher reproductive capacity. Increased reproduction within the proposed MPAs may lead to long term fisheries benefits outside their boundaries. Based on this information, impacts of the proposed Project IPA related to concentration of fishing effort outside MPAs would be less than significant.

Although impacts would be less than significant, it should be noted that implementation of the Marine Protected Areas Monitoring Enterprise, an effort aimed at efficient, cost-effective MPA monitoring that meets MLPA requirements, would further lessen these impacts. The California Department of Fish and Game and other partners would engage resource managers, policy makers, researchers, stakeholders and the public in planning and implementing MPA monitoring of the emerging statewide MPA network.

Potential Impact BIO-2: Adverse Impacts on Marine Species Populations and Habitats Inside MPAs from the Removal of a Human Predator

The red sea urchin (*Strongylocentrotus franciscanus*) has been shown repeatedly to deforest large areas of shallow rocky reefs. To the extent that human harvest of red sea urchins can prevent deforestation of kelp forests, urchin harvest may protect or enhance the many functional roles of algae, their productivity and diversity of species associated with algal habitats. Conversely, many examples of urchin outbreaks and deforestation occur in regions where their natural predators have been heavily fished, often depleted, such that the role of urchin harvest could be compensated by protection of the other predators of sea urchins (California sheephead, spiny lobsters, sea stars, and others). Moreover, human harvest and these other predators may compete with one another for sea urchins, such that human harvest can diminish protection for these other species identified for protection within MPAs. It is expected that the proposed MPAs will result in the return of naturally balanced ecosystems

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that can be more resilient to sea urchin barrens (Department 2009b). In defining the expectation, it should be noted that the removal of human predation on urchin predators would likely replace human removal of urchins. Impacts relative to removal of a human predator would therefore be less than significant.

Potential Impact BIO-3: Impacts on Marine Species Populations and Habitats Inside MPAs Habitat Protection

Establishing MPAs would not be likely to create additional demand on marine species (including marine mammals and birds) or habitats inside the MPAs. There would be substantial biological resource benefits because of the increased habitat protection that would occur under the revised MPA network. There also is likely enough area protected within proposed MPAs to provide some benefits to some overfished populations that depend on the habitat types within the South Coast Study Region (SCSR) for some part of their life history, and to prevent further degradation of marine habitats that are vital to marine ecosystems of the SCSR.

The proposed Project IPA would protect the same or a larger area of all habitat types within the SCSR. Table 7-5 displays differences in the total area that is protected within MPAs in the various packages, ranging from approximately 181 square miles in the existing MPA structure to 412 square miles in Alternative 3 (figures include other types of closures in addition to MPAs). The most prominent differences between the proposed Project IPA and the existing MPA network include the total area protected and the percentage of area within SMRs, the most protective MPAs.

Marine biological resources within MPAs would be expected to benefit from the proposed Project, and impacts on species within the MPAs would be less than significant.

Potential Impact BIO-4: Impacts on Special-status Marine Species Resulting From Removal or Modification of Existing MPAs

The removal or modification of existing MPAs may impact the protection of a special-status marine species. Where existing MPAs are proposed for removal, increases in fishing effort could lead to increased take of special-status fishes. Special-status species that have regulatory protection beyond that offered by the existing MPA regulations (such as species listed as endangered, threatened, fully protected, etc.) could also be impacted, due to the increased potential for incidental take. Species-specific considerations are discussed below.

Salt Marsh Bird's Beak

Salt marsh bird's beak (*Cordylanthus maritimus* ssp. *maritimus*) grows in the higher reaches of coastal salt marshes to intertidal and brackish areas influenced by freshwater input. It is designated an endangered species at both the state and federal levels. The population of this

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**TABLE 7-5
TOTAL PROTECTED AREA BY ALTERNATIVE**

Package	State Marine Park			State Marine Conservation Area			State Marine Reserve			Undesignated and Other ¹			Total		
	No.	Sq. Mi.	% of SCSR	No.	Sq. Mi.	% of SCSR	No.	Sq. Mi.	% of SCSR	No.	Sq. Mi.	% of SCSR	No.	Sq. Mi.	% of SCSR
Existing MPA	8	2.7	0.1	19	17.8	0.8	15	161.0	6.9	0	0	0	42	181.5	7.7
Proposed Project IPA	0	0	0	20	76.55	3.3	28	274.07	11.7	2	36.68	1.6	50	387.3	16.5
Alternative 1	0	0	0	17	53.11	2.3	33	307.76	13.1	2	36.68	1.6	52	397.54	16.9
Alternative 2	0	0	0	12	58.82	2.5	25	282.77	12.0	2	36.68	1.6	39	378.27	16.1
Alternative 3	0	0	0	9	57.85	2.5	30	291.1	12.4	4	63.72	2.7	43	412.67	17.6

¹ These areas include both undesignated and State Marine Recreational Managed Area (SMRMA), note that SMRMA is not an MPA designation, but rather a marine managed area designation.

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species has declined due to loss of habitat and non-native plant competitors. Historically, salt marsh bird's beak was widespread in coastal salt marshes from Morro Bay in San Luis Obispo County to San Diego County and northern Baja California. Presently, it occurs only in scattered sites at fewer than 10 salt marshes. Half of the original occurrences are now extirpated. Within the SCSR, it is currently found at Tijuana Estuary and Sweetwater Marsh in San Diego County, Upper Newport Bay and Anaheim Bay in Orange County, Ormond Beach and Mugu Lagoon in Ventura County, and Carpinteria Salt Marsh in Santa Barbara County. The interaction between tidal flows, and local surface and subsurface freshwater flows is complex and important to the species survival. Salt marsh bird's beak is found in the Upper Newport Bay Ecological Reserve. The Proposed IPA would not remove the Ecological Reserve designation from any area with that designation, and could afford additional protection by the establishment of the Upper Newport Bay SMCA. Impacts to this species would be less than significant; with the expansion of the proposed MPAs this species will be further protected and conserved.

Ventura Marsh Milk-vetch

Ventura marsh milk-vetch (*Astragalus pycnostachys* var. *lanosissimus*) species occurs in two very discrete locations within the SCSR. These species accounts are located inland in close proximity to the SCSR (Ballona Wetlands); however, they are not located within the existing MPAs or areas proposed for MPA designations under the proposed Project IPA. Thus, it is unlikely that the Project would affect this species.

Gambel's Water Cress

Gambel's water cress (*Nasturtium gambelii*) is both a state and federally listed endangered species. It occurs in freshwater and brackish marshes in Santa Barbara, Los Angeles, and Orange counties (CNPS 2010). These occurrences are located inland in close proximity to the SCSR; however, they are not located within the existing MPAs or in areas proposed for designation as MPAs under the proposed Project IPA. Additionally, these occurrence data exist from the late 1800s and early 1900s. Given the location and the time period of the occurrences, is unlikely that there would be adverse impacts to this species. If an unknown population were to exist in and MPA that was being removed or modified, both the federal and state protection already afforded this plant species would remain in effect. Impacts on this species would be less than significant, and the proposed expansion of the MPA network in the SCSR could further protect and conserve this species.

Gastropods (Black/White Abalone)

White abalone (*Haliotis sorenseni*) and black abalone (*Haliotis cracherodii*) are listed as endangered species under the ESA. Coastal development, such as residential areas, harbors, and coastal access points and large ocean discharges of municipal and industrial wastes contribute to the degradation and loss of nearshore habitat. Adult abalone depend primarily

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on drift algae while the main predators of adult abalone are fishes, otters and humans. In June 2007, NOAA Fisheries convened the Black Abalone Status Review Team who concluded that risks associated with withering syndrome are the primary cause for concern about the survival of black abalone as a species, and as such has no bearing on the proposed Project IPA.

Destruction, modification, or curtailment of habitat or range of white abalone was not an important factor in the decline of the species historically and is not believed to limit recovery of the population at this time. Currently, substrate destruction, suboptimal water temperatures, reduced food quantity and quality, and environmental pollutants/toxins are considered to be of relatively low severity and the effect of these threats on the species are relatively uncertain. In the future, potential risks imposed by substrate destruction may be averted through implementation of ESA Section 7 consultations and establishment of Marine Protected/Conservation Areas. The effects of long-term (or global) climate change on this species, either directly through water quality changes or indirectly through interactions with other species, including food items, is a potential threat (NOAA Fisheries 2008). However, the proposed IPA would not contribute substantially to any of these factors, and would therefore not result in significant impacts on this species. Existing federal protections, which would remain effective regardless of any changes to the state's MPA network, would minimize the potential for incidental take.

Southern Steelhead

Southern steelhead (*Oncorhynchus mykiss irideus*) are listed as an endangered species by the ESA and as a California Species of Special Concern by the Department and occur in some areas of the SCSR. Recreational and commercial take is prohibited under federal and state law, and ocean harvest is a rare event (NOAA Fisheries 2005). When caught these fish are required to be returned to the water immediately but mis-identification as well as the stress and possible injury experienced during landing may result in the death of some Southern California steelhead. Reduction in the population of a listed species from the proposed Project IPA may be considered a significant effect if the reduction is substantial. Although potential for impact occurs from incidental take during lawful fishing, overall the expansion of the proposed MPAs further protect and conserve this species.

Steelhead, like salmon, spend most of their lives in the ocean, then return to fresh water to spawn. They are known to aggregate in proximity to the mouth of coastal streams prior to spawning migration. The existing Big Sycamore Canyon SMR prohibits all take of marine life. Removal of this SMR, as proposed in the proposed Project IPA would reduce protection for the marine waters adjacent to Big Sycamore Creek, a known historical steelhead creek, by allowing fishing activities to occur in marine waters. As a result, the removal of Big Sycamore Canyon SMR could, during certain seasons, result in the incidental catch of steelhead during otherwise lawful fishing activity. The removal of other MPAs as proposed

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in the proposed project IPA would create no change to the existing potential for incidental catch of steelhead through lawful fishing activity. Overall, the expansion of the proposed MPAs would protect and conserve this species, and impacts would be less than significant.

Giant Sea Bass

Giant sea bass (*Stereolepis gigas*) are a protected species in the state of California and have been labeled critically endangered by the International Union for the Conservation of Nature and occur throughout the SCSR. Though protected from directed take under state law, giant sea bass are still occasionally caught incidental to other lawful fishing activity. When caught these fish are required to be returned to the water immediately but the stress and possible injury experienced during landing may result in the death of some giant sea bass. Some incidental allowances exist for commercial fisheries regarding incidental catch. Reduction in the population of a listed species from the proposed Project IPA may be considered a significant effect if the reduction is substantial. Although potential for impact occurs from incidental take during lawful fishing, overall the expansion of the proposed MPAs further protect and conserve this species. Although potential for impact occurs from incidental take during lawful fishing, overall the expansion of the proposed MPAs further protects and conserves this species.

Tidewater Goby

Tidewater goby (*Eucyclogobius newberryi*) are listed as endangered under the ESA and occur throughout the SCSR. In addition, they are listed as a California Species of Special Concern by the Department. This species is not subject to pressure from recreational or commercial fishing because of its size, and as such relies heavily on habitat for its continued success. Locations where this species is known to occur within the SCSR are not experiencing a change in protection status, and as such would not have an impact based upon the proposed Project IPA.

Sea Turtles

The loggerhead (*Caretta caretta*), olive ridley (*Lepidochelys olivacea*), and green sea (*Chelonia mydas*) turtle have been listed as threatened under the ESA. The leatherback sea turtle is listed as endangered under the ESA. Sea turtles are not common within state waters of Southern California except at certain times of the year near warm-water effluent channels of the San Diego Gas and Electric Power Company in San Diego Bay. The San Gabriel River also has a small colony of green sea turtles, attracted by the warm-water effluent from the Los Angeles Department of Water and Power's Haynes Generating Station. These species are rarely subject to incidental take and with the expansion of the proposed MPAs this species will be further protected and conserved. Impacts would be less than significant.

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Bald Eagle

In 2007, the bald eagle (*Haliaeetus leucocephalus*) was delisted from the Endangered Species Act and their current protection comes from the Bald and Golden Eagle Act. Additionally, they are listed as endangered by the CESA, and fully protected by the Department. While marine birds are not targeted by recreational or commercial fisheries, they can benefit both directly and indirectly from the establishment of MPAs. Direct benefits include reduced disturbance at breeding and roosting sites and lower probability of interaction with humans and fishing gear at foraging areas. Indirect benefits include reduced competition for important prey resources. The proposed Project IPA and its alternatives each provide an increased level of protection for seabirds (SAT 2009). With the expansion of the proposed MPAs this species will be further protected and conserved. The proposed Project IPA involves designation of a network of MPAs and impacts of the proposed Project IPA will be evaluated as a whole.

Bald eagles are opportunistic feeders. Fish comprise much of their diet, but they also eat waterfowl, shorebirds/colonial waterbirds, small mammals, turtles, and carrion. (Source <http://www.fws.gov/pacific/eagle/NationalBaldEagleManagementGuidelines.pdf>) As such, bald eagle prey species occurring within the SCSR would likely benefit from the proposed Project IPA. Impacts would be less than significant.

Golden Eagle

The golden eagle (*Aquila chrysaetos*) is fully protected by the Department. This species occupies rolling foothills, mountain terrain, and wide arid plateaus deeply cut by streams and canyons, open mountain slopes and cliffs, and rock outcrops (Zeiner et al. 1990). The food supply for this species includes medium to large mammals such as rabbits, hares, and squirrels, and it will also feed on reptiles, birds, and sometimes carrion (Olendorff 1976, Johnsgard 1990). Due to the golden eagle's primarily terrestrial habitat and food requirements, it would not commonly use the habitat within the SCSR, therefore the proposed Project IPA would not adversely affect this species.

American Peregrine Falcon

The American peregrine falcon (*Falco peregrinus anatum*) is fully protected by the Department. Peregrine falcons in general use a large variety of open habitats for foraging, including tundra, marshes, seacoasts, savannahs, grasslands, meadows, open woodlands, and agricultural areas. Sites are often located near rivers or lakes (AOU 1998; Brown 1999; Snyder 1991). Due to the American peregrine falcon's habitat and food requirements, it would not commonly use the habitat within the SCSR, therefore the proposed Project IPA would not adversely affect this species.

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Light-footed Clapper Rail

The light-footed clapper rail (*Rallus longirostris levipes*) is listed as endangered by ESA and CESA and is also listed as a fully protected species by the Department. The light-footed clapper rail is distributed throughout coastal salt marsh habitat from Santa Barbara County, California to San Quintín Bay, Baja California, Mexico. They occur in approximately 24 California marshes where they are usually year-long residents (USFWS 1979). In areas where this species has maintained historical breeding areas, removal of protection would likely result in a potential for impact; however, the federal and state protection already afforded this species would remain in effect. In areas where the expansion of the proposed MPAs would provide greater protection, the species will be further protected and conserved. The proposed Project IPA and its alternatives each provide an increased level of protection for seabirds (SAT 2009).

Ashy Storm-petrel

The ashy storm-petrel (*Oceanodroma homochroa*) is a California Bird Species of Special Concern (breeding) and a federal species of concern. This species' habitat is mainly offshore areas and rocky crevices such as those found near the sea caves in the Channel Islands. The proposed Project IPA and its alternatives each provide an increased level of protection for seabirds (SAT 2009), and impacts to this species would be less than significant. With the expansion of the proposed MPAs this species will be further protected and conserved.

Belding's Savannah Sparrow

Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) is listed as endangered by the CESA. The coastal saltmarshes and estuaries would not lose any protection under the proposed Project IPA. Historic nesting sites at Point Mugu, the Ballona Wetlands, Upper Newport Bay, and Bolsa Chica would retain existing protection. With the expansion of the proposed MPAs this species will be further protected and conserved. Impacts to this species would be less than significant.

Black Storm-petrel

Black storm-petrel (*Oceanodroma melania*) is listed as a California Bird Species of Special Concern (breeding). The only known breeding site for black storm-petrel in the United States is on Sutil Island, an islet off Santa Barbara Island, in 1976. Only one nest was found, but an estimated 10 birds were heard in the vicinity. Black storm-petrels are most common in the warm coastal waters of the Southern California bight over the continental shelf off central California. The proposed Project IPA and its alternatives each provide an increased level of protection for seabirds (SAT 2009), and impacts to this species would be less than significant. With the expansion of the proposed MPAs this species would be further protected and conserved.

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California Brown Pelican

The California brown pelican (*Pelecanus occidentalis californicus*) was protected under both the ESA and the CESA due to diminishing populations stemming from exposure to organochloride pesticide residues. Since the time of the brown pelican's original listing, the U.S. Environmental Protection Agency (EPA) has placed a ban on the use of organochloride pesticides in the United States. As a result, the environmental residue levels of these persistent compounds have steadily decreased in most areas. Pesticide residue levels in brown pelican eggs have steadily decreased since they were first measured. There has also been a corresponding increase in the eggshell thickness and reproductive success of brown pelicans, as well as in many other avian predators such as bald eagles and peregrine falcons. Consequently, populations of brown pelicans on the west coast of the U.S. have substantially increased during the past two decades, and the species has been delisted under both the ESA and CESA. However, the species maintains status as a fully protected species under §3511 of the Fish and Game Code and is protected under the Migratory Bird Treaty Act.

Brown pelicans nest in colonies on offshore islands that are free of mammalian predators and human disturbance, are of sufficient elevation to prevent flooding of nests, and are associated with an adequate and consistent food supply. The proposed Project IPA and its alternatives each provide an increased level of protection for seabirds (SAT 2009). Impacts to this species would be less than significant.

California Least Tern

California least tern (*Sternula antillarum browni*) is listed as endangered by CESA, fully protected by the Department, and endangered under the ESA due to a population decline resulting from loss of habitat. During a survey within the SCSR in 2007, the numbers of nesting California least terns were found to be not uniformly distributed across the entire SCSR. Camp Pendleton, Naval Base Coronado, Los Angeles Harbor, and Baticuitos Lagoon represented 55% of the breeding pairs while Venice Beach, Camp Pendleton, Huntington Beach and Naval Base Coronado produced 52 percent of the fledglings. As the threat to this species is loss of habitat and human disturbance, modification to MPAs where a protection is removed could pose a threat to breeding colonies due to loss of forage areas or prey species. However, the existing regulatory protections maintained by this species would prohibit any take of this species, regardless of any changes to MPA boundaries. Impacts to this species would be less than significant. With the overall expansion of the proposed MPAs, an increase in protected forage area and prey species habitat may contribute to the further protection and conservation of this species.

Elegant Tern

Elegant tern (*Thalasseus [Sterna] elegans*) is listed as a federal species of concern and is listed on the Department's Watch List. This species breeds on flat rocky areas and is strongly

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tioned to the coast. It forages in inshore waters, estuarine habitats, salt ponds and lagoons, with some individuals venturing further offshore in the non-breeding season. The only breeding colonies in the United States are at Bolsa Chica, Pier 400 at Terminal Island, and the salt work dikes at the south end of San Diego Bay. As the threat to this species is limited breeding colonies in the U.S. and human disturbance, incorporation of breeding sites into the San Diego National Wildlife Refuge provides additional protection. Impacts to this species would be less than significant.

Xantus's Murrelet

Xantus's murrelet (*Synthliboramphus hypoleucus*) is a federal species of concern and is listed as threatened by CESA. There are two races of which the northern race (*S. h. scrippsi*) is a fairly common breeder on the Channel Islands, while the southern race (*S. h. hypoleucus*) is a rare visitor to the southern offshore waters of California. The MPAs on the Channel Islands will remain the same, therefore protection of this species would remain the same within its range. Due to the Xantus's murrelet's range and its infrequent utilization of the mainland, it would not commonly use the mainland coastal habitat within the SCSR, therefore the proposed Project IPA and its alternatives each provide an increased level of protection for this species (SAT 2009). With the expansion of the proposed MPAs this species would be further protected and conserved, and impacts would be less than significant.

Willow Flycatcher

The willow flycatcher (*Empidonax traillii*) consists of four or five subspecies. The southwestern willow flycatcher (*E. t. extimus*) is the subspecies present within the SCSR. The willow flycatcher is listed as endangered by the CESA, while the southwestern willow flycatcher is additionally listed as endangered by ESA. The southwestern willow flycatcher is a riparian-obligate species restricted to complex streamside vegetation. Native broadleaf-dominated and mixed native/exotic are the primary habitats used by southwestern willow flycatcher in California (Sogge et al. 1997). Due to the southwestern willow flycatcher's habitat requirements, it would not commonly use the habitat within the SCSR, therefore the proposed Project IPA would not adversely affect this species.

Coastal California Gnatcatcher

The coastal California gnatcatcher (*Poliophtila californica californica*) is listed as threatened by ESA and as a Species of Special Concern by the Department. It occurs in coastal Southern California and Baja California year-round. The coastal California gnatcatcher typically occurs in or near sage scrub habitat which is composed of relatively low-growing, dry-season deciduous and succulent plants (Bontrager 1991). Due to the coastal California gnatcatcher's habitat requirements, it would not commonly use the habitat within the SCSR, therefore the proposed Project IPA would not adversely affect this species.

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Double-crested Cormorant

The double-crested cormorant (*Phalacrocorax auritus*) is listed on the Department's Watch List. During the last 20 years, double-crested cormorant populations throughout North America have been increasing. Improved breeding success due to reductions in human disturbance and persecution, and reductions in exposure to pollutants are believed responsible for population growth since the turn of the century. The proposed Project IPA provides an increased level of protection for seabirds (SAT 2009). With the expansion of the proposed MPAs this species will be further protected and conserved, and impacts would be less than significant.

Osprey

Ospreys (*Pandion haliaetus*) are protected under the Migratory Bird Act and are listed on the Department's Watch List. Upper Newport Bay (Orange County) and Buena Vista Lagoon (San Diego County) have both seen successful nesting and breeding of ospreys in the last several years. The proposed Project IPA and its alternatives each provide an increased level of protection for seabirds (SAT 2009). With the expansion of the proposed MPAs this species will be further protected and conserved, and impacts would be less than significant.

Western Snowy Plover

The Pacific coast population of the western snowy plover (*Charadrius alexandrinus nivosus*) is federally listed under the ESA as threatened. The western snowy plover is also a Bird Species of Special Concern in California. Human activities such as walking, jogging, running pets, horseback riding, and vehicle use are key factors in the ongoing decline in breeding sites and populations. The nesting season of the western snowy plover (March through September) coincides with the period of greatest human use (Memorial Day through Labor Day) on beaches of the west coast. Intensive beach use by humans may result in abandonment of nest sites, reductions in nest density, and reductions in nesting success.

In areas where the expansion of the proposed MPAs would provide greater protection, the species will be further protected and conserved, and impacts would be less than significant.

Pinnipeds

Harbor Seal, California Sea Lion, and Northern Elephant Seal. Harbor seals (*Phoca vitulina*), California sea lions (*Zalophus californianus*), and Elephant seals (*Mirounga angustirostris*) are protected under the MMPA. This act made it illegal to hunt any marine mammal in U.S. waters. The only exceptions include the following: native subsistence hunting and collecting or temporarily keeping of marine mammals for research, education, or public display. It is also illegal, albeit with lower penalties, to do anything that has the potential to disturb a harbor seal in the wild by causing disruption of its behavior patterns.

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With the expansion of the MPAs including no-take SMRs and SMCAs, this may reduce fishery interactions and fishing boat traffic within them. Additionally, because fishing will be prohibited in some areas, harbor seal and sea lion prey species may increase in abundance. Reduced fishing in these areas will result in less competition for food resources between humans and mammals. The proposed expansion and improved management of the MPA network within the SCSR would further conserve and protect this species, and impacts would be less than significant.

Guadalupe Fur Seal. Guadalupe fur seals (*Arctocephalus townsendi*) which mainly breed in Mexico at Isla Guadalupe and Isla Benito del Este, are not known to have specific haul-out sites or rookeries in California. The Guadalupe fur seal is listed as “threatened” under the ESA and CESA, “depleted” and “strategic” under the MMPA, and fully protected under the Fish and Game Code. As there are no established rookeries for this species within the SCSR, any expansion of the proposed MPAs would facilitate further protection and conservation. The proposed Project IPA would not impact this species.

Fissipeds

Southern Sea Otter. Southern sea otters (*Enhydra lutris nereis*) are recognized as “depleted” under the MMPA, and the species is listed as threatened under the ESA and fully protected under the California Fish and Game Code (§4700).

To manage the competition between sea otters and fisheries, the USFWS declared an “otter-free zone” stretching from Point Conception to the Mexican border. In this zone, only San Nicolas Island was designated as sea otter habitat, and sea otters found elsewhere in the area were supposed to be captured and relocated. These plans were abandoned after it proved impractical to capture the hundreds of otters that swam into the zone. Sea otter counts are conducted twice each year by the U.S. Geological Survey. With the expansion of the proposed MPAs this species will be further protected and conserved. Impacts would be less than significant.

Cetaceans

Gray Whale, Humpback Whale, Blue Whale, Finback Whale, Sperm Whale, Baird’s Beaked Whale, and Minke Whale, Bottlenose dolphins, Shortbeaked common dolphins, and Long-beaked common dolphins. Common cetaceans found in the SCSR include gray whale (*Eschrichtus robustus*), humpback whale (*Megaptera novaeangliae*; federally endangered), blue whale (*Balaenoptera musculus*), finback whale (*balaenoptera physalus*), sperm whale (*physeter macrocephalus*), Baird’s beaked whale (*Berardius bairdii*), Minke whale (*Balaenoptera acutorostrata*), bottlenose dolphins (*Tursiops truncatus*), short-beaked common dolphins (*Delphinus delphis*), and long-beaked common dolphins (*D. capensis*). Special status cetacean species whose ranges extend into the SCSR include the North Pacific right whale (*Eubalaena japonica*; federally endangered), sei whale (*Balaenoptera borealis*;

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federally endangered), sperm whale (*Physeter catadon* [*P. macrocephalus*]; federally endangered), and killer whale (*Orcinus orca*; federally endangered) (NOAA Fisheries 2010). All these species are protected under the MMPA. This act made it illegal to hunt any marine mammal in U.S. waters. The only exceptions include the following: native subsistence hunting and collecting or temporarily keeping marine mammals for research, education, or public display. It is also illegal, albeit with lower penalties, to do anything that has the potential to disturb a whale in the wild by causing disruption of its behavior patterns. These are migratory species passing through the SCSR, and the proposed Project would not result in any adverse impacts to these species.

Potential Impact BIO-5: Potential to Conflict with the Provisions of an Adopted Habitat Conservation Plan, Natural Community Conservation Plan, or Policies or Ordinances Protecting Biological Resources

Three habitat conservation plans (HCP) and Natural Community Conservation Plans (NCCP) are located adjacent to proposed MPAs, including the Central/Coastal Orange County NCCP (R.J. Meade Consulting, Inc. 1996), the Palos Verdes NCCP/HCP (URS 2004), and the San Diego County MHCP NCCP/HCP (specifically the San Diego MSCP – Incorporated Subarea Plans; City of San Diego 1997). The jurisdictional boundaries of these NCCP/HCPs extend to the Mean High Tide Line and do not include state waters; therefore, NCCP/HCP jurisdiction does not extend into the SCSR in these areas. Because NCCP/HCP jurisdiction does not extend into the SCSR, no conflicts associated with these NCCP/HCPs would occur. With the expansion of the proposed MPAs near these NCCP/HCPs, the adjacent area would be further protected and conserved.

The Central/Coastal Orange County NCCP (R.J. Meade Consulting, Inc. 1996) encompasses the proposed Upper Newport Bay SMCA. In the proposed Upper Newport Bay SMCA the existing regulated activities, including restrictions on swimming areas, boat speed, shoreline access and access fees, would remain the same as the existing Upper Newport Bay SMP. In addition, the proposed Upper Newport Bay SMCA regulations would allow routine maintenance, dredging, monitoring, research and education, and habitat restoration to continue. Since existing conditions would not be changed, there would be no associated conflicts with the Central/Coastal Orange County NCCP in this area. Additionally, the proposed Upper Newport Bay SMCA expands farther south than the existing Upper Newport Bay SMP boundary. With the expansion of the proposed MPA within the Central/Coastal Orange County NCCP, the area will be further protected and conserved.

**SECTION 8.0
SOCIAL RESOURCES**

8.1 CULTURAL RESOURCES

This section describes the setting and potential cultural resources impacts of the proposed Integrated Preferred Alternative (IPA). Specifically, it describes existing conditions related to cultural resources and summarizes the overall regulatory framework for cultural resources that would affect implementation of the proposed Project IPA. This section then analyzes the potential impacts of the proposed Project IPA on cultural resources and, where appropriate, identifies mitigation measures to address significant impacts.

Cultural resource is the term used to describe several different types of properties: prehistoric and historical archaeological sites; architectural properties such as buildings, bridges, and infrastructure; and resources of importance to Native Americans.

Historical resource is a California Environmental Quality Act (CEQA) term that includes buildings, sites, structures, objects, or districts, each of which may have historical, prehistoric, architectural, archaeological, cultural, or scientific importance, and is eligible for listing or is listed in the California Register of Historical Resources (CRHR).

8.1.1 Regulatory Framework

8.1.1.1 Federal

The National Historic Preservation Act (NHPA) of 1966, as amended, is the primary statute governing projects under federal jurisdiction that may affect cultural resources. If improvements implemented as a part of the proposed Project were funded by the federal government or were part of a federal action, then this statute would apply. Section 106 of the National Historic Preservation Act (16 United States Code Section 470 (f)) requires that all federal agencies review and evaluate how their actions or undertakings may affect historic properties, including those already listed in national registers or that have not yet been reviewed and considered for such. The regulations implementing Section 106 are codified at 36 CFR Part 800 (2001). Because the proposed Project is not federally funded and does not involve a federal action, the NHPA is not applicable to the proposed Project IPA or its alternatives.

8.1.1.2 State/Local

CEQA provides extensive guidance on archaeological and historical resources management, as discussed below. In addition to CEQA, other state laws governing cultural resources and pertinent to the proposed Project IPA include Public Resources Code (PRC) Section 5097.9

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et seq. (Native American heritage) and California Health and Human Safety Code Section 7050.5 et seq. (human remains).

Records about Native American graves, cemeteries, and sacred places, as well as information about the location of archaeological sites, are exempt from being disclosed to the public under the California Public Records Act (California Government Code Section 6254.10).

8.1.1.2.1 California Environmental Quality Act. CEQA is the primary regulatory requirement governing projects under state and local jurisdictions that may affect cultural resources. Under CEQA, both state and local agencies are required to consider potential significant environmental impacts to cultural resources as a result of projects. State CEQA Guidelines define three ways that a property may qualify as a *historical resource* for the purposes of CEQA review:

- The resource is listed in or determined eligible for listing in the CRHR.
- The resource is included in a local register of historical resources, as defined in Section 5020.1(k) of the PRC or identified as significant in a historical resource survey that meets the requirements of Section 5024.1(g) of the PRC, unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- The lead agency determines the resource to be significant as supported by substantial evidence in light of the whole record.

A cultural resource is eligible for inclusion in the CRHR if it:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage
- Is associated with the lives of persons important in our past
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values
- Has yielded, or may be likely to yield, information important in prehistory or history

CEQA defines a *unique archaeological resource* as an archaeological artifact, object, or site that contains information needed to answer important scientific research questions, has a special and particular quality such as being the oldest of its type or the best available example of its type, or is directly associated with a scientifically recognized important prehistoric or historic event or person.

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8.1.1.2.2 Native American Heritage Statute. PRC 5097.9 states, among other things, that “No such agency or party [shall] cause severe or irreparable damage to any Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine...”

8.1.1.2.3 Regulations on Human Remains. The disturbance of human remains without authority of law is considered a felony (Health and Safety Code Section 7052). If human remains are Native American in origin, they are within the jurisdiction of the Native American Heritage Commission (NAHC) (Health and Safety Code Section 7052.5c, PRC 5097.98).

According to state law (Health and Safety Code Section 7050.5, PRC 5097.98), if human remains are discovered or recognized in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

- The county coroner has been informed and has determined that no investigation of the cause of death is required, and
- If the remains are of Native American origin:
 - The descendants from the deceased Native Americans have made a recommendation to the land owner or person responsible for the excavation work for means of treating or disposing of with appropriate dignity the human remains and any associated grave goods as provided in PRC 5097.98, or
 - NAHC was unable to identify a descendent or the descendent failed to make a recommendation within 24 hours after being notified.

According to the California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100), and disturbance of Native American cemeteries is a felony (Section 7052).

8.1.2 Environmental Setting

Cultural resources are those locations, structures, and objects that have importance to the identity of a certain people or place and/or that can educate others and connect them to the important events of the human past. Coastal California possesses a rich prehistory and history of human occupation—by some accounts dating back to 13,000 years before present (Moratto 2004). The prehistory of the south coast study region (SCSR) is represented by submerged archaeological sites and artifacts, and its history is represented by surviving documents, structures, and shipwrecks.

The following setting was developed primarily based on a review of existing data, including in-house reports, online data, offshore marine cultural resources record searches conducted at

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regional centers of the California Historical Resources Information System, and a Sacred Lands File Search conducted by the NAHC. In addition, URS contacted 60 Native American tribal representatives and other groups that the NAHC indicated may have knowledge of the religious and cultural significance of cultural resources within the area. The *Regional Profile of the MLPA South Coast Study Region (Point Conception to the California/Mexico border)* (California Department of Fish and Game [Department] 2009) was also reviewed.

8.1.2.1 Ethnographic/Prehistoric Setting

The SCSR encompasses the traditional home of (from north to south) the Chumash, Gabrieliño/Tongva, Juaneño/Acagchemem, Luiseño, and Kumeyaay (Ipai and Tipai) ethnographic divisions.

8.1.2.1.1 Chumash. The ethnohistoric Chumash are typically characterized as a linguistically-related series of chiefdom societies occupying sedentary or semi-sedentary villages. The Chumash peoples occupied the area ranging from Estero Bay in San Luis Obispo County (north of the study area) to Malibu in Los Angeles County, both coastal and interior valleys and plains, as well as the Channel Islands of San Miguel, Santa Rosa, Santa Cruz, and Anacapa. They had developed a maritime adaptation that was quite complex and efficient. Fishing within the channel waters provided a tremendous amount of meat, and was performed by use of the *Tomol* plank canoe (Glassow and Wilcoxon 1988). Shellfish and nearshore fish were available both in estuarine environments and along the sandy beaches, intertidal zones, and rocky outcrops on the ocean shore. In addition to marine foods, terrestrial foods in the form of terrestrial plants (most notably acorns) and terrestrial game (primarily rabbits and deer) were also available (Glassow 1996; Grenda and Altschul 2002; Glassow et al. 2007). Trade was facilitated by the existence of shell beads, primarily “cup” beads made from the *Olivella biplicata* shell (King 1990). The pre-European contact Chumash population was probably between 10,000 and 15,000 individuals.

8.1.2.1.2 Gabrieliño/Tongva. The Gabrieliño or Tongva territory is centered in the coastal, prairie, and mountain regions of western Los Angeles and Orange Counties, as well as the Channel Islands of Santa Barbara, San Nicolas, Santa Catalina, and San Clemente. The Gabrieliño/Tongva practiced a subsistence living very similar to the Chumash, in that they had a complex maritime adaptation, they employed plank canoes in the open ocean, and had a heavy reliance on marine resources such as fish, shellfish, and sea mammals (Bean and Smith 1978). Similarly, interior terrestrial food sources such as deer, waterfowl, piñon nuts, acorns, and yucca supplemented their diets. The Gabrieliño/Tongva are especially known for their steatite industry, used to make carvings, cooking pots and bowls, pipes, jewelery, and ritual objects (McCawley 1996; Glassow et al. 2007). Steatite was also heavily traded with their neighbors. Pre-European-contact populations probably numbered around 5,000 individuals.

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8.1.2.1.3 Juaneño/Acjachemem. The Juaneño or Acjachemem occupied territory that extended from Las Pulgas Creek in northern San Diego County to the San Joaquin Hills along Orange County's central coast. They were culturally and linguistically related to the Luiseño (Bean and Shipek 1978). Catholic priests called these indigenous people the Juaneño because they lived near Mission San Juan Capistrano. Today these groups call themselves the Juaneño Band of Mission Indians, Acjachemem Nation, and have been seeking federal recognition as a tribe.

Ethnographically and prehistorically, local populations concentrated in semi-permanent villages along major creeks and tributaries, particularly San Juan Creek and San Mateo Creek. The settlement and subsistence patterns of these groups involved annual movements from coastal areas to higher inland areas as different plant and animal species became seasonally available in different locations. Acorns, yucca, grasses, terrestrial game and shellfish, and marine fish all played dietary roles, with acorns serving as a primary staple (Kroeber 1925; Byrd and Raab 2007). Ethnographically, Juaneño society was hierarchically structured and included an elite ruling class, a middle class of established families, and a lower class (Sparkman 1908). Collectively, pre-European-contact Juaneño and Luiseño populations may have ranged from 4,000 to as many as 10,000 people (Bean and Shipek 1978).

8.1.2.1.4 Luiseño. The ethnographic Luiseño, also known as the *Payomkowishum*, consisted of a collection of sedentary and autonomous villages occupying a territory centered on the coastal and interior regions from Aliso Creek in Orange County to Agua Hedionda Creek in central San Diego County. The Luiseño relied primarily on terrestrial food sources, such as deer, upland fowl, antelope, and small mammals. Coastal marine foods such as fish and shellfish were also collected (Bean and Shipek 1978; Byrd and Raab 2007). Acorns proved to be the primary staple of the Luiseño, and technology such as winnowing baskets and bedrock mortars were utilized in the process of utilizing this food source (Sparkman 1908). The Luiseño are one of the few California prehistoric groups known to manufacture pottery. Ethnographically, the Luiseño had a rigid social structure much like the Juaneño that including defined social statuses, ruling families, and elaborate and structured ritualistic behaviors (Sparkman 1908; White 1963; Bean and Shipek 1978). Pre-European-contact populations may have been as high as 10,000 individuals (White 1963).

8.1.2.1.5 Kumeyaay (Ipai and Tipai). The Kumeyaay, formerly known as the Diegueño, include the Ipai and Tipai, two closely related groups that inhabited an area from Agua Hedionda Creek in northern San Diego County south into Baja California. The Ipai occupied the territory from San Diego Bay northward, and the Tipai from San Diego Bay south into Mexico. Their territory encompassed a number of environments, including coastal, mountain, and desert regions. The Ipai and Tipai migrated seasonally and villages were often simple and ephemeral (Kroeber 1925; Luomala 1978). Seasonal movement was often vertical, and followed the ripening of major plants from canyon floors to mountain slopes, including

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coastal and slough bands. Acorns were the major food staple, although mesquite pods and various seed plants were also important. Deer was hunted, but the majority of meat protein was derived from small game such as rabbits and rodents (Byrd and Raab 2007). Trade was more often with each other than with foreign tribes, and both gourd and pottery vessels were produced to hold water. Pre-European-contact populations are estimated to be between 3,000 and 6,000 individuals (Luomala 1978).

8.1.2.2 Historical Setting

8.1.2.2.1 European Exploration. The first recorded European encounter of the California coast was Juan Rodriguez Cabrillo's Spanish voyage in 1542, which landed in San Diego (Kelsey 1986). Far fewer voyages were made to the northern region of Spanish Alta California after this time, but the area was occasionally explored. Sir Francis Drake—an Englishman who, like Cabrillo, was searching for the fabled Northwest Passage to Asia across North America—sailed into what is now Drake's Bay north of San Francisco in 1579.

The first recorded European contact with the people of the Santa Barbara area (in the northern portion of the SCSR) was in 1542 when Cabrillo sailed through the Santa Barbara Channel and made landfall near what is now Goleta (Kelsey 1986; Kennett 1987). Subsequent official, recorded visits continued throughout the next 200 years, as, most likely, did unrecorded visits. These visits resulted in the introduction of European goods into the Chumash economy, the recording of ethnographic information, and the formation of Native opinions, both positive and negative, about the Spanish.

The first recorded European contact with the Gabrieliño was by Juan Rodriguez Cabrillo in October of 1542. However, it was not until 1769 that Portola made the first Spanish overland expedition through present-day Los Angeles County (Crespi 2001). Prior to that time, the Spanish were focused on the immediate coast and Channel Islands. Hence, the interior Gabrieliño probably had little European contact prior to Portola's journey. While *en route* from San Diego to Monterey Bay, Portola stopped at an interior Gabrieliño village called Yang'na, situated on the western bank of the Los Angeles River, near what is now downtown Los Angeles (Crespi 2001). From there, Portola and his crew traveled northwest, through the Sepulveda Pass (now the 405 freeway), and into the San Fernando Valley from the west.

The Spanish continued to explore the northern and southern American continents throughout the 16th and 17th centuries, claiming lands for the Spanish crown and in constant search for gold. Throughout this period, Spanish ships frequented the California coast following a trans-Pacific trade route via Manila that was opened in 1565, although their efforts were more concentrated in South America, present-day Mexico, and the present-day eastern United States (Rawls 1988).

8.1.2.2.2 The Mission System. Despite these occasional expeditions, European occupation of California did not begin in earnest until 1769, with the establishment of the mission

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system. Spanish padres of the Franciscan order constructed a series of missions, reporting to the Catholic Church in Spain, and exploiting converted Native Americans (called neophytes) as labor (Cook 1976). Six missions were established near the coast in the SCSR (listed north to south): Santa Barbara, San Buenaventura, San Gabriel Arcángel, San Juan Capistrano, San Luis Rey de Francia, and San Diego de Alcalá (Shipek 1978). After the overthrow of Spanish rule and the founding of the state of Mexico in 1821, control of Alta California passed from Spanish to Mexican hands. The missions were secularized in 1834 by order of Mexican governor José Figueroa; the surviving Indians dispersed or were driven off, and mission lands passed into private hands (Johnson 1989).

California briefly existed as the northwestern edge of Mexico between the years of Mexico's independence from the Spanish crown in 1821 and the signing of the Treaty of Guadalupe Hidalgo in 1848, which ended the Mexican-American War and ceded California and other territories to the United States (Chapman 1921). Americans gradually settled the state and continued to develop the agricultural and trade-based economy inherited from the Mexican period. The Gold Rush of 1849 drastically increased trade ship traffic along the California coast, bringing about a significant increase in the population of Americans of European ancestry; California was admitted as a state in 1850, further spurring the numbers of American immigrants. Trade transport remained primarily maritime until the completion of the first trans-continental railroad in 1869 and the proliferation of the rail web throughout the west. Maritime trade focused on the San Francisco Bay, due to its proximity to the state's gold reserves and the subsequent population and economic boom in the surrounding area, although smaller ports such as Monterey also became economic and residential hubs and served as major destinations along the route.

8.1.2.3 Physical Setting

Because underwater development has not occurred and due to the difficulties of working underwater, extensive archaeological investigation of underwater cultural resources has not taken place. The inaccessibility of underwater sites and the difficulties posed by their investigation and recording have also meant that California's underwater archaeological record is not as extensive and complete as its land-based record. However, the state's rich maritime and coastal history (and prehistory) has left behind a variety of sites and artifacts.

8.1.2.3.1 Prehistoric Resources. Much of the SCSR consists of steep, actively eroding coastal bluffs and small pocket beaches. An important factor in understanding coastal California's paleoenvironmental history is the evolution of the estuary systems along the coast. Many early archaeological sites would have been present along estuary boundaries, in areas that are now completely submerged. Because of the rise in sea level during the middle and early Holocene (15,000 to 10,000 years ago), formerly land-based archaeological sites pertaining to the coastal activities of native inhabitants would now be deeply submerged if they survived inundation, wave-related erosion, and other natural processes (Moratto 2004).

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Such prehistoric sites could include the full range of site types, including habitation sites identified by stone and shell tools, shell middens, shell mounds, and rock milling features that indicate food processing sites or larger inhabitation sites. Owing to technological, logistical, and funding difficulties, little or no intensive, systematic survey for submerged prehistoric sites off California's coast has been conducted and the number and locations of such sites are unknown. Most submerged prehistoric resources recorded along the coast were found in nearshore waters by divers and include isolated artifacts such as net weights, bowls, and other items lost during maritime activities.

To augment this information, a site record search has been initiated to determine whether select MPAs contain recorded archaeological sites or artifacts (see Appendix F). MPAs selected for the record search include those that would be deleted by the proposed Project IPA. The rationale for focusing on these MPAs is that deleting them could result in the removal of existing regulations that may incidentally provide some protection for any cultural resources present, and determining whether such MPAs contain recorded cultural resources was deemed relevant to the impact analysis, although it is important to note that designation as an SMR or an SMCA does not automatically result in decreased recreational use of an area.

Existing MPAs that will be deleted under the proposed Project IPA include Refugio SMCA, Big Sycamore SMR, Pt. Fermin SMP, Doheny Beach SMCA, Doheny SMCA, Agua Hedionda Lagoon SMR, and San Dieguito Lagoon SMP. Heisler Park SMR is a no take MPA and technically it also will be deleted, but it will be incorporated into another proposed no take MPA (Laguna Beach SMCA); thus, there is essentially no change in protection due to the proposed Project IPA so no site record search was conducted for this location.

The site records searches indicate that the selected MPAs have not been subject to previous underwater archaeological investigations and no submerged archaeological resources have been recorded within the MPA boundaries, although many prehistoric archaeological sites occur on lands adjacent to some MPAs.

The NAHC also was contacted to conduct a search of their Sacred Lands File and to provide contact information for Native Americans who may be able to provide additional information on submerged Native American cultural resources within the south coast region (see Appendix F). The NAHC identified over 60 Native American contacts for the south coast region and indicated that, although sacred lands are present on land adjacent to a number of MPAs within the region, no submerged sacred lands are present within the boundaries of the selected MPAs (D. Singleton, personal communication).

On July 6, 2010, letters were sent by certified mail to the 60 Native American contacts requesting any additional information they may have regarding cultural resources in the Project area. The letters also requested that the recipients provide any comments, questions

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or concerns they had regarding the Project. Approximately 10 days after sending the letters, follow-up calls were made to each individual or group that had not yet provided a response. These contacts included representatives of the Chumash, Fernandeno, Tatviam, Kitanernuk, Gabrielino, Tongva, Juaneno, Luiseno, Digueno, and Kumeyaay. The majority of those contacted either did not respond or stated that had not reviewed the material sufficiently to comment at this time. For those who provided comments, most expressed concerns that focused on the potential loss of traditional hunting-gathering areas, a lack of language in the MPA MLPA regarding Native American interests or their role as stakeholders, and a feeling that Native Americans had little or no involvement in the MLPA Initiative planning process, although the Department implemented an extensive tribal outreach program (see below). Many individuals stated they will provide a more formal response following planned meetings with tribal elders, tribal councils, legal counsels, and inter-tribal organizations. Potential Project-related impacts to archaeological sites protected under CEQA did not seem to be a concern and a few stated they had no concerns regarding the Project due to the lack of ground disturbing activity associated with it. Appendix F of this EIR includes, among other information, documentation from the NAHC, a list of the 60 Native American representatives contacted during preparation of this EIR, and results of the contacts.

The MLPA Initiative staff implemented an outreach program to the five Native American tribal nations within the SCSR that included four separate meetings attended by approximately 75 federally and non-federally recognized California Natives and a two-day Tribal Forum held on February 27 and 28, 2009. Interested Native Americans were provided opportunities to become familiar with the MLPA and to engage the Department in discussions about their concerns and recommendations. Perhaps in recognition that the Project involves no ground disturbance, the final summary report on the Tribal Forum (see Appendix F) does not indicate there were concerns about potential Project-related impacts to Native American archaeological resources protected under CEQA.

8.1.2.3.2 Historic Resources. Shipwrecks are the most prominent known historical artifacts that lie beneath the waters off California. California's first recorded shipwreck is that of the San Augustin, which was driven ashore in 1595 at Drake's Bay, near Point Reyes north of the SCSR. Since then, hundreds of vessels have wrecked off California's rocky coast but offshore locations of most shipwrecks were poorly documented owing to the emergency nature of accidents at sea. The remains of many of these ships have yet to be discovered.

The State Lands Commission shipwreck database lists 360 shipwrecks off the coasts of Santa Barbara, Ventura, Los Angeles, Orange, and San Diego counties. Chinese junks, Russian and Mexican sailing ships, American coastal traders, Gold Rush-era steamships, and U.S. Navy ships from the 1920s to the 1950s have all sunk in these waters but the final resting places for most are unknown. Moreover, many shipwrecks may no longer exist even though we know where they were reported as lost. As a result of these factors, shipwrecks identified in

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databases are for the most part merely the last reported sighting of a foundering ship rather than a verified location of a shipwreck.

These limitations notwithstanding, shipwreck databases can be used as an indication of an area’s sensitivity for shipwrecks. For example, the Department Marine Map database of shipwreck information indicates that 40 shipwreck locations have been reported within 1 mile of those MPAs (Table 8.1-1). Although only 2 of the 40 locations fall within the boundaries of the existing MPAs, the data indicate that some existing MPAs have a fairly high sensitivity for shipwreck locations. Nonetheless, it is important to note that MPAs were not established to explicitly protect shipwrecks and in many cases Department regulations designed to protect marine life still allow boating and diving that can result in anchoring impacts to the ocean bottom and, if present, submerged cultural resources. No take SMRs provide the greatest protection.

**TABLE 8.1-1
SHIPWRECK LOCATIONS NEAR EXISTING MPAs**

MPA Name	Number of Shipwreck Locations Reported within 1 Mile of the MPAs	Number of Shipwreck Locations Reported within the MPAs
Abalone Cove SMP	1	0
Cardiff-San Elijo SMCA	1	1
Crystal Cove SMCA	1	0
Heisler Park SMR	6	0
Laguna Beach SMCA	7	0
Lover’s Cove SMCA	1	0
Mia J Tegner SMCA	3	0
Point Fermin SMP	16	0
Robert E Badham SMCA	1	0
San Elijo Lagoon SMP	1	0
South Laguna Beach SMCA	1	0
South Point SMR	1	1
Total	40	2

Source: Marine Map 2010.

The proposed Project IPA can be characterized in a similar fashion. As Table 8.1-2 illustrates, a total of 45 shipwreck locations are located within 1 mile of the proposed Project IPA boundaries (note: proposed MPAs not listed in this table have no shipwreck locations within a 1-mile radius). Of these 45 locations, 25 are reported within the proposed boundaries of IPA MPAs. MPAs with the most potential to protect shipwrecks include Laguna Beach SMCA, which would subsume the Heisler Park SMR and the existing Laguna Beach SMCA into a new no take zone, the Point Dume SMR, the Point Dume SMCA, and the Point

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**TABLE 8.1-2
SHIPWRECK LOCATIONS NEAR PROPOSED IPA MPAS**

Proposed IPA MPA Name	Number of Shipwreck Locations Reported within 1 Mile of the MPA	Number of Shipwreck Locations Reported within the MPA
Abalone Cove SMCA	8	0
Cabrillo SMR	1	1
Casino Point SMR	1	0
Crystal Cove SMCA	2	0
Dana Point SMCA	2	1
Farnsworth Offshore SMCA	1	0
Farnsworth Onshore SMCA	1	1
Laguna Beach SMCA/SMR	8	6
Lover's Cove SMCA	1	0
Point Dume SMCA	1	0
Point Dume SMR	6	6
Point Vicente SMCA	10	10
San Elijo Lagoon SMR	1	0
South La Jolla SMR	1	0
Swami's SMCA	1	0
Total	45	25

Vicente SMCA. These zones could offer incidental protection to any shipwrecks within their boundaries by eliminating anchoring from fishing boats, although designation as an SMR or SMCA could also attract greater recreational use by divers. Regardless, twenty-two shipwreck locations have been reported within the boundaries of these four proposed MPAs and another three shipwreck locations are reported within 1 mile.

8.1.2.3.3 Paleontological Resources or Unique Geological Features. The SCSR includes fossiliferous geologic strata and unique geologic features, such as rocky intertidal zones, the intertidal portion of beaches of varying grain sizes (gravel to fine-grained), rocky reefs, and underwater pinnacles. The proposed Project IPA is not expected to affect geological resources and, as a result, such resources are not analyzed further in this Draft Environmental Impact Report (EIR) (see Section 4.3).

8.1.3 Impact Analysis

8.1.3.1 Methodology

Due to the proposed Project IPA's scope and defined geographical boundaries, environmental analysis is limited to those resources that may be present within the water or

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buried beneath the sea floor; terrestrial cultural resources are not included in the analysis because the proposed Project will only affect offshore areas. Marine cultural resource surveys were not performed for the proposed Project IPA because of its limited potential to adversely affect any resources that may be present in the area. Instead, this generalized discussion relies on results of offshore archaeological site record searches conducted at regional information centers and an examination of the Marine Map shipwreck database. These sources were used to identify the numbers of submerged cultural resources recorded within or near existing MPAs and MPAs that would be created or deleted by the proposed Project IPA and alternatives (Project alternatives are addressed in Section 10.0).

8.1.3.2 Criteria for Determining Significance

Significance thresholds for assessment of cultural resources-related impacts for the proposed Project are based on the criteria presented in Appendix G of the State CEQA Guidelines. The proposed Project IPA would result in significant impacts to cultural resources if it:

- Causes a substantial adverse change in the significance of a historic resource as defined in Section 150654.5 of the State CEQA Guidelines
- Causes a substantial adverse change in the significance of an archaeological resource pursuant to 15064.5 of the State CEQA Guidelines
- Destroys directly or indirectly a unique paleontological resource or site or unique geologic feature

8.1.3.3 Environmental Impacts

Impact CR-1: Substantial Adverse Effects on Historical Resources

Current regulations prohibit all unauthorized salvage and extraction of artifacts from shipwrecks in state waters. The proposed Project IPA would retain this regulation without modification.

Compared to existing conditions, the creation of the proposed Project IPA would not have a direct adverse effect on underwater cultural resources existing within the SCSR, whether they be recorded, known but unrecorded, or yet unknown. The proposed Project IPA proposes no physical alteration to the ocean floor or the bottom of relevant bays or estuaries, and therefore would not directly disturb any resources present.

The proposed Project IPA would result in the deletion of the Refugio SMCA, Big Sycamore SMR, Point Fermin SMP, Doheny Beach SMCA, Doheny SMCA, Agua Hedionda Lagoon SMR, and San Dieguito Lagoon SMP. Deleting these areas from the MPA system is not expected to have a significant adverse impact to cultural resources because: 1) no submerged cultural resources are known to occur within their boundaries, and/or 2) existing regulations

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at these locations do not prohibit recreational fishing, boating, or diving so eliminating them as MPAs is not expected to result in a change in anchoring impacts (note: all such activities are prohibited at the Big Sycamore Canyon SMR but no submerged cultural resources are known to occur within this MPA so no impacts from the IPA are expected).

Some MPAs will result in a reduction or elimination of recreational and/or commercial fishing compared to existing conditions. To the extent these restrictions reduce anchoring impacts to the ocean floor, they could result in a decrease in potential impacts to submerged resources. Such a beneficial impact, should it occur, is expected to be slight because many new or expanded MPAs will still allow other boating and diving activities that can potentially affect submerged resources. Moreover, areas designated as SMRs or SMCAs may see increased recreational use by divers. In such cases, potential benefits from eliminating fishing boat disturbance of the ocean bottom may be offset by additional anchoring from dive boats.

The proposed Project IPA would not have an adverse effect on any Traditional Cultural Properties (TCPs) that may exist in the SCSR. In accordance with PRC 5097.9, the Department will not interfere with the free expression or exercise of any traditional Native American religious rites, and will not otherwise restrict traditional Native American cultural activities within the MPAs as long as those cultural activities do not include the take of living marine resources.

Mitigation: No mitigation is required because there would be no adverse impact.

Impact CR-2: Substantial Adverse Effects on Archaeological Resources

Current regulations prohibit all unauthorized salvage and extraction of artifacts from state waters. The proposed Project IPA would retain this regulation without modification.

As with historical resources (see above), the creation of the proposed Project IPA would not have a direct adverse effect on underwater archaeological resources existing within the SCSR, whether they be recorded, known but unrecorded, or yet unknown. The proposed Project IPA proposes no physical alteration to the ocean floor or the bottom of relevant bays or estuaries, and therefore would not directly disturb any resources present. Deleting the Refugio SMCA, Big Sycamore SMR, Pt. Fermin SMP, Doheny Beach SMCA, Doheny SMCA, Agua Hedionda Lagoon SMR, and San Dieguito Lagoon SMP is also not expected to have a significant indirect adverse impact to cultural resource for the reasons described above in Impact CR-1.

Restrictions proposed by the proposed Project IPA could have a potential beneficial impact to any underwater resource that may exist within or beneath the MPAs by limiting fishing activities and associated anchoring, thereby reducing the potential for accidental damage to resources. Such a beneficial impact, should it occur, is likely to be either slight or offset because, as noted above, the proposed Project IPA will still allow boating and diving in most

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areas and in some instances designation of an area as an SMR or SMCA could result in increased recreational use by divers.

Mitigation: No mitigation is required because there would be no adverse impact.

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8.2 PUBLIC SERVICES AND UTILITIES

This section describes the existing setting and potential public services and utilities impacts of the proposed Integrated Preferred Alternative (IPA) and its alternatives. Specifically, it describes existing conditions related to public services and utilities; analyzes the potential impacts of the proposed Project IPA and alternatives on public services and utilities; and identifies mitigation measures to address significant impacts, as appropriate.

8.2.1 Regulatory Framework

Primary federal, state and local regulations related to offshore public services and utilities are described below.

8.2.1.1 Power Generation Facilities And Desalination Regulations

Although power generation facilities and desalination facilities (these facilities are frequently combined) are located on land, the cooling system for power plants can be designed to utilize ocean water through an off shore water pipeline. Power plant once-through cooling water systems impact aquatic organisms by thermal discharge effects, impingement, and entrainment (Steinbeck 2008). Thermal discharge is heated water from the cooling water system that is discharged. This heated discharge water can cause impacts to biological resources.

Desalination facilities also include an off shore intake pipeline and impingement of aquatic organisms results during water intake as organisms are pulled into contact with the intake screens, and are held there by the velocity of the water being pumped through the water intake system. Unless the organisms are able to escape, they perish. Entrainment occurs when small aquatic organisms (fish and clam larvae, etc.) are carried through the intake screens (screen mesh size is usually 5/16 or 3/8 of an inch) and through the remainder of the cooling system or intake system for desalination facilities.

The following is an outline of the regulations specific to power generation facilities that utilize ocean water cooling and for desalination facilities.

8.2.1.1.1 Federal Law, Regulations, and Policies.

Clean Water Act of 1972 (33 USC §404 et seq.). Permits to dredge or fill waterways are required. Effluent discharge must be permitted by the National Pollution Discharge Elimination System Program (NPDES).

Under Section 316(b) of the Clean Water Act (CWA), an applicant must utilize best technology available to minimize any adverse impacts to biological resources due to the use of a once-through cooling water system or water intake system for desalination facilities. In

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1987, Section 320 was added to the CWA to establish the National Estuary Program, whose goal is to identify, restore, and protect nationally significant estuaries of the United States.

Coastal Zone Management Act. The Federal Coastal Zone Management Act (CZMA) of 1972, as administered by the state of California through the California Coastal Act, applies to the proposed Project IPA.

Federal Energy Regulatory Commission. The Federal Energy Regulatory Commission (FERC) is the United States federal agency with jurisdiction over interstate electricity sales, wholesale electric rates, hydroelectric licensing, natural gas pricing, and oil pipeline rates. FERC also reviews and authorizes liquefied natural gas terminals, interstate natural gas pipelines and non-federal hydropower projects.

8.2.1.1.2 State Law, Regulation, and Policies.

California Coastal Act of 1976 (PRC §30000 et seq.). The California Coastal Act requires the protection of coastal waters from adverse impacts of wastewater discharges and entrainment. Section 30230 of the Coastal Act states that marine resources shall be maintained, enhanced, and, where feasible, restored. Section 30231 of Coastal Act requires actions that minimize adverse impacts to biological productivity of coastal waters, including: minimization of discharge and entrainment. Section 30240 of Coastal mandates protection of environmentally sensitive habitats from the degradation of habitat value.

Warren-Alquist Act. In 1974 the Warren-Alquist State Energy Resources Conservation and Development Act created the California Energy Commission. The Act required that, prior to constructing or modifying an electric generating plant, the Commission was to certify the need for the plant and the suitability of the site of the plant. Section 25527 states that Certain areas, such as estuaries, state parks, wilderness, scenic or natural reserves, and areas for wildlife protection, are prohibited areas as sites for facilities, unless consistent with the primary uses of such areas, and where there will be no substantial adverse impacts.

California Porter-Cologne Water Quality Control Act 1972; California Water Code §13000-14957; Division 7, Water Quality. The act establishes the framework for regulation of activities affecting water quality in the state, as well as policies for the water quality control program. Section 13142.5 (b), establishes a state policy that new or expanded power plants proposing to use seawater for cooling: shall implement the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of all forms of marine life.

Clean Water Act Section 316(b) has since 1972 required that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact. Section 316(b) is implemented through National Pollutant Discharge Elimination System (NPDES) permits, issued pursuant

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to Clean Water Act Section 402, which authorize the point source discharge of pollutants to navigable waters.

The State Water Resources Control Board (SWRCB) is designated as the state water pollution control agency for all purposes stated in the Clean Water Act, including water quality control planning and waste discharge regulation.

The SWRCB and Regional Water Quality Control Boards (RWQCB) are authorized to issue NPDES permits to point source dischargers in California, including Once-through Cooling power plants.

Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling. On May 4, 2010 the SWRCB, the statewide policy making and oversight body for the RWQCBs, adopted the Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling. The intent of the Policy is to protect marine and estuarine life from the impacts of once-through cooling without disrupting the critical needs of the state's electrical generation and transmission system. The Policy establishes technology-based standards to implement federal CWA Section 316(b) and reduce the harmful effects associated with cooling water intake structures on marine and estuarine life. The policy applies to the 19 existing power plants (including two nuclear plants) that currently have the ability to withdraw over 15 billion gallons per day from the state's coastal and estuarine waters using a single-pass system, also known as once-through cooling. Section 316(b) is implemented through NPDES permits, issued by the RWQCBs.

California Public Utilities Commission regulates investor-owned electric and gas utilities within the state of California, including Pacific Gas & Electric, Southern California Edison, and San Diego Gas & Electric. Among its stated goals for energy regulation are to establish service standards and safety rules, authorize utility rate changes, oversee markets to inhibit anti-competitive activity, prosecute unlawful utility marketing and billing activities, govern business relationships between utilities and their affiliates, resolve complaints by customers against utilities, implement energy efficiency and conservation programs and programs for the low-income and disabled, oversee the merger and restructure of utility corporations, and enforce the California Environmental Quality Act for utility construction.

8.2.1.2 Wastewater Treatment Facilities and Storm Drainage

Publicly owned treatment works (POTWs) collect wastewater from homes, commercial buildings, and industrial facilities and transport it via a series of pipes, known as a collection system, to the treatment plant. Here, the POTW removes harmful organisms and other contaminants from the sewage so it can be discharged safely into the receiving stream. Generally, POTWs are designed to treat domestic sewage only. However, POTWs also receive wastewater from industrial (non-domestic) users. The General Pretreatment

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Regulations establish responsibilities of federal, state, and local government, industry and the public to implement Pretreatment Standards to control pollutants from the industrial users which may pass through or interfere with POTW treatment processes or which may contaminate sewage sludge.

In 1987 the CWA was amended to require the United States Environmental Protection Agency (EPA) to establish a program to address storm water discharges. In response, EPA promulgated the NPDES storm water permit application regulations. These regulations require that facilities with storm water discharges apply for an NPDES permit.

As part of storm water permits, facilities are often required to implement pollution prevention plans. The plan needs to identify potential sources of pollution that may reasonably be expected to affect the quality of storm water discharges associated with a facility. The plan should also describe and ensure the implementation of practices that reduce the pollutants in storm water discharges.

8.2.1.2.1 Federal Statutes and Regulations.

Clean Water Act. The Clean Water Act (CWA) is the primary federal law governing water pollution in the United States. The main goals of the CWA are to restore and maintain the chemical, physical, and biological integrity of the nation's waters by preventing point and nonpoint pollution sources, providing assistance to publicly owned treatment works for the improvement of wastewater treatment, and maintaining the integrity of wetlands.

National Pollutant Discharge Elimination System Permit Program. The 1972 amendments to the CWA provide the statutory basis for the EPA administered NPDES permit program (Section 402). NPDES permits contain industry-specific, technology-based and/or water-quality-based limits, and establish pollutant monitoring and reporting requirements. A facility that intends to discharge into the nation's waters must obtain a permit before initiating a discharge. A permit applicant must provide quantitative analytical data identifying the types of pollutants present in the facility's effluent. The permit will then set forth the conditions and effluent limitations under which a facility may make a discharge.

Water Quality Act of 1987. The Water Quality Act of 1987, also known as the CWA amendments, added provisions to the CWA requiring states to promulgate water quality standards for toxic pollutants for which water quality criteria had been developed. The CWA amendments also required NPDES permits for municipal, industrial, and general construction activity storm water discharges.

The federal government's role in pretreatment began with the passage of the CWA in 1972. The CWA called for EPA to develop national pretreatment standards to control industrial discharges into sewage systems. The National Pretreatment Program is designed to reduce the amount of pollutants discharged by industry and other non-domestic wastewater sources

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into municipal sewer systems, and thereby, reduce the amount of pollutants released into the environment from publicly owned wastewater treatment plants.

8.2.1.2.2 State Regulatory Setting.

Porter-Cologne Water Quality Control Act. The Porter-Cologne Water Quality Act (Porter-Cologne) provides the state with broad jurisdiction over water quality and waste discharge, and also provides the state the authority to prepare regional Basin Plans to protect the state's water resources. Under the Porter-Cologne Water Quality Control Act and Section 401 of the federal CWA, the SWRCB and the RWQCBs regulate discharges to surface waters (including wetlands), groundwater, and point and non-point sources of pollution. The basin plan designates existing and potential beneficial uses for each water body within its geographic region, sets numeric and narrative water quality objectives to protect the beneficial uses, and describes strategies and time schedules for achieving these water quality objectives.

The RWQCBs regulate all nonpoint source discharges under one of two statutory requirements: the NPDES Storm Water Permitting Program and the Coastal Nonpoint Pollution Control Program. The CWA Section 402 program is designed to regulate storm water and urban runoff (i.e., the nonpoint source discharges that become point sources). Virtually all other nonpoint sources are subject to the Coastal Nonpoint Pollution Control Program.

The RWQCBs' permit authority includes the issuance of waste discharge requirements and conditions on CWA Section 401 water quality certification authorizations. The water quality objectives for surface waters in the south coast study region (SCSR) are established by the Water Quality Control Plans (Basin Plans) for Regions 3 (Central Coast), 4 (Los Angeles), 8 (Santa Ana), and 9 (San Diego). The standards represent maximum levels of pollutants, or acceptable ranges (for parameters such dissolved oxygen, temperature or pH) that allow beneficial uses of the water basin to continue unimpaired. The RWQCB has primary authority for ensuring that water resources are protected from degradation by pollutant discharges. To develop water quality standards that are consistent with the uses of a water body, each RWQCB attempts to classify historical, present, and future beneficial uses of the waters under its jurisdiction as part of the Basin Plan for its region. The Basin Plan is periodically reviewed and updated. Finally, each RWQCB is required to identify water bodies that do not meet water quality objectives pursuant to Section 303(d) of the CWA.

Beneficial uses of the major rivers and groundwater basins, along with narrative and numerical water quality objectives, are established in the Basin Plans. Beneficial uses of surface water in the SCSR include municipal and domestic supply; agricultural supply; industrial process supply; industrial service supply; groundwater recharge; navigation; hydropower generation; contact and non-contact recreation; warm, freshwater habitat; cold,

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freshwater habitat; wildlife habitat; estuarine habitat; marine habitat; wildlife habitat; preservation of biological habitat; and commercial and sports fishing.

Point-source discharges from wastewater treatment facilities via off shore pipelines to the marine environment, as well as municipal separate storm sewer system outfalls to coastal waters, are regulated under waste discharge requirements issued by the RWQCBs, which incorporates NPDES requirements. Waste discharge requirements issued to wastewater treatment plants for offshore discharges incorporate numerical effluent limitations that will support maintenance of the water quality objectives established in the California Ocean Plan (SWRCB 2005). The wastewater treatment plant dischargers are required to monitor and report the quality of their discharges for compliance with these effluent limitations. Operators of municipal separate storm sewer systems are required to implement and require the implementation of best management practices that are protective of the beneficial uses of the receiving waters. Municipal separate storm sewer system operators are required to monitor and report the quality of their discharges and receiving waters to determine the impact of their discharges on beneficial uses.

8.2.1.3 Underwater Cables

Underwater cables can provide communication cables for large geographic areas. Submarine cables are typically used by telecommunication companies to carry heavy communication traffic instead of relying on satellites. Submarine cables are typically about 1–3 inches in diameter and are laid by a large specialized cable-laying ship that spools the cable out large holding tanks (globalsecurity.org).

In shallow water where fishing is prevalent, cable is typically buried. When crossing hard bottomed areas where burial is not feasible an armored cable is used with an outside diameter of 2.5 inches. Except in the deepest waters, submarine cables need to be buried in order to avoid the risk of damage due to fishing techniques and abrasion from tidal movements. There are many regulations for undersea cables within international waters. Depending on the location of the cable and the location of the tie in to an existing cable regulations can be established. The following is a description of federal regulations for United States undersea cables that might be applicable to undersea cables off the California coast.

Pursuant to the Submarine Cable Landing License Act (47 U.S.C. 34–39) the President of the United States must grant permission to any entity planning to land a submarine cable in the United States. This statute requires an entity to get permission before it is allowed to land and operate a submarine cable “directly or indirectly connecting the United States with any foreign country, or connecting one portion of the United States with any other portion thereof,” except for any submarine cable, “all of which, including both terminals, lie wholly within the continental United States.”

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In a related Executive Order (E.O. 10530) the President delegated authority to the Federal Communications Commission to grant, deny, or condition submarine cable landing licenses, except that no license can be granted or revoked without the Federal Communications Commission first obtaining approval from the Secretary of State and advice from any executive department of the government as the may be deemed necessary. The National Telecommunications and Information Administration, an agency within the Department of Commerce, advises the Department of State and the Federal Communications Commission on all submarine cable landing license applications.

Aside from the two federal requirements, development of underwater cables off the coast of California is permitted as “development” and typically is reviewed under the appropriate jurisdictions’ permitting requirements for other types of development, which are described in Section 8.3.1 of this Draft EIR.

8.2.2 Environmental Setting

Proposed marine protected areas (MPAs) are not currently served by public services and utilities due to their nature as protected, offshore areas for underwater habitats. Establishment of MPAs within the SCSR would not impact the existing utilities identified in Table 8.2-1. Intake and discharge locations within proposed MPAs would continue to operate based on existing permit conditions. However, the proposed MPAs are most likely outside of the intake and discharge locations for power generation facilities utilizing once-through ocean cooling systems and existing desalination facilities with ocean intake and discharge systems.

The following is a description of POTWs and outfalls that are potentially within waters near the eight proposed new MPAs in the proposed Project IPA that lie along the mainland coast:

- Point Conception – This MPA is located in a remote coastal area without POTW or municipal separate storm sewer system outfalls.
- Kashtayit State Marine Conservation Area (SMCA) – This MPA is located adjacent to the coast. Although there are no POTWs in the vicinity of this MPA, it is anticipated that minor municipal separate storm sewer system outfalls associated with State Highway 101 discharge to the coast.
- Naples SMCA – This MPA is located adjacent to the coast. Although there are no POTWs in the vicinity of this MPA, it is anticipated that minor municipal separate storm sewer system outfalls associated with State Highway 101 discharge to the coast.
- Campus Point State Marine Reserve (SMR) – This MPA is located adjacent to the coast. Although there are no POTWs in the vicinity of this MPA, it is anticipated that minor municipal separate storm sewer system outfalls associated with State Highway 101 and the communities of El Encanto Heights and Ellwood may discharge to the coast.

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**TABLE 8.2-1
POINT SOURCES IN THE MLPA SOUTH COAST STUDY REGION**

Point Source	Effluent	Discharge rating
Municipal Wastewater Treatment Facilities		
City of Los Angeles Hyperion Treatment Plant	Treated sanitary wastewater	Major
Los Angeles County Sanitation District's Joint Water Pollution Control Plant (JWPCP)	Treated sanitary wastewater	Major
Orange County Sanitation District's Sewage Treatment Plant	Treated sanitary wastewater	Major
San Diego Metropolitan Sewerage System's Point Loma Ocean Outfall operated by the City of San Diego	Treated sanitary wastewater	Major
San Elijo Joint Powers Authority's San Elijo Water Pollution Control Facility	Treated sanitary wastewater	Major
Encina Wastewater Authority's Encina Ocean Outfall	Treated sanitary wastewater	Major
City of Oceanside's Oceanside Ocean Outfall	Treated sanitary wastewater	Major
Southeast Regional Reclamation Authority's SERRA Ocean Outfall	Treated sanitary wastewater	Major
City of Oxnard's Waste Water Treatment Plant (WWTP)	Treated sanitary wastewater	Major
South Orange County Wastewater Authority's (SOCWA) Aliso Ocean Outfall	Treated sanitary wastewater	Major
International Boundary and Water Commission's South Bay International Wastewater Treatment Plant	Treated sanitary wastewater	Major
City of Santa Barbara's El Estero WWTP	Treated sanitary wastewater	Major
Goleta Sanitary District's WWTP	Treated sanitary wastewater	Major
Carpinteria Sanitary District's WWTP	Treated sanitary wastewater	Major
Montecito Sanitary District's WWTP	Treated sanitary wastewater	Major
City of Avalon's WWTP NPD	Treated sanitary wastewater	Major
Summerland Sanitary District's WWTP	Treated sanitary wastewater	Minor
U.S. Navy Naval Air Station, North Island's San Clemente Island	Treated sanitary wastewater	Minor
Industrial Desalination Plants		
Chevron U.S.A. Inc.'s Gaviota Oil, Gas, and Desalination	Desalination brine	Minor
U.S. Navy Naval Air Station's San Nicholas Island	Desalination brine	Minor
Southern California Edison Co's Pebbly Beach Desalination Plant	Desalination brine and possibly cooling water	Minor
South Orange Coastal Ocean Desalination Project	Pilot test of beach wells	Unknown
Carlsbad Desalination Project	Permitted – not built	Unknown
Industrial Power Plants		
Southern California Edison Co.'s SONGS Unit 3 (San Onofre)	Cooling water	Major

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**TABLE 8.2-1 (CONTINUED)
POINT SOURCES IN THE MLPA SOUTH COAST STUDY REGION**

Point Source	Effluent	Discharge rating
Southern California Edison Co.'s SONGS Unit 2 (San Onofre)	Cooling water	Major
AES Corporation's Redondo Beach Generating Station	Cooling water	Major
Cabrillo Power LLC's Encina Power Plant	Cooling water	Major
Harbor Generating Station	Cooling water	Major
Haynes Generating Station	Cooling water	Major
Reliant Energy's Ormond Beach Generating Station	Cooling water	Major
El Segundo Power LLC's Generating Station	Cooling water	Major
AES Hunting Beach LLC's AES Huntington Beach	Cooling water	Major
Los Angeles City's Scattergood Generating Station	Cooling water	Major
Reliant Energy's Ocean Vista Power Station at Mandalay Beach	Cooling water	Major
Southern California Edison Co.'s Songs Unit 1	Cooling water	Major
Other Industrial Permitted Discharge Sites		
Cultured Abalone Aquaculture	Aquaculture wastewater	Minor
UC San Diego, Scripps Institute Of Oceanography	Marine lab and public aquarium waste seawater	Minor
USC Wrigley Institute Marine Science Center	Marine lab waste seawater	Minor
Chevron U.S.A.'s El Segundo Refinery	Refinery wastewater	Major
Nuevo Energy Company's Platform Esther	Treated sanitary waste from oil platform	Minor
Nuevo Energy Company's Platform Eva	Treated sanitary waste from oil platform	Minor

Source: Department 2009.

- Point Dume SMCA and SMR – This MPA is located adjacent to the coast and it is anticipated that there may be minor municipal separate storm sewer system outfalls associated with State Highway 1 and the City of Malibu. The City of Malibu is not served by a POTW, so there is no POTW outfall to the MPA.
- Point Vicente SMCA – This MPA is located adjacent to the coast and it is anticipated that there may be minor municipal separate storm sewer system outfalls associated with the City of Rancho Palos Verdes.
- South La Jolla SMCA – This MPA is located adjacent to the coast and it is anticipated that it will receive discharges from municipal separate storm sewer system outfalls associated with the communities of La Jolla and Pacific Beach.

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- Tijuana River Mouth SMCA – This MPA is located adjacent to the coast and it is anticipated that it will receive discharges from municipal separate storm sewer system outfalls associated with the communities of Imperial Beach, City of Tijuana, Mexico, and the Imperial Beach Naval Air Station.

The permit requirements for these facilities will continue to be monitored under the terms and conditions of the existing NPDES permits issued by the RWQCB. The permit conditions include discharge prohibitions, treated water limitations, receiving water limitations, pretreatment specifications, infiltration/inflow and spill prevention program requirements and other provisions intended to protect the beneficial uses of the receiving water body. The establishment of the MPAs will not result in a modification of the permit requirements for POTWs and/or outfalls these permit requirements would be retained.

Underwater cables will not be impacted by the establishment of the MPAs since the main threat to underwater cables is from fishing techniques. Cable maintenance and repair is rare but will continue to be allowed within MPAs. These events will require a vessel to deploy maintenance and/or repair procedures for the cable. Vessels will be allowed within the MPAs so no impacts to the repair and/or maintenance of underwater cables is expected from establishment of the MPAs.

8.2.2.1 Law Enforcement Assets

The 2008 *Master Plan for Marine Protected Areas* notes that a lack of law enforcement resources is one of the reasons existing MPAs fall short of their potential to protect resources. (Fish and Game Code Section 2851 (a)). This lack of resources is not unique to the MPA context, and is true across all marine management activities in California. To remedy this, the MLPA requires that the Marine Life Protection Master Plan include recommendations for improving the effectiveness of enforcement practices. (Fish and Game Code Section 2856(a)(I),(J)). Increased use of cooperative agreements between agencies is also encouraged to ensure adequate enforcement. In addition, because of the added emphasis on MPAs established by the MLPA and the clear need for increased enforcement resources, additional assets are required (Department 2009) (Fish and Game Code Section 2856 (a)(2)(K)).

No single federal, state, or local agency has complete jurisdiction over the coastal and marine environment. Therefore, Department works closely with the enforcement programs of multiple entities on matters of mutual enforcement interest, including the U.S. Fish and Wildlife Service (USFWS), U.S. Department of the Interior, National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries), U.S. Coast Guard, National Park Service (NPS), and California Department of Parks and Recreation. Though these programs often provide financial or logistical support, they do not provide significant staff resources statewide, especially for offshore patrols necessary for MPA enforcement, or, patrols of areas not adjacent to their own facilities. As part of seeking new cooperative agreements as outlined by the 2008 *Master Plan for Marine Protected*

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Areas, the Department will make efforts to acquire more direct assistance from appropriate agencies. Effective enforcement of state and federal regulation within and around the MPAs will improve the likelihood for success of MPAs in conserving and protecting marine resources.

8.2.2.1.1 California Department of Fish and Game. The California Department of Fish and Game (Department) has management authority over living marine resources within state waters. The Department's Law Enforcement Division wardens are charged with enforcing marine resource management laws and regulations over an area encompassing approximately 1,100 miles of coastline and out to the seaward boundary of the Exclusive Economic Zone (EEZ) located 200 miles offshore. Enforcement duties include all commercial and sport fishing statutes and regulations contained in the Fish and Game Code and Title 14, California Code of Regulations, marine water pollution incidents, homeland security, and general public safety. General fishing regulations and other restrictions apply within MPAs but are subject to specific MPA restrictions. Furthermore, the Department has jurisdiction over any vessels that deliver catch to Californian ports, and all California-registered fishing vessels operating in federal waters (Department 2009).

A federal Cooperative Enforcement Agreement with the NOAA deputizes the Department to enforce the Magnuson Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), the Endangered Species Act, the Marine Mammal Protection Act (MMPA), the National Marine Sanctuaries Act, and the Lacey Act. The Department enforcement patrols regularly extend into federal waters between 3 and 12 nautical miles from shore as well as the rest of the EEZ beyond 3 nautical miles. A significant portion of both commercial and recreational fishing efforts – and subsequently enforcement effort – occurs outside state waters in the EEZ (Department 2009).

The Department maintains a fleet of seven large patrol boats in the 54- to 65-foot class stationed at major ports throughout the state (Department 2004). A cadre of 22 wardens and 5 support personnel staffs these patrol boats. The Department also has 8 patrol boats in the 24- to 30-foot range, and another 15 patrol skiffs stationed at ports and harbors throughout the state. Overall, the Department has 269 wardens in the field, responsible for a combination of both inland and marine patrol. Some of these wardens have a “marine emphasis” focusing primarily on ocean enforcement, in addition to enforcing inland regulations. The Department wardens are peace officers whose authority extends to any place in the state (Fish and Game Code Section 856, Penal Code Section 830.1).

The Department's Special Operations Unit, which reports directly to the Marine Assistant Chief who acts out of the Department's Sacramento headquarters, may be used to assist with major MPA violations. The unit consists of wardens who are tasked with conducting statewide covert investigations primarily dealing with the illegal commercialization of fish and/or wildlife, in particular, large poaching operations that severely impact California's fish

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and wildlife resources. Special Operations Unit investigations are varied, and may involve any of the following: commercialization of recreationally caught or illegally taken bear, deer, turkey, abalone, lobster, sturgeon, salmon and steelhead, and a variety of other marine and wildlife species. The unit has no uniform patrol responsibility anywhere in the state.

The Department has existing collaborative efforts in enforcement with 1) NOAA Fisheries in regard to Lacey Act violations for fish transported across state boundaries; 2) the U.S. Coast Guard on enforcement; 3) the Pacific Fishery Management Council on fisheries management plans and fishing gear deployment; 4) the State Department of Weights and Measures in assuring the proper procedures for the weighing of fish and the completion of landing receipts; and 5) the State Department of Parks and Recreation, NPS, Harbor Patrol, local police and local sheriffs departments in matters of mutual enforcement efforts (Department 2001).

8.2.2.1.2 U.S. Fish and Wildlife Service. The USFWS conserves, protects and enhances populations of fish, other wildlife, and plants. It also manages the system of National Wildlife Refuges. This system includes the following coastal refuges in California: Castle Rock, Humboldt Bay, San Pablo Bay, Marin Islands, Farallon, Don Edwards San Francisco Bay, Salinas River, Guadalupe-Nipomo Dunes, Seal Beach, San Diego Bay, San Diego, and the Tijuana Slough. The Seal Beach, Tijuana Slough, and San Diego National Wildlife Refuge Complex is the only refuge within the SCSR (Department 2009).

8.2.2.1.3 NOAA Fisheries. The Department has a Joint Enforcement Agreement with NOAA Fisheries. NOAA Fisheries provides funding to the state to enforce federal regulations in state waters; federal offshore waters; and in bays, estuaries, rivers and streams. NOAA Fisheries has regulatory authority for marine finfish, invertebrates, sea turtles, and marine mammals other than sea otters in waters 3 to 200 nautical miles from shore. NOAA Fisheries derives its authority from the Magnuson-Stevens Act of 1976, the MMPA and the federal Endangered Species Act. Under the Magnuson-Stevens Act, NOAA Fisheries manages any fishery that is the subject of a fishery management plan developed by regional fishery management councils as well as some non-fishery management plan species (Department 2009).

8.2.2.1.4 U.S. Coast Guard. The U.S. Coast Guard (USCG), which is now a part of the U.S. Department of Homeland Security, maintains stations and centers within the SCSR. These stations are listed in Table 8.2-2.

8.2.2.1.5 U.S. Navy. The U.S. Navy has numerous bases, air stations, ranges, and operating areas in and adjacent to the SCSR as described in Table 8.2-3. Comprised of hundreds of interconnected, instrumented and non-instrumented ranges, the Southern California Range Complex covers 45,000 acres of land, 113,000 square nautical miles of airspace and 120,000 square nautical miles of ocean training areas. Within the SCSR, the Southern California

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**TABLE 8.2-2
U.S. COAST GUARD FACILITIES
IN THE SOUTH COAST STUDY REGION**

Name of Facility	County
Integrated Support Command San Pedro	Los Angeles
Air Station Los Angeles	Los Angeles
Marine Safety Office Long Beach	Los Angeles
Group Long Beach	Los Angeles
Flotilla 27 Newport Beach	Orange
Air Station San Diego	San Diego
Marine Safety Office San Diego	San Diego
Group San Diego	San Diego

Source: Department 2009.

**TABLE 8.2-3
NAVY FACILITIES IN THE SOUTH COAST STUDY REGION**

Name of Coastal Facility	County
Point Mugu Naval Air Station	Ventura
Port Hueneme Construction Battalion Center	Ventura
Seal Beach Naval Weapons Station	Orange
Coronado Naval Base Fleet and Industrial Supply Center	San Diego
Coronado Naval Amphibious Base, Coronado CA	San Diego
Silver Strand Training Complex	San Diego
North Island Naval Air Station North Island	San Diego
Point Loma Naval Base Point Loma	San Diego
San Diego Naval Station Base San Diego	San Diego
San Diego Naval Mine and Anti-submarine Warfare Training Center Command	San Diego
Naval Outlying Landing Field Imperial Beach	San Diego
Balboa Naval Hospital	San Diego
San Clemente Island	San Diego
San Nicolas Island	Ventura

Source: Department 2009.

Range Complex extends from the ocean floor up to an altitude of 80,000 feet, and from shore facilities and ranges to almost 200 nautical miles offshore.

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8.2.2.1.6 U.S. Park Police. The U.S. Park Police is a distinct federal agency that is empowered to enforce all Department regulations. Park Police provide 24-hour coverage, and work closely with NPS to enforce regulations within national parks.

8.2.2.1.7 National Park Service. The National Park Service (NPS) has several park lands located along the California coast. Two national parks are located in the SCSR: the Channel Islands National Park and the Cabrillo National Monument. Both are underwater parks; the seaward boundary of Channel Islands National Park is 1 nautical mile around each of the five park islands (Anacapa, Santa Cruz, Santa Rosa, San Miguel, and Santa Barbara islands), and Cabrillo National Monument's seaward boundary is 300 yards seaward of mean low water.

The Channel Islands National Park, established in 1980, currently encompasses San Miguel, Santa Rosa, Santa Cruz, Anacapa, and Santa Barbara islands, as well as submerged lands and waters within 1 nautical mile of each island. NPS regulates landing and camping on the islands, access to cultural and archeological sites, and use of personal watercrafts. Channel Islands National Park works closely with the Channel Islands National Marine Sanctuary and other public and private partners to coordinate the preservation and protection of the Channel Islands. The Channel Islands National Marine Sanctuary completely surrounds the Channel Islands National Park and overlaps the national park boundary to the first nautical mile from shore which is within the national park (Department 2009).

8.2.2.1.8 California Highway Patrol. The California Highway Patrol works in conjunction with other agencies, especially in the northern section of the SCSR, to enforce regulations along the coastline.

8.2.2.1.9 California Department of Parks and Recreation. The Department of Parks and Recreation manages approximately one-third of the California coastline and manages coastal wetlands, estuaries, beaches, and dune systems within State Park system units. Through California State Lands Commission leases, the California Department of Parks and Recreation has the management authority over 15 underwater areas, though it does not have the authority to restrict the take of living marine resources. The California Parks and Recreation Commission has the authority to establish, modify, or delete state marine reserves, state marine parks, and state marine conservation areas, but must have the concurrence of the California Fish and Game Commission (Commission) on any proposed restrictions related to the extraction of living marine resources (PRC Section 6725).

State and Regional Parks provide law enforcement services within respective park boundaries, and both are managed on a county level. Rangers from both offices are empowered to enforce state and federal regulations, and generally stay within the jurisdictional boundaries of their parks. They also often collaborate with other agencies such as the county sheriffs, coast guard, and NPS to ensure full coverage of the coastline.

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8.2.2.1.10 Sheriffs. Law enforcement services provided by sheriffs are on the county level. Sheriff's departments often work in collaboration with other agencies such as the NPS Law Enforcement Division, the State Park Police and the USCG. The following is a description of available resources from sheriffs' offices on the coast by county.

The Santa Barbara County Sheriff's Department has over 600 sworn and non-sworn employees providing a wide variety of services to the public. The sheriff's department search and rescue capabilities include a dive team.

In Ventura County, there are 360 sworn deputies available for field patrol on staff and approximately 72 on duty per shift at any given time in the field. The sheriff's department coordinates with the Ventura County Harbor Patrol and the USCG, the Department, as well as state and county park authorities to meet enforcement goals (Ross Bonfiglio, Media Information Officer Ventura County Sheriff's Department, personal communication).

The Los Angeles County's Sheriff's Department is the largest in the world comprised of three patrol divisions (Field Operations Regions I, II, and III) along the SCSR. The Los Angeles County Sheriff's Department has three stations which serve coastal communities these are the Malibu/Lost Hills, Marina Del Ray and Avalon working in conjunction with the USCG where there is need for additional patrol or support. Coastal portions of western Los Angeles County are served by the Malibu/Lost Hills Station's six sergeants, six lieutenant and two deputy officers. Avalon Sheriff's Station provides law enforcement for Santa Catalina Island, San Clemente Island, and the ocean waters between the islands and mainland of Southern California. The personnel roster of the station consists of a Station Commander; three sergeants, and nine deputy sheriffs. These personnel are augmented by as many as twelve reserve deputies during the busiest holiday seasons and on summer weekends. Marina del Rey Station operates six patrol boats in the harbor waters. Growth in the sheriff's department is proportional to population growth for the county, law enforcement services can be expected to remain the same relative to total county population (Los Angeles County 2010).

In Orange County, the Sheriff-Coroner Department is a sizeable, multi-faceted law enforcement agency with approximately 4,000 staff and over 800 reserve personnel. The department is structured into 20 divisions comprising five organizational functions. These include public protection such as land and coastal patrols, homeland security, and emergency services; Technical services such as the coroner, investigations, communication, and forensics; jail operations; and administrative and support services. The Sheriff-Coroner Department services unincorporated Orange County, as well as contracted policing services for 12 Orange County cities, John Wayne Airport, Orange County Superior Court, the Social Services Agency, and Orange County Transportation Authority (Orange County 2010).

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The San Diego County Sheriff's Department is comprised of approximately 4,000 sworn officers and professional support staff which provide general law enforcement, detention, and court services. The sheriff manages seven major detention facilities, eight major substations, four patrol substations, a crime laboratory, and various support operations. The department is organized into six general service areas, including: Office of the Sheriff, Law Enforcement Services, Detention Facility Services, Court Services, Human Resource Services, and Management Services. The department provide law enforcement services for unincorporated San Diego County, as well as the cities of Del Mar, Encinitas, Imperial Beach, Lemon Grove, Poway, San Marcos, Santee, Solana Beach, and Vista (San Diego County 2010).

8.2.2.1.11 Port Police and Harbor Patrol. In Orange County, the Harbor Patrol/Marine Operations Bureau is staffed by a lieutenant who serves as county Harbormaster, seven sergeants, and 40 deputy sheriffs providing 24-hour enforcement, marine fire fighting and search/rescue services along the 48 miles of coastline and within the three major harbors at Newport Beach, Sunset-Huntington and Dana Point. Marine Operations works closely with local and federal government agencies, sharing information for the detection and prevention of suspected acts of terrorism. The Marine Operations fleet consists of six twin-engine fireboats and nine single-engine patrol boats. Marine Operations is overseen by the captain of the Orange County Sheriff's Department, Homeland Security Division. The Newport Beach office serves as the headquarters for the Marine Operations Bureau, and also as an official reporting station for the National Weather Service and NOAA. The 7,000-square-foot Harbor Patrol Headquarters building contains an emergency operations center, conference and training rooms, a marine maintenance facility, and a state-of-the-art 800 MHz dispatch area. This dispatch center also serves as a backup for the county's primary dispatch facility at Loma Ridge (Orange County 2010).

The Port of San Diego's Harbor Police is made up of 166 Port District employees. Approximately 141 of the employees are sworn law enforcement officers and 25 are civilian support staff. The Harbor Police provide uniformed police services and marine fire fighting within the territorial limits of the Port of San Diego. Other services provided by the Harbor Police include professional law enforcement and support staff interacting with the public to ensure a safe and secure environment at Lindbergh Field, on San Diego Bay and on Tidelands (Port of San Diego 2010).

The task of policing the harbors and ports of Los Angeles County is undertaken by several separate agencies. The Los Angeles County Sheriff's Department Marina del Ray Station provides harbor patrol detail from the Ventura County line to Palos Verdes Point and the unincorporated county area. The Sheriff's Department maintains a fleet of six vessels and works closely with the US Coast Guard, Los Angeles County Lifeguard Baywatch, and Los Angeles County Fire Department as first responders and rescue units. The department also maintains a Dive/Rescue Team of 15 certified divers (Los Angeles County 2010). The Los Angeles Port Police maintain patrols and surveillance for the Port of Los Angeles and

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surrounding Harbor Areas. The LA Port Police maintain patrol units, a dive team, and a K-9 unit, and assists with the Cargo Theft Interdiction Program and High Intensity Drug Trafficking Area task force along with various federal agencies (Los Angeles County 2010). The Port of Long Beach maintains its own Harbor Patrol for 24-hour surveillance and patrol in conjunction with various law enforcement organizations including the Long Beach Police Department, Customs and Border Protection, USCG, and Homeland Security. The Long Beach Harbor Patrol contains a dive team, security submersibles, and a K-9 unit (Port of Long Beach 2010).

The Santa Barbara Harbor Patrol provides emergency response, security, and law enforcement in the Santa Barbara Waterfront jurisdiction. The Harbor Patrol coordinates its operations with the USCG, Santa Barbara Police Department, Santa Barbara Fire Department, the California Department of Fish and game, and the Santa Barbara County Sheriff's Department. In addition to foot, vehicle, and boat patrols, the Harbor Patrol maintains two fire rescue boats and a first response fire suppression team. The Harbor Patrol performs frequent open water rescues and disabled boat retrievals (Santa Barbara County 2010).

8.2.2.2 MPA Enforcement Considerations

The level and type of enforcement activity in an individual MPA depends upon the objectives of the individual MPA and its accompanying regulations. In some cases, MPAs may be enforced without direct contact of individual vessels, such as in state marine reserves where a vessel is obviously not engaged in fishing. In limited-take areas, the specific regulations may require close examination of individual vessels to determine whether fishing activities comply with the regulations (e.g., whether a fishing vessel stows its gear while transiting a no-take area).

Beyond the MPA classification, other elements of MPA design have implications for an effective enforcement plan. The following factors facilitate enforcement of MPAs:

- Straight line coordinates of offshore boundaries which follow lines of latitude and longitude—more easily recognized by users and enforcement is simplified.
- Larger shoreline lengths—provide a buffer against unintentional boundary infractions.
- Proximity to cities—enhances the ability to enforce as more assets are readily available and deployment of staff and equipment is easier; however may pose problems for level of use.
- Distance from heavily used areas—areas near urban development are often more heavily visited and require more enforcement effort to ensure compliance.
- Fewer points of public access—requires less monitoring and staffing than MPAs with multiple access points (e.g., multiple shoreside access points versus only offshore access).

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- Boundaries adjacent to the shoreline—enforceable using smaller vessels and shoreside patrol when compared to offshore MPAs with no shoreline connection.
- Adjacent to onshore feature and facilities—existing staff (e.g., river mouths or state parks and state park ranger stations) can assist in enforcement and monitoring.

The number of and distance between MPAs also impacts the Department's ability to enforce the MPA regulations. If MPAs are too far from one another, individual patrols are not able to enforce multiple areas. If MPAs are too numerous, individual patrols are not able to reach all areas. Each case would require additional enforcement personnel to cover the entire network of MPAs in the SCSR.

Finally, the enforcement plan must consider natural barriers to enforcement. MPAs established in areas with normally rough conditions may be difficult to patrol or access. Offshore MPAs require larger vessels and dedicated at-sea patrol. MPAs located farther offshore or more distant from ports have higher patrol costs in both time and expenses. Though MPAs in very remote and difficult-to-access areas will naturally have fewer visitors and a decreased chance of unintentional violations, they are also uniquely suited for unobserved intentional violations.

8.2.2.3 Emergency Response Services

The USCG, the primary maritime law enforcement agency, currently provides emergency response within existing MPAs. Search and Rescue is one of the Coast Guard's oldest missions. Coast Guard Search and Rescue response involves multi-mission stations, cutters, aircraft, and boats linked by communications networks. Emergency response services include distress monitoring, communications, provision of medical advice, initial medical assistance, and/or medical evacuation. The USCG develops, establishes, maintains, and operates rescue facilities for the promotion of safety on, under, and over international waters and waters subject to U.S. jurisdiction; conducts safety inspections of most merchant vessels; and investigates marine casualties.

8.2.2.4 Marine Protected Areas Enforcement Plans

The MLPA identifies adequate enforcement as a program goal (California Fish and Game Code Section 2853(c)(2)). To this end, the Department will prepare enforcement plans for the proposed MPAs once the MPAs are established. The primary purpose of an MPA enforcement plan is to ensure compliance with regulations designed to achieve the individual MPA objectives. The objectives of the enforcement plan include the following three primary categories:

1. Provide an effective and comprehensive operational ability.
2. Maintain and enhance cooperative efforts with other agencies.

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3. Ensure public awareness of regulations and rationale and provide enhanced public outreach and education.

Priorities are to be developed based on the potential for resource impact, level of use, and potential for infractions. High priority areas include habitats that are particularly vulnerable to damage, areas with high aggregations of critical species or species at low abundance, and areas where infractions are likely to occur or have occurred at high rates in the past.

8.2.3 Impact Analysis

8.2.3.1 Methodology

Impacts of the proposed Project IPA were evaluated qualitatively, based on the potential for MPA establishment to disrupt existing utilities and services.

8.2.3.2 Criteria for Determining Significance

Based on Appendix G of the State CEQA Guidelines and professional judgment, it was determined that the proposed Project IPA would result in a significant impact on public services if it would:

- Significantly increase the need for enforcement of federal, state, and/or local laws and regulations.
- Result in the need for new or physically altered governmental facilities, in order to maintain acceptable service ratios, response times, or other performance objectives for police, fire, or emergency response.

8.2.3.3 Environmental Impacts

Criterion PS-1: Significantly increase the need for enforcement of federal, state, and/or local laws and regulations.

The proposed Project IPA is a set of state regulations intended to increase the total marine area protected from approximately 182 square miles to approximately 351 square miles (see Section 3.0 of this Draft EIR for detailed discussion and locations of proposed MPAs). This represents a substantial increase in protected ocean area, and the bulk of enforcement responsibility would lie with the Department and its collaborative efforts with enforcement partners. However, because the proposed regulatory changes would modify an existing regulatory program, rather than creating a new program, it is envisioned that enforcement of the revised MPA network would be accomplished through the Department's existing enforcement procedures, utilizing Department wardens, on-board observers, and cooperative agreements with other state and federal agencies as well as the general public (e.g., the CalTIP program, an anonymous hotline by which the public can report poachers and illegal

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polluters). In addition, the proposed MPA boundaries have been designed in such a way as to improve public understanding (points of access would be minimized, boundary lines would be straight and clearly marked when possible, etc., see Section 8.2.2.2 above), which would increase voluntary compliance and lessen the incidence of inadvertent violations resulting from ignorance or confusion by the regulated public. Clearly marked boundaries would also allow efficient enforcement and improved success in adjudications. Given these considerations, enforcing the proposed network of MPAs would be within the Department's capabilities (California MLPA Initiative 2009). Aside from the MPA regulations themselves, the proposed IPA would not increase the need for enforcement of any federal, state, or local laws or regulations. Impacts relative to enforcement of laws and regulations would be less than significant.

Criterion PS-2: Result in the need for new or physically altered governmental facilities, in order to maintain acceptable service ratios, response times, or other performance objectives for police, fire, or emergency response.

The proposed Project IPA requires no utility services and would not affect existing utilities such as those identified in Table 8.2-1. Undersea cables are typically buried and would not be impacted by establishment of MPAs. Consideration was given for existing uses of the SCSR's marine environment that have been permitted by other federal state agencies during the design process for the proposed Project IPA. An overview of the design process is provided in Section 2.0 of this Draft EIR. Wastewater treatment facilities and storm drainage outfalls will not be impacted by the establishment of the proposed Project IPA. The permit requirements for these facilities would continue to be monitored under the terms and conditions of the existing NPDES permits issued by the RWQCB. Since all of the existing facilities have been permitted, the creation of the MPAs would not impact their operation. The proposed project IPA is a set of passive marine protection regulations that would not require POTW or municipal separate storm sewer system outfalls, cables, power generation, or desalination. The establishment of the proposed Project IPA will not create the need for new or expanded public services within the SCSR.

Because the MPAs would be limited to areas within 3 nautical miles of the shoreline, any emergency situations requiring response from medical, law enforcement, or fire suppression personnel could be responded to within a reasonable period regardless of MPA locations. Further, the proposed MPAs would not prohibit vessel traffic, and would therefore not present an obstacle in the event of an emergency. Given these considerations, no construction of new governmental facilities to accommodate the proposed Project's demand for public services would be required, and impacts would be less than significant.

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8.3 LAND USE AND RECREATIONAL RESOURCES

This section describes the existing setting and potential impacts of the proposed Integrated Preferred Alternative (IPA) on land use and recreational activities on terrestrial lands adjacent to the south coast study region (SCSR). Specifically, it describes existing conditions related to land uses and recreation, and summarizes the overall federal, state, and regional/local regulatory framework that would affect implementation of the marine protected area (MPA) network components. The existing planning conditions are described within the SCSR, particularly focusing on the permitted uses within state waters.

Recreational activities within this section focus on non-consumptive recreational uses (e.g., diving, wildlife viewing, kayaking, etc.), and also look at trends and hot spots for more popular consumptive recreational activities.

8.3.1 Regulatory Framework

Regulations pertaining specifically to land use and recreational resources are described below. Land use regulations in general relate to terrestrial uses that are controlled and regulated using a system of plans, policies, goals, and ordinances adopted by the various jurisdictions with authority over uses adjacent to the SCSR. The project area for the proposed Project IPA is within the open water and therefore, the local coastal plan information is included for information purposes only.

8.3.1.1 Federal

8.3.1.1.1 Rivers and Harbors Act of 1899. The federal Rivers and Harbors Act of 1899 (RHA) regulates development and use of the nation's navigable waterways. It prohibits the unauthorized obstruction or alteration of any navigable waters of the United States. As defined by the RHA, navigable waters include all waters that are:

- Subject to the ebb and flow of tides and/or
- Presently, historically, or potentially used for foreign or interstate commerce

Regulations implementing Section 10 of the RHA are coordinated with those implementing CWA Section 404. Specifically, the RHA regulates:

- Construction of structures in, under, or over navigable waters;
- Excavation or deposition of material in navigable waters; and
- All work affecting the course, location, condition, or capacity of navigable waters.

The RHA is administered by the U.S. Army Corps of Engineers (Corps), typically in conjunction with Section 404 of the federal Water Pollution Control Act of 1972 (Clean

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Water Act; CWA) (33 U.S.C. 1251 et seq.). If a proposed activity falls under the authority of both CWA Section 404 and RHA Section 10, the Corps processes and issues a single permit. For activities regulated only under RHA Section 10, such as installation of a structure not requiring fill, permit conditions may be added to protect water quality during construction.

8.3.1.1.2 Coastal Zone Management Act. The Federal Coastal Zone Management Act (CZMA) of 1972, as administered by the state of California through the California Coastal Act, applies to the proposed Project IPA.

8.3.1.1.3 National Park Service. The National Parks Service (NPS) was established to conserve natural scenery, wildlife, and natural and historic objects. In addition, the NPS provides management of these resources for future generations. The NPS manages national parks, monuments, historic sites, and recreation areas by developing and implementing park management plans. While their responsibilities are not specifically ocean or coastal oriented, NPS manages four coastal recreational parks in California; only the Cabrillo National Monument is located within the SCSR. The Cabrillo National Monument is an underwater park and its boundary is 300 yards seaward of the mean low water line.

National Park Act of August 19, 1916 (Organic Act), 16 U.S.C. 1, et seq. The National Park Act of August 19, 1916 (16 U.S.C. 1 et seq.), also known as the Organic Act, created the NPS in the Department of the Interior. The NPS is charged with the promotion and regulation of the use of the federal areas known as national parks, monuments, and reservations, so as to conform with “the fundamental purpose to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment for the same in such manner and by means as will leave them unimpaired for the enjoyment of future generations.”

National Wildlife Refuge System Administration Act of 1966 and National Wildlife Refuge System Improvement Act of 1997. The United States Fish and Wildlife Service (USFWS) owns and manages national wildlife refuges and bay waters totaling 30,000 acres. The National Wildlife Refuge System Administration Act of 1966 conserves and protects listed endangered and threatened species and migratory birds through protection and restoration of species’ habitats, and by managing uses, such as recreation, of refuge areas to prevent negative impacts to these species. The National Wildlife Refuge System Improvement Act of 1997 designates wildlife-dependent recreational uses involving hunting, fishing, wildlife observation and photography, and environmental education and interpretation as “priority general public uses.” When these activities are compatible with species protection goals (as determined by USFWS), they are welcome on refuges and receive priority over other uses. The San Diego National Wildlife Refuge complex in the SCSR includes the following: Seal Beach National Wildlife Refuge, South Beach National Wildlife Refuge, Sweetwater Marsh National Wildlife Refuge, and Tijuana Slough National Wildlife Refuge. Refuges are also discussed in Section 6.3 and Section 7.0.

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8.3.1.1.4 Bureau of Land Management. The U.S. Department of the Interior, Bureau of Land Management (BLM) administers 262 million surface acres of America's public lands, located primarily in 12 western states. The BLM was established to sustain the health, diversity, and productivity of public lands under its jurisdiction for the use and enjoyment of present and future generations. Among other holdings, BLM manages lands within the National Landscape Conservation System through development and implementation of resource management plans. While most of its lands are not located along the coast, BLM does manage several on-shore coastal properties including the California Coastal National Monument, which encompasses more than 20,000 offshore rocks and small islands above mean high tide within 12 nautical miles of the coast. The California Coastal National Monument has developed a resource management plan, which establishes the management framework, outlining the goals and objectives, identifying dozens of management actions needed to implement the plan over the next 15 to 20 years, and providing the major implementation priorities. To effectively manage these lands, BLM has formed numerous partnerships with federal, state, and local entities, including the California Department of Fish and Game (Department) and the California Department of Parks and Recreation (State Parks). BLM's management goals for the California Coastal National Monument emphasize protection of the biological, geological, aesthetic, and cultural resources of the rocks and islands.

8.3.1.2 State

8.3.1.2.1 California Coastal Act (California Public Resources Code Sections 30000, et seq.). The California Coastal Act (California PRC sections 30000 et seq.) was enacted by the state legislature in 1976 to provide long-term protection of California's 1,100-mile coastline for the benefit of current and future generations. Section 30001.5 states that the goals are to:

- a) Protect, maintain, and where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and artificial resources;
- b) Assure orderly, balanced utilization and conservation of coastal zone resources, taking into account the social and economic needs of the people of the state;
- c) Maximize public access to and along the coast and maximize public recreational opportunities in the coastal zone consistent with sound resources conservation principles and constitutionally protected rights of private property owners;
- d) Assure priority for coastal-dependent and coastal-related development over other development on the coast; and
- e) Encourage state and local initiatives and cooperation in preparing procedures to implement coordinated planning and development for mutually beneficial uses, including educational uses, in the coastal zone.

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The California Coastal Act created a partnership between the state (acting through the California Coastal Commission [CCC]) and local government (15 coastal counties and 58 cities) to manage the conservation and development of coastal resources through a comprehensive planning and regulatory program. The act mandates that local governments and constitutional entities prepare a land use plan and schedule of implementing actions to carry out the policies of the Coastal Act. The policies constitute the standards used by the CCC to determine the adequacy of local coastal programs and the permissibility of proposed development. The CCC also reviews and approves local coastal programs, which are the basic planning tools used by local governments to guide development in the coastal zone.

Policies within the California Coastal Act that would apply to the proposed Project IPA include the following:

- Section 30230. Marine resources shall be maintained, enhanced, and, where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.
- Section 30231. The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

For the entire California coast, except San Francisco Bay, the CCC implements the federal CZMA of 1972. The CCC is responsible for reviewing proposed federal and federally authorized activities to assess their consistency with the approved state coastal management program. The Commission developed the California Coastal Management Program pursuant to the requirements of the federal CZMA. After the National Oceanic and Atmospheric Administration (NOAA) approved the California Coastal Management Program in 1977, all federal activities affecting coastal zone resources became subject to the CCC's regulatory jurisdiction. A federal agency must conduct its activities (including federal development projects, permits and licenses, and assistance to state and local governments) in a manner consistent with the California Coastal Management Program. The process established to implement this requirement is called a consistency determination for federal activities and development projects and a consistency certification for federal permits and licenses and federal support to state and local agencies.

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8.3.1.2.2 Public Trust Doctrine. The Public Trust Doctrine encompasses the notion that title to lands under navigable waters up to the high water mark is held by the state in trust for the people.¹ The U.S. Constitution grants states sovereignty over their tide and submerged lands, and the Supreme Court established the states' duty to protect (in perpetuity) the public's interest in these areas.² The California Supreme Court has interpreted the range of public interest values in these waterways to include general recreation activities such as swimming and boating; and preservation of lands in their natural state as open space, as wildlife habitat, and for scientific study.^{3,4}

State and local governments have two forms of authority to manage navigation that enable them to strike a balance between recreation and environmental needs: 1) control over development of tide and submerged lands that can affect navigability of waterways, and 2) recreational boating rules. Under the first category, the California State Lands Commission (SLC) manages public uses of navigable waters through its leasing program. When a public or private entity applies for a permit to lease tide and submerged lands, the SLC reviews the application to ensure that the proposed use (e.g., a marina or pier) will maintain the public benefits of the overlying navigable waters. Usually the city or county fulfills this review role because most tide and submerged lands are owned by local authorities through past legislative grants of state lands.

Under the second category, recreational boating rules in Section 660 of the California Harbors and Navigation Code empower local governments to establish ordinances that regulate navigation in waters within their jurisdiction through time-of-day restrictions, speed zones, special-use areas, and sanitation and pollution controls.⁵

8.3.1.2.3 California State Lands Commission. The SLC manages certain lands held in trust for the people of California. Their jurisdiction includes a 3-mile-wide section of tidal and submerged land adjacent to the coast and offshore islands, including bays, estuaries, and lagoons; the waters and underlying beds of more than 120 rivers, lakes, streams, and sloughs;

¹ The concept of a public trust resource originated in Roman law. Through U.S. federal and state constitutional and case law, the doctrine has been applied to these resources in the U.S. For a more detailed discussion of the evolution of public trust law in California, refer to the Public Trust Statements at the California State Lands Commission website: <http://www.slc.ca.gov/Policy%20Statements/Policy_Statements_Home.htm>

² *Illinois Central Railroad v. Illinois*, 1892. 146 U.S. 387. The Public Trust Doctrine has yet to be applied to federal lands and waters through statutes or case law.

³ *Marks v. Whitney*. 1971. 6 Cal.3d 251; *National Audubon Society v. Superior Court*. 1983. 33 Cal.3d 419; *People v. California Fish Co.* 1913. 166 Cal. 576.

⁴ Frank, R.M. 1983. "Forever Free: Navigability, Inland Waterways, and the Expanding Public Interest." *University of California, Davis Law Review*, 16:579. California case law also establishes a link between navigation and recreation, and verges on treating the two as interchangeable public interests.

⁵ Harbors and Navigation Code §660 (b); and *Personal Watercraft Coalition v. Marin County Board of Supervisors*. 2002. 100 Cal. App. 4th 129; and *People ex. rel. Younger v. County of El Dorado*, 96 Cal App.3d. 403.

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and 585,000 acres of school lands granted to the state by the federal government to support public education. The SLC is comprised of four divisions: Environmental Planning and Management, Land Management Division, Marine Facilities Division, and Mineral Resources Management.

8.3.1.2.4 State Parks. State Parks manages nearly 30 percent of the state's coastal terrestrial lands and has been involved in the planning and implementation of underwater parks and reserves since 1960, with the establishment of Point Lobos Marine Reserve off Point Lobos State Reserve. Prior to the passage of the Marine Life Protection Act (MLPA), State Parks had established 14 marine managed areas. In 1979 State Parks prepared its first Underwater Parks Master Plan and updated the plan in 1984. Many of the planning elements and goals fundamental to the department's Underwater Parks Program mirror those of the MLPA and the Marine Managed Areas Improvement Act (Parks and Recreation 2008).

State Parks' program goals include:

- Preservation of outstanding and representative examples of marine habitats found in each seascape province off the coast of California
- Protection of marine resources (flora and fauna) and ecosystems
- Preserving scenic underwater resources
- Providing a variety of nearshore recreational opportunities, such as nature observation, diving, underwater photography, fishing and boating
- Providing public education and interpretation of marine environments, including intertidal areas

8.3.1.3 Local

Local coastal programs (LCPs), when adopted by local governments and certified by the CCC, establish development controls for areas of local jurisdiction within the coastal zone. LCPs are basic planning tools used by local governments (both counties and cities) to guide development in the coastal zone, in partnership with the CCC. LCPs contain the ground rules for future development and protection of coastal resources. The LCPs specify appropriate location, type, and scale of new or changed uses of land and limited water (shorelines). Each LCP includes a land use plan and measures to implement the plan (such as zoning ordinances). Prepared by local government, these programs govern decisions that determine the short- and long-term conservation and use of coastal resources. While each LCP reflects unique characteristics of individual local coastal communities, regional and statewide interests and concerns must also be addressed in conformity with California Coastal Act goals and policies. The CCC also hears appeals of local decisions in areas of an LCP designated as within the CCC's appeal jurisdiction.

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After an LCP has been finally approved, the CCC's coastal permitting authority over most new development is transferred to the local government, which applies the requirements of the LCP in reviewing proposed new developments. The CCC retains permanent coastal permit jurisdiction over development proposed on tidelands, submerged lands, and public trust lands, and the CCC also acts on appeals from certain local government coastal permit decisions. The CCC reviews and approves any amendments to previously certified Local coastal programs.

8.3.2 Environmental Setting

8.3.2.1 Land Uses

The SCSR extends from Point Conception in Santa Barbara County to the U.S.-Mexico border in San Diego County. The SCSR abuts five coastal counties: Santa Barbara, Ventura, Los Angeles, Orange, and San Diego. Areas along the entire coastline of the SCSR support large numbers of people and extensive development, although the largest urban centers occur in the cities of Los Angeles and San Diego. Section 8.3 of this Draft Environmental Impact Report (EIR) includes discussion of population adjacent to the SCSR.

Existing terrestrial land uses designated by the "counties and cities" adjacent to the SCSR include, for example: recreation, open space, residential, public, commercial, industrial and agricultural uses. LCPs contain the basic framework for future development and protection of coastal resources. The LCPs specify the location, type, and scale of new or changes to land use and coastal areas. Each LCP includes a land use plan and zoning measures that implement the LCP.

The SLC has primary jurisdiction over the majority of the SCSR, which is located between the mean high tide line and 3 nautical miles offshore. Non-terrestrial use designations are administered by the SLC and over two hundred leases are known to be either active or inactive within the SCSR.

The SLC issues leases or permits on state lands for purposes including marinas, industrial wharves, tanker anchorages, harvesting of timber, dredging, grazing, mining, oil and gas exploration and extraction, and geothermal development. In addition, private landowners must also obtain a lease to install a recreational pier adjacent to a waterfront residence. Work in harbors and waterways requires dredging permits that are issued to both public and private parties by the SLC.

In 1921, the California State legislature authorized the issuance of prospecting permits and leases for oil and gas development of the state's tide and submerged lands by the Surveyor General, the predecessor of the SLC. Exclusive jurisdiction over all oil and gas development on state-owned property was given to the SLC in 1938. The SLC currently administers more

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than 100 sites on which oil companies have developed some 1,000 wells that take oil and gas from state lands.

Santa Barbara County has three active shellfish aquaculture leases. These sites grow oysters, clams, mussels, scallops, and abalone for commercial sale. Shellfish aquaculture operations with active state water bottom leases cover 106.7 acres within the SCSR (Department 2009). Aquaculture is discussed in Section 5.0 and Section 7.0 of this Draft EIR.

An active water bottom lease must be in the form of a lease, have time remaining on the lease period, currently meet planting and harvesting requirements as set forth in CCR, Title 14, §237i-j, and be approved by the California Fish and Game Commission (Commission). The boundary and acreage of a specified state water bottom parcel are defined in a lease, as well as the terms and conditions of usage of that area for a specified time. The annual cost is based on a rate per acre as a result of a competitive bidding in a lease auction. The Commission must approve any changes to terms or conditions in the lease (Department 2009).

Thirty-six of the 106.7 acres leased are in use. Santa Barbara Mariculture Company uses 36 of 71.7 leased acres for farming rock, speckled, and Japanese scallops, manila clams, Pacific and Kumamoto oysters, and Mediterranean mussels. Culture practices include longline, rafts, rack and bag, longline on stakes, rack and tray, groundline and bag, bottom culture, and floats. Neushul Mariculture, Inc. uses 1 of 25 leased acres for algae cultivation. Eaglenet Sea Farms, Inc. uses zero of the 10 leased acres for red abalone cultivation by anchored ocean habitats (Department 2009). This issue is also discussed in Section 5.0 of this Draft EIR.

Additional agencies with permit authority over portions of the proposed Project IPA include the CCC and California Department of Fish and Game (Department). The CCC is responsible for administering the California Coastal Act and federally approved California Coastal Management Program pursuant to the CZMA. The California Coastal Act policies implemented by the CCC address issues such as public access and recreation, natural resource protection, agricultural operation, coastal development projects, port activities, and energy production. The SLC monitors existing offshore oil and gas activities to ensure revenue accountability, efficient resource recovery, and protection of the environment. However, since 1982, there has been a federal moratorium on new Pacific Outer Continental Shelf oil and gas leasing activities off the California coast, and since 1989 there has been a ban on issuing new state oil and gas leases in state tidelands.

8.3.2.2 Recreational Activities

In 1999 and 2000, more than 43 percent of all Americans participated in some form of marine recreation. Americans flock to beaches and shores to swim, fish, boat, and enjoy the natural scenery. Populations in the coastal zone are projected to steadily increase, as is the total number of people participating in all forms of marine recreation, with the largest

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increases expected for beach going activities. California ranks second only to Florida in the number of participants in coastal recreation, with nearly 18 million participants, most of whom take part in one of the 17 non-consumptive activities listed in Table 8.3-1 (Department 2009). Refer to Figures 8-1 through 8-6 for coastal access points and recreational uses in the SCSR.

**TABLE 8.3-1
PARTICIPATION IN COASTAL RECREATION IN CALIFORNIA**

Coastal Activity	Estimated Numbers Statewide for California
Visit beaches	12,598,069
Visit waterside besides beaches	1,500,965
Swimming	8,398,997
Snorkeling	706,998
Scuba diving	288,023
Surfing	1,114,372
Wind surfing	82,201
Motorboating	1,549,289
Sailing	1,087,755
Personal watercraft use	680,309
Canoeing	190,948
Kayaking	433,209
Rowing	280,265
Water-skiing	265,533
Bird watching in saltwater surroundings	2,581,958
Viewing other wildlife in saltwater surroundings	2,551,711
Viewing or photographing scenery in saltwater surroundings	4,175,372

Source: Department 2009.

Note: Data includes civilian non-institutionalized population 16 years and older as sampled Sept. 1999. Extrapolated from a sample of 27,854 households.

The SCSR also contains numerous coastal parks and beaches, which attract visitors to enjoy such activities as swimming, diving, bird watching, whale watching, observing tide pools, and hiking in the magnificent coastal environments.

8.3.2.2.1 Coastal Tourism. California is the most visited state in the U.S. In 2006, California received approximately 14.6 million international visitors, over half of whom visited the Los Angeles-Long Beach area. Coastal California also received approximately 352.3 million domestic visitors, with 84.9 percent being Californians. Within the SCSR, Los

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Angeles County has the highest travel spending, varying between \$14 and \$22 million between 1994 and 2006 (Department 2009), see Figure 8-7.

Coastal tourism and recreation contributed \$12.4 billion to California's gross state product in 2000. Visits to the beach and waterfront activities are the third most popular recreational activities in California, after "sightseeing" and "theme and amusement parks." Theme and amusement parks within the SCSR also represent interest in the coastal and ocean ecosystems. Sea World in San Diego, with an entrance fee of \$55 to \$65, was the fourth most visited theme/amusement park in California, receiving a total of 4.1 million visitors in 2005.

Southern California is also home to aquariums, nautical and maritime museums, and monuments, and fleets and processors that represent the historic fishing community—all of which draw tourists interested in coastal communities, history, and ecosystems. Tourism and recreation are economic drivers in and adjacent to the SCSR; Los Angeles County has the highest travel spending, followed by San Diego and Orange counties, which also showed increasing trends in spending. Travel spending in Ventura and Santa Barbara counties has remained fairly constant, but significantly below the travel spending in Los Angeles, San Diego, and Orange counties, possibly due to a less developed tourist infrastructure, smaller cities, or fewer attractions (Department 2009).

Southern California boasts seven of the state's ten most-visited state parks; of this seven, five are adjacent to the coast. Old Town San Diego Historic State Park, the most visited state park in the state, received 5,431,333 visitors in 2005/2006, and, while not adjacent to the coast, it is within a mile of the ocean. The five parks adjacent to the shore are the Huntington, Bolsa Chica, San Onofre, Doheny, and Cardiff state beaches, which received over 11 million visitors in 2005/2006. Table 8.3-2 lists the ten most frequently visited California state parks adjacent to the shore in the SCSR. The Channel Islands National Park, which encompasses Anacapa, Santa Cruz, Santa Rosa, San Miguel, and Santa Barbara islands and extends one mile offshore around all these islands, received 434,107 visitors in 2005 (Department 2009). Also, adjacent to the coast in the SCSR is the Santa Monica Mountains Recreation Area, which received 553,866 visitors in 2005. Tourists also visit the San Diego National Wildlife Refuge coastal San Diego Bay National Wildlife Refuge, Seal Beach National Wildlife Refuge, and the Tijuana Slough National Wildlife Refuge (Department 2009).

The SCSR is also home to a large number of county and city beaches; therefore, total beach attendance for the SCSR is much greater than the numbers reported for state beaches alone. Beach attendance estimates for Southern California range from 100 to over 151 million beach visits annually (Department 2009). Annual beach visits are 129 million following surveys at 75 beaches in Los Angeles, Orange, and San Diego counties from 2000–2004. Average annual beach visits ranged from a low of about 27,000 at Surfside Beach in Orange

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**TABLE 8.3-2
TEN MOST FREQUENTLY VISITED CALIFORNIA STATE PARKS
ADJACENT TO THE SHORE IN THE SOUTH COAST STUDY REGION**

Park Name	County	Total Attendance (Fiscal Year 2005/2006)
Huntington State Beach	Orange	2,899,770
Bolsa Chica State Beach	Orange	2,735,919
San Onofre State Beach	San Diego	2,418,209
Doheny State Beach	Orange	2,049,666
Cardiff State Beach	San Diego	1,715,856
Carlsbad State Beach	San Diego	1,671,327
South Carlsbad State Beach	San Diego	1,514,203
Torrey Pines State Beach	San Diego	1,501,778
San Elijo State Beach	San Diego	996,646
Carpinteria State Beach	Santa Barbara/Ventura	779,822

Source: Department 2009.

County to a high of over 7 million at Zuma Beach in Los Angeles County (Department 2009).

8.3.2.2.2 Recreational Fishing. Recreational fishing is a major source of income for the tourism and recreation sector in the SCSR. The main boat-based modes of fishing include commercial passenger fishing vessels (CPFVs), and private and rental boats, including kayaks (angling and diving). Shore based modes of recreational fishing include beach and bank fishing, fishing from manmade structures, and shore based diving. In 2007, fishing from manmade structures was the most common mode of recreational fishing and accounted for 1,341,343 recorded angler days. The second most common mode of recreational fishing was beach and bank fishing with 766,709 angler days (Department 2009).

Boat-based Modes of Recreational Fishing.

Commercial Passenger Fishing Vessels. CPFVs, also called party boats, are crewed vessels that carry recreational anglers and consumptive divers to ocean fishing locations for a fee. CPFVs are generally limited by travel time, and can be characterized by trip duration (multi-day, overnight, three-quarter day, half day, twilight). CPFVs in the SCSR operate out of ports in all five south coast counties from Santa Barbara to San Diego. Over 200 CPFVs operating in the SCSR, ranging in passenger capacity from two to 150 persons, with an average passenger load of 35 persons per trip. CPFVs in the SCSR fish in nearshore waters of the mainland coast, Santa Catalina, Santa Barbara, San Nicholas, and San Clemente

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islands, and around the Channel Islands, as well as in Mexican waters and offshore banks (Department 2009).

Private and Rental Boats. Private boats are privately owned vessels, and rental boats are vessels that are rented without a crew. The private and rental boat category includes kayaks, float tubes, sailboats, skiffs, and large motor boats that are used to engage in fishing, including but not limited to angling and consumptive diving. In general, these vessels fish the same areas within the SCSR as CPFVs, although areas accessed vary by vessel type and size (Department 2009).

The SCSR coastline is well protected, and distribution of fishing effort is dependent on the population size of the counties rather than limited access points or rough sea conditions. Some anglers travel farther to find good fishing during fair weather. Similarly, in larger boats, anglers will venture to offshore banks and coastal islands within the SCSR for highly migratory species.

Shore-based Modes of Recreational Fishing. Shore-based modes include all land-based fishing access, including beaches, rocky shores, and man-made structures such as public piers. Shore trips include angling as well as scuba and free dive trips where the point of access was shore based and no vessel was used. Shore access for fishing occurs along the shoreline at public beaches, parks, and other locations throughout the SCSR. Public piers are numerous throughout the region, and include Gaviota Pier, Goleta Pier, Santa Barbara Pier, Ventura Pier, Hueneme Pier, Malibu Pier, Santa Monica Pier, Venice Pier, Manhattan Beach Pier, Hermosa Beach Pier, Redondo Beach Pier, Cabrillo Beach Pier, Belmont Pier, Seal Beach Pier, Huntington Beach Pier, Newport Pier, Balboa Pier, San Clemente Pier, Oceanside Pier, Ocean Beach Pier, Shelter Island Pier, and Imperial Beach Pier among other piers and public jetties that allow fishing access. No fishing license is required for recreational fishing from public piers.

8.3.2.2.3 Recreational Beach Use. The SCSR includes approximately 690 miles of mainland coastline and 354 miles of island coastline that provide not only intrinsic natural and aesthetic values, but also recreational opportunities for its users and great economic benefits to the local, regional, and state economies. In 1998, California's beaches statewide generated \$14 billion in direct revenue (\$73 billion including indirect and induced benefits), \$2.6 billion in federal tax revenue, and 883,000 jobs (Department 2009). A more recent study estimates that direct expenditures by beachgoers in California average roughly \$25 per person per day and total spending by beachgoers in the state is approximately \$3.75 billion. Revenues at state parks adjacent to the coast in the SCSR from user fees and concessions reached nearly \$25 million during the 2005/2006 fiscal year. The highest revenues—also the highest attendance—were at Bolsa Chica State Beach, Huntington State Beach, and San Onofre State Park (Table 8.3-3). These three parks account for over one third of the total revenue earned by state parks adjacent to the coast in the SCSR (Department 2009).

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**TABLE 8.3-3
CALIFORNIA STATE PARK REVENUE FOR PARKS LOCATED
ADJACENT TO SHORE IN SOUTH COAST STUDY REGION 2005/2006**

California State Park	County	Total Revenue Fiscal Year 2005/2006 ¹
Bolsa Chica State Beach	Orange	\$3,099,729
Huntington State Beach	Orange	\$2,838,061
San Onofre State Park	San Diego	\$2,791,464
South Carlsbad State Beach	San Diego	\$2,006,050
Doheny State Beach	Orange	\$1,874,237
Carpinteria State Beach	Santa Barbara/Ventura	\$1,809,601
San Elijo State Beach	San Diego	\$1,733,429
San Clemente State Beach	Orange	\$1,280,786
Crystal Cove State Park	Orange	\$1,086,114
Leo Carrillo State Beach	LA/Ventura	\$1,080,466
El Capitan State Beach	Santa Barbara	\$976,707
Silver Strand State Beach	San Diego	\$876,544
Point Mugu State Park	Ventura	\$832,560
McGrath State Beach	Ventura	\$668,622
Refugio State Beach	Santa Barbara	\$618,978
Malibu Creek State Park	Los Angeles	\$485,873
Gaviota State Park	Santa Barbara	\$215,770
Emma Wood State Beach	Ventura	\$228,073
Malibu Lagoon State Beach	Los Angeles	\$162,698
San Buenaventura State Beach	Ventura	\$85,920
Cardiff State Beach	San Diego	\$75,110
Robert H. Meyer Memorial State Beach	Los Angeles	\$66,700
Border Field State Park	San Diego	\$233
Dockweiler State Beach	Los Angeles	\$0
Point Dume State Beach	Ventura	\$0
Santa Monica State Beach	Los Angeles	\$0
Will Rogers State Beach	Los Angeles	\$0
Mandalay State Beach	Ventura	\$0
Carlsbad State Beach	San Diego	\$0
Torrey Pines State Beach	San Diego	\$125

Source: Department 2009.

¹ Some state parks do not charge an entrance fee or a parking fee. Therefore, there is no revenue listed for these parks. Some state parks are managed by an entity other than State Parks, and any revenue received by those entities is not included here.

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California beaches are owned by the public, and as a result, one does not necessarily need to pay to visit the beach. Beach visitors may value the beach beyond their direct expenditures such as gas or parking fees. This value, known as consumer surplus, has been estimated to range from a low of \$10.98 (in 2001 dollars) for visits to Cabrillo Beach in Los Angeles County to a high of over \$70 (in 2001 dollars) per person per trip for visits to San Diego beaches. Using a conservative estimate of \$15/visit, the cost of parking alone at some Los Angeles beaches, for the value of a beach day and a conservative estimate of beach attendance of 150 million beach days annually, the non-market value of beach visits in California (85 percent of which occur in Los Angeles, Orange, and San Diego counties) is estimated to be approximately \$2.5 million annually (Department 2009). It is estimated the total value of going to the beach, including market and non-market values, may exceed \$5 billion annually (Department 2009).

The impact of California's beaches on the state and national economy continues to grow; in comparison to Delaware, which ranks just behind California in overall federal funding for shoreline preservation, California generates 20 times more economic activity per federal dollar. In addition to the 30 state parks adjacent to shore (Table 8.3-3), the counties and many of the cities in the SCSR maintain one or more public beaches. The SCSR's miles of state, county, and city beaches, from thin ribbons of sand below steep cliffs to long, wide strips of sand, offer much opportunity for non-consumptive recreational activities such as swimming, sunbathing, sailing, diving, sightseeing, hiking, surfing, kayaking, canoeing, and whale watching (Department 2009).

Approximately 1.1 million surfers live in California, surfing at popular spots along the coast, many of which are in the SCSR. Huntington Beach is one example of popular surfing locations in the SCSR. Huntington Beach draws surfers and spectators alike from around the world during the more than thirty surfing events held there. The 10-day long U.S. Open of Surfing, the world's biggest surfing event, takes place at Huntington Beach and draws over 250,000 tourists and locals alone (Department 2009). The U.S. surfing culture also supports a \$7.48 billion dollar industry as of 2006. Table 8.3-4 lists some of the beach facilities available for recreation and beach access by county in the SCSR. This table includes facilities along the mainland SCSR and doesn't include information for the Channel Islands.

8.3.2.2.4 Boating. Boating is a popular and economically important activity in the SCSR. In 2000, over four million people in California were involved in activities related to marine boating. The contribution of boating to the gross state product was \$11 billion in 1995, representing 1.2 percent of the state economy. The nearshore ocean waters in the SCSR are fairly protected because of the geographic orientation of the Southern California Bight with its east-west orientation protecting the regions from large oceanic events. The Channel Islands also provide protection on the leeward side (south-east side) of each island. There are

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**TABLE 8.3-4
SPECIFIC FACILITIES AT COASTAL ACCESS SITES**

County	Number of Campgrounds	Number of Stairways to Beach	Number of Paths to Beach	Number of Biking Trails	Number of Boating Facilities	Number of Fishing Sites
Santa Barbara	8	7	7	8	3	22
Ventura	10	4	9	10	5	14
Orange	9	24	27	19	24	46
Los Angeles	6	18	22	13	8	36
San Diego	8	29	23	14	19	62
Total	41	82	88	64	59	180

Source: Department 2009.

Note: Partial list; does not include facilities on the Channel Islands.

also numerous bays, estuaries, and harbors in the SCSR that provide protected waters that are conducive to boating (Department 2009).

Major public boat launch facilities within the SCSR include the Gaviota Pier boat hoist, the Goleta Pier boat hoist, Santa Barbara Harbor launch ramp, Ventura Harbor launch ramp, Channel Islands Harbor launch ramp, Marina Del Rey launch ramp, King Harbor boat hoist and small craft launch ramp, Cabrillo Beach launch ramp, South Shore launch ramp, Davey’s launch ramp, Sunset Aquatic launch ramp, Newport Dunes launch ramp, Oceanside Harbor launch ramp, Dana Basin launch ramp, Shelter Island launch ramp, and others. Additional numerous public launch facilities occur throughout Mission Bay and San Diego Bay, in addition to other locations throughout the SCSR. Please see Table 8.3-5 for public boat launch or hoists locations.

The California Department of Boating and Waterways published a report titled “California Boating Facilities Needs Assessment,” a survey and assessment of boating and boating facilities needs in California. The assessment breaks the state into regions, two of which encompass the SCSR. Santa Barbara, Ventura, Los Angeles, and Orange counties make up one of the two regions, and San Diego County the other. According to this study, the 25 most-used waterways (including freshwater waterways) for residents from Santa Barbara through Orange County included the marine waterways of the Pacific Ocean (i.e., ocean waters not defined by another name), Channel Islands Harbor, Marina Del Rey, Mission Bay, Newport Harbor, Los Angeles-Long Beach Harbor, Dana Harbor, Santa Barbara Channel, San Pedro Bay, Santa Catalina Island, and Alamitos Bay. The Pacific Ocean was the most used waterway in Santa Barbara and Orange counties with 7 percent of all boaters in the region using this waterway (Department 2009).

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**TABLE 8.3-5
PUBLIC BOAT LAUNCH OR HOISTS LOCATIONS**

County	Launch or Hoist Locations	
Santa Barbara	Santa Barbara Launch Ramp Gaviota Pier/Hoist	Goleta Pier/Hoist
Ventura	Ventura Launch Ramp	Channel Islands Launch Ramp
Los Angeles	Marina Del Rey Launch Ramp Davies Launch Ramp Claremont Ramp Granada Ramp Marine Stadium Ramp	Mother's Beach (hand launch) South Shore Launch Ramp Cabrillo Launch Ramp Avalon Pleasure Pier/Hoist King Harbor Launch Ramp/Hoist
Orange	Dana Point Launch Ramp Newport Dunes Launch Ramp Huntington Harbor Ramp	Sunset Aquatic Launch Ramp North Star Beach (hand launch)
San Diego	Shelter Island Launch Ramp Oceanside Launch Ramp Agua Hedionda Lagoon Launch Ramp Santa Clara Point Launch Ramp Dana Basin Launch Ramp Chula Vista Launch Ramp	Glorietta Launch Ramp National City Launch Ramp Ski Beach Launch Ramp South Shores Launch Ramp De Anza Cove Launch Ramp La Jolla Shores (hand launch)

For residents of San Diego County, the 20 most used waterways (including freshwater waterways) included the marine waterways of the San Diego Bay, Mission Bay, Pacific Ocean, and Oceanside Harbor. San Diego Bay was the most used waterway in the region with 21.5 percent of all boaters in San Diego County using this waterway (Department 2009).

8.3.2.2.5 Recreational Scuba Diving. Scuba diving is a popular activity within the SCSR, especially around the Channel Islands. About 20 percent of California's 1.5 million certified divers are "active," meaning they dove within the past 12 months and plan to dive within the next year. California, which accounts for an estimated 12 percent of the total national revenue generated by recreational scuba diving, generates approximately \$180 million annually; equipment sales produce an additional \$60 million. There are over thirty dive shops in San Diego County alone. Some of these shops specialize in the increasingly popular activity of underwater photography while others focus on custom wetsuits or equipment sales. Many of these shops also offer dive boat trips and scuba instruction. Guided Discoveries, a non-profit organization, runs a summer camp located in Toyon Bay on Santa Catalina Island where teenage campers can become scuba certified (Department 2009).

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Many dive sites exist within the SCSR's islands and mainland coast, and some of the popular diving sites are listed in Table 8.3-6 and Figure 8-1. The SCSR mainland coastline offers many scuba access points from the shore; only popular scuba diving sites are listed here. These locations are often easily accessible and known for their scenic value. Scuba diving trips on the Channel Islands require boat access for divers that live on the mainland, and are excluded from this table.

**TABLE 8.3-6
POPULAR MAINLAND SCUBA DIVING SITES**

Santa Barbara County	Ventura County	Los Angeles County	Orange County	San Diego County
Naples Reef	Rincon Reef	Leo Carrillo (Beach, Lil Cove and No. Lot)	Corona Del Mar	La Jolla Canyon
Carpinteria Reef	La Jennelle	Nicholas Canyon	Little Corona	Scripps Canyon
Gaviota State Beach	Long Walk	La Piedra	Reef Point	Goldfish Point
Tajiguas	North Deer Creek	El Pescador	North Crescent Bay	La Jolla Cove
Refugio State Beach	Deer Creek Road	El Matador	South Crescent Bay	Hospital Point
Ellwood	Staircase	Paradise Cove	Shaw's Cove	The Wreck of the Ruby E
Isla Vista	Neptune's Net	Escondito Creek	Fisherman's Cove	Marine Room
Arroyo Burro Park		Latigo Beach	Heisler Park	Boomer Beach
Leadbetter		Latigo Canyon	Diver's Cove	Quast Hole
Mesa Lane		Point Dume	Main Beach	Sunset Cliffs
Hammonds		Corral Beach	Cleo Street Barge	Osprey Point
		Big Rock	Cress/Mountain Street	Rockslide
		Topaz Jetty	Wood's cove	Point Loma Kelp Beds
		Malaga Cove	Montage Resort	Swami's
		Marineland	Dana Point Harbor	
		White Point	Moss Point	
		Big Rock	Treasure Island	
		Gladstone's	Aliso Beach	
		Vet's Park		
		Cardiac Hill		

Source: Department 2009.

Note: Partial list, scuba diving sites on the Channel Islands require boat access for divers that live on the mainland and are excluded from this list.

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8.3.2.2.6 Boardwalks, Kayaking, and Other Activities. Visitors and locals take advantage of the boardwalks and bike paths that line many of Southern California’s most popular beaches. Beachgoers can walk, jog, skateboard, bike, and more along these paths. Beachgoers and visitors support the many bike rental companies, retail stores, restaurants, and hotels that operate along these boardwalks such as the Venice Beach boardwalk, Santa Barbara’s West Beach bike path, and the Mission Beach boardwalk in San Diego.

More than one-half million people participated in some form of kayaking in California in 1999, 2.5 million people participated in wildlife viewing, and more than 4 million people took photos at the beach (Department 2009). Kayaking, whale watching, and nature observation have all increased in popularity. There are at least 32 kayak rental shops in the coastal counties in the SCSR and some popular kayak trip locations are listed in Table 8.3-7. Although the SCSR coastline offers many access points from the shore, only popular kayak trip locations are listed here. These locations are often easily accessible and known for their scenic value.

**TABLE 8.3-7
POPULAR KAYAK TRIP LOCATIONS**

Santa Barbara County	Ventura County	Los Angeles County	Orange County	San Diego County
Butterfly Lane to Sharks Cove	Anacapa Island	Port of Los Angeles	Newport Harbor to Reef Point	La Jolla Shores to Mission Bay
Hendry’s County Beach to Santa Barbara Harbor		Royal Palms State Beach to Cabrillo Beach	Reef Point to Aliso Beach County Park	San Diego Bay
Loon Point to Sand Point (including Carpinteria Reef)				
Naples Reef to Goleta Pier				
Refugio State Beach to El Capitan State Beach				
Santa Cruz Island: Cueva Valdez to Arch Rock				

Source: Department 2009.

Note: Partial list for example only; only most popular locations are listed.

The coast of Southern California is heavily populated, and Southern California’s beaches offer a location for residents and visitors alike to gather for a wide variety of other recreational activities. Beach volleyball courts are located on many public beaches. Frisbee games, yoga classes, open water swim events, lifeguard competitions, triathlons, and more are regular occurrences on the beaches of the SCSR.

8.3.2.2.7 Tidepool Visitors and Wildlife Watching. Tidepool visitation is another popular recreational activity within the SCSR. While tidepool visitation is a non-consumptive activity

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in theory, careless tidepool visitors or great numbers of visitors can cause damage and disturb the habitat during their visit by trampling or handling tidepool species (Department 2009). Tidepool locations in the SCSR were taken from “California Coastal Access Guide” by the CCC, the NPS, San Diego Natural History Museum, and Orange

County Parks websites and are listed in Table 8.3-8. Tidepool locations within the Channel Islands National Park are limited to only the most accessible areas; therefore, Table 8.3-8 does not represent an exhaustive list of tidepooling sites in the SCSR. Several agencies and organizations, including some of the state parks, Long Beach Marine Institute, Cabrillo National Monument, and the Orange County Marine Protected Areas Committee, have tidepool awareness programs to teach proper tidepool etiquette (Department 2009).

Whale watching and wildlife viewing are also very popular in the SCSR due especially to the number of marine mammals that pass through the Santa Barbara Channel. There are at least 21 boats that participate in whale watching activities from Santa Barbara to San Diego, many of which participate in both whale watching and sport fishing, depending upon the season. Boats out of Santa Barbara offer whale watching tours throughout the year. Also, at least one helicopter company out of Long Beach offers tours of Santa Catalina Island and the southern coast of California (Department 2009).

Watching wildlife from shore is also a popular activity in the SCSR. Pinnipeds, cetaceans, seabirds, and shorebirds can be viewed from numerous locations. Pinniped rookeries and haulouts are shown on Figures 7-19 and 7-20. These figures also provide seabird diversity and colony location information. Piers and many prominent points of land can be used to view whales and other cetaceans. Estuaries in the SCSR are often used for viewing resident and migrating waterfowl, seabirds, and shorebirds. Wildlife watching from shore also includes fish. From March to August on the right nights, observers can watch grunion runs on many beaches in the SCSR. Youth groups and schools organize trips to watch the grunion run, and a statewide volunteer monitoring program records grunion runs and associated conditions on numerous sandy beaches (Department 2009).

8.3.2.2.8 Maritime Heritage Structures. The SCSR has a rich maritime heritage including several lighthouses listed in Table 8.3-9 which are still active today. These maritime heritage structures are also popular tourist destinations.

8.3.3 Impact Analysis

8.3.3.1 Methodology

Effects to recreational activities and facilities were assessed by evaluating the potential change in use patterns resulting from the proposed Project IPA component relative to the most popular locations known for non-consumptive recreational users. These potential

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**TABLE 8.3-8
TIDE-POOLING SITES WITHIN THE SOUTH COAST STUDY REGION**

Santa Barbara County	Ventura County	Los Angeles County	Orange County	San Diego County
Anacapa Island - Frenchy's Cove*	Emma Wood State Beach	Bluff Cove	Crystal Cove State Park*	Bird Rock*
Arroyo Hondo*	Mussel Shoals Beach *	Leo Carrillo State Beach*	Dana Point*	Cabrillo National Monument*
Carpinteria State Beach*		Malaga Cove - south end*	Doheny State Beach	Cardiff State Beach*
Devereux Point*		Palos Verdes Estates Shoreline Preserve	Heisler Park State Marine Reserve*	La Jolla Underwater Marine Park*
El Capitan State Beach		Point Fermin Reserve*	Little Corona Del Mar Beach*	Ocean Beach Park
Gaviota State Park*		Royal Palms County Beach	Three Arch Cove Beach	San Elijo State Beach
Leadbetter Point		Stairs to Beach at Latigo Beach	Treasure Island Beach*	San Onofre State Beach*
Refugio State Beach*			San Clemente State Beach	Scripps Beach*
Rincon Point				Sun Gold Point
San Miguel Island - Cuyler Harbor*				
Santa Cruz Island - Smuggler's Cove*				
Santa Rosa Island - Becher's Bay				

Source: Department 2009.

Note: * Indicates monitoring site.

changes were evaluated for their potential to impact existing recreational facilities and infrastructure.

8.3.3.2 Criteria for Determining Significance

Appendix G of the State CEQA Guidelines state that the project would have a significant impact on land use if it:

- Physically divides an established community
- Conflicts with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan,

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**TABLE 8.3-9
ACTIVE LIGHTHOUSES IN THE SOUTH COAST STUDY REGION**

Lighthouse	Location	County
Anacapa Island	Entrance to Santa Barbara Channel	Ventura
Long Beach	San Pedro Middle Breakwater of Long Beach Harbor	Los Angeles
Los Angeles Harbor	San Pedro Breakwater	Los Angeles
Point Conception	West Entrance to Santa Barbara Channel	Santa Barbara
Santa Barbara	Santa Barbara Point	Santa Barbara
Port Hueneme	East Entrance to Santa Barbara Channel	Ventura
Point Loma (New)	Southern End of Point Loma	San Diego
Point Vicente	Palos Verdes/North of Los Angeles Harbor	Los Angeles

Source: Department 2009.

local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect

- Conflicts with any applicable habitat conservation plan or natural community conservation plan

Based on Appendix G of the State CEQA Guidelines, the project would have a significant impact on recreational resources if it:

- Increases the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated
- Includes recreational facilities or requires the construction or expansion of recreational facilities which might have an adverse physical effect on the environment

8.3.3.3 Environmental Impacts

Land Use conflicts would occur if any of the following conditions or criteria were met.

Criterion LAND-1: Physically divide an established community?

The proposed Project IPA would not physically divide an established community because these are terrestrial-based considerations that do not apply to state waters in the SCSR.

Criterion LAND-2: Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general

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plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect

The proposed Project IPA is consistent with the policies contained in the California Coastal Act. The following policies from the California Coastal Act will be promoted with the implementation of the proposed Project IPA.

- **30230:** Marine resources shall be maintained, enhanced, and, where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.
- **30231:** The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

By creating the MPAs, marine resources will be maintained, enhanced, and potentially restored. The biological productivity and the quality of coastal waters are intended to be enhanced by the MPAs. There is also a monitoring component of the MPAs that will evaluate their performance and make recommendations for adjusting management techniques. Adaptive management is a part of the MPLA. The MLPA requires monitoring to determine whether its goals related to use are being met. If the goals of the MLPA (see Section 3.2) are not being met, then either regulatory or management changes could occur to try and meet the goals. This will help ensure that the above policies are consistently advanced through the proposed Project IPA.

State Parks. Several California state parks are located adjacent to proposed MPAs, including Border Field State Park, Corona del Mar State Beach, Crystal Cove State Park, Doheny State Beach, El Matador State Beach, Gaviota State Park, Point Dume State Beach, Refugio State Beach, Cardiff State Beach, and San Elijo State Park. Underwater park units with the SCSR occur at Refugio State Beach, Crystal Cove State Park, Doheny State Beach, and Cardiff and San Elijo State Beaches, and Silver Strand State Beach. Additionally, Gaviota State Park and Malibu Lagoon State Park include public fishing piers as part of their park units. The Department of Parks and Recreation has expressed concern to the Commission over loss of protections in existing State Parks underwater park units, and conflicts between management objectives for some existing state beaches and proposed MPAs within the IPA. Due to these

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concerns, regulatory options for Crystal Cove SMCA, Refugio SMCA, Doheney SMCA, and Swami's SMCA addressing State Parks management conflicts were incorporated into the proposed Project IPA for consideration. With the expansion of the proposed MPAs near these California state parks, the adjacent areas will be further protected and conserved.

University of California Natural Reserve System. Reserves adjacent or overlapping MPAs proposed in the proposed Project IPA include the Scripps Coastal Reserve and Coal Oil Point Natural Reserve. Proposed MPAs within the IPA adjacent to these reserves include Campus Point SMR and San Diego Scripps Coastal SMCA. Proposed regulations are consistent with adjacent UC Natural Reserve management, and no impacts to Natural Reserves have been identified.

Department of Fish and Game Ecological Reserves. Several Department ecological reserves overlap existing and proposed MPAs. Many of these existing MPA are proposed to be modified or in some cases deleted under the proposed Project IPA. Ecological reserves with existing and proposed MPAs that have overlapping boundaries include Goleta Slough Ecological Reserve, Bolsa Chica Ecological Reserve, Upper Newport Bay Ecological Reserve, Agua Hedionda Lagoon Ecological Reserve, San Dieguito Lagoon Ecological Reserve, Batiquitos Lagoon Ecological Reserve, and San Elijo Lagoon Ecological Reserve. The effects of the duplication of regulation under Title 14 of the California Code of Regulations section 632 and section 630 was reviewed during the development of the proposed Project IPA regulations. The proposed regulation for MPAs within ecological reserves adds a reference to activities authorized pursuant to Section 630. Therefore, text that duplicates text in Section 630, Title 14, CCR is deleted and incorporated by reference and no conflicts with the planned uses of state ecological reserves is expected.

National Parks and Bureau of Land Management. The California Coastal National Monument, Santa Monica Mountains Recreation Area, and Cabrillo National Monument are adjacent to MPAs proposed within the proposed Project IPA. No associated conflicts with any land use plan, policy or agency regulations for these federal management areas have been identified based on plan information available for review.

County and City Governments. Within the SCSR, many proposed MPAs, such as the Goleta Slough SMCA or the Famosa Slough SMCA, have been proposed in areas where there is some overlap with local government management activities, such as flood control, vector control, and dredging, and water treatment facilities. However, regulations proposed for these areas have been crafted to allow ongoing activities to continue, and no impacts or conflicts are anticipated.

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Criterion LAND-3: Conflict with any applicable Habitat Conservation Plan or Natural Community Conservation Plan

Three habitat conservation plans (HCP) and/or Natural Community Conservation Plans (NCCP) are located adjacent to proposed MPAs, including the Central/Coastal Orange County NCCP (R.J. Meade Consulting, Inc. 1996), the Palos Verdes NCCP/HCP (URS 2004), and the San Diego County MHCP NCCP/HCP (specifically the San Diego MSCP – Incorporated Subarea Plans; City of San Diego 1997). The jurisdiction of these NCCP/HCPs extend to the Mean High Tide Line and do not include state waters, therefore NCCP/HCP jurisdiction does not extend into the SCSR in these areas. Because NCCP/HCP jurisdiction does not extend into the SCSR, there are no associated conflicts with these NCCP/HCPs. With the expansion of the proposed MPAs near these NCCP/HCPs, the adjacent area will be further protected and conserved.

The Central/Coastal Orange County NCCP (R.J. Meade Consulting, Inc. 1996) encompasses the Upper Newport Bay SMCA. In the proposed Upper Newport Bay SMCA the existing regulated activities, including restrictions on swimming areas, boat speed, shoreline access and access fees, would remain the same as the existing Upper Newport Bay SMP. In addition, the proposed Upper Newport Bay SMCA regulations would allow routine maintenance, dredging, monitoring, research and education, and habitat restoration to continue. Since existing conditions would not be changed, there are no associated conflicts with the Central/Coastal Orange County NCCP in this area. Additionally, the proposed Upper Newport Bay SMCA expands farther south than the existing Upper Newport Bay SMP boundary. With the expansion of the proposed MPA within the Central/Coastal Orange County NCCP, the area will be further protected and conserved.

Recreational conflicts would occur if any of the following conditions or criteria were met.

REC-1: Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated

An increase in take regulations within proposed MPAs adjacent to parks, launch ramps, parking lots, or other facilities may cause people to recreationally fish elsewhere. Although there are many places available for consumptive recreational activities within the SCSR that are not proposed as MPAs, there could be re-distribution of recreational fishing activities that result in a significant increase in use of parking lots or other facilities at existing neighborhood or regional parks or other recreational facilities. However, recreational use would generally be diffused amongst many existing neighborhood or regional parks or other recreational facilities due to high accessibility within the SCSR.

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REC-2: Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment

The main purpose of the proposed Project is to increase the coherence and effectiveness of the proposed Project IPA at protecting marine life, habitat and ecosystems within the SCSR. Further, the Project would not involve the construction or expansion of any recreational facilities that could result in an adverse effect on the environment.

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8.4 VESSEL TRAFFIC

This section describes the existing setting and potential vessel traffic impacts of the IPA. Specifically, it describes existing conditions related to vessel traffic; summarizes the overall federal, state, and regional/local regulatory framework for vessel traffic that would affect implementation of an MPA network component; analyzes the potential impacts of the IPA on vessel traffic; and identifies mitigation measures to address significant impacts, as appropriate.

8.4.1 Regulatory Framework

This section describes the applicable federal and state regulations governing vessel traffic patterns and practices within the SCSR.

8.4.1.1 Federal

8.4.1.1.1 Title 33 of the Code of Federal Regulations. Title 33 of the Code of Federal Regulations (CFR) is the portion of the CFR that governs Navigation and Navigable Waters within the United States. It is divided into three Sections based on regulatory entity (U.S. Coast Guard [USCG], Army Corps of Engineers, and Saint Lawrence Seaway Development Corporation).

8.4.1.1.2 U.S. Coast Guard Regulations. USCG enforces the Navigation Rules for Inland and International Waters as found in Title 33 of the Code of Federal Regulations, Volume I, Chapter I, Parts 1–124, Navigation and Navigable Waters (current as of June 22, 2010).

8.4.1.1.3 Convention on the International Regulations for Preventing Collisions at Sea Demarcation Lines. International Navigation Rules (Rules) were formalized in the Convention on the International Regulations for Preventing Collisions at Sea, 1972, and were adopted by Congress as the International Rules Act of 1977. The Rules (commonly called 72 COLREGS) are part of the Convention, and vessels flying the flags of states ratifying the treaty are bound to the rules. The United States has ratified this treaty and all United States flag vessels must adhere to these Rules where applicable. The COLREGS include rules on steering and sailing, look-out, safe speed, risk of collision and actions to avoid collision, traffic separation schemes, conduct of vessels in sight of one another, and conduct of vessels in restricted visibility. The Rules also include specific requirements for vessels engaged in fishing, and vessels restricted in their maneuverability. The International Rules in the Navigation Rules book is published by the Coast Guard. These Rules are applicable on waters outside of established navigational lines of demarcation. The lines are called COLREGS Demarcation Lines and delineate those waters upon which mariners shall comply with the Inland and International Rules. COLREGS Demarcation lines are contained in Title 33 of the Code of Federal Regulations, part 80 (33 CFR 80) of the Navigation Rules manual.

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Regulated Navigational Area. A Regulated Navigation Area (RNA) is a region of water within a boundary defined by the United States Coast Guard. It can incorporate a variety of sub-regions such as Safety Zones, Defense Areas, Security Zones, and Regulated Areas. Within these waters, the local district commander has the authority to regulate vessels deemed to be hazardous or facing hazardous conditions. Regulations include vessel size, speed, draft limitations and other operating conditions, as well as times of entry, exit, and specific movements. The district commander's authority includes a formalized Traffic Separation Scheme (TSS) that helps to maintain and control commercial and large vessel two-way movements through series of designated and adjoining lanes and turnabout locations. Vessel Traffic Services (VTS) is a complementary program that provides advice, control and management of participating vessels. A primary distinction between the TSS and VTS programs is that the TSS is a physically mapped suite of locations subject to Rule 10 of the International Navigation Rules, while the VTS is a staffed facility that communicates with crews of the vessels to facilitate their safe passage.

The SCSR falls into two Federal Navigation Regulation zones: Sector Los Angeles-Long Beach Marine Inspection Zone and Captain of the Port Zone, and Sector San Diego Marine Inspection Zone and Captain of the Port Zone. Sector Los Angeles-Long Beach's (LA-LB) office is located in San Pedro, CA. The boundaries of Sector LA-LB's Marine Inspection Zone and Captain of the Port Zone start at a point near the intersection of Monterey County and San Luis Obispo County and the California coast, proceeding southwest to the outermost extent of the Exclusive Economic Zone (EEZ); thence south along the outermost extent of the EEZ; thence northeast to the intersection of Orange County and San Diego County and the California coast. The USCG also protects the Districts' major ports, which include the Tier one ports of Los Angeles, and Long Beach, as well as 27 Tier two ports within them. Sector San Diego's office is located in San Diego, California. The boundaries of Sector San Diego's Marine Inspection Zone and Captain of the Port Zone start at a point near the intersection of Orange County and San Diego County and the coast, proceeding southwest to the outermost extent of the EEZ; thence south along the outermost extent of the EEZ to the intersection of the maritime boundary with Mexico; thence east along the maritime boundary with Mexico to its intersection with the California coast. The USCG also protects the Districts' major ports, which include the Tier One port of San Diego, as well as 9 Tier two ports within it (USCG 2008). In Southern California, vessel traffic information and related safety recommendations are provided to the USCG by the Marine Exchange of Southern California (see below).

8.4.1.1.4 Army Corps of Engineers Regulations. The Army Corps of Engineers enforces navigational rules for vessel traffic near/in danger zones, restricted areas, and disposal and dumping areas, as found in Title 33 of the Code of Federal Regulations, Volume I, Chapter I, Parts 200–399, Navigation and Navigable Waters (current as of June 22, 2010).

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Danger Zones and Restricted Areas. A danger zone is defined as a water area (or areas) used for target practice, bombing, rocket firing or other especially hazardous operations, normally for the armed forces. The danger zones may be closed to the public on a fulltime or intermittent basis, as stated in the regulations. A restricted area is a defined water area for the purpose of prohibiting or limiting public access to the area. Restricted areas generally provide security for Government property and/or protection to the public from the risks of damage or injury arising from the Government's use of that area.

Disposal and Dumping Areas. The disposal and dumping areas were established for various purposes related to dumping of toxic wastes (no longer allowed) and/or depositing of dredged materials. They may constitute hazards to navigation. The U.S. Environmental Protection Agency (EPA) and the Department of the Navy also establish disposal and dumping areas. Refer to Section 8.5 for more information on hazards and hazardous materials.

8.4.1.2 State

State regulations regarding navigation and safety are found in Title 14 of the California Code of Regulations. State laws governing boating operation and safety are found in Section 650, Article 1, Chapter 5, Division 3 of the California Harbors and Navigation Code. State regulatory oversight also includes implementation of the Oil Spill Prevention and Response Act of 1990.

8.4.1.2.1 Oil Spill Prevention and Response Act of 1990. The Oil Spill Prevention and Response Act of 1990 (SB 2040) was passed by California Legislature as a response to the Alaska's Exxon Valdez (1989) and California's American Trader (1990) oil spills. The goals of SB 2040 are to improve the prevention, removal, abatement, response, containment, and clean up and mitigation of oil spills in the marine waters of California. SB 2040 created harbor safety committees for the major harbors of the state of California to plan "for the safe navigation and operation of tankers, barges, and other vessels within each harbor... (by preparing)... a harbor safety plan, encompassing all vessel traffic within the harbor." The Department of Fish and Game's (DFG) Office of Spill Prevention and Response (OSPR; formerly known as the Office of Oil Spill Prevention and Response) is the lead agency for implementing SB 2040 under the direction of its Administrator. The California State Lands Commission (SLC) operates the state's marine terminal inspection and monitoring program, as required by SB 2040, which is coordinated with OSPR and the USCG.

8.4.1.2.2 State Lands Commission. The SLC Lands Division is responsible for leases of land or mineral rights on state lands, which includes submerged lands out to three miles from shore; SLC's Marine Facilities Division regulates offshore moorings and onshore terminals used in the transfer of petroleum. The primary focus of their regulation is preventing oil spills, through testing and regulation of pipelines in these facilities. The Marine Facilities

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Division develops Marine Oil Terminal Engineering and Maintenance Standards, which are incorporated into applicable sections of the State Building Code. The Division also develops standards for the discharge of ballast water to control the release of nonindigenous species. None of these activities would be affected by the project, and the SLC has no direct authority or connection with this project.

8.4.1.3 Local

8.4.1.3.1 Marine Exchange of Southern California. This private non-profit corporation has been maintaining and providing information on vessel traffic in Southern California in the early 1900s. In the 1980s the Marine Exchange partnered with the USCG to provide vessel traffic advisory service, and the arrangement was formalized in the 1990s by state law creating the Vessel Traffic Service operated by the Marine Exchange as an agent of the State of California in partnership with the Ports of Los Angeles and Long Beach and other agencies for the USCG. The Marine Exchange Area of Responsibility (AOR) includes all waters outside of federal breakwaters, extending 25 nautical miles from shore from Point Fermin southward along the coast. This arrangement is the only joint-venture government/private section vessel traffic system in the country. Information and recommendations regarding navigation and safety are provided by the Marine Exchange and enforcement of federal navigation and safety regulations, port security, and homeland defense procedures and policies is provided by the USCG.

8.4.1.3.2 Harbor Patrol. Local harbor patrol or harbor police enforce federal and state laws and regulations within individual ports and harbors. In addition, most large ports (Tier one ports) have developed individual harbor safety plans that identify key regional safety issues. Safety issues may include questions regarding the need for escort tugs, required capabilities of escort tugs, and the need for new or enhanced vessel traffic information systems to monitor and advise vessel traffic (Department 2009). See Section 8.2 (Public Services and Utilities) of this Draft EIR for more information.

8.4.1.3.3 Santa Barbara Channel Oil and Gas Lanes. Oil and natural gas derived from offshore production platforms in the Santa Barbara Channel (both state and federal leases) are transported through state waters to onshore marine terminals by underwater pipelines located within designated pipeline corridors. These pipelines obviate the need to deliver crude oil and gas onto tankers for transport to shore, and thereby greatly reduce the amount of large-vessel traffic that would otherwise generated by offshore oil and gas operations. Despite this fact, some level of vessel traffic remains associated with offshore platforms, as these facilities are in need of regular vessel service to convey food, supplies, and personnel to the platforms and to transport waste material back to shore. These types of operations are commonly performed by platform supply vessels, which travel to the offshore platforms in the SCSR regularly from Port Hueneme, the Port of Long Beach, and Santa Barbara Harbor. Because platform supply vessels frequently visit more than one platform at a time, and

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because the SCSR's offshore platforms are closer to shore than the coastwise vessel traffic lanes, platform supply vessels do not routinely utilize the coastwise traffic lanes when travelling to or among the platforms.

Marine tanker ships and barges are also used to transport crude oil to the terminals from non-platform sources. An ongoing project at the Ellwood terminal involves transporting oil and gas produced at offshore platform Holly through pipelines to an onshore terminal. Crude oil is pumped into storage tanks prior to being loaded onto a barge for shipment to refineries. The natural gas is distributed by pipeline to the Southern California Gas Company. The Ellwood facility is located near the existing Goleta Slough and Campus Point state marine reserves (SMRs).

8.4.2 Environmental Setting

Major considerations for the environmental setting include the locations of major ports and other transportation nodes, shipping lanes, vessel traffic closure areas, and types and numbers of commercial and recreational vessels and their associated movement in and around the SCSR.

8.4.2.1 Port Complexes and Transportation Nodes

“A port complex comprises one or more port areas of varying importance whose activities are geographically linked either because these areas are dependent on a common inland transport system or because they constitute a common initial destination for convoys” (US Department of Defense 2010).

8.4.2.1.1 Port Complexes. The busiest port complexes in the United States are located in the SCSR. The three major port complexes include: Santa Barbara (Santa Barbara and Ventura counties), Los Angeles (Los Angeles and Orange counties), and San Diego (San Diego County). Each port complex contains major ports (Tier one ports) and minor ports (Tier two ports). A brief profile of individual ports is described by county below.

Santa Barbara County. Santa Barbara Harbor is located in the City of Santa Barbara. The harbor holds 1,054 slips, side and end ties, 16 open water moorings, and 24 fisherman float spaces. The harbor contains four marinas and a boat launch and offers recreational boating and commercially operated recreation activities such as sport fishing, wildlife tours, yacht cruises, and sailing.

In 2007, there were 175 commercial fishing vessels, 222 commercial fishermen, 61 fish businesses and two aquaculture businesses that reported landings in Santa Barbara County. From 1998 through 2007, the top ten commercial fisheries based on average annual landings in pounds were, in decreasing order, sea urchin, market squid, rock crab, ridgeback prawn, sea cucumber, spiny lobster, California halibut, shark (sharks, skates, and rays, excluding

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white and angel sharks), white sea bass, and nearshore fishes. Aquaculture products grown were red abalone, mussels and oysters (Department 2009).

Ventura County. Ventura Harbor is located in the City of Ventura and is operated by the Ventura Port District. The harbor contains both a marina and a boat launch, and offers recreational boating, swim beaches, and commercially operated recreation activities such as sport fishing, tours, scuba diving and sailing (County of Ventura 2005).

Port Hueneme is located in the City of Port Hueneme, and serves as California's only deepwater port between Los Angeles and San Francisco. The port is administered by the Oxnard Harbor District and the U.S. Navy. The Port contains six wharves that are used for cargo transfer, tanker lightering, and servicing offshore oil supply vessels, and to a less extent, commercial and sport fishing. The Port of Hueneme handles a variety of commodities in addition to offshore oil and gas supplies. These include automobiles, bananas, citrus and fresh fruit, fish, fuel, wood pulp, forest products, pipe, steel and other general cargo (County of Ventura 2005). Currently, the number of annual vessel calls is 270, but is expected to increase to almost 500 by 2020 due to wharf infrastructure investment projects (Port of Hueneme 2010).

Channel Islands Harbor is located in the City of Oxnard and is operated by the Ventura County General Services Agency. The Harbor holds 2,300 small crafts and future expansion is being planned. The harbor contains both a marina and boat launch and offers recreational boating, swim beaches, and commercially operated recreation activities such as sport fishing, tours, scuba diving and sailing (County of Ventura 2005).

In 2007, there were 184 commercial fishing vessels, 232 commercial fishermen, and 89 fish businesses that reported landings in Ventura County ports. The top ten commercial fisheries, based on average annual landings in pounds from 1998 through 2007 were (in decreasing order) market squid, Pacific sardine, mackerel/anchovy, sea urchin, sea cucumber, rock crab, California halibut, ridgeback prawn, Pacific bonito, and tuna. It should be noted that highly migratory fishes, such as for example tuna, are caught primarily outside of the SCSR. However, these fisheries are still considered economically important to this county (Department 2009).

Los Angeles County.

Tier One Ports. Los Angeles County features a large port complex, comprised of the adjacent ports of Los Angeles and Long Beach. The Port of Los Angeles is located on 7,500 acres in San Pedro Bay, and features 27 terminals (25 cargo terminals and two passenger terminals), 270 berths, 69 container cranes, and 17 marinas encompassing 3,800 recreational boat slips. The port is the busiest port in the United States by container volume, and the 16th-busiest container port internationally (Port of Los Angeles 2010). The Port of Los Angeles exhibits high levels of vessel traffic that mainly support the transportation of oil and

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petroleum products. The Los Angeles Harbor receives a majority of the oil imported into the United States, and has a large number of refining facilities. The entire port encompasses 7,500 acres, 43 miles of waterfront and features 27 cargo terminals, including dry and liquid bulk, container, breakbulk, automobile and omni facilities. The port is also home to the World Cruise Center, encompassing a total of 18 acres and features two terminal buildings serving approximately 11 cruise lines. In 2009, the port's annual vessel call was 2,179, a decrease from 2,370 in 2008 (Port of Los Angeles 2010). The Los Angeles/Long Beach ports also contain 24 petroleum terminals. In addition, a public boat launch facility, and chartered sportfishing and whale watching services exist within the port.

The Port of Long Beach abuts the Port of Los Angeles to the west, and is the second-busiest seaport in the United States, and the 17th-busiest container port internationally. In 2009, top imports at the Port of Long Beach included crude oil, electronics, plastics, furniture, and clothing; and top exports included petroleum coke, refined petroleum, chemicals, waste paper, and foods (Port of Long Beach 2010). The port occupies 3,200 acres, and contains 10 piers, 80 berths, and 71 post-panamax gantry cranes (Port of Long Beach 2010). Specialized terminals move petroleum, automobiles, cement, lumber, steel and other products. The port is also home to Carnival Cruise Line's Long Beach Cruise Terminal, plus a variety of private docks, as well as several public boat launch facilities, marinas, and chartered sportfishing and whale watching services within the port.

Terminal Island is an artificial island in San Pedro Bay that contains ancillary land uses supporting the ports of Los Angeles and Long Beach. The island encompasses hosts canneries, shipyards, and Coast Guard facilities, as well as a Federal Correctional Institution.

Tier Two Ports. Tier two ports in Los Angeles County include Marina Del Rey, Avalon Harbor, and King Harbor. King Harbor is located on the Santa Monica Bay and serves mainly as water craft launching, slip rentals, dock facilities and supports sport fishing and recreational water activities (King Harbor Marina 2010). Marina Del Rey is located within the City of Marina Del Rey and is one of the largest man-made small harbors in the U.S. The harbor hosts 19 marinas that provide boat storage, haulout facilities, and a yacht center and offers commercially operated recreation facilities (i.e., yacht clubs, boat clubs, charters and rentals including sport fishing and "party boats," and sailing centers).

Avalon Harbor is located on Santa Catalina Island within Avalon Bay. Avalon harbor hosts boat storage, shoreboat services, and public amenities, and offers recreational boat camping areas (Santa Catalina Island Company 2010). Boat moorings that occur in some of the island's various coves under the jurisdiction of Avalon Harbor; in other coves, these moorings are under the authority of Two Harbors. Two Harbors is located at the west end of the island, and consists of Isthmus Cove and Catalina Harbor. Two Harbors provides dingy dock and marine fuel dock services and hoist mooring sites and anchorage for recreational boating. Vessel routes providing commercial passenger service to Santa Catalina Island serve both Two

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Harbors and Avalon Harbor, and transfer passengers to various mainland locations in the southern portion of the SCSR. Shoreboat transportation among the harbors on Santa Catalina Island also occurs.

In 2007, there were 265 commercial fishing vessels, 304 commercial fishermen, and 77 fish businesses that reported landings in Los Angeles County ports. The top ten fisheries, based on average annual landings in pounds from 1998 through 2007 were, in decreasing order, Pacific sardine, market squid, mackerel/anchovy, tuna, sea urchin, swordfish, Pacific bonito, sharks (sharks, skates, and rays, excluding white and angel sharks), sea cucumbers, and white sea bass. It should be noted that highly migratory fisheries (e.g., tuna and swordfish) are caught primarily outside of the SCSR. However, these fisheries are still considered economically important to this county (Department 2009).

Orange County. Tier two ports include Dana Point Harbor, Newport Harbor, and Huntington Harbor. Dana Point Harbor is located within the City of Dana Point, and hosts three marinas and a public boat launch facility. Dana Point Harbor offers boat services and commercially operated recreational activities such as fishing and whale watching excursions, kayaking, and Catalina Island transportation (City of Dana Point 2010). Newport Harbor is located within the City of Newport Beach and hosts numerous marinas and anchorages, as well as charter, rental, and public boat launch facilities. Huntington Harbor is located within the City of Huntington Beach and hosts numerous marinas and anchorages, and public boat launch facilities. Areas around Newport Harbor and Huntington Harbor also have a large variety of private dock locations.

In 2007, there were 81 commercial fishing vessels, 72 commercial fishermen, and 46 fish businesses that reported landings in Orange County ports. The top ten fisheries, based on average annual landings in pounds from 1998 through 2007 were, in decreasing order, DTS complex, spiny lobster, sea urchin, spot prawn, swordfish, mackerel/anchovy, rock crab, croakers, market squid, and California sheephead. It should be noted that highly migratory fisheries (e.g., swordfish) are caught outside of the SCSR. However, these fisheries are still considered economically important to this county (Department 2009).

San Diego County.

Tier One Ports. The Port of San Diego is located in San Diego Bay and extends across five sister cities including Imperial Beach, National City, Chula Vista, San Diego and Coronado. The port is the third busiest port complex in the SCSR, and is one of the three busiest port complexes in the country, with high amounts of vessel traffic that support the transportation of oil and petroleum products (Department 2009). The port also has a large volume of military vessel traffic, as it shelters various naval air stations, a naval amphibious base, training centers, and marine terminals. The port hosts two maritime cargo terminals, a cruise ship terminal, 17 public parks, multiple public boat launch facilities, and the largest

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charter sportfishing fleet in the state, various wildlife reserves, a Harbor Police department and the leases of more than 600 tenant and sub-tenant businesses around San Diego Bay. The port's B Street Cruise Ship Terminal hosts approximately 190 cruise ships and receives approximately 200 annual cruise ship calls. A Port Master Plan has been developed that outlines future development plans and goals (Port of San Diego 2010). There are eight marine oil terminals in the San Diego region.

Tier Two Ports. Tier two ports in San Diego County consist of Mission Bay and Oceanside Harbor. Mission Bay is located in the City of Mission Bay, north of the Port of San Diego, and features nine marinas containing 1,800 slips, numerous public boat launch facilities, and sportfishing charters. Oceanside Harbor is located in the City of Oceanside, and hosts 24 slips and several side ties. Oceanside Harbor offers a launching ramp, sportfishing charters, boat storage, dinghy racks, a yacht club, and a police force (City of Oceanside 2010).

In 2007, there were 153 commercial fishing vessels, 145 commercial fishermen, 53 fish businesses and one aquaculture business that reported landings in San Diego County ports. The top ten fisheries, based on average landings in pounds from 1998 through 2007 were, in decreasing order, tuna, sea urchin, swordfish, spiny lobster, Pacific sardine, sharks (sharks, skates, and rays, excluding white and angel sharks), rock crabs, DTS complex (Dover sole, thornyheads and sablefish), spot prawn, and California sheephead. Aquaculture products consisted of mussels and oysters. It should be noted that highly migratory fishes (e.g., tuna and swordfish) are caught primarily outside of the SCSR. However, these fisheries are still considered economically important to this county and are included in the analyses (Department 2009).

8.4.2.1.2 Transportation Nodes. There are approximately 160 marina and launch ramp facilities in the SCSR (roughly half of coastal marinas and ramps statewide), with over 35,000 boat slips and tie-ups (Sadrozinski, pers. Comm.). Ports with marinas, public launch ramps, and hoists in the study region are listed in Tables 8.4-1 and 8.4-2.

8.4.2.2 Coastwise Shipping Lanes

Designated coastwise shipping lanes traverse the California coast from near Point Arguello, in western Santa Barbara County, through Santa Barbara Channel, continue southeast to the Ports of Los Angeles and Long Beach, then continue south to the Port of San Diego. The shipping lanes consist of both a Northbound and Southbound Coastwise Traffic Lane and a Separation Zone in between. Southern California is a heavily traveled vessel transportation corridor. Most coastwise vessel traffic passes through the Santa Barbara Channel en route to major ports on the U.S. west coast. Exceptions are super tankers, which for safety reasons generally avoid the channel by traveling south of the Channel Islands. Vessel transportation

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**TABLE 8.4-1
PORTS WITH MARINAS**

County	Ports with Marinas
Santa Barbara	Santa Barbara Harbor
Ventura	Ventura Harbor Channel Islands Harbor Port Hueneme
Los Angeles	Marina Del Rey King Harbor Port of Los Angeles Port of Long Beach Alamitos Bay San Pedro Bay Avalon Harbor
Orange	Huntington Harbor Newport Harbor Dana Point Harbor
San Diego	Oceanside Harbor Mission Bay San Diego Harbor

Source: Department 2009.

in the south coast include many types of vessels including tankers, container ships, bulk carriers, military vessels, research vessels, cruise ships, tugs and tows, commercial fishing boats, and other commercial vessels (SLC 2003).

The coastwise shipping lanes operate in accordance with a Traffic Separation Scheme (TSS). A TSS is an internationally recognized vessel routing designation that separates opposing flows of vessel traffic into lanes approximately 1 nautical mile (NM) wide (such as the Northbound Coastwise Traffic Lane), with a zone between lanes approximately 2 NM wide (Separation Zone) where traffic is to be avoided. Vessels are not required to use any designated TSS, but failure to use one, if available, would be a major factor for determining liability in case of a collision (SLC 2003). Refer to Section 8.5 Hazards and Hazardous Materials for more information on vessel accidents.

From Point Conception to Point Dume (Santa Barbara and Ventura Counties), the proposed Point Conception SMR is the only MPA proposed near or within a coastwise shipping lane. This MPA is proposed approximately 2.5 miles north of the Northbound Coastwise Traffic Lane (Marine Map 2010).

From Point Dume to Dana Point (Los Angeles and Orange Counties), there are two proposed MPA locations that are located near or within a coastwise shipping lane. These MPAs include Point Vicente SMR and Abalone Cove SMCA. The Point Vicente SMR is located at

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**TABLE 8.4-2
PUBLIC BOAT LAUNCH OR HOIST LOCATIONS**

County	Launch or Hoist Locations
Santa Barbara	Santa Barbara Launch Ramp Gaviota Pier/Hoist Goleta Pier/Hoist
Ventura	Ventura Launch Ramp Channel Islands Launch Ramp
Los Angeles	Marina Del Rey Launch Ramp Davies Launch Ramp Claremont Ramp Granada Ramp Marine Stadium Ramp Mother's Beach (hand launch) South Shore Launch Ramp Cabrillo Launch Ramp Avalon Pleasure Pier/Hoist King Harbor Launch Ramp/Hoist
Orange	Dana Point Launch Ramp Newport Dunes Launch Ramp Huntington Harbor Ramp Sunset Aquatic Launch Ramp North Star Beach (hand launch)
San Diego	Shelter Island Launch Ramp Oceanside Launch Ramp Agua Hedionda Lagoon Launch Ramp Santa Clara Point Launch Ramp Dana Basin Launch Ramp Chula Vista Launch Ramp Glorietta Launch Ramp National City Launch Ramp Ski Beach Launch Ramp South Shores Launch Ramp De Anza Cove Launch Ramp La Jolla Shores (hand launch)

Source: Department 2009.

the border of the Northbound Coastwise Traffic Lane and the Abalone Cove SMCA is located less than a mile from the Northbound Coastwise Traffic Lane (Marine Map Nautical Chart).

From Dana Point to the Mexico Border (San Diego County), there are no proposed MPA locations located near or within a coastwise shipping lane.

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The most congested areas occur at the entrances to major ports in the region discussed in Table 8.4-1. Harbor Safety Committees established by state law at the major ports, improved Vessel Traffic Service, and other safety measures have served to improve navigation safety and response in these areas. None of the proposed MPAs are at or near the entrance to any of the major ports in the region.

8.4.2.3 Restricted Access Areas

8.4.2.3.1 Military Use Areas. The Army Corps of Engineers, Department of the Army, and the Department of Defense (DOD) use specific areas in the SCSR for military operation and training purposes along the mainland coast and surrounding the Channel Islands. Military use areas prohibit vessel traffic access in danger zones and restricted areas under individual regulations. Each area has prescribed requirements, access limitations and controlled activities, as described in the CFR. Danger zones and restricted areas within the SCSR are described by County, as they pertain to vessel traffic.

Santa Barbara and Ventura Counties. Vandenberg Air Force Base has nine danger zones surrounding the base, which are closed during launch activities. Port Hueneme has restricted areas, dump sites, buoy testing zones, and danger zones which surround Laguna Point, southeast of Point Hueneme. Restrictions state that no vessels or persons may enter the restricted area unless permission is obtained from Port Hueneme's Commanding Officer. Point Mugu has two danger zones, consisting of small arms firing ranges that are closed during firing procedures. In addition, one restricted area prohibits the entry of all vessels unless permission is obtained in advance from Point Mugu's Commanding Officer.

Los Angeles and Orange Counties. San Pedro Bay has one danger zone, consisting of a practice firing range for the U.S. Army Reserve, National Guard, and Coast Guard units, and is closed during periods of firing. In addition, San Pedro Bay has one restricted area that prohibits any person or vessel from entering, navigating, anchoring or mooring without first obtaining the permission of the Warden of the Federal Correctional Institution at Terminal Island. Seal Beach has one restricted area near the Anaheim Bay Harbor Naval Weapons Station and prohibits entry of any recreational craft and any activity involving persons in the water. Long Beach Harbor has one restricted area that is reserved exclusively for use by naval vessels. Permission for any person or vessel to enter the area must be obtained from the enforcing agency.

San Diego County. Port of San Diego has five restricted areas near the Naval Amphibious Base, the Naval Air Station North Island, and the San Diego harbor. Regulations state that vessel traffic will be allowed (except within 100 feet of Bravo Pier) but shall proceed across the areas by the most direct route and without unnecessary delay. Only vessels owned by, under hire to, or performing work for the Naval Air Station or the Naval Weapons Station may operate within 100 feet of Bravo Pier. Camp Pendleton has three restricted areas

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associated with the Camp Pendleton Marine Corps Base. Regulations state that no vessel or craft of any size shall lie-to or anchor in the restricted areas at any time other than a vessel operated by or for the U.S. Coast Guard, local, State or Federal law enforcement agencies.

San Nicolas Island. Regulations promulgated by the U.S. Army Corps of Engineers (see 33 CFR 334.980) designate the waters surrounding San Nicolas Island as a restricted area, and restrict vessel traffic in two portions of the restricted area (identified in the regulations as Section Bravo and Section Charlie). In these areas, no vessels other than Pacific Missile Range craft and those cleared for entry by the Commander of the Pacific Missile Range, or the Officer-in-Charge at San Nicolas Island are permitted to enter at any time except in an emergency. However, the regulations also provide that dredging, dragging, seining, or other fishing operations are permitted within these areas, except when the areas are declared closed by the Commander of the Pacific Missile Range. Thus, the restricted areas at San Nicolas Island must be avoided by all vessels except for those engaged in fishing.

San Clemente Island. San Clemente Island has exclusive use zones, security zones, restricted areas, and danger zones that are restricted to naval vessels, as they present a hazard to mariners. Portions of the waters surrounding the island are designated as a danger zone which is closed during scheduled military use. Range marker poles are used as physical indicators of the three restricted zones and local Notices to Mariners are broadcast as needed to advise of area closures (Department 2009).

Effective June 21, 2010, the U.S. Coast Guard issued a Final Rule (see 75 FR 28194) amending the CFR to establish a safety zone around San Clemente Island in support of potentially hazardous military training and testing exercises (see 33 CFR 165.1411). The safety zone is intended to protect the public from hazardous, live-fire and testing operations and to reduce the incidence of operational delays. The safety zone completely surrounds San Clemente Island and is subdivided into nine mapped sections, with eight sections titled Sections A through G and a ninth section designated around Wilson Cove.

The Coast Guard's regulations at 33 CFR 165.23 governing activities within safety zones explicitly prohibit entry into safety zones except by permission of the Captain of the Port or the District Commander. However, regulatory language governing the safety zone at San Clemente Island includes provisions allowing the Captain of the Port to temporarily suspend enforcement in Sections A through F of the safety zone. During periods when enforcement is suspended, entry and use of the safety zone by non-military vessels is not be prohibited. The Captain of the Port provides public notice of suspended enforcement through notices to mariners and by posting a schedule of restricted access periods by date, location and duration on the San Clemente Island website at <http://www.scisland.org>.

Suspended enforcement does not occur within Section G and the Wilson Cove section of the safety zone, and entry into or navigation through these sections of the safety zone is

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prohibited. However, the Final Rule provides a telephone number and radio procedure for obtaining authorization to navigate through Section G and Wilson Cove on a case-by-case basis. If authorization is not obtained, vessel traffic in the area must maintain a distance of three nautical miles from the island to bypass these locations. If the Navy determines that facilitating safe transit through Section G and Wilson Cove negatively impacts range operations, the Navy will cease this practice and enforce the safety zones in these two areas without exception (33 CFR 165.1141(d)(2)).

8.4.2.3.2 Power Plant Areas. Several coastal power plants are located within the SCSR with restricted access due to security reasons. San Onofre Nuclear Generating Station, for example, prohibits vessel traffic from entering, transiting, or anchoring within one NM of the power plant (measured from 33°22'30"N, 117°33'50"W), though it does not prevent recreational activities in the surf zone or on the beach.

8.4.2.4 Navigation and Weather Buoys

At particular locations, the SCSR contains floating buoys that have been permanently installed for purposes of navigational safety and data collection. Navigation buoys are most commonly installed to identify the location of pilot channels and prevent collisions among vessels entering or leaving harbors. Such buoys are usually placed reasonably near to shore, but can also be installed in offshore locations to indicate a given distance to port. In locations where reefs or other submerged boating hazards may exist, buoys may be used to alert passing vessels of the danger. Buoys are also frequently used as markers in nearshore waters to delineate the boundaries of recreational swimming areas. In addition to buoys installed for navigational safety purposes, the SCSR also contains several larger buoys, equipped with various measurement devices that have been deployed for the purposes of recording meteorological and oceanographic conditions. The National Data Buoy Center identifies a total of 25 data buoys moored within the SCSR, most of which are located within state jurisdictional waters. Although buoys are unmanned for the most part, occasional replacement or repair of moored buoys is necessary to ensure that the units have not become damaged or detached, and are functioning as intended. An examination of nautical charts overlain on the proposed MPA network using the Marine Map Decision Support Tool (Marine Map 2010) indicated that at a minimum, there are numerous mooring buoys within and adjacent to the proposed Point Conception SMR and Matlahuayl SMCA.

8.4.2.5 Vessel Types

The following sections describe the major types of vessels that venture out from SCSR ports or that transit in the region.

8.4.2.5.1 Fishing Vessels. Fishing vessels can be categorized into three basic modes: commercial fishing vessels, commercial passenger fishing vessels (CPFVs), and private and rental boats.

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Commercial Fishing Vessels. Commercial fishing vessels are dedicated vessels that fish for commercial profit. Some commercial fishing vessels can be large, with the ability to fish hundreds of miles off-shore, and are capable of hauling large catches of fish. These vessels usually require a crew that includes a captain, or skipper, a first mate, a boatswain/deckboss, and deckhands with specialized skills (Bureau of Labor Statistics 2010). Other commercial fishing vessels, such as those that engage in commercial fishing for lobster and urchin, can be smaller in size.

Commercial Passenger Fishing Vessels. CPFVs, also called party boats, carry recreational anglers to ocean fishing locations for a fee. CPFVs have the greatest range of any recreational fishing mode and are generally limited by travel time, and less so by weather or other considerations. CPFVs in the study region operate out of ports in all five south coast counties from Santa Barbara to San Diego. There are over 200 CPFVs operating in the SCSR, ranging in passenger capacity from two to 150 persons, with an average passenger load of 35 persons per trip. CPFVs in the study region fish in nearshore waters of the mainland coast, Santa Catalina, Santa Barbara, San Nicholas, and San Clemente islands, and around the Channel Islands, as well as in Mexican waters and offshore banks (Department 2009).

Private and Rental Boats. Private boats are privately owned vessels, and rental boats are vessels that are rented without a crew. The private and rental boat category includes kayaks, sailboats, skiffs, and large motor boats. In general, these vessels fish the same areas within the study region as CPFVs, although areas accessed vary by vessel type and size. The coastline is well protected, and distribution of fishing effort is dependent on the population size of the counties rather than limited access points or rough sea conditions. Some fishermen travel farther to find good fishing during fair weather. Similarly, in larger boats, anglers will venture to offshore banks and coastal islands within the study area for highly migratory species (Department 2009).

8.4.2.5.2 Non-fishing Commercial and Recreational Vessels.

Commercial Vessels. There are a number of different types of commercial craft, such as ferries, tugs, crew and supply boats, as well as charter excursion boats that travel within the SCSR. In 2004, roughly 300 commercial vessels identified their home port within Southern California. However, a much larger numbers of vessels transit in and through the study region. The majority of these transits are large commercial vessels, such as container ships and bulk product carriers, which travel within two miles of shore and carry up to one million gallons of bunker fuel, which is similar to crude oil (Department 2009).

Container ships, informally known as “box boats,” carry the majority of the world’s dry cargo or, manufactured goods such as metal ores, coal, and wheat. Capacity is measured in twenty-foot equivalent units (TEU), defined as the number of standard 20-foot containers

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(measuring 20 × 8.0 × 8.5 feet) a vessel can carry. Most containers used today measure 40 feet in length. There are large main line vessels that use deep sea routes, and many small “feeder” ships that supply large ships at centralized hub ports. According to the American Association of Port Authorities (AAPA) 2008 World Port Rankings, the Port of Los Angeles and the Port of Long Beach rank 16th and 17th respectively in heaviest TEU traffic worldwide (AAPA 2008).

Recreational Vessels. The number of non-consumptive recreational vessels has been increasing in the study region. Non-consumptive recreational vessels include wildlife watching boats (mainly birds and whales), recreational cruising boats, kayaks, jet skis, and sail boats. For example, Island Hoppers (private ventures capitalizing on the demand for recreational harbor tours, wildlife viewing, and transportation to the Channel Islands) generate vessel trips daily from Santa Barbara, Ventura, San Pedro (Los Angeles Harbor), Long Beach, Dana Point (Orange County) and San Diego. An operator in the Los Angeles Area provides up to 30 round trips per day service to Catalina Island from ports in Long Beach, San Pedro and Dana Point. These activities differ from Commercial Passenger Fishing Vessels (CPFV) as operating locations, trip durations and destinations are generally established for efficient transportation or to view wildlife occurring in the SCSR. According to data from the California Department of Motor Vehicles, the California Recreational Fisheries Survey (CRFS), and the Department’s vessel permitting data for the three major port complexes in the SCSR, there are approximately 296,747 registered recreational marine or aquatic vessels in the SCSR (Table 8.4-3) (Department 2009).

**TABLE 8.4-3
REGISTERED VESSELS IN THE SCSR**

County	Registered Vessels 1990	Pleasure Vessels 1990	Registered Vessels 2007	Pleasure Vessels 2007
Santa Barbara	9,083	8,636	10,679	10,253
Ventura	22,299	21,896	26,558	26,136
Los Angeles	123,824	122,027	124,420	123,145
Orange	67,545	66,528	70,014	69,126
San Diego	56,363	55,037	69,427	68,087

Source: Department 2009.

8.4.2.5.3 Research Vessels. There are number of research vessels within the SCSR that support research and education. In Santa Barbara County, the Channel Islands National Marine Sanctuary supports The Shearwater. Within Los Angeles County, Southern California Marine Institute maintains two research vessels, Sea Watch and Yellowfin. In Orange County, the Ocean Institute maintains three vessels, Pilgrim, Spirit of Dana Point and Sea Explorer. In San Diego County, the Scripps Institute of Oceanography maintains four

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research vessels: Roger Revelle, Melville, New Horizon, and Robert Gordon Sproul (Department 2009).

8.4.2.5.4 Military Vessels. Types of military vessels range from small work boats to major combatants such as aircraft carriers, cruisers, and submarines. The activity level of ships and boats is characterized as a ship or boat event. They include operational, training, post maintenance, and Research, Development, Test, and Evaluation (RDT&E) events. Some of these events may occur simultaneously, as the vessels operate together or separately in one of the many training areas available.

8.4.2.6 California Recreational Fisheries Survey

The CRFS conducts interviews of anglers returning to public launch ramps. CRFS samplers intercepted a total of 22,278 private and rental boats within the SCSR. The most surveys took place in San Diego County while the fewest took place in Santa Barbara County. San Diego County also had the highest rate of boats that had fished for finfish recreationally (69 percent), and Santa Barbara County had the lowest rate (45 percent). Santa Barbara County had the highest percentage of commercial fishing or non-fish vessels at approximately 10 percent. San Diego County had the lowest percentage of vessels not fishing (28.5 percent), while Los Angeles County had the highest (46.1 percent). See Table 8.4-4 for a complete summary of the CRFS results for all counties in the study region (Department 2009).

The CRFS figures are not indicative of the overall proportions of vessels engaging in consumptive and non-consumptive activities within the SCSR. Many vessels, in particular sailboats, are moored in the region's marinas and buoyed areas, and were not interviewed in the survey (Department 2009). However, the CRFS data do yield examples of the various purposes for consumptive and non-consumptive vessel traffic within the SCSR, and provide a coarse-level comparison of the popularity of the various activities.

8.4.3 Impact Analysis

8.4.3.1 Study Methods

Effects to vessel traffic were qualitatively assessed by evaluating the IPA's proposed MPA locations in relationship to known navigational rules such as Traffic Separation Schemes.

8.4.3.2 Criteria for Determining Significance

Based on Appendix G of the State CEQA Guidelines with an adaptation for marine traffic, it was determined that the proposed Project would result in a significant impact on vessel traffic if it would:

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**TABLE 8.4-4
RECREATIONAL VESSEL TRIPS BY ACTIVITY AND COUNTY IN 2007
FOR VESSELS INTERVIEWED AT PUBLIC LAUNCH RAMPS**

	Santa Barbara		Ventura		Los Angeles		Orange		San Diego		Total Study Region	
	Vessels	%	Vessels	%	Vessels	%	Vessels	%	Vessels	%	Vessels	%
Vessels Fishing												
Fished recreationally for finfish	656	45.3	1,549	50.3	3,267	51.1	1,839	59.4	5,673	68.7	12,984	58.3
Intended to fish recreationally, but no gear in water	11	0.8	53	1.7	114	1.8	38	1.2	76	0.9	292	1.3
Recreational shellfish	4	0.3	14	0.5	10	0.2	3	0.1	8	0.1	39	0.2
Recreational squid only					3	--	2	0.1	1	--	6	--
Fished commercially	132	9.1	154	5	50	0.8	37	1.2	150	1.8	523	2.4
Total Vessels Fishing	803	55.5	1,770	57.5	3,444	53.9	1,919	62	5,908	71.5	13,844	62.2
Vessels Not Fishing												
Recreational cruising	376	26	807	26.2	2,478	38.8	965	31.2	1,684	20.4	6,310	28.3
Burial at sea			2	--					6	0.1	8	--
Bird watching									1	--	1	--
Diving, non-consumptive	18	1.2	48	1.6	57	0.9	38	1.2	135	1.6	296	1.3
Enforcement (public agency)	3	0.2	18	0.6	11	0.2			36	0.4	68	0.3
Hunting, gun									2	--	2	--
Boat maintenance	72	5	160	5.2	207	3.2	85	2.7	215	2.6	739	3.3
Research (public agency)	52	3.6	21	0.7	13	0.2	6	0.2	40	0.5	132	0.6
Whale watching	1	0.1	4	0.1			12	0.4	6	0.1	23	0.1
Other commercial activity	26	1.8	108	3.5	29	0.5	3	--	65	0.8	231	1.1
Removing boat from slip, no trip	95	6.6	143	4.6	148	2.3	65	2.1	143	1.7	594	2.7
Unidentified	1	--	1	--	1	--	5	0.2	22	0.3	30	0.1

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**TABLE 8.4-4 (CONTINUED)
RECREATIONAL VESSEL TRIPS BY ACTIVITY AND COUNTY IN 2007
FOR VESSELS INTERVIEWED AT PUBLIC LAUNCH RAMPS**

	Santa Barbara		Ventura		Los Angeles		Orange		San Diego		Total Study Region	
	Vessels	%	Vessels	%	Vessels	%	Vessels	%	Vessels	%	Vessels	%
Total Vessels Not Fishing	644	44.5	1,312	42.5	2,944	46.1	1,179	38	2,355	28.5	8,434	37.8
Total All Boats	1,447	100	3,082	100	6,388	100	3,098	100	8,263	100	22,278	100

Source: Department 2009.

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- Substantially increase oceanic hazards, in particular due to changes in vessel traffic concentration (i.e., congestion)
- Result in disruption of existing vessel traffic patterns and marine navigation

8.4.3.3 Environmental Impacts

Criterion VT-1: Substantially increase oceanic hazards, in particular due to changes in vessel traffic concentration (i.e., congestion)

The proposed Project IPA would establish MPAs that have certain restrictions in terms of allowable activities; however, vessels would not be restricted from transiting through them. The primary vessel groups that would be potentially impacted by the proposed MPAs are those engaged in commercial and recreational fishing. These user groups may be displaced from some of the new MPAs, thereby forcing them to conduct their activities at the periphery of MPA boundaries or in other locations with fewer restrictions. This could result in an increased competition for resources in locations outside of MPAs, and potential increased concentration (i.e., congestion) in such locations. A secondary user group potentially impacted by the proposed Project IPA would be divers and scientific researchers attracted to the reserve's underwater habitats. Both within and outside of the proposed MPAs, there may be a minor increase in concentration of vessel traffic attributed to the primary and secondary user groups, which could conceivably create a hazard from having more boats operating in a smaller area. In addition, increases in habitat and wildlife in the SCSR as a result of the proposed Project IPA may result in additional wildlife viewing vessel trips to individual MPAs.

The proposed Project IPA would increase the extent of MPAs within the SCSR by approximately 169 square miles, an increase of 93 percent compared to existing conditions. Because of this substantial increase in area, it is very unlikely that boat concentrations within the MPAs would cause congestion, especially considering that current traffic associated with consumptive uses would decrease within the MPAs. Although the increase in protected areas would be substantial when viewed as a percentage of the current MPA network, the increase would nevertheless only constitute a small fraction of the SCSR. The vast majority of state waters in the region would remain open to consumptive commercial and recreational uses. Because the area available for fishing uses greatly exceeds the area from which fishing effort would be displaced by the proposed Project IPA, it is reasonable to conclude that substantial vessel congestion in fishing grounds would not occur. Further, captains and operators of each individual vessel would be subject to international navigational rules, which would be unaffected by implementation of the proposed regulatory changes. These rules place the responsibility upon individuals to pilot their vessels in a safe manner. The existing TSS, Vessel Traffic System monitoring, safety reviews and recommendations by Harbor Safety Committees, USCG enforcement, and other systems in place to ensure safe navigation and vessel operations would remain in place. Consequently, potential impacts related to vessel

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density and oceanic hazards from the proposed Project IPA would be less than significant, and no mitigation would be required.

Criterion VT-2: Result in disruption of existing vessel traffic patterns and marine navigation

Based on a query of the Marine Map Decision Support Tool (Marine Map 2010), a web application that enables a graphical examination of the proposed MPA boundaries relative to nautical designations and other features, some MPAs are proposed in the vicinity of the current coastwise vessel traffic lanes. The offshore boundary of the proposed Point Vicente SMR is adjacent to the northbound coastwise shipping lane leaving the Los Angeles/Long Beach port complex, and the southern extent of the proposed Abalone Cove SMCA, which would border the Point Vicente SMR to the east, is only slightly further away. With the exception of these two locations, all other MPAs designated by the IPA would be located at least one nautical mile from designated shipping lanes. Because of this limited interface between shipping lanes and proposed MPAs, and because boaters are generally familiar with the locations of shipping lanes, it is unlikely that implementation of the proposed Project IPA would result in a substantial increase in the number of fishing vessels within commercial shipping lanes. Thus, the proposed Project IPA would not significantly disrupt vessel traffic patterns and marine navigation with respect to the coastwise shipping lanes. Three existing MPAs within the northern Channel Islands (the Anacapa Island SMCA, Anacapa SMR, and Scorpion SMR) overlap the southbound coastwise shipping lane through the Santa Barbara Channel; however, these existing MPAs would not be altered by the proposed regulatory changes and are thus not a part of the proposed Project.

The proposed Project IPA would not alter the accessibility of existing mainland ports and harbors to vessel traffic. The proximity of MPAs to ports or major access points has been thought to cause problems to vessel traffic, particularly if vessels are required to travel over greater distances, or in dangerous conditions. Because vessel safety in emergencies and foul weather is critical, transit through and anchoring in MPAs is allowed in all of the proposed MPAs. There are areas where boating and anchoring are restricted or limited to specific areas or restricted to daylight hours, for example in certain areas surrounding the safety zone around San Clemente Island. Transit, however, is allowed and anchoring in emergency situations is always permitted pursuant to federal law. Since these restrictions exist in the present MPAs in these locations, the proposed Project IPA would not change existing use patterns. In addition, vessels engaged in fishing can legally transit MPAs, so long as fishing gear is stowed.

While commercial and recreational fishing vessels may be required to travel slightly longer distances to fish beyond MPA boundaries, non-consumptive marine navigation would not be disrupted by the proposed Project IPA; therefore, the proposed Project's impact on existing

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marine routes and navigation would be less than significant, and no mitigation would be required.

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8.5 HAZARDS AND HAZARDOUS MATERIALS

This section evaluates the proposed Integrated Preferred Alternative (IPA) with respect to hazards and hazardous materials. Specifically, the section identifies the existing conditions within the south coast study region (SCSR); analyzes the potential impacts of the proposed Project related to hazards and hazardous materials; and identifies mitigation measures to address these impacts, as appropriate.

8.5.1 Regulatory Framework

Regulations pertaining specifically to hazards and hazardous materials are described further in this section. For general information regarding coastal and open water jurisdictions within the SCSR, resource-based agencies, and commissions, please refer to Section 2.0 of this Draft Environmental Impact Report (EIR).

8.5.1.1 International Shipping Laws and Regulations

The International Maritime Organization (IMO) maintains a comprehensive regulatory framework for shipping that includes safety, environmental concerns, legal matters, technical cooperation, maritime security, and the efficiency of shipping. Measures are aimed at the prevention of accidents, including standards for ship design, construction, equipment, operation, and staffing, as well as key treaties. Other measures recognize that accidents may happen, and include procedures concerning distress and safety communications (IMO 2010).

The International Convention for the Prevention of Pollution from Ships (MARPOL), 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78), is the principal instrument established by the IMO for preventing marine pollution. Annex I, Regulation 26 of MARPOL requires that every oil tanker of 150 tons gross tonnage and above and every ship other than an oil tanker of 400 tons gross tonnage and above carry on board a shipboard oil pollution emergency plan approved by the Administration (Flag State). The IMO has also issued “Guidelines for the Development of Shipboard Oil Pollution Emergency Plans” to assist both tanker owners and governments. Traffic separation schemes must also be developed and approved by the IMO, such as the approved traffic separation schemes off the entrance to the Santa Barbara Channel. It should be noted that plans that meet the 1990 Oil Pollution Act (OPA) and the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act (California Senate Bill 2040) requirements also meet IMO requirements.

8.5.1.2 Federal Statutes and Regulations

A number of federal laws regulate oil and gas facilities, marine terminals and vessels that occur within and near the SCSR. These laws address design and construction standards, operational standards, spill prevention, and cleanup. Regulations to implement these laws are contained primarily in Code of Federal Regulations (CFR) Titles 33 (Navigation and

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Navigable Waters), 40 (Protection of Environment), and 46 (Shipping). Key federal laws addressing oil pollution are discussed below.

8.5.1.2.1 Resource Conservation and Recovery Act. The Resource Conservation and Recovery Act (RCRA) of 1976 (42 U.S.C. §6901 et seq.) is a United States Environmental Protection Agency (EPA) administered law that gives EPA the authority to control the generation, transportation, treatment, storage, and disposal of hazardous waste, as well as the management of non-hazardous solid wastes. RCRA includes the Hazardous and Solid Waste Amendments of 1984 (HSWA) that focus on waste minimization, phasing out land disposal of hazardous waste, and corrective action for releases. Other mandates include increased enforcement authority for EPA, more stringent hazardous waste management standards, and a comprehensive underground storage tank program.

8.5.1.2.2 Oil Pollution Act. The OPA was signed into law in August 1990 (Public Law 101–380 [H.R.]: August 18, 1990). The OPA establishes provisions that expand the federal government’s ability to respond to oil spills. The OPA also created the national Oil Spill Liability Trust Fund, which is available to provide up to one billion dollars per spill incident. In addition, the OPA provided new requirements for contingency planning both by government and industry. The National Oil and Hazardous Substances Pollution Contingency Plan has been expanded in a three-tiered approach: the federal government is required to direct all public and private response efforts for certain types of spill events; Area Committees—composed of federal, state, and local government officials—must develop detailed, location-specific area contingency plans; and owners or operators of vessels and certain facilities that pose a serious threat to the environment must prepare their own facility response plans. Finally, the OPA increases penalties for regulatory noncompliance, broadens the response and enforcement authorities of the federal government, and preserves state authority to establish law governing oil spill prevention and response.

The EPA is responsible for the National Contingency Plan, and acts as the lead agency in response to an onshore spill. EPA also serves as co-chairman of the Regional Response Team, which is a team of agencies established to provide assistance and guidance to the on-scene coordinator during the response to a spill. The EPA also regulates disposal of recovered oil and is responsible for developing regulations for spill prevention, control, and countermeasures plans. These plans are required for non-transportation-related onshore and offshore facilities that have the potential to spill oil into waters of the United States or adjoining shorelines.

The United States Coast Guard (USCG) is responsible for federal contingency planning, and acts as a co-chair with the California Department of Fish and Game (Department) in the Port Area Committees for Contingency Planning. The area committees are each chaired by a USCG representative and include oil spill response representatives from federal, state, and local government agencies. The State Office of Spill Prevention and Response is the lead

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non-federal agency. The SCSR contains two port areas that have developed area contingency plans; the Los Angeles/Long Beach area and the San Diego area. Each area contingency plan is site-specific, and provides clear directives on oil spill response, including the organization of incident command, planning and response roles and responsibilities, response strategies, and logistics. In addition, site-specific response plans are described for various coastal segments where there are species and other resources of concern. The plan also provides site-specific information on resources of concern, local contacts, access to sites, and containment strategies. Each Area Contingency Plan is updated annually, so that the plans are current and accurate. The USCG also issues regulations under OPA addressing requirements for response plans for tank vessels, offshore facilities, and onshore facilities that could reasonably expect to spill oil into navigable waterways.

8.5.1.2.3 Clean Water Act. The Clean Water Act (CWA) is the primary federal law governing water pollution in the United States. The main goals of the CWA are to restore and maintain the chemical, physical, and biological integrity of the nation's waters by preventing point and nonpoint pollution sources, providing assistance to publicly owned treatment works for the improvement of wastewater treatment, and maintaining the integrity of wetlands.

National Pollutant Discharge Elimination System Permit Program. The 1972 amendments to the CWA provide the statutory basis for the EPA administered the National Pollutant Discharge Elimination System (NPDES) permit program (Section 402). NPDES permits contain industry-specific, technology-based and/or water-quality-based limits, and establish pollutant monitoring and reporting requirements. A facility that intends to discharge into the nation's waters must obtain a permit before initiating a discharge. A permit applicant must provide quantitative analytical data identifying the types of pollutants present in the facility's effluent. The permit will then set forth the conditions and effluent limitations under which a facility may make a discharge.

The CWA, 40 CFR Part 112, aims to prevent the discharge or threat of discharge or oil into navigable water or adjoining shorelines. The regulations require a written spill prevention, control, and countermeasures plan to be prepared for facilities that store or treat oil that could leak into navigable waters.

8.5.1.2.4 Water Quality Act of 1987. The Water Quality Act of 1987 is an amendment to the CWA that requires industrial stormwater dischargers and municipal separate storm sewer systems to obtain EPA-administered NPDES permits.

8.5.1.2.5 Act to Prevent Pollution from Ships. The Act to Prevent Pollution from Ships (33 U.S.C. §§1905-1915) implements the MARPOL Convention (see Section 8.5.1.1).

This act applies to all U.S.-flagged ships and to all foreign-flagged vessels operating in navigable waters of the United States or while at port under U.S. jurisdiction. The USCG has primary responsibility to prescribe and enforce regulations necessary to implement this Act

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in these waters. The regulatory mechanism established to implement MARPOL is separate and distinct from the CWA and other federal environmental laws.

8.5.1.2.6 Hazardous and Solid Waste Amendments of 1984. The HSWA are amendments to both the Solid Waste Disposal Act of 1965, and the RCRA. The HSWA created the Land Disposal Restrictions Program, established the RCRA Corrective Action requirements, established permitting deadlines for hazardous waste facilities, regulates small-quantity generators of hazardous waste, and requires a nationwide survey of the conditions at solid waste landfills. The HSWA remain incorporated within the Solid Waste Disposal Act, as amended by RCRA, and the three combined acts are generally referred to as RCRA.

8.5.1.2.7 Refuse Act of 1899. The Refuse Act of 1899 is a federal statute governing the use of waterways and administered by the Army Corps of Engineers. The Act, a section of the Rivers and Harbors Act of 1899, prohibits “dumping of refuse“ into navigable waters, except by permit, in order to control debris that obstructs navigation. The Refuse Act was followed by the Federal Water Pollution Control Act of 1948, 33 U.S.C.A. §1251, which created water quality standards and prescribed the levels of pollutants permitted in a given body of water. Since 1972, federal regulation of water pollution has been primarily governed by the CWA.

8.5.1.2.8 United States Coast Guard Regulations. The USCG, through 33 CFR (Navigation and Navigable Waters) and 46 CFR (Shipping), is the federal agency responsible for vessel inspection, marine terminal operations safety, coordination of federal responses to marine emergencies, enforcement of marine pollution statutes, marine safety (navigation aids, etc.), and operation of the National Response Center for spill response, and is the lead agency for offshore spill response. The USCG implemented a revised vessel boarding program in 1994 designed to identify and eliminate substandard ships from U.S. waters. The USCG is also responsible for reviewing marine terminal operations manuals and issuing letters of adequacy upon approval. At the present time, the USCG relies on the California State Lands Commission (SLC) to review operations manuals and inspect terminals.

8.5.1.2.9 National Oceanic and Atmospheric Administration. NOAA provides scientific support for response and contingency planning, including, but not limited to: hazard assessment, hazardous substances trajectory modeling, and coastal environments sensitivity. NOAA also provides expertise on living marine sources and their habitats, including endangered species, marine mammals, and National Marine Sanctuary ecosystems. NOAA provides information on actual and predicted meteorological, hydrological, and oceanographic conditions for marine, coastal, and inland waters, and tide and circulation data for coastal waters.

8.5.1.3 State of California Statutes and Regulations

The following California state laws and regulations address gas and liquid pipelines, oil and gas facilities and hazardous materials.

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8.5.1.3.1 Office of Environmental Health Hazard Assessment. The Office of Environmental Health Hazard Assessment (OEHHA) provides a health advisory for fish consumption. According to OEHHA, fish that contain high levels of toxic chemicals are found in many different parts of California. OEHHA reports that in Southern California (Los Angeles area) – certain kinds of fish contain high levels of industrial chemicals and pesticides. According to OEHHA, most advisories are issued because of mercury in fish. In a few cases, fish are contaminated with PCBs or other chemicals. OEHHA provides an Advisory Map for Water Bodies with Safe Eating Guidelines for Fish Consumption. OEHHA also provides specific advice for women in childbearing years and children.

8.5.1.3.2 Lempert-Keene-Seastand Oil Spill Prevention and Response Act of 1990. The Act covers all aspects of marine oil spill prevention and response in California. It establishes an Administrator who is given very broad powers to implement the provisions of the Act. The Act also gives the SLC certain authority over marine terminals. In 1991 the Office of Spill Prevention and Response was established within the Department. The Act seeks to protect the waters of the state from oil pollution and to plan for the effective and immediate response, removal, abatement, and cleanup in the event of an oil spill. It requires immediate cleanup of spills following approved contingency plans. It assigns primary authority to Office of Spill Prevention and Response to direct prevention, removal, abatement, response, containment, and cleanup efforts with regard to all aspects of any oil spill in the marine waters of the state. It also requires vessel and marine facilities to have marine oil spill contingency plans.

8.5.1.3.3 Hazardous Waste Control Law. The Hazardous Waste Control Law (HWCL) is administered by the California Environmental Protection Agency Department of Toxic Substances Control (DTSC). DTSC has adopted extensive regulations governing the generation, transportation, and disposal of hazardous wastes. These regulations impose cradle-to-grave requirements for handling hazardous wastes in a manner that protects human health and the environment. The HWCL regulations establish requirements for identifying, packaging, and labeling hazardous wastes. They prescribe management practices for hazardous wastes; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in landfills. Hazardous waste is tracked from the point of generation to the point of disposal or treatment using hazardous waste manifests. Manifests must list a description of the waste, its intended destination, and regulatory information about the waste.

8.5.1.3.4 Hazardous Materials Transportation in California. California regulates the transportation of hazardous waste originating or passing through the state in 13CCR. The California Highway Patrol and Caltrans have primary responsibility for enforcing Federal and state regulations and responding to hazardous materials transportation emergencies. The highway patrol enforces materials and hazardous waste labeling and packing regulations that prevent leakage and spills of material in transit, and provide detailed information to cleanup

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crews in the event of an incident. Vehicle and equipment inspection, shipment preparation, container identification, and shipping documentation are all part of the responsibility of the highway patrol. The highway patrol conducts regular inspections of licensed transporters to ensure regulatory compliance. Caltrans has emergency chemical spill identification teams at locations throughout the state.

8.5.1.3.5 California Coastal Act of 1976. The California Coastal Act of 1976 (Coastal Act; Public Resources Code sections 30000–30900) establishes policies and guidelines that provide direction for the conservation and development of the California coastline. The Coastal Act established the California Coastal Commission (CCC) as the state’s coastal management, regulatory, and permitting agency for all development within California’s coastal zone. The CCC shares permitting and regulatory authority with local governments who have a certified local coastal program. The policies set forth in Chapter 3 of the California Coastal Act require the avoidance or minimization of adverse impacts to the people, communities, visual character, and sensitive resources of California’s coastal zone from hazardous developments.

Section 30232 of the act addresses hazardous materials spills, and states that protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. In addition, effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.

Section 30262 of the act sets requirements for oil and gas development and transportation, and states that new or expanded oil and gas facilities shall be consolidated, platforms or islands will not be sited in areas of substantial hazard to vessel traffic, and that all offshore produced oil shall be transported onshore, and to processing and refining facilities by pipeline only. In addition, Section 30262 states that the protection of marine habitat and environmental quality will be maximized, and the best achievable technology shall be used when an offshore well is abandoned.

8.5.2 Environmental Setting

With respect to hazards and hazardous materials, the baseline environmental conditions reflect the current conditions and operation status of existing facilities within the SCSR. The SCSR has a number of areas that contain hazards and hazardous materials such as contaminated sediments, a Superfund site, and oil and gas facilities.

8.5.2.1 Sediment Contamination

The Draft Staff Report-Water Quality Control Plan for Enclosed Bays and Estuaries prepared in 2008 by the State Water Resources Control Board (SWRCB) and California Environmental Protection Agency (Cal-EPA) provides general information regarding

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sediment contamination in the Southern California Bight. According to the report, sediments in bays and estuaries in the SCSR have been identified to be contaminated with a variety of pollutants from sources including industrial and agricultural discharges, municipal wastewater treatment plants, and stormwater. Contaminated sediments are typically located in bays and harbors due to their proximity to anthropogenic contaminant sources and their hydrological characteristics that contribute to particulate settlement and retention. In the Southern California Bight, bays and harbors were reported as containing 22 percent of total Bight-wide sediment contamination, even though they constitute only 6 percent of the area surveyed (SWRCB and Cal-EPA 2008). Within bays and harbors, areas of greater sediment contamination are typically located in areas with low water exchange rates, such as blind slips, and/or in areas of high sedimentation, such as river or creek mouths. Urban, industrial and recreational uses of marine waters and associated upstream watersheds all contribute to contaminants found in sediments offshore of the Bight. Effects of these contaminants subsequently degrade the associated beneficial uses of the waters overlying the sediments, including the biological, commercial, industrial, and recreational values. Exposure to contaminated sediments can have a significant effect on the health, diversity and abundance of invertebrates. Foraging fish and birds may also be exposed by ingesting contaminated invertebrates or sediments. In turn, those organisms consuming contaminated fish may be exposed to toxic pollutants (SWRCB and Cal-EPA 2008). The SWRCB has implemented a Bay Protection and Toxic Cleanup Program to identify areas of sediment contamination and is in the process of developing and adopting sediment quality objectives for enclosed bays and estuaries.

8.5.2.1.1 Sediment Contamination within the Regional Water Quality Control Board

Los Angeles Region. The Los Angeles Region encompasses all coastal drainages flowing into the Pacific Ocean between Rincon Point (on the coast of western Ventura County) and the San Gabriel River drainages, as well as the drainages of five coastal islands (Anacapa, San Nicolas, Santa Barbara, Santa Catalina and San Clemente). In addition, the region includes all coastal waters within three miles of the continental and island coastlines. Two large deepwater harbors (Port of Los Angeles and Port of Long Beach harbors) and one smaller deepwater harbor (Port Hueneme) are contained in the region. There are small craft marinas within the harbors, as well as tank farms, naval facilities, fish processing plants, boatyards, and container terminals. Several small-craft marinas also exist along the coast (Marina del Rey, King Harbor, and Ventura Harbor); these contain boatyards, other small businesses and dense residential development. Several large, primarily concrete-lined rivers (Los Angeles River, San Gabriel River) lead to unlined tidal prisms, which are influenced by marine waters. Some of these tidal prisms receive a considerable amount of freshwater throughout the year from publicly owned treatment works discharging tertiary treated effluent. Lagoons are located at the mouths of other rivers draining relatively undeveloped areas (Mugu Lagoon, Malibu Lagoon, Ventura River Estuary, and Santa Clara River Estuary). There are also a few isolated coastal brackish water bodies receiving runoff from agricultural or residential areas. Santa Monica Bay, which includes the Palos Verdes Shelf,

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dominates a large portion of the open coastal water bodies in the region (SWRCB and Cal-EPA 2008).

The Los Angeles Region Contaminated Sediment Task Force was formed to create a long-term strategy for managing contaminated sediments as authorized by California Senate Bill 673. As part of the Bay Protection and Toxic Cleanup Program, the Los Angeles Regional Water Quality Control Board (RWQCB) prioritized contaminated sites to protect water and sediments from discharges of waste, in-place sediment pollution, and contamination (CCC 2010). Within the Los Angeles Region, four sites were designated high priority toxic hot spots:

- **Mugu Lagoon/Calleguas Creek Tidal Prism, Eastern Arm, Main Lagoon, Western Arm.** The area has been identified as an impaired water body due to sediment contamination (dichlorodiphenyltrichloroethane [DDT], polychlorinated biphenyls [PCBs], metal, chlordane and chlorpyrifos) (SWRCB and Cal-EPA 2008).
- **Santa Monica Bay/Palos Verdes Shelf.** The Palos Verdes Shelf has been identified as an impaired water body due to sediment contamination (DDT, PCBs, cadmium, copper, lead, mercury, nickel, zinc, polynuclear aromatic hydrocarbon (PAHs), and chlordane), sediment toxicity, tissue bioaccumulation of pollutants (DDT, PCBs, silver, chromium, and lead), and the issuance by the California OEHHA of a health advisory warning against consumption of white croaker (*Genyonemus lineatus*). Elevated DDT and PCB levels have been the focus of much attention by a variety of regulatory authorities, among them the EPA, which is developing a plan for remediation of the area. Although heavy metals contamination is recognized as an additional source of impairment, remediation of the DDT impairment may fully or partially address the issue (SWRCB and Cal-EPA 2008).
- **Los Angeles Outer Harbor/Cabrillo Pier.** The area in the vicinity of the Cabrillo Pier in the Outer Los Angeles Harbor is considered impaired due to sediment contamination (PAHs, DDT, zinc, copper, and chromium), sediment toxicity, and tissue bioaccumulation of DDT. High bacteria levels are also a concern. As part of the Main Channel Deepening Project, the United States Army Corps of Engineers and Port of Los Angeles are currently in the process of expanding the Cabrillo Shallow Water Habitat area to cover much of the area with available uncontaminated sediments, effectively capping a portion of the area. Additional efforts are being undertaken by the Port of Los Angeles to address sources of impairment other than the existing sediments (SWRCB and Cal-EPA 2008).
- **Los Angeles Inner Harbor/Dominguez Channel/Consolidated Slip.** Within the Inner Los Angeles Harbor, the Consolidated Slip and the Dominguez Channel Watershed are recognized to be impaired: sediment contamination (PAHs, zinc, chromium, lead, DDT, chlordane, and PCBs), sediment toxicity, benthic community effects, and tissue

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bioaccumulation (DDT, chlordane, PCBs, organotins, and zinc) have been documented. Fish consumption advisories have also been posted for these areas. The Consolidated Slip Restoration Program Working Group is currently considering remediation alternatives under the leadership of the Los Angeles RWQCB. The group has recently compiled data showing the extent of contamination to be at least 20 feet below the harbor bottom in some areas. Restoration alternatives for sediments in the Consolidated Slip as well as the Dominguez Channel Watershed are in development, which are recognized to be a potential source of recontamination (SWRCB and Cal-EPA 2008).

In addition, the Los Angeles RWQCB identified several sites within the Los Angeles Region as moderate or low toxic hot spots. Sites listed within the Los Angeles area, and the respective reasons for listing, include Marina del Rey (sediment toxicity, DDT, PCBs, copper, mercury, nickel lead, zinc and chlordane), Los Angeles River Estuary (sediment toxicity, DDT, PAH and chlordane), Ballona Creek Tidal Prism (sediment toxicity, DDT, zinc, lead, chlordane, dieldrin, and chlorpyrifos), and Huntington Harbor Upper Reach (sediment toxicity, chlordane, DDE, and chlorpyrifos) (SWRCB and Cal-EPA 2008).

8.5.2.1.2 Sediment Contamination within the RWQCB Santa Ana Region. The Santa Ana Region comprises all upland basins draining into the Pacific Ocean between the southern boundary of the Los Angeles Region and the Santa Ana River drainage into Newport Bay and Aliso Creek (SWRCB and Cal-EPA 2008).

Within the Santa Ana Region, one site was designated by the Santa Ana high priority toxic hot spots:

- **Lower Newport Bay Rhine Channel.** The area has been identified as an impaired water body due to sediment contamination (arsenic, copper, lead, mercury, zinc, dichlorodiphenyldichloroethene [DDE], PCBs, and tributyltin [TBT]) (SWRCB and Cal-EPA 2008).

In addition, several sites were identified by the Santa Ana RWQCB as moderate or low toxic hot spots. Sites listed within the Santa Ana area, and the respective reasons for listing, include Anaheim Bay Naval Reserve (sediment toxicity, chlordane, and DDE), Upper Newport Bay Narrow (sediment toxicity, chlordane, zinc, and DDE), and Lower Newport Bay Island (exceeds water quality objectives, copper, lead, mercury, zinc, chlordane, DDE, PCBs, and TBT) (SWRCB and Cal-EPA 2008).

8.5.2.1.3 Sediment Contamination within the RWQCB San Diego Region. During the early 1980s, the San Diego RWQCB began an investigation focusing on pollutant sources, fates, and effects in San Diego Bay. The San Diego RWQCB directed the placement of the station locations for the State Mussel Watch program and augmented this work with significant staff effort to collect sediment samples at more than 300 sites throughout the Bay. As a result of this effort, the San Diego RWQCB identified several areas in San Diego Bay

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with sediments contaminated with chemical pollutants. Further investigations by the San Diego RWQCB identified the sources or potential sources of the contamination at most of these sites. In 1985, to combat this water quality problem, the RWQCB embarked on the San Diego Bay Cleanup Program, a long-term endeavor to control contaminant inputs and remediate sediment contamination (SWRCB and Cal-EPA 2008).

The San Diego Region comprises all basins draining into the Pacific Ocean between the southern boundary of the Santa Ana Region and the California-Mexico boundary. The San Diego Region is located along the coast of the Pacific Ocean from the Mexican border to north of Laguna Beach. The region is rectangular in shape and extends approximately 80 miles along the coastline. The region includes portions of San Diego, Orange, and Riverside Counties. The population of the region is heavily concentrated along the coastal strip. Six deepwater sewage outfalls and one across-the-beach discharge from the new border plant at the Tijuana River empty into the ocean. Two harbors, Mission Bay and San Diego Bay, support major recreational and commercial boat traffic. Coastal lagoons are found along the San Diego County coast at the mouths of creeks and rivers. San Diego Bay is long and narrow, 15 miles in length and approximately one mile across. A deep-water harbor, San Diego Bay has experienced waste discharge from former sewage outfalls, industries, and urban runoff. Up to 9,000 vessels may be moored there. San Diego Bay also hosts four major U.S. Navy bases with approximately 80 surface ships and submarines. Coastal waters include bays, harbors, estuaries, beaches, and open ocean (SWRCB and Cal-EPA 2008).

Within the San Diego Region, one site is designated as a high priority toxic hot spot:

- **San Diego Bay Seventh Street Channel Paleta Creek, Naval Station.** The area has been identified as an impaired water body due to sediment contamination (chlordane, DDT, PAHs and total chemistry) and benthic community effects (SWRCB and Cal-EPA 2008).

Several sites in the San Diego area are listed as moderate or low toxic hot spots. Sites listed and the respective reasons for listing include, San Diego Bay Between “B” Street and Broadway Piers (benthic community impacts, PAHs, total chemistry), San Diego Bay Central Bay, Switzer Creek (sediment toxicity, chlordane, lindane, DDT, total chemistry), San Diego Bay Chollas Creek (benthic community impacts, chlordane, total chemistry), San Diego Bay Foot of Evans and Sampson Streets (benthic community impacts, PCBs, antimony, copper, total chemistry) (SWRCB and Cal-EPA 2008).

8.5.2.2 Superfund Sites

The Palos Verde Shelf Superfund Site is an area of contaminated sediment off the Palos Verdes Peninsula. The contaminated sediment lies in the Pacific Ocean at depths of 150 feet and more. The fishes found in the Palos Verdes Shelf area contain high concentrations of DDT and PCBs. Although current concentrations have dropped from historical highs,

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concentrations of DDT and PCBs in fish tissues continue to pose a threat to human health and the natural environment. Los Angeles County wastewater (effluent) has been discharged at White Point off the Palos Verdes Shelf since 1937. Sewage is treated at the Joint Water Pollution Control Plant in the City of Carson before it enters the outfalls. The Los Angeles County Sanitation District (LACSD) is in charge of the county's sanitation system. Among the many industries that used the sewer system was the Montrose Chemical Corporation, the nation's largest manufacturer of DDT. From the 1950s to 1971 tons of DDT and associated manufacturing waste entered the sewer system to be discharged ultimately from the outfalls at White Point. In 1971, the last year Montrose used the county sewers, an estimated 50,500 pounds of DDT were discharged from the outfalls. PCBs, another persistent hazardous substance, also formed part of the industrial waste stream that was discharged to the sewer system until their ban in 1976. After these persistent pollutants ceased to dominate the waste stream, LACSD continued discharging treated wastewater onto the Palos Verdes Shelf. This created a layer of cleaner sediment on top of the DDT- and PCB-contaminated sediment. On the Palos Verdes Shelf, an estimated 5.7 million tons of sediment have been affected by the effluent discharged from the White Point outfalls. Mixed within these effluent affected sediments are an estimated 110 tons of DDT and 11 tons of PCBs. The affected sediment forms an identifiable deposit over a mile offshore at a depth of 150 feet to the shelf break. The deposit ranges in thickness from 2 inches to over 2 feet, with the area of greatest accumulation at 200 feet. It is thickest and has the highest concentrations of DDT and PCBs in the vicinity of the outfalls, then fans out to the northwest (EPA 2010).

On September 30, 2009, EPA signed an interim Record of Decision that selected a cleanup remedy for Palos Verdes Shelf. The selected remedy has three components: placing a cover of clean silty sand over the portion of the contaminated sediment deposit that has the highest contaminant surface concentrations and appears to be erosive; monitoring the natural recovery that is occurring in other areas of the Shelf; and continuing the Institutional Controls program that uses outreach and education, enforcement, and monitoring to minimize consumption of fish that contain DDT and PCBs (EPA 2010).

8.5.2.3 Oil and Gas Facilities

The SCSR is rich in oil and gas activities; the area contains various oil platforms located off the coast, including networks of pipelines running from platforms to onshore facilities. There are also approximately 80 marine terminals in state waters along the California coast and numerous land-based oil production, transportation, and storage facilities. Most of these marine terminals located in the SCSR. As of May, 2008, there are 26 production platforms, one processing platform, and six artificial oil and gas production islands located in the offshore waters of California. Of these platforms, four are located in state waters offshore of Santa Barbara and Orange counties (see Figures 6-8 and 6-9), and 23 are located in federal waters offshore of Santa Barbara, Ventura, and Los Angeles counties (Department 2009).

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8.5.2.3.1 Historical Releases. The risk of hazardous material contamination from oil spills is high in the SCSR. In federal waters adjacent to the SCSR there have been 4 notable oil spill events since 1990, all in the Santa Barbara Channel and all from platform incidents. The single most notable oil spill event in California's history was the 1969 oil spill from Union Oil of California's (UnoCal) Platform "A" off Santa Barbara. This spill allowed an estimated 80,000 barrels of crude oil to escape into the ocean, covering an 800 square mile area and affecting thirty-five miles of coastline. As a consequence, approximately 4,000 water birds died, numerous marine mammals were poisoned, and many fisheries were adversely affected. There has been no spill of the same magnitude in Southern California since that time (Department 2009).

In state waters, there have been four notable oil spills since 1990. The causes of these spills include pipeline breaks and a tanker accident. The cause of one spill remains unknown. Unlike the incidents in federal waters, there have not been any significant spills related to platforms in state waters. The spills have had direct and indirect impacts on marine life; for example, more grunion than seabirds were killed in the American Trader oil spill (see Table 8.5-1). In addition, oil spills pose serious threats to grunion eggs, and the last four spills have occurred in grunion spawning habitat. Table 8.5-1 summarizes the four oil spills in state waters since 1990 (Department 2009).

The 1969 blowout and oil spill from UnoCal's Platform A in the Santa Barbara Channel received international attention and was a major catalyst in the development of modern environmental law in the United States. The spill influenced the passage of major state and federal legislation, such as the National Environmental Policy Act, CWA, California Environmental Quality Act (CEQA), California Coastal Initiative in 1972 (Proposition 20), and California Coastal Act of 1976. Pursuant to these and other statutes, development permits for onshore and offshore oil and gas facilities cannot be issued without provisions to protect terrestrial, marine, visual, recreational, and air resources (Department 2009). Although oil and gas pipelines and processing facilities are engineered to current safety standards, materials still pose risks to human health and the environment. Accidental spills can cause human health risks, biological, and hydrological damage, as well as public exposure to toxic materials, fires, and explosions.

8.5.2.3.2 Characteristics of Crude Oil. Crude oil is a heterogeneous mixture of solids, liquids, and gases. This mixture includes sediments, water and water vapor, salts, sulfur, and acid gases, including hydrogen sulfide and carbon dioxide. Total sulfur content in crude oils ranges from approximately one to four percent by weight, and hydrogen sulfide (H₂S) concentrations can reach 150 parts per million (ppm) in "sour" crude oil. Other constituents of crude oil include nitrogen and oxygen compounds, and water- and metal-containing compounds, such as iron, vanadium, and nickel. A spill of crude oil could result in the release of flammable and/or toxic vapors including propane, butane, pentane, benzene and hydrogen sulfide.

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**TABLE 8.5-1
OIL SPILL INCIDENTS IN STATE WATERS, 1990–2008**

Name	Date	Location	Cause	Pollution	Resource Impact
American Trader Oil Spill	02/7/90	Huntington Beach, Orange County	Tanker incident	416,598 gal crude oil	3,400 birds killed. Fish contaminated. Restricted recreational activities.
McGrath Oil Spill	12/25/93	McGrath State Beach, Ventura County	Pipeline break	87,150 gal crude oil	206 birds killed. Damaged riparian and coastal habitat.
Torch/Platform Irene Oil Spill	09/28/97	Northern Santa Barbara County (offshore and coastline)	Pipeline break	6,846 gallons of petroleum products	700 birds killed. Sandy and rocky beach habitat affected. Restricted recreational beach use.
Ventura County Oil Spill	01/13/05	Santa Barbara to Ventura	Unknown	Oil: type and amount unknown	86 birds killed.

Source: Department 2009.

8.5.2.4 Damage Assessment, Remediation, and Restoration Program Sites

NOAA’s Damage Assessment, Remediation, and Restoration Program (DARRP) collaborates with other agencies, industry, and citizens to protect and restore coastal and marine resources threatened or injured by oil spills, releases of hazardous substances, and vessel groundings. DARRP was formally created in 1992 after the 1989 Exxon Valdez oil spill. DARRP’s multidisciplinary team of scientists, economists, and attorneys work with response agencies and co-trustees to:

- Protect coastal and marine natural resources
- Respond to discharges of oil and hazardous substances
- Assess risks and injuries to natural resources
- Restore injured natural resources and related socioeconomic benefits (DARRP 2010)

In California, the DARRP has restored and/or protected 1,600 acres of marine habitats, 2,900 acres of freshwater and terrestrial habitats, and 48 stream miles. Legal settlements have resulted in 60 protection and restoration projects statewide. Cleanup actions have also promoted recovery of coastal resources and communities at 22 hazardous waste sites. Currently DARRP lists 11 hazardous waste sites and one oil spill case in the SCSR, as either priority cases, or featured cases, as listed below and seen on Figure 8-9.

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Priority cases are those cases that the DARRP program believes, within current 2010 budget constraints, are most important to address because they provide greatest potential benefit to natural resources in NOAA’s trust. Priority cases within the SCSR are presented in Table 8.5-2 (listed north to south).

**TABLE 8.5-2
DARRP PRIORITY CASES IN THE SOUTH COAST STUDY REGION**

Priority Case Name	Case Location	EPA Facility ID
Port Hueneme Naval Base Hazardous Waste Site	Ventura County	CA6170023323
Halaco Engineering Co Hazardous Waste Site	Port Hueneme, Ventura County	CAD009688052
Teledyne Ryan Hazardous Waste Site	San Diego, San Diego County	CAD990833014
Naval Training Center (Boat Channel) Hazardous Waste Site	Coronado, San Diego County	NA
North Island Naval Air Station Hazardous Waste Site	Coronado, San Diego County	CA7170090016
Naval Amphibious Base Coronado Hazardous Waste Site	Coronado, San Diego County	NA
Former Tow Basin Facility Hazardous Waste Site	San Diego, San Diego County	NA
Solar Turbines Inc. Hazardous Waste Site,	San Diego, San Diego County	CAD008314908
NASSCO/SW Marine Shipyard Hazardous Waste Site	National City, San Diego County	NA
Naval Station San Diego Hazardous Waste Site	National City, San Diego County	NA

Source: DARRP 2010.

Featured cases provide detailed information about current, or past, DARRP efforts including case history and contacts, remedial or injury assessment, restoration planning, and related technical documents. This information is presented in Table 8.5-3.

8.5.3 Impact Analysis

Once the baseline risks are quantified, significance criteria are used to determine if there is an increased level of risk associated with the proposed Project IPA or its alternatives, and to determine if proposed changes introduce a significant increase in potential impacts.

8.5.3.1 Study Methods

Desktop research was performed as well as consultation with various agencies including the DTSC and RWQCBs. The understanding that the project, as a set of regulations, will not

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**TABLE 8.5-3
DARRP FEATURED CASES IN THE SOUTH COAST STUDY REGION**

Featured Case	Case Location	Case Status	Case Overview
Palos Verdes Shelf Hazardous Waste Site	Rancho Palos Verdes, Los Angeles County	Case settled. In restoration.	From the late 1940s to the early 1970s, millions of pounds of DDT and PCBs were discharged into ocean waters off the Southern California coast. Almost all of the DDTs originated from the Montrose Chemical Corporation's manufacturing plant in Torrance, California, and were discharged into LACSD's wastewater collection system. The DDT-contaminated wastewater was discharged for years through the wastewater outfall into the Pacific Ocean off White Point, in a submarine area known as the Palos Verdes Shelf. Montrose also dumped hundreds of tons of DDT-contaminated waste into the ocean near Santa Catalina Island. Additionally, large quantities of PCBs from numerous sources throughout the Los Angeles basin were also released into ocean waters through the LACSD's wastewater outfall on the Palos Verdes Shelf. This site is discussed further in Section 8.5.1.2.
T/V American Trader Oil Spill Case	Huntington Beach, Orange County	Settled in 1997. Under restoration.	On February 7, 1990, the steam tanker American Trader spilled approximately 400,000 gallons of Alaska North Slope crude oil into the Pacific Ocean off of Huntington Beach, California. The vessel's anchor punctured two holes in the starboard cargo tank due to a combination of ocean swells and inadequate water depth during an attempted mooring at the sea berth. At the time, the vessel was lightering a cargo of Alaska North Slope crude oil from the Keystone Canyon, a very large crude carrier anchored in Long Beach, California, to several locations along the Southern California coast, including the Golden West terminal at Huntington Beach. The oil affected 60 square miles of ocean and washed ashore along approximately 14 miles of beaches, affecting seabirds and recreational use of beaches.

utilize hazardous materials in its implementation, provided context for analysis in relation to CEQA's significance criteria, which are discussed below.

8.5.3.2 Significance Criteria

Based on the standards of significance from Appendix G of the State CEQA Guidelines, a project would normally result in a significant impact relative to hazards and hazardous materials if it would result in any of the following:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials

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- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment
- Be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area
- Be located within the vicinity of a private airstrip, and result in a safety hazard for people residing or working in the project area
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan
- Have environmental effects which will result in substantial adverse effects on human beings, either directly or indirectly

8.5.3.3 Environmental Impacts

Criterion HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials

The proposed regulatory changes would not require or induce the routine transport, use or disposal of hazardous materials; therefore there would be no impact.

Mitigation: No mitigation would be required.

Criterion HAZ-2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment

The designation of the marine protected areas (MPAs) would not require the use of hazardous materials and there would be no reasonably foreseeable upset or accident condition involving the release of hazardous materials into the environment. For an evaluation of the proposed Project's impacts relative to increased chances of marine vessel collisions, please refer to Section 8.4 (Vessel Traffic) of this Draft EIR. Because the proposed Project would not involve or affect the use of hazardous materials within the SCSR, impacts related to any upset and accident conditions would be less than significant.

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Mitigation: No mitigation would be required.

Criterion HAZ-3: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school

Although the proposed regulatory changes would affect only offshore areas, some coastal schools and universities do occur within 0.25-mile of the SCSR. However, the proposed regulatory changes would not result in hazardous emissions or handling of hazardous or acutely hazardous materials, substances or waste. Therefore there would be no impact.

Mitigation: No mitigation would be required.

Criterion HAZ-4: Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment

There are areas within the Southern California Bight that have been identified on lists compiled pursuant to Government Code Section 65962.5 as having contaminated sediments. Many of these sites are currently undergoing assessment, monitoring and remediation. The designation process of the MPAs has avoided known contaminated sediment areas. MPAs could be located in areas where contaminated sediments exist, but have not been identified. However, the designation of MPAs would not create a hazard to the public or the environment. Therefore there would be no impact.

Mitigation: No mitigation would be required.

Criterion HAZ-5: Be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area

The regulatory changes proposed under the IPA would be limited to offshore areas within the SCSR, and no areas affected are within an airport land use plan. However, several large and small public and public-use airports occur in coastal areas adjacent to the SCSR, some of which are within two miles of areas affected by the proposed Project IPA. The proposed regulatory changes would not result in any construction activities or require the use of workers, and there are no residents in the proposed Project area. Although some changes in boat traffic patterns would be expected to occur, particularly with regard to commercial and recreational fishing vessels, the general nature and intensity of human uses within the SCSR would be unchanged by the proposed Project. Thus, impacts relative to airport hazards would be less than significant.

Airports in Southern California within 2 miles of SCSR:

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1. Santa Barbara Municipal Airport
2. McIllelan-Palomar (Carlsbad)
3. San Diego International Lindbergh Field Airport
4. Los Angeles International
5. Imperial Beach OLF Ream Field (Navy)
6. Oceanside Municipal Airport
7. Point Mugu Naval Air Station (Navy)
8. Oxnard Airport
9. Santa Monica Municipal Airport

Private Ownership:

1. Catalina Airport
2. Santa Cruz Island Airport (The Nature Conservancy)
3. Santa Rosa Island (Channel Islands) Airstrip

Mitigation: No mitigation would be required.

Criterion HAZ-6: Be located within the vicinity of a private airstrip, and result in a safety hazard for people residing or working in the project area

The regulatory changes proposed under the IPA would be limited to offshore areas within the SCSR, and no airstrips occur within the areas to be affected. The SCSR does not support any residents, and the proposed Project would not require workers. Therefore, impacts on workers, residents, or private airstrips would be less than significant.

Mitigation: No mitigation would be required.

Criterion HAZ-7: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan

The proposed MPAs would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The proposed regulatory changes would not prohibit vessel transit through MPAs, and any emergency-related plans calling for sea evacuations or other marine components could be implemented without interference from the proposed MPAs. Therefore, impacts related to emergency response or evacuation plans would be less than significant.

Mitigation: No mitigation would be required.

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Criterion HAZ-8: Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands

The proposed regulatory changes would affect only marine areas, and therefore would not expose people or structures to significant risk or loss, injury or death involving wildland fires. There would be no impact.

Mitigation: No mitigation would be required.

Criterion HAZ-9: Have environmental effects which will result in substantial adverse effects on human beings, either directly or indirectly?

As discussed in Section 5.0 of this Draft EIR, adoption of the proposed regulatory changes would have the potential to displace existing consumptive uses away from areas where new or more stringent take regulations are proposed. Because marine waters in certain portions of the SCSR are contaminated to the extent where consuming particular fish or shellfish species may be unhealthful, it is possible that commercial or recreational fishing efforts could be displaced from an area of acceptable water quality into such contaminated waters. The Office of Environmental Health and Hazard Assessment evaluates data pertaining to contaminant levels in seafood and prepares Fish Safe Guidelines that detail the species of fish and associated safe frequency of consumption (OEHHA 2009). Figures 6-13 through 6-15 illustrate safe eating guidelines for fish, and areas within the SCSR that are affected. All of the areas have a health advisory for PCBs and DDT. There are two levels (yellow and red zones) for fish consumption advisories; within the red zone the fish consumption guidelines are more restrictive. Displacement could occur from areas with no fish consumption guidelines to areas with fish consumption guidelines, or from areas located in “yellow” zones to “red” zones.

If an MPA designation would be modified (reduced or expanded area of the MPA, designation added, and designation removed) then it has the potential to have an effect on the quality of fish, shellfish, or kelp consumed. Consumptive uses could be displaced from an area with higher water quality to an area with lower water quality. Whether users choose to relocate to an area with equivalent water quality, lower quality, or cease engaging in their former consumptive uses cannot be predicted. For the purposes of this impact, displacement to areas of lower water quality is of concern only if the reduced water quality could result excess contaminant levels in the seafood or ocean vegetables harvested for consumption (i.e., result in contaminant levels that would limit the amount of seafood or sea vegetables that could be safely consumed).

Displacement of consumptive uses to an area with fish consumption guidelines would not necessarily result in adverse effects to human health. If the users comply with the consumption guidelines, then potential adverse effects from consuming fish from this area

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would be considered acceptable, and therefore potential impacts would be less than significant. It is not possible to predict to what degree individuals would comply with the guidelines.

It is also difficult to predict the magnitude of the potential risk to consumers from relocation of these activities to areas with potentially lower water quality due to the number of variables including the amount of fish, shellfish and kelp consumed, the demographics of the consumer and other health related variables (e.g., age, sex, fishing mode, body weight, ethnicity, income), the degree of contamination (even within the same guideline zones), the type of chemicals contaminating the area, the parts of the fish consumed, the preparation of the fish for consumption (cleaning and cooking), the effectiveness of safe eating guidelines (OEHHA 2009), and if it is subsistence fishing (OEHHA 2001).

The percentage of the entire SCSR that would be closed to consumptive uses compared to the area available for consumptive uses is small. Thus potential impacts of displacement of uses from open water areas (i.e., areas only accessible by boat) would be considered less than significant; users could travel to near-by open water areas to obtain the same or similar type of seafood or sea vegetables (kelp).

The continental shoreline (i.e., coastal shoreline not including islands) in the SCSR is approximately 647.6 miles long (1,063.2 square miles total area); approximately 311.3 miles (126.6 miles in the Red Zone and 184.7 miles in the Yellow Zone) of this shoreline are covered by fish consumption advisories. By area, 490.1 square miles of the SCSR are covered by fish consumption advisories; 163.5 square miles in the Red Zone and 326.6 square miles in the Yellow Zone. New or modified MPAs located along the continental coast would cover approximately 90 miles of shoreline, including 43.1 miles (3.2 miles in the Red Zone and 39.9 miles in the Yellow Zone) of shoreline with fish consumption advisories. By area, there would be 122.7 square miles of new or modified MPAs located within the continental portion of the regional study area and 59.0 square miles of these MPAs are located within fish consumption advisory areas (17.6 in the Red Zone and 41.4 square miles in the Yellow Zone). Of the total shoreline included in the new or modified MPAs in the IPA, approximately 43 miles would be located in areas with fish consumption advisories, and 47 miles would be located in areas that do not have fish consumption advisories. Thus, the IPA could potentially displace consumptive uses from approximately 14 percent of the shoreline without fish consumption advisories. The IPA could also displace consumptive uses from approximately 9 percent of the total area that is free of fish consumption advisories.

Mitigation: The state has issued Safe Eating Guidelines for Fish from Coastal Waters of Southern California: Ventura harbor to San Mateo Point (OEHHA 2009). The public has been notified through the Department website and in the written regulations books distributed to fisherman of these known risk. Should OEHHA notify the Department of further health

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advisories, the Department will amend the information in the regulatory booklets and the website to reflect these changes.

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8.6 ENVIRONMENTAL JUSTICE

This section describes the existing social environment in the terrestrial lands adjacent to the south coast study region (SCSR) and assesses the potential environmental justice-related impacts of the proposed Integrated Preferred Alternative (IPA) and alternatives on Santa Barbara, Ventura, Los Angeles, Orange, and San Diego counties. The focus of this section is an analysis of environmental justice, which refers to the fair and equitable treatment of individuals regardless of ethnicity or income level in the development and implementation of environmental management policies and actions. Therefore, the key parameters addressed in this section are: 1) local demographics, including population and ethnicity, and 2) measures of social and economic well-being, including per capita income and poverty rates.

8.6.1 Regulatory Framework

8.6.1.1 Federal

Executive Order 12898, “*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*,” requires each federal agency to incorporate environmental justice into its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects, including social or economic effects, of its programs, policies, and activities on minority populations and low-income populations of the United States (Council on Environmental Quality 1997). As such, environmental justice is considered part of the National Environmental Protection Act (NEPA) review process, and is not required or considered by the California Environmental Quality Act (CEQA).

Section 4-4 of Executive Order 12898 specifically addresses some populations or groups who principally rely on fish and/or wildlife for their subsistence. The orientation of this section is toward identifying and providing guidance regarding health risks associated with those consumption patterns – particularly the consumption of pollutant-bearing fish or wildlife.

The U.S. Environmental Protection Agency’s (EPA) Office of Environmental Justice offers the following definition of environmental justice:

“The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.”

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This definition and EPA policies provide guidance for other federal and state agencies in the implementation of environmental justice principles.

8.6.1.2 State

Under CEQA, purely economic or social changes resulting from a project are not treated as significant impacts on the environment. The CEQA Guidelines (14 CCR 15131) state:

“Economic or social effects of a project shall not be treated as significant effects on the environment. An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes. Economic or social effects of a project may be used to determine the significance of physical changes caused by the project.”

However the California Fish and Game Commission (Commission) and the California Department of Fish and Game (Department) are required to analyze environmental justice impacts from the activities that they undertake.

California law defines environmental justice as “the fair treatment of people of all races, cultures and income with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies” (Government Code Section 65040.12(e) and Public Resources Code Section 72000). The State of California Resources Agency (Resources Agency) has established a policy on environmental justice (Resources Agency 2003). This policy applies to all departments, boards, commissions, conservancies, and special programs of the Resources Agency including the Commission and the Department. The Resources Agency Environmental Justice Policy provides that the fair treatment of people of all races, cultures, and income shall be fully considered during the planning, decision-making, development and implementation of all Resources Agency programs, policies, and activities.

The intent of this policy is to ensure that the public – including minority and low-income populations – is informed of opportunities to participate in the development of all Resources Agency programs, policies, and activities, and that they are not discriminated against, treated unfairly, or caused to experience disproportionately high and adverse human health or environmental effects from environmental decisions. Both the Commission and Department are part of the Resources Agency and are subject to Resource agency policy and as such must consider environmental justice in their decision-making process for the proposed Project IPA and its alternatives.

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With respect to protecting public health in the consumption of fish and shellfish that may contain elevated levels of pollutants, the primary activities of the state are through the Office of Environmental Health and Hazard Assessment (OEHHA) of the California Environmental Protection Agency. OEHHA conducts studies of contaminant levels in and consumption of fish and shellfish, and publishes guidelines and advisories regarding consumption. OEHHA also conducts regular public outreach meetings and presentations to inform the fishing public and consumers of fish about the benefits of fish consumption and potential hazards of excess consumption of certain species in certain areas. OEHHA guidelines are presented as recommendations on the number of fish meals consumed during a period of time (e.g., up to two meals per week, or some other number). These vary depending on location and measured pollutant levels in fish and shellfish, and are also different for children and women of childbearing age and adult males. In Southern California, OEHHA has defined a “red zone” generally centered on Palos Verdes and extending north to Santa Monica and south to Huntington Beach, where their recommendations are most stringent. There are also two “yellow zones” where the recommendations are intermediate, and large areas (generally south of Orange County and north of Ventura Harbor) where there are no guidelines in place (OEHHA 2009). When necessary, OEHHA works directly with the Department to post fishing closures.

8.6.2 Environmental Setting

The following demographic overview of the SCSR residents will be used in this analysis of potential environmental justice-related impacts. The geographic scope of the information presented includes the counties of Santa Barbara, Ventura, Los Angeles, Orange, and San Diego. A number of surveys have also been conducted to identify fish and shellfish consumption by fishers in various racial, ethnic, and income groups. These surveys have been summarized by OEHHA (2001). These surveys were targeted to all people using various public fishing locations and addressed residents from the counties within the SCSR as listed above, as well as visitors from inland counties or other areas.

8.6.2.1 Population Trends and Projections

The five counties adjacent to the SCSR are highly urbanized, with population centers located in close proximity to the coast. As of 2000, Orange and Los Angeles counties have the greatest population densities. Densities in these counties exceed 3,607 and 2,344 people per square mile, respectively, and are approximately 3 to 24 times higher than other counties in the SCSR. Orange County has the least amount of land, while Los Angeles County has the most people. San Diego County has a similar population size to Orange County, but is similar in size to Los Angeles County. The major cities adjacent to the Pacific Ocean within the SCSR include: Los Angeles (3.7 million people), San Diego (1.3 million people), Long Beach (0.5 million people), Chula Vista (0.2 million people), Huntington Beach (0.2 million people), and Oxnard (0.2 million people) (Department 2009).

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Population growth projection trends in these coastal counties (based on a demographic model that incorporates fertility, migration, and survival rates) indicate that Ventura County is expected to have the highest change in population growth over the next 50 years, followed closely by San Diego County. Los Angeles, Orange, and Santa Barbara counties are expected to have similar growth patterns, which include a population growth slightly greater than half that of Ventura and San Diego counties (see Table 8.6-1). Santa Barbara County, which has the smallest population and the lowest density, is expected to experience the least growth and population change between 2000 and 2050. Aside from Santa Barbara County, rapid growth is occurring in the counties where the average population density is currently the lowest (Department 2009).

**TABLE 8.6-1
TOTAL POPULATION, PROJECTED GROWTH, AND POPULATION GROWTH,
IN COASTAL COUNTIES IN THE SCSR**

Coastal County	Total Population (2000)	Projected Population (2010)	% Projected Population Change (2000–2010)	Projected Population (2050)	% Projected Population Change (2000–2050)	People per Square Mile (2000)
Santa Barbara	401,115	434,497	8.3%	534,447	33.2%	145.9
Ventura	758,884	855,876	12.8%	1,229,737	62.0%	408.2
Los Angeles	9,578,960	10,514,663	9.8%	13,061,787	36.4%	2,344.10
Orange	2,863,834	3,227,836	12.7%	3,987,625	39.2%	3,607.50
San Diego	2,836,303	3,199,706	12.8%	4,508,728	59.0%	670

Source: Department 2009.

8.6.2.2 Ethnicity

In addition to population growth, ethnicity is also an important consideration for evaluating potential environmental justice-related effects. This issue is especially significant for the proposed Project and its alternatives because it deals with marine areas, which may disproportionately affect certain ethnicities that rely heavily on ocean-dependent income, or marine life diet. As shown in Table 8.6-2, the counties adjacent to the SCSR are very culturally diverse.

With the exception of Los Angeles County, the combined ethnic groups within each county represent about 50 percent of the population (or slightly greater). Within Los Angeles County, combined ethnic groups represent approximately 72.8 percent of the population. The average of combined ethnic groups for all counties adjacent to the SCSR is approximately 56.19 percent, which is approximately equal to, but slightly less than the state of California as a whole (57.4 percent).

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**TABLE 8.6-2
RACE OR ETHNICITY BY STUDY AREA COUNTY**

County	White (Non- Hispanic/ Latino)	Black/ African American	American Indian/ Alaska Native	Asian	Native Hawaiian/ Pacific Islander	Multi-race	Hispanic/ Latino
Santa Barbara	50.3%	1.8%	0.9%	4.6%	0.2%	3.5%	38.7%
Ventura	46.55%	1.80%	0.46%	7.09%	0.19%	1.80%	42.11%
Los Angeles	27.2%	8.8%	0.5%	12.9%	0.3%	3.0%	47.3%
Orange	45.7%	1.7%	0.5%	16.1%	0.3%	2.5%	33.2%
San Diego	49.30%	5.0%	0.8%	10.2%	0.5%	3.8%	30.4%
State	42.6%	6%	0.8%	12.1%	0.3%	2.1%	36.1%

Source: U.S. Census 2008.

In terms of the fishing population, several studies were reviewed by OEHHA and one that was considered to be reasonably representative of the Southern California was conducted in Santa Monica Bay. The distribution of fishers by race or ethnicity from that study, as reported by OEHHA (2003) is summarized in Table 8.6-3.

**TABLE 8.6-3
DISTRIBUTION OF ANGLERS BY ETHNIC GROUP**

Ethnic Group	No. in Group (% of Group)
White	217 (39.1)
Hispanic	137 (24.7)
Black	57 (10.3)
Asian	122 (22.0)
Other	14 (2.5)
All	555 (some non-responders)

Consumption rates of fish and shellfish vary among groups within the population depending on race or ethnicity, age, sex, fishing mode, region, and other variables. In very general terms within the Southern California region, fish consumption rates are higher for some Asian groups and Pacific Islanders, and whites, while they tend to be lower in Hispanic groups (OEHHA 2001).

Defining individuals or groups as subsistence fishers, meaning those for whom a substantial portion of their protein supply was from fish, is problematic in general and particularly so in Southern California. This is because the definition itself is narrative and does not provide a quantitative measure such as income level, frequency of fishing, or amount of fish

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consumption. Anglers are not always willing to report income levels, and do not necessarily identify themselves as subsistence fishers. Some subpopulations who might be expected to be subsistence fishers have consumption rates that are in line with national averages for all people, while others with relatively higher consumption rates do not define themselves as subsistence fishers. In any event, studies identifying groups with extremely high fish consumption—true subsistence fishers—involve Native Americans in Alaska and the Pacific Northwest. For this reason, no attempt will be made in this Draft EIR to identify specific effects on subsistence fishers as a separate issue from effects on minority or low-income groups.

8.6.2.3 Income-related Measures of Social Well-being

Certain financial factors are widely used as economic indicators of social well-being. These include: per capita income, median household income, and poverty rates. Table 8.6-4 presents these data for each county adjacent to the SCSR, as well as for the state of California. In 2008, per capita income in the counties ranged from \$27,264 to \$34,550 (approximately 9.3 below and 15 percent above the state level of \$30,062) (Census 2008). The average per capita income for these counties was approximately \$31,066, slightly greater than that of the state.

**TABLE 8.6-4
INCOME AND POVERTY RATES BY COUNTY AND STATE**

County	Total Population	Per Capita Income (in 2008 Inflation- adjusted Dollars)	Median Household Income (1999 Dollars)	Poverty Rate (2008)
Santa Barbara	402,627	\$30,062	59,850	13.5%
Ventura	793,814	\$32,555	76,269	8.7%
Los Angeles	9,832,137	\$27,264	55,192	15.1%
Orange	2,985,995	\$34,550	75,176	9.5%
San Diego	2,965,943	\$30,898	63,727	11.7%
State of California	36,418,499	\$30,062	47,493	14.4%

Source: U.S. Census 2008.

Poverty rates represent the percentage of an area’s total population living at or below the poverty threshold established by the U.S. Census Bureau. Based on 2008 Census data, the poverty rate in the counties adjacent to the SCSR ranged from 8.7 to 15.1 percent, and averaged approximately 11.7 percent as compared to the median state poverty rate of 14.4 percent. Only Los Angeles County’s poverty rate of 15.1 percent exceeded that of the state. The median household income in all five counties exceeds that of the state by 16 to 58 percent (or an average of about 39 percent).

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In a review of a fishing survey performed for Santa Monica Bay, OEHHA determined that fishers with the highest incomes also had the highest rate of fish consumption (when measured by the mean and high-level, or 95th percentile, values [OEHHA 2003]). Thus, with respect to potential contamination and health risks from fish consumption, all higher consuming fishers, including those with high incomes, may be subject to exposure to chemical contaminants.

8.6.2.4 Distribution of Fishing Modes

The Department conducts recreational fishing surveys and reports the results to the Commission. Data from the most recent survey is summarized below in Table 8.6-5.

**TABLE 8.6-5
ESTIMATED NUMBER OF ANGLER TRIPS IN 2007**

District	Fishing Mode				Total
	Man-made Structures	Beaches and Banks	Commercial Passenger Fishing Vessels	Private and Rental Boats	
South	1,144,114	611,388	201,947	215,826	2,173,275
Channel	197,230	155,321	34,817	24,643	412,011
Totals	1,341,344	766,709	236,764	240,469	2,585,286

The above tabulation indicates that within the Southern California region, over 81 percent of all fishing trips are conducted from man-made structures (e.g., piers) or from beaches and banks (Department 2008). There are about two dozen fishing piers along the coast within the proposed project area, from Goleta Beach Pier on the north to Imperial Beach Pier on the south. Some are more or less concentrated in densely developed shoreline areas—for example Santa Monica Pier, Venice Pier, Manhattan Beach Pier, Hermosa Beach Pier, and Redondo Beach Pier, within a 10-mile length of the coast north of the Palos Verde Peninsula. Others are located at greater distances from densely populated areas, where urban centers are separated by larger areas such as Camp Pendleton or the Point Mugu military installations. There are also many beaches, breakwaters, and other locations where shoreline fishing is popular and productive. To the extent that these free or very low-cost fishing modes might be used preferentially by low-income or other disadvantaged groups, they represent potential areas that may be affected by the project. These fishing locations are distributed along the entire coastline—some are located in the OEHHA “red zone,” some are located in the “yellow zones,” and some are located in clear areas where there are no OEHHA consumption guidelines.

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8.6.3 Impact Analysis

8.6.3.1 Methodology

Available data sources were reviewed to describe existing conditions in the five counties adjacent to the SCSR for population, ethnicity, and economic factors. These included information on the distribution of non-commercial fishing and data on fish consumption by various racial or ethnic groups. Current recommendations by OEHHA regarding fish consumption advisories, and where these advisories are located, were compared with locations proposed as SMCAs under this project. These data were used to evaluate whether the proposed Project IPA and alternatives would have the potential to result in disproportionately high and adverse impacts to minority population(s) and/or low-income populations, thus potentially creating an environmental justice-related impact.

8.6.3.2 Criteria for Determining Significance

Under CEQA, socioeconomic effects are typically not addressed as an independent topic but may be used in the determination of significance related to other physical changes. Thus, there are no CEQA guidelines or “significance criteria” available to determine the potential for impacts related to socioeconomic effects or the need for subsequent mitigation.

In order to assess compliance of the project with federal guidance and Resources Agency policy, a general analysis for environmental justice was performed based on whether implementation of the proposed Project IPA or alternatives would have a disproportionate effect on minority or low-income populations. The particular issue at hand is whether the proposed SMCAs would tend to displace minority or low-income anglers into areas where health hazards might be incrementally higher relative to their current fishing locations and modes.

8.6.3.3 Environmental Effects

The proposed Project IPA and alternatives propose changes to existing MPA regulations which control commercial fishing, recreational fishing, and other consumptive activities, within defined areas along portions of the SCSR. The potential effects of these changes relative to minority or low-income groups within the project area are as follows:

- As discussed in Section 8.6.2.2, the average of combined ethnic groups for all counties adjacent to the SCSR is approximately 56.19 percent, which is approximately equal to, but slightly less than the state of California as a whole (57.4 percent). Thus, while there may be concentrations of ethnic groups in certain areas, the overall ethnic diversity in the area is similar to that of the state, and implementation of the proposed Project IPA or its alternatives is not expected to disproportionately affect minority groups as the region is viewed as a whole.

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- As discussed in Section 8.6.2.3, in general these coastal counties enjoy a higher standard of living that typically exceeds that of the state of California. The average household income for these counties is above that of the state by approximately 39 percent, and the poverty rate averaged 11.7 percent as compared to 14.4 percent for the state. Further, the average per capita income for these counties was approximately \$31,066, slightly greater than that of the state (\$30,062). Thus, implementation of the proposed Project IPA or alternatives is not expected to disproportionately affect low-income groups.
- Minority and low-income populations participate in extractive recreational and commercial take of fisheries in all five counties, as do other populations. Extraction of these marine resources in the SCSR occurs from facilities such as boats, man-made structures and piers, or from the shoreline itself, and as discussed in Section 5.0, the proposed Project IPA and alternatives will likely result in some displacement of these extractive activities. For example, implementation of the Upper Newport Bay and Crystal Cove SMCAs may displace pier fishing from these areas to nearby piers or shoreline locations to the north and south. The affected fishing points centered on Newport Bay are in the OEHHA “yellow zone” where there are guidelines related to maximum fish consumption to avoid unhealthy pollutant levels. There are available alternative fishing locations in both directions, but some facilities to the north are in the defined “red zone” where OEHHA guidelines recommend lower consumption amounts to avoid unhealthy intake of environmental pollutants. Locations to the south, however (including San Clemente Pier and Oceanside Pier) are free of current OEHHA recommendations. Thus, in response to such displacement, individuals may choose to redistribute their fishing to other available areas. Depending on the area chosen, and the presence of OEHHA recommendations, the choice may or may not involve a change in consumption habits. Access to these other areas and extractive facilities (such as piers or other structures and shorelines) is available to all populations throughout the SCSR. Thus, establishment of an MPA in a specific area may lead to an alteration in fishing behavior, but would not preclude continued fishing as a recreational activity or for consumption purposes. To the extent that there is any effect on the availability of fishing from specific points, it will be experienced by all groups and income levels using that particular point or fishing mode. For these reasons, the project is not expected to affect or restrict fishing activities for minority or low-income populations in a disproportionate manner when compared to other populations.
- In addition to commercial and recreational fishing, minority or low-income groups use beaches for recreation such as swimming, surfing, picnicking, and other activities. The proposed Project IPA and alternatives would not displace or affect these activities.

Based on the above considerations, the potential for environmental justice-related effects due to implementation of the proposed Project IPA or its alternatives is not expected to be significant and disproportional effects on minority or low-income populations are not anticipated to occur.

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**SECTION 9.0
CUMULATIVE IMPACTS**

This section analyzes the environmental effects of the proposed Integrated Preferred Alternative (IPA) in conjunction with past, present, and probable future projects causing related impacts; and examines feasible options for avoiding or lessening the Project's contribution to any significant cumulative impacts.

9.1 REGULATORY SETTING

The State California Environmental Quality Act (CEQA) Guidelines (section 15355) define "cumulative impacts" as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." An Environmental Impact Report (EIR) is required to discuss cumulative impacts of a project "when the project's incremental effect is cumulatively considerable," that is, when a project's incremental effects are significant in the context of the effects of past, present, and probable future projects (State CEQA Guidelines section 15065(a)(3)). The discussion of cumulative impacts must reflect the severity of the impacts and their likelihood of occurrence, but need not be as detailed as the discussion of the effects of the project alone (State CEQA Guidelines section 15130(b)). The cumulative impacts discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact (State CEQA Guidelines section 15130(b)). Further, the State CEQA Guidelines (Section 15151) state that the cumulative impacts analysis should be prepared in light of what is reasonably feasible.

9.2 STUDY METHODS

The State CEQA Guidelines (Sections 15130(a)(1)(A) and (B)) indicate that there are two acceptable methods for analyzing cumulative impacts in an EIR: the "list" method and the "summary of projections," or "plan" method. The "list" method involves considering a project's impacts in conjunction with a list of past, present, and probable future projects producing related impacts. The "summary of projections," or "plan" method, in contrast, involves considering a project's impacts in light of published projections from an adopted general plan, air quality plan, or other planning document. Where the "list" method is utilized, the contents of the list are dictated by the nature of the environmental resources being examined, as well as the location and type of project considered for inclusion in the list (see Section 15130(b)(2) of the State CEQA Guidelines).

Because the proposed Project IPA is a large-scale, regional project affecting an offshore area, there is no suitable general plan or other planning document that provides growth or other projections for the south coast study region (SCSR). The "plan" method is therefore not well

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suited for analysis of the proposed Project IPA. Accordingly, this Draft EIR utilizes the “list” method to analyze the proposed Project’s potential cumulative environmental impacts.

9.2.1 Geographic Scope of Analysis

The list of past, present, and probable projects considered in the analysis of cumulative impacts was geographically limited to those located within the Southern California bight (the bight). The bight represents a distinct oceanographic feature, dominated by a circulating oceanic gyre created from the interaction between southbound currents along the coast and northbound countercurrents slightly farther offshore. The northernmost extent of the bight, Point Conception, also marks the boundary between two biogeographic provinces, each with distinct biota and ecosystems: the Oregonian province to the north, and the San Diegan (or Californian) province to the south. For more information regarding the characteristics of the bight, please refer to Section 7.0 of this Draft EIR. Because the SCSR is fully encompassed within the bight, and because the bight is distinct from the surrounding waters from an oceanographic and biological perspective, the limits of the bight represent reasonable and logical study boundaries for the cumulative impacts analysis.

9.3 CUMULATIVE PROJECTS CONSIDERED

As described more fully in Sections 6.0 through 8.5 of this Draft EIR, the project-specific environmental impacts attributable to the proposed Project are limited, due to the preservation-oriented nature of the project. Because of this, and because of the very large geographic extent of the bight, the list of past, present, and probable future projects considered in this section is not exhaustive, but instead focuses on the most prominent projects in the bight. The physical environment within the bight has the potential to be affected by a variety of human activities, ranging from relatively low-impact, non-consumptive personal recreational uses to large-scale commercial and industrial operations.

9.3.1 Offshore Oil and Gas Development – Federal Waters

The federal Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE, formerly the Minerals Management Service) oversees offshore leases of federal offshore waters for oil and natural gas exploration and extraction. Currently, a portion of the federal offshore leases within the bight are undeveloped but are planned for development by the lease operators. However, some uncertainty exists due to pending litigation (see *Amber Resources et al. v. United States*, U.S. Court of Federal Claims Nos. 02-30C, 04-1822C, and 05-249C [consolidated]) and continuing objections to offshore drilling from the state of California. For the purposes of this analysis, it is assumed that these offshore leases would be developed as projected by the lease operators (see Minerals Management Service 2005). This conservative assumption is intended to portray the maximum probable extent of potential future lease development in the bight; lesser impacts would occur if some of the leases were to remain undeveloped.

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Generally, the planned developments can be classified into two categories: development of undeveloped leases from existing platforms or mobile drilling units, and development of undeveloped leases from new platforms. Other activities, such as decommissioning of existing facilities and abandonment of exploration wells, are also planned, but would involve impacts of limited duration and intensity. Ongoing operations within currently active leases are also projected to continue in the future, and could foreseeably intensify through the construction of additional wells on existing offshore oil platforms.

9.3.1.1 Proposed Development of Undeveloped Leases from Existing Platforms or Mobile Drilling Units

The majority of the probable future oil and gas development projects within the bight would be located offshore of Santa Barbara and Ventura Counties, in the Santa Barbara Channel. This area has substantial existing offshore infrastructure, including platforms, pipelines, and processing facilities, and many of the proposed developments would use these facilities where feasible. The development scenarios would generally involve installation of test wells to determine the optimal location for any extractive activities, followed by installation of development and service wells. The summary descriptions that follow are adapted from an Environmental Information Document released by the Minerals Management Service in 2005 describing potential development scenarios for undeveloped federal lease units offshore of San Luis Obispo, Santa Barbara, and Ventura counties.

9.3.1.1.1 Rocky Point (Plains Exploration and Production Company). The Plains Exploration and Production Company (PXP) operates the Rocky Point Unit, which is comprised of federal Leases OCS-P 0452 and 0453 offshore of Point Conception at the extreme northern boundary of the bight. Proposed development within this unit includes a total of 20 development wells (14 oil wells and 6 service wells), to be drilled from existing platforms Harvest (seven wells), Hermosa (seven wells), and Hidalgo (six wells). Four of these wells have already been installed. The proposed wells would feature horizontal reach of approximately 2.5 to 3.5 miles, and would require several months to install.

Oil would be dehydrated and stabilized on the platforms, then sent to the Gaviota facility via the existing subsea dry oil pipeline. At Gaviota, the oil would be metered, heated, stored temporarily, and then transported via the Plains All-American Pipeline (Plains AAPL) to various refining destinations.

Rocky Point gas would be sweetened on the platforms and 1) sent via pipeline for sales onshore; 2) used to generate electricity and heat for platform operations; 3) sent to shore to fuel the Gaviota co-generation units; and/or 4) injected into the Point Arguello Field, the Rocky Point Field, or both.

9.3.1.1.2 Bonito Unit (Plains Exploration and Production Company). PXP is the operator of the Bonito Unit, which includes Leases OCS-P 0499, 0500, 0443, 0445, 0446,

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0449, and a portion of 0450. The Bonito Unit is located approximately 6 to 15 miles west of Point Arguello in the Santa Maria Basin offshore Santa Barbara County. Proposed extended reach development wells would be drilled from Platform Hidalgo located on Lease OCS-P 0450. Oil would be dehydrated and stabilized on the platform, then sent to the existing Gaviota facility via the existing subsea dry oil pipeline. At the Gaviota facility, the oil would be metered, heated, stored temporarily, and then transported via pipeline to various refining destinations.

9.3.1.1.3 Sword Unit (Samedan Oil Company). Samedan Oil Company currently operates the Sword Unit, which includes Leases OCS-P 0319, 0320, 0322, and 0323A. A portion of Lease OCS-P 0323 was relinquished and the remaining lease was redesignated 0323A to reflect the change. Eleven development wells, including 10 oil wells and 1 service well, would be drilled from Platform Hermosa, located on Lease OCS-P 0316. The wells would be extended reach wells, with horizontal displacements of 3.5 to 4.5 miles. Oil would be dehydrated and stabilized on the platforms, then sent to the Gaviota facility via the existing subsea dry oil pipeline. At Gaviota, the oil would be metered, heated, stored temporarily, and then transported by pipeline to various refining destinations.

9.3.1.1.4 Cavern Point Unit (Venoco, Inc.). Venoco is the current operator of the Cavern Point Unit, which includes Leases OCS-P 0210 and 0527, located off the coast of Ventura County. Potential development of the Cavern Point Unit would occur from existing Platform Gail. Development could include extended reach drilling of 11 wells from Platform Gail, including 10 oil wells and 1 service well (MMS 2005). Produced oil and gas would be transported via Platform Gail's existing off- to onshore pipelines to Venoco's existing Carpinteria Oil and Gas Processing Facility, located in the City of Carpinteria.

9.3.1.2 Development of Other Undeveloped Offshore Leases from New Platforms

9.3.1.2.1 Gato Canyon Unit (Samedan Oil Company). Samedan Oil Company currently operates the Gato Canyon Unit, which is comprised of Leases OCS-P 0460 and 0464. The Gato Canyon Unit would be developed from a new platform proposed in Lease OCS-P 0460, offshore the El Capitan area of the Gaviota Coast. In total, the new platform could potentially include 28 well slots, 20 production wells, and 4 service wells. A new 14-inch wet oil pipeline, an 8-inch gas pipeline, an 8-inch produced water pipeline, and two power cables would connect the platform to the existing ExxonMobil Las Flores Canyon facility (MMS 2005). The pipelines and cable would run from the platform, traversing State Lease PRC 2991.1 to landfall, and then through the existing Santa Ynez Unit pipeline corridor to the Las Flores Canyon facility. Gas would be processed at the Las Flores Canyon Gas Plant and sold to The Gas Company (MMS 2005). Oil would be processed at the Las Flores Canyon facility using existing capacity, and then transported to other locations outside of Santa Barbara County via pipeline. Produced water would be treated at the existing Las Flores Canyon Water Treatment Plant, transported offshore by pipeline, and disposed of at the new platform.

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9.3.2 Offshore Oil and Gas Development – State Waters

In addition to the potential federal energy projects summarized above, several offshore energy projects located in state waters have also been proposed. Because the California Coastal Sanctuary Act of 1994 (codified at Sections 6240 through 6244 of the California Public Resources Code) prohibits the California State Lands Commission (SLC) from entering into new leases for the extraction of oil and gas from state tidelands under normal circumstances, probable future oil and gas projects would be limited to development within existing leases.

9.3.2.1 Redevelopment of Carpinteria Field (Carone Petroleum Corporation)

The Carone Petroleum Corporation has proposed redevelopment of the offshore Carpinteria Field (existing State Leases PRC-4000, PRC-7911, and PRC-3133). The proposed project includes the drilling of up to 25 new production or injection wells from existing Platform Hogan (located in federal waters in Lease OCS-P 0166). Oil and gas production from the leases would be commingled on Platform Hogan with existing production and sent via existing pipelines to the La Conchita facility. After processing, gas and oil would be sold to The Gas Company and other third parties at the La Conchita sales meters, and shipped via existing pipelines. Total production would increase from approximately 1,300 to 1,500 barrels of oil per day (bpd) to approximately 6,000 bpd through January 2020, at which time total production would decline.

9.3.2.2 Ellwood Full Field Development (Venoco, Inc.)

In 2006, Venoco, Inc. applied to the SLC and City of Goleta to fully develop the offshore Ellwood Field. The proposed project includes an adjustment to the State Lease PRC-3242.1 boundary eastward to allow development of the South Ellwood Field from Platform Holly, the drilling of up to 40 new wells, construction of a new 10-mile onshore pipeline from Venoco's Ellwood Onshore Facility to the existing pipeline system at Las Flores Canyon, decommissioning and abandonment of the Ellwood Marine Terminal and offshore loading facility, safety and environmental upgrades of the Ellwood Onshore Facility, and a new power generating plant. If approved, the proposed project is anticipated to have a peak oil production rate of 12,600 bpd, and peak gas production rate of 20 million standard cubic feet per day (mmscfd) after 5 years (County of Santa Barbara 2010a).

9.3.2.3 Resumption of State Lease PRC-421 Development (Venoco, Inc.)

In May 2004, Venoco, Inc. proposed to bring two idle oil production wells within State Lease PRC-421 back into production. The wells are located in the City of Goleta on two adjacent piers. Pier 421-1 supports an idled water and gas injection well, and Pier 421-2 supports an idled oil production well. Venoco proposes to install new production equipment and reactivate the oil well on Pier 421-2, and reactivate the former injection well on Pier 421-1

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for disposal of wastewater and natural gas (County of Santa Barbara 2010b). Based on current projections, the estimated life of the proposed project would be twelve years of oil production; production would be expected to be no more than an average of 700 bpd in the first year, tapering off to approximately 100 bpd by year 12 (SLC 2007).

9.3.2.4 Ellwood Marine Terminal Lease Renewal (Venoco, Inc.)

Venoco, Inc. is currently seeking approval from the SLC for a new State Lease (PRC-3904.1) through February 28, 2013. This would allow Venoco to continue operating the existing Ellwood Marine Terminal located offshore the City of Goleta and lands under the ownership of the University of California, Santa Barbara (SLC 2009). The proposed project does not include construction of any new facilities or modifications to any existing facilities, but would include the potential for increasing crude oil throughput and transportation from current levels to permitted levels (SLC 2009).

9.3.3 Major Port Projects

9.3.3.1 Projects at the Port of Los Angeles

9.3.3.1.1 San Pedro Waterfront Project. The San Pedro Waterfront Project has been proposed by the Port of Los Angeles (PoLA) in an effort to increase public access to the waterfront, allow additional visitor-serving commercial development within the port, accommodate increased demand in the cruise industry, and enhance transportation within and around the port (U.S. Army Corps of Engineers and PoLA 2006). The project would include construction of three new harbors, a network of promenades and publicly accessible open spaces, and expansion of existing commercial and restaurant areas. In addition, a new cruise ship terminal would be constructed, an existing berth would be upgraded to accommodate cruise vessels, and a second cruise ship berth would be installed (construction of the proposed new harbors would eliminate the one existing cruise ship berth). The project would also include various parking and transportation improvements associated with the proposed and expanded port facilities.

The draft National Environmental Policy Act (NEPA)/CEQA environmental document for the project (U.S. Army Corps of Engineers and PoLA 2008) indicates that if approved as proposed, the project would result in significant and unavoidable impacts in the areas of aesthetics, air quality, biological resources (disruption of biological communities), geologic hazards, noise, recreational resources, automobile traffic and circulation (vessel traffic impacts were determined to be less than significant), and water quality. All other impacts were either determined to be less than significant, or would be reduced to a less-than-significant level by proposed mitigation measures.

9.3.3.1.2 Wilmington Waterfront Development Project. The PoLA proposed the Wilmington Waterfront Development Project to enhance the livability and economic viability

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of the Los Angeles Harbor area, the Wilmington community, and the surrounding region. The project is intended to draw visitors to the Wilmington Waterfront, and includes a waterfront park, promenade, and dock, as well as other publicly-oriented improvements to enhance the connection of the Wilmington community with the waterfront. The project also includes constructing approximately 150,000 square feet of light industrial development, approximately 50,000 square feet of commercial retail space, and a one-acre park. One existing roadway would be vacated and another would be realigned, and various streetscape improvements would improve aesthetics and pedestrian connectivity. The project would be constructed in two phases, with completion scheduled in 2020.

According to the CEQA Findings for the project (PoLA 2009a), the Wilmington Waterfront Development Project would result in significant impacts with respect to air quality, greenhouse gas emissions, geology, and noise after incorporation of mitigation measures. All other impacts of the project were either found to be less than significant, or would be mitigated to a less-than-significant level.

9.3.3.1.3 Port of Los Angeles Channel Deepening Project. The PoLA has proposed the Channel Deepening Project to deepen existing navigation channels and berthing areas within the port to a new depth of -53 feet at mean lower low water. In total, the proposal would generate approximately 3 million cubic yards of dredged material, which would be disposed of at undersea locations. Where existing sediments are contaminated and unsuitable for open water disposal, a confined disposal facility would be constructed and utilized to ensure safety. A portion of the dredged material generated by the project would be used to construct a landfill in an existing slip, which would allow safer and more efficient truck and equipment operations. In addition, more than half of the dredged material generated would be used to create approximately 50 acres of shallow water habitat in areas that are currently deeper; this acreage would be placed into the PoLA's mitigation bank. Excess uncontaminated dredge material that would not be used for habitat creation or landfill would be deposited at an existing ocean disposal site operated by the U.S. Environmental Protection Agency (EPA).

As stated in the CEQA Findings for this project (PoLA 2009b), the PoLA Channel Deepening Project would result in significant and unavoidable impacts to air quality because the project would contribute to existing violations of air quality standards in the South Coast Air Basin. All other impacts of the project were either found to be less than significant, or would be reduced to a less-than-significant level through incorporation of mitigation measures.

9.3.3.1.4 Berth 97-109 (China Shipping) Container Terminal Project. The China Shipping Container Terminal Project would increase the PoLA's cargo handling capacity by constructing a new container shipping terminal, and is intended to accommodate projected future increases in containerized cargo volumes passing through the port. Various supporting land and waterway improvements would also be needed, to ensure adequate connectivity to

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land-based rail and truck infrastructure. Supporting land uses near the terminal to allow loading and unloading containers from ships and for storing and transporting containers would also be implemented. The China Shipping Container Terminal Project has been the subject of previously settled litigation, and the first phase of the project has been completed and is currently operational, consistent with the terms of the settlements. If approved, completion of the remaining project phases is estimated to occur in 2012.

The PoLA's evaluation of this project under CEQA included all phases of the project, including both the portion that has already been completed and is currently operational, as well as the unbuilt portion. The PoLA's CEQA Findings for this project (PoLA 2008a) indicate that the China Shipping Container Terminal Project would result in significant impacts related to aesthetics, air quality, biological resources, geology, ground transportation, noise, and "water quality, sediments, and oceanography." All other impacts of the project were either found to be less than significant, or would be reduced to a less-than-significant level through incorporation of mitigation measures.

9.3.3.1.5 Pacific L.A. Marine Terminal LLC Crude Oil Terminal. This project would include construction and operation of a new deep-draft crude oil marine terminal within the port, allowing the port to accept deliveries of crude oil (including partially-refined crude oil) and occasionally marine gas oil. This project would not require dredging, because the proposed location at the PoLA currently features a berth with sufficient water depth to accommodate Very Large Crude Carrier vessels, the largest vessels expected to call at the terminal. The project also includes constructing new tank farm facilities with a total of 4.0 million barrels of capacity, to be located on piers near the terminal. A new 42-inch diameter, high-volume pipeline would convey crude oil from vessels calling at the terminal to the new tank farm facilities. New and existing underground pipelines would connect the new crude oil marine terminal and tank farms to existing onshore refineries in the vicinity of the port.

In the CEQA Findings for this project (PoLA 2008b), the PoLA determined that the Pacific L.A. Marine Terminal LLC Crude Oil Terminal project would result in significant and unavoidable impacts to air quality, biological resources, geology, noise, recreation (diminished recreational experience due to pile driving noise during construction), risk of upset/hazardous materials, and water quality. All other impacts of the project were either found to be less than significant, or would be reduced to a less-than-significant level through incorporation of mitigation measures.

9.3.3.1.6 TraPac Container Terminal Project. The TraPac Container Terminal project would expand and modernize existing container terminal facilities at the PoLA in an effort to accommodate foreseeable increases in containerized cargo volumes passing through the port. Specifically, the project would include an expanded container terminal, deeper berths, longer and improved wharves, replacement of existing cranes, new terminal buildings and facilities, and a new on-dock intermodal rail yard promoting direct transfer of cargo between ship and

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rail. The existing contained terminal would be expanded by approximately 67 acres, and approximately 1,105 linear feet of new wharves would be constructed. Proposed filling operations would create 10 acres of new land, which would partly accommodate the proposed facilities. A vegetated buffer area would also be installed in an effort to provide physical separation between port operations and adjacent residential uses. The project would be implemented in two phases, and would be completed in 2025.

The CEQA Findings for this project prepared by the PoLA (2007), indicate that the TraPac Container Terminal project would result in significant and unavoidable impacts to air quality, biological resources, geology, noise, ground transportation/circulation, and water quality. All other impacts of the project were either found to be less than significant, or would be reduced to a less-than-significant level through incorporation of mitigation measures.

9.3.3.2 Projects at the Port of Long Beach

9.3.3.2.1 Middle Harbor Redevelopment Project. The Port of Long Beach (PoLB) proposed the Middle Harbor Redevelopment Project in an effort to accommodate projected future increases in the volume of containerized cargo passing through the port. Common operations and wharves of two existing terminals would be consolidated into a single terminal, which would be substantially rehabilitated, modernized, and expanded. Proposed filling operations would generate approximately 55 acres of new land, which would be used to accommodate the proposed terminal expansion. Existing ship berths would be lengthened, widened, and deepened to allow access by larger and more modern cargo vessels, and existing, obsolete gantry cranes would be replaced with newer-generation units capable of reaching across these larger vessels. An electrical substation would also be constructed, supplying power to the Middle Harbor container terminal as well as other PoLB facilities.

In its CEQA Findings for the project (PoLB 2009), the PoLB determined that the Middle Harbor Redevelopment Project would result in impacts related to air quality, biological resources, ground transportation, and noise that would remain significant after incorporation of all feasible mitigation measures. All other impacts of the project were either found to be less than significant, or would be reduced to a less-than-significant level through incorporation of mitigation measures.

9.3.3.3 Projects at the Port of San Diego

9.3.3.3.1 North Embarcadero Port Master Plan Amendment. The San Diego Unified Port District is currently in the process of updating the portion of the existing Port Master Plan dealing with the Centre City Embarcadero (Planning District 3). The proposed amendment would adjust the Port Master Plan boundary to incorporate the Navy Pier, and would assign future land uses to the pier. A portion of the port currently designated for commercial recreation would be redesignated as a marine terminal, and an existing parcel would be prepared for development through assigning development designs and standards. A

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new youth hostel and a bayfront shuttle route would be incorporated. The Master Plan Amendment would also update the descriptions of planned land uses within the port, removing references to elements that were included in the 1980 plan but that have not been built and are no longer envisioned. Generally speaking, the proposed amendment would not substantially alter the geographic extent or vessel capacity of the port.

The San Diego Unified Port District has initiated the CEQA review process for the proposed plan amendment, and an EIR for the project is currently in preparation (a Notice of Preparation was issued on October 6, 2009, see San Diego Unified Port District 2009). Because a Draft EIR for the project has not yet been released, no published information regarding the probable environmental effects of the proposed amendment exists. However, the Notice of Preparation indicates that the Draft EIR will evaluate impacts related to land use and planning, traffic, parking, climate change, air quality, hydrology and water quality, public services, and recreation. Thus, it is possible that the project could result in impacts upon these resources. The significance of any impacts, and the feasibility of reducing impacts to a less-than-significant level through adoption of mitigation measures or alternatives, remains unknown at this time.

9.3.4 Water and Wastewater Treatment Projects

9.3.4.1 Seawater Desalination Project at Huntington Beach

Poseidon Resources, a private firm, proposes to construct a 13-acre seawater desalination facility at a coastal location within the city of Huntington Beach in Orange County. The project is intended to help meet the city's potable water demands in the face of growing costs and increasing uncertainty over imported water supplies. The proposed facility would be located adjacent to the existing Huntington Beach Generating Station, an 880-megawatt natural gas-fired electrical generating station, and seawater would be routed to pass through the existing once-through cooling system of the generating station into the desalination facility. Thus, the project would not involve constructing any intake structures, as seawater would enter the plant through the existing intake associated with the generating station. In addition to the desalination facility, the project includes construction of appurtenant features such as an administration building, on-site and off-site pump stations, water distribution lines, and a 66-kilovolt electrical substation. Three existing fuel oil storage tanks currently occupying the project site would be demolished.

The project has not yet been approved, and the City of Huntington Beach released a Draft Subsequent EIR for the project for public review and comment in May 2010 (portions of the document were later revised and recirculated for additional public review in June 2010). According to the Draft Subsequent EIR, the project would result in impacts related to growth inducement and air quality that would remain significant after incorporation of all feasible mitigation measures. All other impacts of the project were either found to be less than

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significant, or would be reduced to a less-than-significant level by incorporating mitigation measures.

9.3.4.2 South Orange Coastal Ocean Desalination Project

The Municipal Water District of Orange County (MWDOC) is currently exploring the feasibility of constructing a seawater desalination facility north of Doheny State Beach in Dana Point, on the inland side of the Pacific Coast Highway. As currently envisioned, the facility would produce approximately 15 million gallons of fresh water per day and more than 15.2 billion gallons of water per year. The project is intended to improve local water reliability and potentially provide up to 25 percent of the potable water demand. Feasibility testing for the proposed project is currently underway, with extended pumping and pilot plant testing scheduled to continue until 2012 (MWDOC 2010). If results are favorable, the MWDOC would initiate efforts to move forward with development of a full-scale project description and EIR.

Because the project is in the preliminary phases and has not been formally proposed, environmental impacts of the project are uncertain. Specific details regarding the location, footprint, technology, and operating procedures for the facility would have bearing on the project's impacts, but these details are unknown as the project has not yet entered the design phase. Thus, attempting to evaluate the environmental impacts of the MWDOC's envisioned facility at Dana Point would be speculative.

9.3.5 Hydrokinetic Power Projects

Hydrokinetic power projects generate energy from the motion of waves or the unimpounded flow of tides, ocean currents, or inland waterways. Although few hydrokinetic power projects have been built or permitted within the U.S. to date, the Federal Energy Regulatory Commission (FERC), which issues licenses for construction, operation, and maintenance of hydropower projects under the authority of the Federal Power Act, has indicated a commitment to support the advancement of these innovative technologies (FERC 2008). To that end, FERC has entered into Memoranda of Understanding (MOUs) with various state agencies in an attempt to coordinate and streamline the regulatory process for hydrokinetic projects. A MOU between FERC and the California Natural Resources Agency, the California Environmental Protection Agency, and the California Public Utilities Commission was executed on May 18, 2010. However, because hydrokinetic power technologies are emerging, it is likely that smaller-scale, pilot projects will be proposed to test these technologies prior to full-scale commercial development.

Two federal preliminary permits have been issued by FERC for hydrokinetic pilot projects off the coast of Southern California, within or near the SCSR. These projects include the South Coast WaveConnect Project proposed by the Pacific Gas and Electric Co., proposed in state waters offshore of Santa Barbara County; and a project proposed by Green Wave

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Energy Corporation off the coast of Santa Catalina Island (FERC 2010). Although these two pilot projects have received preliminary permits, and their construction and operation is probable, FERC criteria for pilot projects stipulate that they must be small-scale, easily removed, and located in non-environmentally sensitive areas. Thus, the likely environmental effects of these pilot projects would be minimal. Full-scale, commercial hydrokinetic energy projects and associated transmission infrastructure would undoubtedly result in greater impacts; however, due to the emerging nature of the technologies involved and the lack of full-scale proposals or siting plans, insufficient information is currently available to consider such potential proposals as “probable future projects” for purposes of CEQA. Additionally, attempting to discern the cumulative environmental impacts of these possibilities would require speculation.

9.3.6 Restoration Projects and Programs

9.3.6.1 Other Marine Protected Area Designations in California

As described in Section 2.0 of this Draft EIR, the California Fish and Game Commission (Commission) is currently working to design and implement revised marine protected area (MPA) networks, consistent with the goals and objectives of the Marine Life Protection Act (MLPA), for the remainder of the California coast and offshore islands. Regulatory revisions have already been adopted for some California waters, including the northern Channel Islands, as well as in the north coast and north central coast MLPA study regions. It is anticipated that MPA networks will be proposed for the central coast and San Francisco Bay study regions, and that the characteristics of these MPA networks would be similar to those of the MPAs currently proposed under the IPA. Therefore, it is reasonable to believe that impacts of these proposals would be similar to those of the proposed Project IPA, although they would occur in different locations. Generally, the combined effects of the past, presently proposed, and probable future MPA designations would create a comprehensive, statewide network of protected areas that would benefit marine resources in the long term.

In 2008, a five-year review of the MPA network on the five northernmost Channel Islands (San Miguel, Santa Rosa, Santa Cruz, Anacapa, and Santa Barbara Islands, where MPAs were designated in 2003) was conducted to determine whether the program had yielded discernible effects within that time. The five-year review (Department et al. 2008) was based on field monitoring efforts, and addressed biological and habitat monitoring, as well as socioeconomic monitoring. With respect to habitat, the review indicated positive results; areas within MPAs experienced increased growth of kelp forests, greater density and biomass of fish and invertebrate species commonly targeted by fishing efforts, larger proportion of large individuals in lobster populations, and a greater proportion of piscivores in the fish community.

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Socioeconomic monitoring results indicated a slight decline in the number of commercial fishing vessels at the islands, and mixed responses in commercial fisheries at the islands. In terms of value, compared to the rest of southern California, the rock crab and sea urchin fisheries at the islands increased more; lobster and squid fisheries increased less; the sea cucumber fishery declined less; and sheephead and rockfish fisheries declined more. Numbers of recreational fishing visits and non-consumptive uses were not substantially affected (Department et al. 2008).

9.3.6.2 Montrose Settlements Restoration Program

The Montrose Settlements Restoration Program is an effort by several federal and state resource trustee agencies, including the National Oceanic and Atmospheric Administration, the U.S. Fish and Wildlife Service, the National Park Service, the California Department of Fish and Game (Department), the California Department of Parks and Recreation, and the SLC, to repair the substantial ecological damage that the bight has sustained due to decades of contamination by DDTs and PCBs from point-source discharges associated with industrial waste disposal. The resource trustee agencies were able to secure funding for the restoration effort by litigating against the entities responsible for the contamination, as allowed under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). The Montrose Settlements Restoration Program was developed in accordance with the CERCLA requirements, which stipulate that monetary damages must be spent by the resource trustee agencies to restore, replace, rehabilitate, or acquire the equivalent of the natural resources that have been injured. The environmental effects of DDTs and PCBs are well documented, and have included catastrophic declines of several avian species as well as human health effects.

The Montrose Settlements Restoration Program, as approved by the resource trustees, calls for implementation of a number of different projects, each of which would benefit specific geographic areas or target species. To restore lost fishing services, the program seeks to create artificial reefs and fishing access improvements, to provide public information, and to augment funds for implementing California's network of MPAs. Funding is specifically allocated to recover and monitor populations of bald eagles and peregrine falcons, two raptor species that were listed as Endangered due to the effects of DDT. In addition, the program contains measures intended to recover Southern California's seabird populations, including restoration of seabird populations on several major offshore islands and rocks, and restoration of alcid (auk) populations on Santa Barbara Island.

In 2005 the resource trustee agencies identified above prepared a joint programmatic Environmental Impact Statement (EIS)/EIR for the proposed restoration effort. In 2006, the Department issued a Notice of Determination stating that the restoration program would not have a significant impact on the environment, and approving the project (Department 2006).

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9.3.6.3 Santa Monica Bay Restoration Plan Update

In 2008, the Santa Monica Bay Restoration Commission updated the Bay Restoration Plan (Santa Monica Bay Restoration Commission 2008), originally adopted in 1995. The program is part of a National Estuary Program administered by the EPA. Santa Monica Bay lies adjacent to a substantial human population in the Los Angeles area, and has been impacted through water quality impairments, resource harvesting, and encroachment. Goals of the Bay Restoration Plan are diverse, and include improving water quality, restoring coastal and marine habitats, protecting public health, and improving public coastal access. During the 13-year period between adoption of the original Bay Restoration Plan and incorporation of the update, the Santa Monica Bay Restoration Commission completed or made substantial progress towards 47 of the 90 major action categories identified in the plan. Ongoing implementation of the plan's policies and objectives is anticipated to continue in the future. Because the plan is a general, planning-level document, and is non-regulatory in nature, and because the primary purpose of the plan is to achieve environmental benefits in the Santa Monica Bay and its watershed, no adverse environmental impacts are anticipated.

9.3.6.4 The Nature Conservancy Trawler Buy-out Program

In June 2006, The Nature Conservancy purchased federal trawling permits and trawling vessels from commercial fishermen in Morro Bay, in the first effort by a private organization to buy out Pacific fishing vessels and permits for conservation purposes. The Nature Conservancy buy-out program is a collaborative effort between government and fishermen that seeks to protect 3.8 million acres of the marine environment. This program is intended to reduce the impacts on seafloor communities from fishing activities, and to recover groundfish populations. Because buyouts eliminate the potential for increased fishing pressure in new locations, this program is not anticipated to result in adverse environmental impacts.

9.4 CUMULATIVE IMPACTS OF THE PROPOSED IPA

Impacts of the proposed Project IPA in conjunction with the other past, present, and probable future projects identified in Section 9.3, above, are presented below. Discussions of consumptive uses and environmental justice provided in sections 5.0 and 8.6, respectively, have been provided for informational purposes only, as social and economic consequences not linked to concomitant changes in the physical environment are not considered to be significant impacts under CEQA (see Section 15131(a) of the State CEQA Guidelines). Thus, these topics have not been included in the discussion of cumulative impacts.

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9.4.1 Air Quality

9.4.1.1 Summary of Project-specific Impacts to Air Quality

The proposed Project IPA would not introduce any new major sources of pollution that would affect sensitive receptors or exceed applicable ambient air quality standards. However, the proposed regulatory changes could potentially cause commercial and recreational fishing vessels to travel longer distances to reach open fishing grounds, resulting in increased combustion emissions from the vessel engines. Project-specific air quality impacts would be less than significant, and are described in greater detail in Section 6.1 of this Draft EIR.

9.4.1.2 Cumulative Impacts to Air Quality

As described in Section 9.3 above, many of the currently proposed and probable future projects within the bight would result in significant air quality impacts despite adoption of all feasible mitigation measures. Existing failures to attain national ambient air quality standards, particularly in the South Coast Air Basin, suggest that past activities have also had a significant impact on air quality. Although the proposed Project IPA would result in an increase in air pollutant emissions, the increase would be very slight, even in relation to the most stringent standards applicable in the bight (the proposed Project IPA would generate less than one-third of the threshold value for daily NO_x emissions in Ventura County Air Pollution Control District's [VCAPCD's] jurisdiction, and a substantially lesser percentage for other pollutants and jurisdictions). In addition, the Project's impacts would occur offshore, where emission sources are not concentrated, sensitive receptors are distant, and topographically-defined air basins are absent. The absence of confined basins would decrease the likelihood that Project-related emissions would become trapped and accumulate. Also, increased pollutant emissions associated with the proposed Project would be spatially distributed throughout the SCSR, which spans several hundred miles, and it is therefore highly unlikely that the entire pollutant load would affect the same receptor or air basin. For these reasons, the proposed Project would not contribute considerably to existing and projected cumulative air quality impacts.

9.4.2 Greenhouse Gases

9.4.2.1 Summary of Project-specific Impacts Related to Greenhouse Gases

The proposed Project IPA would result in slightly increased greenhouse gas (GHG) emissions relative to current levels due to the increased travel distances required for fishing vessels to reach open fishing grounds. This increase would be substantially below the threshold of significance used in the analysis (approximately one percent of the threshold value). For more information, please refer to Section 6.2 of this Draft EIR.

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9.4.2.2 Cumulative Impacts Related to Greenhouse Gases

According to available environmental documentation, none of the currently proposed or reasonably foreseeable projects in the bight would result in significant impacts related to climate change or GHG emissions. Increasing concern and recent legislative actions by the state of California to reduce greenhouse gas emissions suggest that past human activities have resulted in significant impacts with respect to greenhouse gases. Because human-induced climate change is a global phenomenon, attempting to evaluate the significance of GHG emissions based on geographic boundaries or other emission sources that may be proximate is not practical. Because the proposed Project's impacts related to GHG emissions would not be significant in the localized context of California, the increased emissions would be truly insubstantial when considered in a global context. The proposed Project would not contribute considerably to a significant impact related to GHG emissions.

9.4.3 Water Quality

9.4.3.1 Summary of Project-specific Impacts to Water Quality

The proposed Project IPA would have the potential to cause limited, localized water quality impacts by changing the human use patterns (particularly motorized vessels, which could potentially release contaminants into the water) within the SCSR's marine environment; these impacts would be less than significant. The proposed Project IPA would not conflict with existing water quality standards, and would have no effect on any activities permitted by other federal or state agencies. For more information, please refer to Section 6.3 of this Draft EIR.

9.4.3.2 Cumulative Impacts to Water Quality

Based on a review of available environmental documentation, a small number of the proposed and probable future projects within the bight would result in significant impacts to water quality despite the application of feasible mitigation measures. However, due to the very large geographic extent of the SCSR, changes in use patterns would not result in vessels entering or leaving the SCSR in the vast majority of cases. Because the proposed Project would not result in a net increase in motorized vessels operating in the SCSR, the Project would not contribute considerably to any cumulative water quality impacts.

9.4.4 Mineral Resources

9.4.4.1 Summary of Project-specific Impacts to Mineral Resources

No known mineral resources are located within areas proposed for designation as MPAs, and the proposed regulatory changes would not affect existing operations permitted by other federal or state agencies. The proposed Project IPA would not result in any significant

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impacts on mineral resources; please refer to Section 6.4 of this Draft EIR for further information.

9.4.4.2 Cumulative Impacts to Mineral Resources

Based on a review of available environmental documentation, none of the proposed and probable future projects in the bight would result in significant impacts on mineral resources. The proposed Project IPA would not impact these resources, and would therefore not contribute considerably to any cumulative impact on mineral resources.

9.4.5 Biological Resources

9.4.5.1 Summary of Project-specific Impacts to Biological Resources

The proposed Project IPA would have the potential to result in localized, adverse impacts to biological resources within areas where existing MPAs would be removed. Additional fishing effort would affect target species, but would also result in additional incidental take of non-target marine resources. Species with protections beyond those afforded through the Commission's MPA regulations, such as those regulated under the federal Endangered Species Act (ESA) and the California Endangered Species Act (CESA), would retain those additional levels of protection; however, incidental take during otherwise lawful fishing would not be avoidable. These adverse impacts would be compensated for by the long-term conservation benefits provided by the proposed network of MPAs. For further information, please refer to Section 7.1.3 of this Draft EIR.

9.4.5.2 Cumulative Impacts to Biological Resources

Based on a review of available environmental documentation, some of the proposed and probable future projects in the bight would result in significant impacts to biological resources. In most cases, these impacts would be associated with disruption of benthic biological communities. Because the proposed Project IPA's adverse impacts on biological resources would be localized, and would be outweighed by long-term conservation benefits, the proposed Project would not contribute considerably to cumulative impacts on biological resources.

9.4.6 Cultural Resources

9.4.6.1 Summary of Project-specific Impacts to Cultural Resources

The proposed Project IPA would not adversely impact historical resources or archaeological resources. For further information, please refer to Section 8.1 of this Draft EIR.

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9.4.6.2 Cumulative Impacts to Cultural Resources

None of the proposed and probable future projects identified in the bight would result in significant impacts on historic or pre-historic archaeological resources. The proposed Project IPA would not impact these resources, and therefore would not contribute considerably to any cumulative impact on cultural resources.

9.4.7 Public Services and Utilities

9.4.7.1 Summary of Project-specific Impacts Related to Public Services and Utilities

The proposed regulatory changes would not impact any existing utilities, wastewater treatment facilities, storm drainage outfalls, or other existing facilities operating under federal or state permits. The proposed Project IPA would not create the need for new or expanded public services within the SCSR. Consequently, the proposed Project IPA would have no impacts to public services and utilities. For further information, please refer to Section 8.2 of this Draft EIR.

9.4.7.2 Cumulative Impacts Related to Public Services and Utilities

Based on a review of environmental documentation, none of the proposed and probable future projects identified in the bight would result in significant impacts on public services or utilities. The proposed Project IPA also would not result in impacts of this nature, and therefore would not contribute considerably to any cumulative impact on public services or utilities.

9.4.8 Land Use and Recreation

9.4.8.1 Summary of Project-specific Impacts Related to Land Use and Recreation

The proposed Project IPA would have the potential to result in minor shifts in recreational use patterns along the coast of the SCSR, due to consumptive users being displaced from MPAs and selecting new, open fishing grounds. Movement in the opposite direction is foreseeable as well, however, as non-consumptive users such as kayakers, divers, swimmers, and wildlife viewers could find the protected areas desirable. The proposed Project IPA is not anticipated to result in any substantial net change in the beach use patterns of recreational users.

9.4.8.2 Cumulative Impacts Related to Land Use and Recreation

Based on a review of available environmental documentation, none of the proposed and probable future projects within the bight would result in significant land use impacts, and only one project would significantly affect recreation. Because the identified impacts would be site-specific (excessive noise from pile-driving operations diminishing the recreational

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experience along a specific section of coastline near the Port of Los Angeles), and the proposed Project IPA's impacts would not occur at this location, impacts of the Project would not have the potential to combine with the effects of other projects. Therefore, the proposed Project IPA would not contribute considerably to cumulative land use and recreation impacts.

9.4.9 Vessel Traffic

9.4.9.1 Summary of Project-specific Impacts Related to Vessel Traffic

Both within and outside of the proposed MPAs, the proposed Project IPA could potentially result in a minor increase in concentration of vessel traffic attributed to different user groups, which could conceivably create a hazard from having more boats operating in a smaller area. However, captains and operators of each individual vessel would still be subject to international navigation and maritime safety rules, which would not be affected by the proposed regulatory changes. While commercial and recreational fishing vessels may be required to travel slightly longer distances to fish beyond MPA boundaries, non-consumptive marine navigation would not be disrupted by the proposed Project IPA. Impacts of the proposed Project IPA on vessel traffic would be less than significant. For further information, please refer to Section 8.4 of this Draft EIR.

9.4.9.2 Cumulative Impacts Related to Vessel Traffic

Based on available environmental documentation, several of the proposed and probable future projects in the bight would expand the capacity of ports in the region, and would be expected to result in increases in container vessel traffic through the SCSR. However, vessel traffic patterns would remain confined to the existing designated shipping lanes, and would continue to be subject to applicable maritime safety regulations. Because the proposed MPA network would not generate substantial vessel traffic, the Project would not contribute considerably to cumulative vessel traffic impacts.

9.4.10 Hazards and Hazardous Materials

9.4.10.1 Summary of Project-specific Impacts Related to Hazards and Hazardous Materials

The proposed regulatory changes would not require or result in the use of hazardous materials, and would not create potential for any reasonably foreseeable upset or accident condition involving the release of hazardous materials into the environment. Sites containing contaminated sediments were deliberately excluded from proposed MPA boundaries during the IPA development process. However, because marine waters in certain portions of the SCSR are contaminated to the extent where consuming particular fish or shellfish species may be unhealthful, it is possible that commercial or recreational fishing efforts could be

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displaced from areas of acceptable water quality into such contaminated waters. This effect would be less than significant due to the presence of widely published safe consumption advisories informing the public about the risks posed by contaminated seafood, and because the amount of fishing effort likely to be displaced to an area of substantially different water quality would be small. For further information, please refer to Section 8.5 of this Draft EIR.

9.4.10.2 Cumulative Impacts Related to Hazards and Hazardous Materials

Based on a review of available environmental documentation, only one of the proposed and probable future projects within the bight, the Pacific L.A. Marine Terminal LLC Crude Oil Terminal Project, would result in significant impacts relative to hazards and hazardous materials. All offshore projects involving the routine extraction, storage, and transport of oil and natural gas involve certain risks associated with upset/accident conditions. However, the proposed Project IPA would not involve hazardous materials, and therefore would not contribute to this impact. None of the projects identified are anticipated to result in increased risks of exposure to contaminated sources of fish or shellfish.

9.5 CUMULATIVE IMPACTS CONCLUSION

As described above, the proposed Project IPA would not contribute considerably to any cumulatively significant environmental impacts. No mitigation is required.

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**SECTION 10.0
ALTERNATIVES**

Section 15126.6 the State CEQA Guidelines requires that an environmental impact report (EIR) must describe a “range of reasonable alternatives” to the project or its location, which would feasibly attain most of the project objectives while avoiding or substantially lessening the significant effects of a proposed project, and must evaluate the comparative merits of each alternative. The range of alternatives to be considered in an EIR is governed by the “rule of reason”; an EIR must consider a reasonable range of alternatives that will foster informed decision making and public participation. The State CEQA Guidelines also make clear that an EIR must include “sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project.” Among the range of alternatives considered, an EIR must include a “No Project” alternative, which allows decision-makers to compare the impacts of approving a proposed project with the effects of not approving a proposed project (State CEQA Guidelines Section 15126.6(e)(3)(A)). The description of each alternative must be sufficient to allow meaningful evaluation and comparison with a proposed project. Where the No Project alternative is environmentally superior to the other alternatives considered, the lead agency must also identify an environmentally superior alternative among the other alternatives (State CEQA Guidelines Section 15126.6(e)(2)).

As described more fully in Section 2.0 of this Draft EIR, the proposed Project IPA was created by combining elements of three distinct MPA network proposals received through the public participation process. The original three proposals, in addition to the “No Project” alternative, are presented below as possible alternatives to the proposed Project IPA.

Due to its identification as the Commission’s preferred regulatory alternative, the proposed Project IPA has undergone detailed regulatory analysis, to ensure the feasibility of intended use and to ensure compatibility with ongoing activities regulated by other agencies. The three South Coast Regional Stakeholder Groups’ (SCRSG) workgroup proposals haven not undergone this detailed analysis, and the allowed uses and activities within these proposals come directly from the SCRSG workgroups. Although the alternatives have not undergone the same level of analysis as the proposed Project IPA, they were drafted under the same MLPA planning guidelines as the proposed Project, and represent three separate efforts by members of the regional stakeholder group to achieve the objectives and goals set forth by the MLPA. Should one of the alternatives be selected for adoption instead of the proposed Project IPA, it is expected that additional analysis (similar to what was performed for the proposed Project IPA) will be conducted for the adopted alternative.

Because in some cases the boundary differences between options is small, a set of very detailed figures (at scales high enough to display only one to three MPA boundaries per figure for the proposed Project IPA and all four alternatives) has been supplied as Appendix

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A, while Section 10.0 figures show various alternatives compared with existing conditions. Please refer to the figures in Appendix A in addition to the figures supplied specifically for this section. All figures are bound together in a separate volume, including Appendix A figures.

The four alternatives considered in this section are described briefly below.

1. **Alternative 0 (No Project alternative):** Under this alternative, no regulatory action would be taken by the Commission, and the existing MPA regulations would remain in effect and unmodified. A description of the No Project alternative, as well as a comparative evaluation of its merits and environmental impacts, is presented in Section 10.1 below.
2. **Alternative 1:** This alternative was created by the south coast regional stakeholder group (SCRSG) Work Group 1, a group tasked with developing an MPA proposal that met the SAT's guidelines while achieving a high level of cross-interest support. For further information regarding the origin and development of Alternative 1, please refer to the Work Group's narrative rationale for the proposal (SCRSG 2009a). A description of Alternative 1, as well as a comparative evaluation of its merits and environmental impacts, is presented in Section 10.2 below.
3. **Alternative 2:** This alternative was created by the SCRSG Work Group 2. The Work Group intended their proposal to meet design guidelines while balancing them with socioeconomic impacts. For further information regarding the origin and development of Alternative 2, please refer to the Work Group's narrative rationale for the proposal (SCRSG 2009b). A description of Alternative 2, as well as a comparative evaluation of its merits and environmental impacts, is presented in Section 10.3 below.
4. **Alternative 3:** This alternative was created by the SCRSG Work Group 3, and was intended to achieve preferred SAT science guidelines as requested by the BRTF. For further information regarding the origin and development of Alternative 3, please refer to the Work Group's narrative rationale for the proposal (SCRSG 2009c). A description of Alternative 3, as well as a comparative evaluation of its merits and environmental impacts, is presented in Section 10.4 below.

As described in Section 2.0 of this Draft EIR, is a combination and modification of the three original MPA proposals developed by the Blue Ribbon Task Force. However, because the IPA was identified by the Commission as the preferred regulatory proposal, the regulations proposed in the IPA have been refined and fine-tuned to ensure that the proposed designations are consistent with the intended levels of future use within MPAs. Areas proposed for designation as SMRs were reviewed for potential conflicts with existing uses permitted by other federal and state agencies, and the proposals were revised to designate these areas as SMCAs instead, where appropriate.

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The regulations proposed by Alternatives 1, 2, and 3 are presented below. The language submitted by the BRTF (as a result of the scientific, public, and stakeholder-driven process) has been retained. It is possible that the regulatory language and the designated MPA types being proposed under these alternatives could potentially conflict with existing uses permitted by other federal or state agencies that the Commission lacks the authority to regulate (or which it was not the intent of the BRTF to regulate). However, it is anticipated that if the Commission decides to adopt one of the alternatives, appropriate revisions to the proposed regulatory language and designations would be made as applicable and allowed.

10.1 ALTERNATIVE 0 (NO PROJECT ALTERNATIVE)

Under Alternative 0 (No Project alternative), the MPA regulations for the SCSR would not be revised, and the existing network of MPAs established by regulations in 14 CCR 632(b) would remain in effect. The locations of MPAs under this alternative are depicted graphically on Figure 10-1 and on detailed figures provided in Appendix A, and a numerical summary of the extent of these MPAs is presented in Table 10.1-1. The No Project alternative would retain the existing network of 42 MPAs within the SCSR, which include the 13 existing MPAs surrounding the northern Channel Islands. The existing MPA network encompasses approximately 182 square miles of protected areas, representing approximately 7.7 percent of state waters within the SCSR.

**TABLE 10.1-1
SUMMARY OF AREAS PROTECTED UNDER
ALTERNATIVE 0 (NO PROJECT)**

Type of MPA or Restricted Area ¹	Number of Existing MPAs ¹	Number of MPAs Under Alternative 0 ²	Area of Existing MPAs (sq mi) ²	Area of MPAs under Alternative 0 (sq mi) ³	Net Change In MPA Area (sq mi) ³
State Marine Reserve (SMR)	15	15	161.0	161.0	No change
State Marine Conservation Area (SMCA)	19	19	17.95	17.95	No change
State Marine Park (SMP)	8	8	2.68	2.68	No change
MPAs in final configuration	42	42	181.66	181.66	No change

Sources: Department 2010 and Department 2009.

Note:

¹ Type of MPA refers to the type of designation as classified by Section 36710 of the California Public Resources Code.

² Data includes all MPAs within the SCSR, including 13 MPAs surrounding the northern Channel Islands (11 SMRs and 2 SMCAs).

³ Data includes 167.75 square miles of MPAs surrounding the northern Channel Islands (158.67 square miles in SMRs and 9.08 square miles in SMCAs).

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10.1.1 Description of Regulations under No Project Alternative

Under this alternative, no regulatory changes would not be adopted and the existing network of MPAs would continue to operate under current regulations (14 CCR 632(b)). Descriptions of existing MPAs and a summary of their respective regulations on take and other activities are provided below.

10.1.1.1 Refugio SMCA

Description of Existing MPA: The Refugio SMCA is adjacent to Refugio State Beach, located approximately 20 miles north of Santa Barbara along Highway 101. This SMCA has an area of 1.03 square miles, and an alongshore span running 2.6 miles. Depths within the SMCA range from 0 to 51 feet. Boundaries of this SMCA are depicted graphically on Figure 3-10 and on detailed figures provided in Appendix A.

Description of Take Regulations: Take of all living marine resources within the Refugio SMCA is prohibited except for the recreational take of selected species of marine invertebrates, in addition to the commercial take of finfish, some marine invertebrates, and algae (except giant kelp and bull kelp) (14 CCR 632(b)(74)(B)).

Description of Other Regulated Activities: None.

10.1.1.2 Goleta Slough SMP

Description of Existing MPA: The Goleta Slough SMP is located approximately 8 miles west of Santa Barbara, near Goleta, California. The SMP consists of waters below the mean high tide line within the Goleta Slough Ecological Reserve, and has an area of 0.25 square mile. Boundaries of this proposed SMR are depicted graphically on Figure 3-10 and on detailed figures provided in Appendix A.

Description of Take Regulations: Take of all living marine resources is prohibited except the recreational hook and line take of species other than marine aquatic plants from designated areas (14 CCR 632(b)(75)(B)).

Description of Other Regulated Activities: Boating, swimming, wading, and diving are prohibited. Other restrictions exist on accessible areas (14 CCR 632(b)(75)(D)).

10.1.1.3 Big Sycamore Canyon SMR

Description of Existing MPA: The Big Sycamore Canyon SMR is located in the southern end of Ventura County, adjacent to Point Mugu State Park, and approximately 15 miles northwest of Malibu. The Big Sycamore Canyon SMR has an area of 2.22 square miles, and an alongshore span of 2.5 miles. This area is bounded by the 5-fathom depth contour and the 20-fathom depth contour. Depths within the SMR range from 0 to 130 feet. Boundaries of

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this SMR are depicted graphically on Figure 3-11 and on detailed figures provided in Appendix A.

Description of Take Regulations: Take of all living marine resources is prohibited (14 CCR 632(b)(90)(B)).

Description of Other Regulated Activities: Swimming, wading, diving, or using any diving equipment are prohibited (except as authorized for scientific research). Other restrictions exist regarding boating, firearms, public entry, pesticides/herbicides, litter, aircraft, pets, and scientific collection (14 CCR 632(b)(90)(C-L)).

10.1.1.4 Abalone Cove SMP

Description of Existing MPA: The Abalone Cove SMP is located on the eastern edge of the city of Rancho Palos Verdes in Los Angeles County. The SMP has an area of 0.10 square mile, and an alongshore span of 0.8 miles. This area is bounded by the mean high tide line. Depths within the SMP range from 0 to 10 feet. Boundaries of this SMP are depicted graphically on Figure 3-12 and on detailed figures provided in Appendix A.

Description of Take Regulations: Take of all living marine resources is prohibited except the recreational take of finfish by hook and line or spear (14 CCR 632(b)(92)(B)).

Description of Other Regulated Activities: None.

10.1.1.5 Point Fermin SMP

Description of Existing MPA: The Point Fermin SMP is located near the town of San Pedro, in the city of Los Angeles, approximately 5 miles southwest of Long Beach. It runs alongside Point Fermin Park. The SMP has an area of 0.07 square mile, and an alongshore span of 0.6 miles. This area is bounded by the mean high tide line and a distance of 600 feet seaward of mean lower low water. Depths within the SMP range from 0 to 20 feet. Boundaries of this SMP are depicted graphically on Figure 3-12 and on detailed figures provided in Appendix A.

Description of Take Regulations: Take of all living marine resources is prohibited except the recreational take of lobster and selected species of finfish and pelagic finfish to be taken by hook and line or by spearfishing gear only (14 CCR 632(b)(93)(B)).

Description of Other Regulated Activities: None.

10.1.1.6 Bolsa Chica SMP

Proposed Modification of Boundaries: The Bolsa Chica SMP area consists of waters below the mean high tide line within the Bolsa Chica Ecological Reserve, which extends along the

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east side of the Pacific Coast Highway in the city of Huntington Beach. The SMP has an area of 0.25 square mile. Boundaries of this SMP are depicted graphically on Figure 3-12 and on detailed figures provided in Appendix A.

Description of Take Regulations: Take of all living marine resources is prohibited except the recreational hook and line take of species other than marine aquatic plants from designated areas around outer Bolsa Bay (14 CCR 632(b)(94)(B)).

Description of Other Regulated Activities: Boating, swimming, wading, and diving are prohibited. Other restrictions exist pertaining to time of entry, accessible areas and allowed management activities (14 CCR 632(b)(94)(D-F)).

10.1.1.7 Arrow Point to Lion Head Point Invertebrate Area (Special Closure)

Description of Existing MPA: The Arrow Point to Lion Head Point Invertebrate Area (Special Closure) is located off the northeastern shore of Santa Catalina Island. This area is bounded by the mean high tide line and a distance of 1,000 feet seaward of mean lower low water. It encompasses an area of 0.54 mile, and has an alongshore span running 2.9 miles. Depths within the Special Closure Area (SCA) range from 0 to 259 feet. The boundaries of the SMR are depicted graphically on Figure 3-13 and on detailed figures provided in Appendix A.

Description of Take Regulations: Recreational take of invertebrates is prohibited. Take of other living marine resources is allowed (14 CCR 632(b)(95)(B)).

Description of Other Regulated Activities: None.

10.1.1.8 Catalina Marine Science Center SMR

Description of Existing MPA: The Catalina Marine Science Center SMR is located on the northern shore of Santa Catalina Island. The SMR covers an area of 0.06 square mile, and an alongshore span running 0.8 mile. This area is bounded by the mean high tide line. Depths range from 0 to 111 feet. The boundaries of the SMCA are depicted graphically on Figure 3-13 and on detailed figures provided in Appendix A.

Description of Take Regulations: Take of all living marine resources is prohibited (14 CCR 632(b)(96)(B)).

Description of Other Regulated Activities: Restrictions exist pertaining to anchoring and mooring of vessels, as well as scientific collection (14 CCR 632(b)(96)(B)).

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10.1.1.9 Farnsworth Bank SMCA

Description of Existing MPA: The Farnsworth Bank SMCA is located off the southwest shore of Santa Catalina Island in open water. The SMCA covers an area of 1.68 square miles, and an alongshore span running 1.2 miles. Depths range from 135 to 403 feet. The boundaries of the SMCA are depicted graphically on Figure 3-13 and on detailed figures provided in Appendix A.

Description of Take Regulations: Take of purple coral is prohibited. Take of other living marine resources is allowed (14 CCR 632(b)(97)(B)).

Description of Other Regulated Activities: None.

10.1.1.10 Lover's Cove SMCA

Description of Existing MPA: The Lover's Cove SMCA is located on the southeast shore of Santa Catalina Island. The SMCA covers an area of 0.02 square mile, and an alongshore span running 0.3 miles. This area is bounded by the mean high tide line and a distance of 100 yards seaward of mean lower low tide. Depths range from 0 to 10 feet. The boundaries of the SMCA are depicted graphically on Figure 3-13 and on detailed figures provided in Appendix A.

Description of Take Regulations: Take of all living marine resources is prohibited except the commercial take of finfish and kelp (14 CCR 632(b)(97)(B)).

Description of Other Regulated Activities: None.

10.1.1.11 Upper Newport Bay SMP

Description of Existing MPA: The Upper Newport Bay SMP area consists of waters below the mean high tide line within the Upper Newport Bay Ecological Reserve, which is located in the city of Newport Beach. The SMP covers an area of 1.10 square miles. The boundaries of this SMP are depicted graphically on Figures 3-12 and 3-14 and on detailed figures provided in Appendix A.

Description of Take Regulations: Take of all living marine resources is prohibited except the recreational hook and line take of species other than kelp (14 CCR 632(b)(99)(B)).

Description of Other Regulated Activities: Restrictions exist regarding: swimming areas, boat speed, shoreline access and access (14 CCR 632(b)(99)(C-F)).

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10.1.1.12 Robert E. Badham SMCA

Description of Existing MPA: The Robert E. Badham SMCA is located adjacent to the city of Corona Del Mar. The SMCA covers an area of 0.02 square mile, and has an alongshore span of 0.6 miles. This area is bounded by the mean high tide line and a distance of 200 feet seaward of mean lower low water. Depths within the SMCA range from 0 to 10 feet. The boundaries of the SMCA are depicted graphically on Figures 3-12 and 3-14 and on detailed figures provided in Appendix A.

Description of Take Regulations: Take of all living marine resources is prohibited except the recreational take of lobster, and select species of pelagic finfish by hook and line or by spearfishing gear only. The commercial take of spiny lobster is also allowed (14 CCR 632(b)(100)(B)).

Description of Other Regulated Activities: None.

10.1.1.13 Crystal Cove SMCA

Proposed Modification of Boundaries: The Crystal Cove SMCA is located approximately halfway between Newport Beach and Laguna Beach. It runs adjacent to Crystal Cove State Park. The SMCA covers an area of 1.80 square miles, and has an alongshore span running 3.1 miles. This area is bounded by the mean high tide line and the 20-fathom depth contour. Depths within the SMCA range from 0 to 136 feet. The boundaries of the SMCA are depicted graphically on Figures 3-12 and 3-14 and on detailed figures provided in Appendix A.

Description of Take Regulations: Take of all living marine resources is prohibited except the recreational take of selected species of invertebrates and finfish. The commercial take of finfish, selected species of invertebrates, and algae (except giant kelp and bull kelp) are also allowed (14 CCR 632(b)(101)(B).)

Description of Other Regulated Activities: None.

10.1.1.14 Irvine Coast SMCA

Description of Existing MPA: The Irvine Coast SMCA is located approximately halfway between Newport Beach and Laguna Beach. It is adjacent to Crystal Cove State Park. The SMCA covers an area of 0.35 square mile, and an alongshore span running 3.1 miles. This area is bounded by the mean high tide line and a distance of 600 feet seaward of mean lower low water. Depths within the SMCA range from 0 to 14 feet. The boundaries of the SMCA are depicted graphically on Figures 3-12 and 3-14 and on detailed figures provided in Appendix A.

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Description of Take Regulations: Take of all living marine resources is prohibited except the recreational take of lobster and select species of pelagic finfish and finfish. Finfish shall be taken by hook and line or by spearfishing gear only. The commercial take of spiny lobster is also allowed (14 CCR 632(b)(102)(B)).

Description of Other Regulated Activities: None.

10.1.1.15 Heisler Park SMR

Description of Existing MPA: The Heisler Park SMR is located adjacent to the City of Laguna Beach. It overlaps with the Laguna Beach SMCA and is adjacent to Heisler Park. The SMR covers an area of 0.04 square mile, and has an alongshore span running 0.4 miles. Depths within the SMCA range from 0 to 11 feet. The boundaries of the SMR are depicted graphically on Figure 3-15 and on detailed figures provided in Appendix A.

Description of Take Regulations: Take of all living marine resources is prohibited (14 CCR 632(b)(104)(B)).

Description of Other Regulated Activities: Boats may be launched and retrieved only in designated areas and may be anchored within the reserve only during daylight hours (14 CCR 632(b)(104)(C)).

10.1.1.16 Laguna Beach SMCA

Description of Existing MPA: The Laguna Beach SMCA is located adjacent to the City of Laguna Beach, and is contiguous to the south end of Heisler Park SMR. The SMCA covers an area of 0.77 square mile, and an alongshore span running 4.4 miles. This area is bounded by the mean high tide line and a distance of 600 feet seaward of mean lower low water. Depths range from 0 to 41 feet. The boundaries of the SMCA are depicted graphically on Figure 3-14 and on detailed figures provided in Appendix A.

Description of Take Regulations: Take of all living marine resources is prohibited except the recreational take of lobster and selected species of pelagic finfish and finfish (14 CCR 632(b)(103)(B)).

Description of Other Regulated Activities: None.

10.1.1.17 South Laguna Beach SMCA

Description of Existing MPA: The South Laguna Beach SMCA is located adjacent to the City of Laguna Beach, and is contiguous to the southern boundary of Laguna Beach SMCA. The SMCA covers an area of 0.05 square mile, and has an alongshore span running 0.4 miles. This area is bounded by the mean high tide line and the 20-foot depth contour. Depths

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range from 0 to 22 feet. The boundaries of the SMCA are depicted graphically on Figure 3-14 and on detailed figures provided in Appendix A.

Description of Take Regulations: Take of all living marine resources is prohibited except the recreational take of lobster and selected species of finfish. Finfish shall be taken by hook and line or spearfishing gear only. The commercial take of spiny lobster is also allowed (14 CCR 632(b)(103)(B)).

Description of Other Regulated Activities: None.

10.1.1.18 Niguel SMCA

Description of Existing MPA: The Niguel SMCA is located along the southern coast of the City of Laguna Niguel, and a portion of it runs adjacent to Salt Creek Beach Park. The SMCA covers an area of 0.49 square mile, and an alongshore span running 2.0 miles. This area is bounded by the mean high tide line and a distance of 1,200 feet seaward of mean lower low water. Depths range from 0 to 53 feet. The boundaries of the SMCA are depicted graphically on Figure 3-14 and on detailed figures provided in Appendix A.

Description of Take Regulations: Take of all living marine resources is prohibited except the recreational take of lobster and select species of pelagic finfish and finfish. Finfish shall be taken by hook and line or by spearfishing gear only. The commercial take of spiny lobster is also allowed (14 CCR 632(b)(106)(B)).

Description of Other Regulated Activities: None.

10.1.1.19 Dana Point SMCA

Description of Existing MPA: The Dana Point SMCA is located adjacent to the City of Dana Point, and is contiguous with the southern boundary of Niguel SMCA.. The SMCA covers an area of 0.20 square mile, and has an alongshore span running 0.8 miles. This area is bounded by the mean high tide line and a distance of 1,200 feet seaward of mean lower low water. Depths range from 0 to 34 feet. The boundaries of the SMCA are depicted graphically on Figure 3-14 and on detailed figures provided in Appendix A.

Description of Take Regulations: Take of all living marine resources is prohibited except the recreational take of lobster and selected species of pelagic finfish and finfish below the mean lower low-water mark. Finfish shall be taken by hook and line or by spearfishing gear only. The commercial take of spiny lobster is also allowed (14 CCR 632(b)(107)(B)).

Proposed Modification of Other Regulated Activities: Restrictions exist pertaining to take and impact in the intertidal zone, scientific collection, and allowed management activities (14 CCR 632(b)(107)(C-G)).

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10.1.1.20 Doheny SMCA

Description of Existing MPA: The Doheny SMCA is located adjacent to the community of Capistrano Beach, and runs alongside Doheny State Beach. The SMCA covers an area of 0.14 square mile, and an alongshore span running 1.1 miles. This area is bounded by the mean high tide line and a distance of 1,500 feet seaward of mean lower low water. Depths range from 0 to 10 feet. The boundaries of the SMCA are depicted graphically on Figure 3-14 and on detailed figures provided in Appendix A.

Description of Take Regulations: Take of all living marine resources is prohibited except the recreational take of select species of invertebrates and finfish. Commercial take is allowed (14 CCR 632(b)(109)(B)).

Description of Other Regulated Activities: None.

10.1.1.21 Doheny Beach SMCA

Description of Existing MPA: The Doheny Beach SMCA is located adjacent to the community of Capistrano Beach, and runs alongside the Doheny State Beach. The SMCA covers an area of 0.19 square mile, and an alongshore span running 1.2 miles. This area is bounded by the mean high tide line and a distance of 600 feet seaward of mean lower low water. Depths range from 0 to 14 feet. The boundaries of the SMCA are depicted graphically on Figure 3-14 and on detailed figures provided in Appendix A.

Description of Take Regulations: Take of all living marine resources is prohibited except the recreational take of lobster and selected species of pelagic finfish and finfish. Finfish shall be taken by hook and line or by spearfishing gear only. The commercial take of spiny lobster is also allowed (14 CCR 632(b)(108)(B)).

Description of Other Regulated Activities: None.

10.1.1.22 Agua Hedionda Lagoon SMR

Description of Existing MPA: The Agua Hedionda Lagoon SMR adjacent to the City of Carlsbad, and consists of waters below the mean high tide line within the Agua Hedionda Lagoon Ecological Reserve. The SMR covers an area of 0.04 square mile. The boundaries of the SMR are depicted graphically on Figures 3-14 and 3-15 and on detailed figures provided in Appendix A.

Description of Take Regulations: Take of all living marine resources is prohibited (14 CCR 632(b)(111)(B)).

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Description of Other Regulated Activities: Other restrictions and allowances exist pertaining to management activities for fish and wildlife, flood control, vector control, as well as authorized operation and maintenance activities (14 CCR 632(b)(111)(C)).

10.1.1.23 Batiquitos Lagoon SMP

Description of Existing MPA: The Batiquitos Lagoon SMP is located between the cities of Carlsbad and Encinitas. It consists of waters below the mean high tide line within the Batiquitos Lagoon Ecological Reserve. The SMP covers an area of 0.28 square mile. The boundaries of the SMP are depicted graphically on Figure 3-15 and on detailed figures provided in Appendix A.

Description of Take Regulations: Take of all living marine resources is prohibited except the recreational take of finfish by hook and line from shore (14 CCR 632(b)(112)(B)).

Description of Other Regulated Activities: Boating, swimming, wading, and diving are prohibited. Other restrictions exist pertaining to management activities for fish and wildlife, flood and vector control, as well as authorized operation and maintenance activities (14 CCR 632(b)(112)(C-D)).

10.1.1.24 Encinitas SMCA

Description of Existing MPA: The Encinitas SMCA is located adjacent to the City of Encinitas. The SMCA covers an area of 0.11 square mile, and an alongshore span running 0.9 miles. This area is bounded by the mean high tide line and a distance of 600 feet seaward of mean lower low water. Depths range from 0 to 10 feet. The boundaries of the SMCA are depicted graphically on Figure 3-15 and on detailed figures provided in Appendix A.

Description of Take Regulations: Take of all living marine resources is prohibited except the commercial and recreational take of finfish (14 CCR 632(b)(113)(B)).

Description of Other Regulated Activities: None.

10.1.1.25 Cardiff-San Elijo SMCA

Description of Existing MPA: The Cardiff-San Elijo SMCA is located near the community of Cardiff-By-The-Sea, and runs southeast of and contiguous with the Encinitas SMCA. The SMCA covers an area of 1.21 square miles, and an alongshore span running 2.1 miles. This area is bounded by the mean high tide line and a distance of 3,000 feet seaward of mean lower low water. Depths range from 0 to 59 feet. The boundaries of the SMCA are depicted graphically on Figure 3-15 and on detailed figures provided in Appendix A.

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Description of Take Regulations: Take of all living marine resources is prohibited except for select species of invertebrates and finfish. Commercial take is allowed (14 CCR 632(b)(114)(B)).

Description of Other Regulated Activities: None.

10.1.1.26 San Elijo Lagoon SMP

Description of Existing MPA: The San Elijo Lagoon SMP is located near the community of Cardiff-By-The-Sea, and runs southeast of and contiguous with the Cardiff-San Elijo SMCA. This area consists of waters below the mean high tide line within the San Elijo Lagoon Ecological Reserve. The SMCA covers an area of 0.44 square mile. The boundaries of the SMP are depicted graphically on Figure 3-15 and on detailed figures provided in Appendix A.

Description of Take Regulations: Take of all living marine resources is prohibited except the recreational take of finfish by hook and line from shore (14 CCR 632(b)(115)(B)).

Description of Other Regulated Activities: Boating, swimming, wading, and diving are prohibited. Other restrictions exist pertaining to management activities for fish and wildlife, flood control and vector control, as well as authorized operation and maintenance activities (14 CCR 632(b)(115)(C-E)).

10.1.1.27 San Dieguito Lagoon SMP

Description of Existing MPA: The San Dieguito Lagoon SMP is located between the cities of Solana Beach and Del Mar. This SMP consists of waters below the mean high tide line within the San Dieguito Lagoon Ecological Reserve. The SMP covers an area of 0.19 square mile. The boundaries of the SMP are depicted graphically on Figure 3-15 and on detailed figures provided in Appendix A.

Description of Take Regulations: Take of all living marine resources is prohibited except the recreational take of finfish by hook and line from shore and the Grand Avenue Bridge (14 CCR 632(b)(116)(B)).

Description of Other Regulated Activities: Boating, swimming, wading, and diving are prohibited. Other restrictions exist pertaining to access to the California least tern island, hours of entry, sample collections, and allowed management activities (14 CCR 632(b)(116)(C-G)).

10.1.1.28 San Diego-Scripps SMCA

Description of Existing MPA: The San Diego-Scripps SMCA is located near the community of La Jolla on either side of the Scripps pier. The SMCA covers an area of 0.11

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square mile, and an alongshore span running 0.5 mile. This area is bounded by the mean high tide line and a distance of 1,000 feet seaward of mean lower low water. Depths range from 0 to 10 feet. The boundaries of the SMCA are depicted graphically on Figure 3-15 and on detailed figures provided in Appendix A.

Description of Take Regulations: Take of all living marine resources is prohibited except the commercial and recreational take of finfish (14 CCR 632(b)(117)(B)).

Description of Other Regulated Activities: Licensees of the Regents of the University of California and all officers, employees, and students of such university may take, for scientific purposes, any invertebrate or specimen of marine plant life without a permit from the department (14 CCR 632(b)(117)(C)).

10.1.1.29 La Jolla SMCA

Description of MPA: The La Jolla SMCA is located near the community of La Jolla, and runs south of and contiguous with the San Diego-Scripps SMCA. The SMCA covers an area of 0.53 square mile, and an alongshore span running 1.1 miles. This area is bounded by the mean high tide line. Depths range from 0 to 214 feet. The boundaries of the SMCA are depicted graphically on and on detailed figures provided in Appendix A 3-15.

Description of Take Regulations: Take of all living marine resources is prohibited except the commercial take of squid for bait by use of hand-held scoop net west of a line drawn due north from Goldfish Point (14 CCR 632(b)(118)(B)).

Description of Other Regulated Activities: Boats may be launched and retrieved only in designated areas and may be anchored within the conservation area only during daylight hours (14 CCR 632(b)(118)(C)).

10.1.1.30 Mia J. Tegner SMCA

Description of Existing MPA: The Mia J. Tegner SMCA is located adjacent to Point Loma, off the Cabrillo National Monument. The SMCA covers an area of 0.02 square mile, and has an alongshore span running 0.6 miles. This area is bounded by the mean high tide line and a distance of 150 feet seaward of mean lower low water. Depths range from 0 to 10 feet. The boundaries of the SMCA are depicted graphically on Figure 3-15 and on detailed figures provided in Appendix A.

Description of Take Regulations: Take of all living marine resources is prohibited except the recreational take of finfish and commercial take of finfish and marine aquatic plants (14 CCR 632(b)(119)(B)).

Description of Other Regulated Activities: None.

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10.1.2 Environmental Impacts of the No Project Alternative

As described above, the No Project alternative proposes no new MPAs; all existing designations and related regulations would remain, including the currently allowable uses within existing MPAs. In accordance with Section 15125(e)(3)(A) of the State CEQA Guidelines, the analysis of the No Project alternative considers the environmental impacts that would occur if the proposed Project were not approved and the existing MPA regulations continued into the future.

10.1.2.1 Consumable Living Marine Resource Products

All existing MPAs would be retained without modification under the No Project alternative, and no additions, removals, boundary adjustments, or regulatory changes would occur. Thus, no fishing or aquaculture effort would be displaced by new and expanded MPAs under this alternative. However, if the existing MPA regulations were to continue into the future, it is foreseeable that the ongoing declines in marine ecosystems, which the MLPA was intended to address, would continue to negatively impact the SCSR's fisheries. In the long term, the No Project alternative would therefore result in negative effects on consumptive uses of the SCSR's marine environment.

10.1.2.2 Air Quality

Alternative 0, which would maintain the existing MPA boundaries and take regulations, would not result in any short-term changes in air pollutant emissions. In the long-term, it is possible that changes in use patterns due to reduced vitality of the SCSR's fisheries would result in changes in pollutant emissions. The nature of these potential changes is unknown, and emissions could potentially increase (due to increased hours at sea or greater travel distances) or decrease (due to diminished interest in the depleted fisheries). In either case, given the relative scale of air emissions from fishing vessels, the effect is not likely to be substantial.

10.1.2.3 Global Climate Change and Greenhouse Gas Emissions

Because the effects of Alternative 0 on GHG emissions would pertain solely to mobile source emissions associated with vessel traffic patterns, GHG emissions under this alternative would be closely correlated with emissions of other air pollutants, discussed in Section 10.1.2.2 above. Effects of the No Project alternative on GHG emissions would be substantially similar to those of the proposed Project IPA. However, because this alternative would not result in increased kelp bed habitat, the rate of biological GHG uptake by algae in the SCSR would be lesser under this alternative compared to the proposed Project IPA.

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10.1.2.4 Water Quality

Because the No Project alternative, would not propose any regulatory changes, this alternative would not conflict with existing water quality standards or regulatory requirements. No new or altered sources of water pollution would be introduced into the SCSR. This alternative would not directly change fishing or recreation locations, alter vessel operations within the current MPAs, nor would it cause short-term shifts in consumptive or non-consumptive uses at the existing MPAs. Although some long-term shifts in use could be expected due to the continued decline of marine ecosystems under this alternative, effects on water quality are not expected to be substantial.

10.1.2.5 Mineral Resources

The No Project alternative would not result in any changes to the regulatory framework dictating permitted and prohibited offshore activities, and therefore would not result in any foreseeable impacts to either the ongoing exploration and extraction of offshore mineral resources or the future availability of untapped resources.

10.1.2.6 Biological Resources

The MLPA is a statute intended largely for the protection of biological resources. Protecting the natural diversity and abundance of marine life, as well as the structure, function, and integrity of marine ecosystems, is identified in the act as a goal of the MPA system, as is sustaining, conserving, protecting, and rebuilding marine life populations, including those of economic value. By failing to improve the shortcomings of the existing MPA network, the No Project alternative would allow ongoing declines in marine ecosystems to continue unabated. The marine environment supports a wide diversity of marine life, including declining species that have federal and state special status designations, as well as those that are economically important and commercially harvested. If the No Project alternative were adopted, these species would be expected to continue to decline below existing levels. Because the proposed Project IPA would be expected to benefit these species, impact of the No Project alternative on biological resources would be greater than those of the proposed Project IPA.

10.1.2.7 Cultural Resources

The No Project alternative would not result in a change in existing conditions. Neither Alternative 0 nor the proposed Project IPA would result in direct physical alteration of the ocean floor or the bottom of relevant bays or estuaries, and therefore would not directly disturb any historical, archaeological or paleontological resources present, whether they be recorded, known but unrecorded, or yet unknown. Alternative 0 is expected to result in slightly more potential impacts to submerged cultural resources than the proposed Project IPA because far less acreage would be protected by no-take regulations; these regulations

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result in an incidental reduction in anchoring and trawling impacts that can affect submerged cultural resources, if present. However, boating, diving, and associated anchoring would be allowed in most no-take MPAs regardless of whether the IPA or Alternative 0 is selected, and the impacts of the No Project alternative on cultural resources would be substantially similar to those of the proposed Project IPA.

10.1.2.8 Public Services and Utilities

The No Project alternative would not result in any changes to the existing conditions within the SCSR with regard to the need or availability of utilities or public services, and would therefore have no impact with regard to this resource.

10.1.2.9 Land Use and Recreational Resources

Under Alternative 0, the No Project alternative, existing protections and designations would be maintained. Because no regulatory or land use changes are proposed, this alternative would result in no impacts on land use or recreational resources.

10.1.2.10 Vessel Traffic

The No Project alternative would not change current conditions in the SCSR with respect to vessel traffic, and would therefore not impact this resource.

10.1.2.11 Hazards and Hazardous Materials

Because the No Project alternative would not involve any changes to the existing MPA regulations, no changes in the use of hazardous materials within the SCSR would result. This alternative would avoid the proposed Project IPA's impacts associated with displacement of fishing effort into areas of poor water quality and fish consumption advisories. Overall, impacts of the No Project alternative related to hazards and hazardous materials would be slightly less than those of the proposed Project IPA.

10.1.2.12 Environmental Justice

Because the No Project alternative would not result in any changes to the existing conditions within the SCSR, and would not require any discretionary action on the part of the Commission, this alternative would not create an inconsistency with any policy related to Environmental Justice.

10.1.2.13 No Project Alternative Summary

As described in the subsections above, the No Project alternative would not result in any short-term changes in the existing conditions in the SCSR, and would not result in environmental impacts on most resources. In addition, this alternative would lessen some of

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the effects of the proposed Project IPA related to hazards. However, the No Project alternative would not comply with the MLPA's mandate to improve the existing network of MPAs, and would not achieve any of the project objectives set forth in Section 3.0 of this Draft EIR. Existing declines in biological resources, which the proposed Project IPA is intended to ameliorate, would foreseeably worsen under this alternative.

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10.2 ALTERNATIVE 1

Under Alternative 1 the existing MPA regulations at 14 CCR 632(b) would be modified, altering the boundaries, designations, and conditions governing the MPA network within the SCSR. The locations of MPAs under this alternative are depicted graphically on Figure 10-3, and a numerical summary of the changes in protected area that would occur under this alternative are presented in Table 10.2-1. The regulatory changes proposed under Alternative 1 would expand the existing MPA network to encompass a total of 50 MPAs, compared to 42 under existing regulations, including the existing 13 MPAs surrounding five of the Channel Islands. The total extent of areas protected would increase from approximately 182 square miles under existing conditions to approximately 361 square miles under Alternative 1.

**TABLE 10.2-1
SUMMARY OF AREAS PROTECTED UNDER ALTERNATIVE 1²**

Type of MPA or Restricted Area ¹	Number of Existing MPAs	Number of MPAs Under Alternative 1	Area of Existing MPAs (sq mi)	Area of MPAs under Alternative 1 (sq mi)	Net Change In MPA Area (sq mi)
State Marine Reserve (SMR)	15	33	161.0	307.76	+146.76
State Marine Conservation Area (SMCA)	19	16	17.95	51.58	+33.63
State Marine Park (SMP)	8	1	2.68	1.53	-1.15
All MPAs in final configuration	42	50	181.66	360.87	+179.24

Sources: Department 2010 and Department 2009.

Note:

¹ Type of MPA refers to the type of designation as classified by Section 36710 of the California Public Resources Code.

² Data includes all MPAs within the SCSR, including those surrounding the northern Channel Islands.

10.2.1 Description of Regulatory Changes under Alternative 1

The changes to existing MPA boundaries and, allowed and prohibited uses that would occur under Alternative 1, are described below.

10.2.1.1 Point Conception SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: The Point Conception SMR has been proposed in an area of the SCSR with no existing MPA. This proposed SMR would extend due west from Point Conception, and east along the coast just past Cojo Bay; the offshore boundary would be the limits of state jurisdiction. This SMR is the second largest MPA being proposed under Alternative 1, with an area of 22.51 square miles and an alongshore span of 5.27 miles. Depths within the proposed SMR would range from 0 to 489 feet. Boundaries of the Point

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Conception SMR as proposed under Alternative 1 are depicted graphically on Figure 10-4 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 1, take of all living marine resources would be prohibited.

Proposed Modification of Other Regulated Activities: None.

Implementation Notes: This SMR is not intended to regulate, and would not regulate, activities and operations of the U.S. military.

10.2.1.2 Kashtayit SMP

Classification: Proposed Addition.

Proposed Modification of Boundaries: The Kashtayit SMP has been proposed in an area of the SCSR with no existing MPA. The proposed SMP is located approximately 10.50 miles east of the proposed Point Conception SMR, and is adjacent to Gaviota State Park. The proposed SMP would encompass an area of 1.53 square miles, with depths ranging from 0 to 160 feet. The alongshore span would run 1.42 miles. Boundaries of the Kashtayit SMP as proposed under Alternative 1 are depicted graphically on Figure 10-4 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 1, recreational take of all finfish, marine invertebrates except for rock scallops and mussels, and giant kelp by hand harvest would be allowed.

Proposed Modification of Other Regulated Activities: None.

10.2.1.3 Refugio SMCA

Classification: Proposed Removal.

Proposed Modification of Boundaries: This is an existing SMCA that has been proposed for elimination under Alternative 1. For a description of this existing SMCA, refer to the discussion of the No Project alternative in Section 10.1.1.1 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations allowing recreational take of marine invertebrates; commercial take of finfish, marine invertebrates, and algae; and prohibiting take of all other living marine resources (14 CCR 632(b)(74)(B)) would be lifted.

Proposed Modification of Other Regulated Activities: None.

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10.2.1.4 Mikiw SMCA

Classification: Proposed Addition.

Proposed Modification of Boundaries: The Mikiw SMCA has been proposed in an area of the SCSR with no existing MPA. The proposed SMCA is located along the Gaviota Coast, northwest of the proposed Helo SMR. It has an area of 2.58 square miles, and an alongshore span running 1.91 miles, with depths ranging from 0 to 162 feet. Boundaries of the Mikiw SMCA as proposed under Alternative 1 are depicted graphically on Figure 10-4 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 1, take of living marine resources would be limited to:

1. The recreational take of finfish by spearfishing.
2. The commercial take of giant kelp by mechanical harvest.

Proposed Modification of Other Regulated Activities: None.

10.2.1.5 Helo SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: The Helo SMR has been proposed in an area of the SCSR with no existing MPA. The proposed SMR is located near the City of Goleta and the University of California, Santa Barbara (UCSB). The proposed SMR extends from UCSB's Campus Point westward along the Gaviota Coast, and more than one mile east toward the proposed Goleta Slough SMR. The offshore boundary of the proposed Helo SMR extends south to the offshore limits of state jurisdiction. It has an area of 11.78 square miles and an alongshore span of 3.13 miles, with depths ranging from 0 to 701 feet. Boundaries of the Helo SMR as proposed under Alternative 1 are depicted on geographically on Figure 10-4 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 1, the take of all living marine resources would be prohibited.

Proposed Modification of Other Regulated Activities: The intent of SCRSG Work Group 1 is to allow for current oil activities to be permitted to continue without interference. Likewise, the UCSB Marine Science Institute would be permitted to continue current discharge and intake of seawater into this SMR.

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10.2.1.6 Devereux Lagoon SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: The Devereux Lagoon SMR has been proposed in an area of the SCSR with no existing MPA. The proposed SMR consists of waters below the mean tide line within the Devereux Slough. The seaward end of the lagoon is contiguous to the proposed Helo SMR. This SMR would have an area of 0.09 square mile. Boundaries of Devereux Lagoon SMR as proposed under Alternative 1 are depicted geographically on Figure 10-4 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 1, the take of all living marine resources would be prohibited.

Proposed Modification of Other Regulated Activities: Intentions of the SCRSG Work Group 1 are to minimize the impacts on current scientific take practices, and allow the current methods of procuring scientific take remain in place so long as they are not overtly harming the resource. The intent with these coastal wetlands is to provide the highest level of protection possible while protecting the operations of current wetlands managers where the managers are doing great work. The SCRSG Work Group 1 supports regulated scientific take of relative resources in an effort to more completely understand their ecosystems.

10.2.1.7 Goleta Slough SMP and Goleta Slough SMR

Classification: Proposed Replacement.

Proposed Modification of Boundaries: No boundary modifications; under Alternative 1 the existing 0.25 square mile Goleta Slough SMP is proposed to be removed and replaced by an SMR designation. Boundaries of the Goleta Slough SMR as proposed under Alternative 1 are depicted on Figure 10-4 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations allowing only recreational hook and line take of some species in designated areas (14 CCR 632(b)(75)(B)) would be removed, and take of all living marine resources would become prohibited.

Proposed Modification of Other Regulated Activities: None.

10.2.1.8 Carpinteria Salt Marsh SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: The Carpinteria Salt Marsh SMR has been proposed in an area of the SCSR with no existing MPA. The proposed SMR is located approximately

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22 miles east of the proposed Goleta Slough SMR. The proposed SMR consists of waters below the mean tide line of the salt marsh, covering an area of 0.28 square mile. Boundaries of the Carpinteria Salt Marsh SMR as proposed under Alternative 1 are depicted geographically on Figure 10-4 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 1, the take of all living marine resources would be prohibited.

Proposed Modification of Other Regulated Activities: The intent of the SCRSW Work Group 1 is to minimize impacts on current scientific take practices, and allow the current methods of procuring scientific take to remain in place so long as they are not overtly harming the resource. The intent with these coastal wetlands is to provide the highest level of protection possible while protecting the operations of current wetlands managers where the managers are doing great work. The SCRSW Work Group 1 supports regulated scientific take of relative resources in an effort to more completely understand their ecosystems.

10.2.1.9 Big Sycamore Canyon SMR

Classification: Proposed Removal.

Proposed Modification of Boundaries: This is an existing SMR that has been proposed for removal under the Alternative 1. For a description of this existing SMR, refer to the description of the No Project alternative (existing MPAs) in Section 10.1.1.3 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations prohibiting take of all living marine resources (14 CCR 632(b)(90)(B)) would be removed.

Proposed Modification of Other Regulated Activities: Under Alternative 1, existing regulations restricting swimming, boating, firearms, public entry, pesticides, litter, use of aircraft, and pets (14 CCR 632(b)(90)(C-L)) would be removed.

10.2.1.10 Sumo SMCA

Classification: Proposed Addition.

Proposed Modification of Boundaries: The Sumo SMCA has been proposed in an area of the SCSR with no existing MPA. The proposed SMCA abuts the Malibu coast southeast of Point Mugu State Park, and adjacent to the proposed Lisiqsihi SMR. The boundaries of the proposed SMCA expand westward and southward from Point Dume and to the offshore limits of state jurisdiction. With an area of 16.72 square miles and alongshore span running 4.46 miles, the proposed SMCA is the largest SMCA proposed under Alternative 1. Depths within the proposed SMCA would range from 0 to 2,023 feet. Boundaries of the Sumo

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SMCA under Alternative 1 are depicted graphically on Figures 10-5 and 10-6 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 1, take of living marine resources would be limited to:

1. The recreational take of pelagic finfish by spearfishing; Pacific bonito by spearfishing; and white sea bass by spearfishing.
2. The commercial take of coastal pelagic finfish by pelagic round haul nets; market squid by pelagic round haul nets; market squid by dip net; and swordfish by harpoon.

Proposed Modification of Other Regulated Activities: None.

10.2.1.11 Lisiquihi SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: The Lisiquihi SMR has been proposed in an area of the SCSR with no existing MPA. The Lisiquihi SMR is located adjacent to the Sumo SMCA, and abuts Point Dume State Beach in Malibu. Its boundaries extend northwest and northeast from Point Dume, and southward to the offshore limits of state jurisdiction. The proposed SMR has an area of 6.54 square miles, and an alongshore span running 1.71 miles. Depths within the SMR range from 0 to 1,976 feet. Boundaries of the Lisiquihi SMR as proposed under Alternative 1 are depicted graphically on Figures 10-5 and 10-6 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 1, the take of all living marine resources would be prohibited.

Proposed Modification of Other Regulated Activities: None.

10.2.1.12 Palos Verdes SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: The Palos Verdes SMR has been proposed in an area of the SCSR with no existing MPA. The northern boundary of the proposed SMR extends due west from the northern side of the Palos Verdes pinnacle to the offshore limits of state jurisdiction. The alongshore span of this proposed SMR is limited to avoid costal beaches along the southeastern boundary. It has an area of 17.20 square miles, and an alongshore span of 3.97 miles, with depths ranging from 0 to 2,640 feet. Boundaries of the Palos Verdes SMR as proposed under Alternative 1 are depicted graphically on Figure 10-6 and on detailed figures provided in Appendix A.

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Proposed Modification of Take Regulations: Under Alternative 1, the take of all living marine resources would be prohibited.

Proposed Modification of Other Regulated Activities: None.

10.2.1.13 Abalone Cove SMP

Classification: Proposed Removal.

Proposed Modification of Boundaries: This is an existing SMP that has been proposed for removal under Alternative 1. For a description of this existing MPA, refer to the description of the No Project alternative (existing MPAs) in Section 10.1.1.4 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations allowing recreational take of finfish by hook and line or spear and prohibiting take of all other living marine resources (14 CCR 632(b)(92)(B)) would be lifted.

Proposed Modification of Other Regulated Activities: None.

10.2.1.14 Point Fermin SMP and Point Fermin SMCA

Classification: Proposed Replacement.

Proposed Modification of Boundaries: Under Alternative 1, the existing Point Fermin SMP would be redesignated as an SMCA of the same name. The existing boundaries would be simplified for the proposed SMCA to facilitate public understanding and enforcement capabilities. The proposed SMCA more than doubles the area of protection provided by the existing SMP, to a total of 0.16 square mile. The alongshore span would also increase from 0.6 mile, to 0.71 mile. Depths within this proposed MPA would range from 0 to 29 feet. Boundaries of the existing Point Fermin SMP and proposed Point Fermin SMCA under Alternative 1 are depicted graphically on Figure 10-6 and on detailed figures provided in Appendix A. For a description of the SMP proposed for removal, refer to the No Project alternative (existing MPAs) in Section 10.1.1.5 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations allowing recreational take of select pelagic finfish and other finfish (14 CCR 632(b)(93)(B)) would be replaced by regulations allowing only:

1. The recreational take of lobster by diving; shore fishing (any target) by hook and line; finfish by hook and line; and finfish by spearfishing.
2. The commercial take of lobster by trap; and urchin by diving.

Proposed Modification of Other Regulated Activities: None.

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10.2.1.15 Bolsa Chica SMP and Povuu'nga Komiik SMR

Classification: Proposed Replacement.

Proposed Modification of Boundaries: Under Alternative 1, the existing Bolsa Chica SMP would be eliminated and replaced by the proposed Povuu'nga Komiik SMR. The boundaries of the proposed SMR are modified from those of the existing SMP to encompass the entire Bolsa Chica Wetlands above the Pacific Coast Highway Bridge. The proposed SMR increases the area of protection provided by the MPA to 0.72 square mile – nearly a 200 percent increase in size. Boundaries of the existing Bolsa Chica SMP and proposed Povuu'nga Komiik SMR under Alternative 1 are depicted graphically on Figure 10-6 and on detailed figures provided in Appendix A. For a description of the SMP proposed for removal, refer to the description of the No Project alternative (existing MPAs) in Section 10.1.1.6 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations allowing recreational hook and line take of species other than marine aquatic plants from designated areas around outer Bolsa Bay (14 CCR 632(b)(94)(B)) would be lifted, and take of all living marine resources would become prohibited.

Proposed Modification of Other Regulated Activities: The intention of the SCRSG Work Group 1 is to allow all restoration activities including dredging.

10.2.1.16 Emerald Bay (Catalina Island) SMCA

Classification: Proposed Addition.

Proposed Modification of Boundaries: The Emerald Bay SMCA has been proposed in an area of the SCSR with an existing SCA designation. The existing Arrow Point to Lion Head Point Invertebrate Area Special Closure has an alongshore span running 2.86 miles along the northeastern side of Catalina Island. The proposed SMCA removes the SCA and establishes boundaries within the area currently encompassed by the southern half of the Special Closure. The proposed boundaries would reduce the area protected by the SCA from 0.54 square mile to 0.22 square mile. The alongshore span and depth range would also decrease to 1.35 miles and 0 to 108 feet respectively. Boundaries of the proposed Emerald Bay SMCA are depicted graphically on Figure 10-7 and on detailed figures provided in Appendix A. For a description of the SCA proposed for removal, refer to the description of the No Project alternative (existing MPAs) in Section 10.1.1.7 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations allowing take of marine invertebrates (14 CCR 632(b)(95)(B)) would be lifted, and take of all living marine resources would become prohibited, except recreational take of finfish.

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Proposed Modification of Other Regulated Activities: None.

10.2.1.17 Catalina Marine Science Center SMR and Blue Cavern SMR

Classification: Proposed Replacement.

Proposed Modification of Boundaries: Under Alternative 1, the existing Catalina Marine Science Center SMR would be replaced by the much larger proposed Blue Cavern SMR. The boundary of the proposed SMR extends northward from the shore of Santa Catalina Island to the offshore limits of state jurisdiction. The Blue Cavern SMR would increase the area of the MPA from 0.06 square mile to 10.28 square miles. The alongshore span would also increase, as would the depth range, to 2.29 miles and 0 to 2,616 feet respectively. Boundaries of the Blue Cavern SMR as proposed under Alternative 1 are depicted on Figure 10-7 and on detailed figures provided in Appendix A. For a description of the existing SMR, refer to the discussion of the No Project alternative (existing MPAs) in Section 10.1.1.8 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations prohibiting the take of all living marine resources (14 CCR 632(b)(96)(B)) would remain unmodified with the proposed Blue Cavern SMR.

Proposed Modification of Other Regulated Activities: None.

10.2.1.18 Cat Harbor (Catalina Island) SMCA

Classification: Proposed Addition.

Proposed Modification of Boundaries: The Cat Harbor SMCA has been proposed in an area of the SCSR with no existing MPA. The proposed SMCA is located on the western side of Santa Catalina Island, and has an area of 0.25 square mile. It has an alongshore span of 0.45 mile, and depths ranging from 0 to 186 feet. Boundaries of the Cat Harbor SMCA as proposed under Alternative 1 are depicted graphically on Figure 10-7 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 1, take of of living marine resources would be limited to:

1. The recreational take of lobster by hoop net; lobster by diving; urchin by diving; finfish by hook and line; and finfish by spearfishing.
2. The commercial take of sea cucumber by diving; lobster by trap; and urchin by diving.
3. Recreational fishing for squid by jigging.

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Proposed Modification of Other Regulated Activities: Intentions of the SCRSG Work Group 1 are to allow mariculture of white sea bass and yellowtail.

10.2.1.19 Long Point (Catalina Island) SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: The Long Point SMR has been proposed in an area of the SCSR with no existing MPA. The proposed SMR is located on the southeast side of Santa Catalina Island, approximately 2.20 miles south of the proposed Blue Cavern SMCA. It has area of 3.54 square miles, and an alongshore span of 2.96 miles. Depths within this proposed SMR would range from 0 to 988 feet. Boundaries of the Long Point SMR as proposed under Alternative 1 are depicted graphically on Figure 10-7 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 1, the take of all living marine resources would be prohibited.

Proposed Modification of Other Regulated Activities: None.

10.2.1.20 Farnsworth Bank SMCA and Farnsworth SMCA

Classification: Proposed Replacement.

Proposed Modification of Boundaries: Under Alternative 1, the existing Farnsworth Bank SMCA would be removed and replaced by the proposed Farnsworth SMCA. The MPA is currently located offshore of the southwest coast of Santa Catalina Island. The proposed SMCA would extend the boundaries of the existing Farnsworth Bank SMCA due east to the coast of Santa Catalina Island, and due west to the offshore limits of state jurisdiction. The resulting area of 9.28 square miles is 5.5 times greater than that of the existing MPA. The alongshore span also increases from 1.2 miles to 2.61 miles, and the depth range within the MPA increases to 0 to 1,909 feet. Boundaries of the proposed Farnsworth SMCA as proposed under Alternative 1 are depicted graphically on Figure 10-7 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations allowing take of all living marine resources except purple coral (14 CCR 632(b)(97)(B)) would be lifted, and take of living marine resources would become limited to:

1. Recreational take of pelagic finfish by spearfishing; Pacific bonito by spearfishing; white sea bass by spearfishing; coastal pelagic finfish by dip net; jumbo squid by hook and line; and market squid by dip net.

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2. Commercial take of coastal pelagic finfish by pelagic round haul nets; coastal pelagic finfish by dip net; jumbo squid by hook and line; market squid by pelagic round haul nets; market squid by dip net; and swordfish by harpoon.
3. Recreational take of striped marlin (hook and line) only IF the MPA maintains a high LOP, and if it will not negatively impact the Department's feasibility analysis.

Proposed Modification of Other Regulated Activities: None.

10.2.1.21 Casino Point (Catalina Island) SMCA

Classification: Proposed Addition.

Proposed Modification of Boundaries: The Casino Point SMCA has been proposed in an area of the SCSR with no existing MPA. The proposed Casino Point SMCA is located at the northern end of the Avalon Harbor, and has an area of 0.01 square mile. It has an alongshore span running 0.15 mile, and depths ranging from 0 to 73 feet. Boundaries of the Casino Point SMCA as proposed under Alternative 1 are depicted graphically on Figure 10-7 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 1, take of living marine resources would be limited to recreational take of urchin (including red and purple urchins) by diving and with game permit.

Proposed Modification of Other Regulated Activities: None.

10.2.1.22 Lover's Cove SMCA

Classification: Proposed Expansion.

Proposed Modification of Boundaries: Under Alternative 1, boundaries of the existing Lover's Cove SMCA will be expanded and increased to encompass an area of 0.06 square mile. The proposed SMCA covers an alongshore span of 0.39 mile, and the depth range encompassed by the proposed MPA is 0 to 188 feet. The boundaries of the Lover's Cove SMCA as proposed under Alternative 1 are depicted graphically on Figure 10-7 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations allowing commercial take of finfish and kelp (14 CCR 632(b)(98)(B)) would be lifted, and take of living marine resources would become limited to recreational pier fishing of any target by hook and line.

Proposed Modification of Other Regulated Activities: None.

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10.2.1.23 Begg Rock SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: The Begg Rock SMR has been proposed in an area of the SCSR with no existing MPA. The proposed SMR is encircles Begg Rock, located approximately 9 miles north of San Nicolas Island. With an area of 37.96 square miles, the proposed SMR is the largest MPA proposed under Alternative 1. The depth range encompassed by the proposed SMR is 219 to 374 feet. The boundaries of the Begg Rock SMR as proposed under Alternative 1 are depicted graphically on Figure 10-7 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 1, take of all living marine resources would be prohibited.

Proposed Modification of Other Regulated Activities: This SMR is not intended to and will not regulate military activities. The SCRSG Work Group 1 proposal recommends that the Department and U.S. Department of Defense should coordinate regulatory language similar to Vandenberg SMR.

10.2.1.24 Upper Newport Bay SMP and Upper Newport Bay SMCA

Classification: Proposed Replacement.

Proposed Modification of Boundaries: Under Alternative 1, the existing Upper Newport Bay SMP would be replaced by the proposed Upper Newport Bay SMCA. The boundaries of the proposed SMCA would slightly modify existing boundaries, reducing the existing area of 1.10 square miles to 1.09 square miles. Boundaries of the existing Upper Newport Bay SMP and proposed Upper Newport Bay SMCA as proposed under Alternative 1 are depicted graphically on Figures 10-6 and 10-8 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations allowing recreational hook and line take of species other than kelp (14 CCR 632(b)(99)(B)) would be lifted, and take of living marine resources would become limited to recreational catch-and-release of any target by hook and line (single barbless hooks and artificial lures) from shore.

Proposed Modification of Other Regulated Activities: Intentions of the SCRSG Work Group 1 are to allow all restoration activities including dredging. Fishing would be allowed only in shore access areas approved by the Ecological Reserve manager.

10.2.1.25 Umuqpat SMCA

Classification: Proposed Replacement.

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Proposed Modification of Boundaries: Under Alternative 1, the existing Robert E. Badham SMCA, Irvine Coast SMCA, and Crystal Cove SMCA would be subsumed into the newly proposed Umuqpat SMCA. This proposed SMCA would increase the protected area encompassed by the three existing MPAs from 2.17 square miles to 3.18 square miles. The alongshore span and maximum depth within the MPA would also increase to 3.52 miles and 242 feet respectively. Boundaries of the proposed SMCA under Alternative 1 are depicted on Figures 10-6 and 10-8 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Existing regulations governing the three existing SMCAs (see sections 10.2.1.26, 10.2.1.27, and 10.2.1.28, below) would be lifted, and take of living marine resources would become limited to the following:

1. The recreational take of lobster by hoop net; lobster by diving; urchin by diving; finfish by hook and line; and finfish by spearfishing.
2. The commercial take of lobster by trap; urchin by diving; coastal pelagic finfish by pelagic round haul nets; and market squid by pelagic round haul nets.
3. Recreational take of all finfish, except sheephead.

Proposed Modification of Other Regulated Activities: Intentions of the SCRSG Work Group 1 are to allow for kelp restoration activities. Additionally, any commercial urchin fishermen entering this area must be collecting data, with appropriate certification. Protocols would be established by the Department or a designated marine science institute or university.

10.2.1.26 Robert E. Badham SMCA

Classification: Proposed Removal.

Proposed Modification of Boundaries: Under Alternative 1, boundaries of the existing Robert E. Badham SMCA would be eliminated as the area encompassed by the MPA is subsumed into the proposed Umuqpat SMCA, as described in Section 10.2.1.25 above. For a description of the existing Robert E. Badham SMCA, refer to the discussion of the No Project alternative (existing MPAs) in Section 10.1.1.12 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations allowing recreational take of lobster and select species of pelagic finfish and finfish taken by hook and line or by spearfishing gear; and the commercial take of spiny lobster (14 CCR 632(b)(100)(B)) would be lifted and replaced by take regulations proposed for the Umuqpat SMCA. Refer to Section 10.2.1.25 above for changes to take regulations governing the area encompassed by this existing MPA.

Proposed Modification of Other Regulated Activities: Refer to Section 10.2.1.25 above.

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10.2.1.27 Crystal Cove SMCA

Classification: Proposed Removal.

Proposed Modification of Boundaries: Under Alternative 1, boundaries of the existing Crystal Cove SMCA would be eliminated as the area is subsumed into the proposed Umuqpat SMCA, described in Section 10.2.1.25 above. For a description of the existing Crystal Cove SMCA, refer to the discussion of the No Project alternative (existing MPAs) in Section 10.1.1.13 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations allowing recreational take of select species of invertebrates and finfish; commercial take of finfish, select species of invertebrates, and algae except giant kelp and bull kelp (14 CCR 632(b)(101)(B)) would be lifted and replaced by take regulations proposed for the Umuqpat SMCA. Refer to Section 10.2.1.25 above for changes to take regulations under Alternative 1.

Proposed Modification of Other Regulated Activities: Refer to Section 10.2.1.25 above.

10.2.1.28 Irvine Coast SMCA

Classification: Proposed Removal.

Proposed Modification of Boundaries: Under Alternative 1, boundaries of the existing Irvine Coast SMCA would be eliminated as the area is subsumed into the proposed Umuqpat SMCA, as described in Section 10.2.1.25 above. For a description of the existing Irvine Coast SMCA, refer to the discussion of the No Project alternative (existing MPAs) in Section 10.1.1.14 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations allowing recreational take of lobster, recreational take of selected species of pelagic finfish and finfish taken by hook and line or by spearfishing gear, and commercial take of spiny lobster (14 CCR 632(b)(102)(B)) would be lifted and replaced by take regulations proposed for the Umuqpat SMCA. Refer to Section 10.2.1.25 above for changes to take regulations under Alternative 1.

Proposed Modification of Other Regulated Activities: Refer to Section 10.2.1.25 above.

10.2.1.29 Laguna SMR

Classification: Proposed Replacement and Expansion.

Proposed Modification of Boundaries: Under Alternative 1, the existing Heisler Park SMR and Laguna Beach SMCA would be subsumed into the proposed Laguna SMR. This proposed SMR would increase the protected area encompassed by the two existing MPAs

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from 0.81 square mile to 10.45 square miles. The alongshore span and the maximum depth within the MPA would also increase to 3.11 miles and 1,433 feet respectively. This MPA borders the terrestrial Laguna Coast Wilderness Park. Boundaries of the proposed Laguna SMR under Alternative 1 would extend beyond the offshore boundaries of the existing MPAs to be subsumed, as depicted on Figure 10-8 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations governing take within the existing MPAs (see Section 10.2.1.30 and 10.2.1.31 below) would be replaced by regulations prohibiting all take of living marine resources. This change would result in more restrictive regulations within the Laguna Beach SMCA, but would not change the protections within the Heisler Park SMR.

Proposed Modification of Other Regulated Activities: Intentions of the SCRSG Work Group 1 are to allow scientific data collection by commercial fishermen trained to collect data. Designation of this MPA is not intended to impede ongoing Clean Water Act-mandated monitoring, maintenance and marine life sampling for pollutant effects associated with the Aliso Creek mid-level sewer outfall.

10.2.1.30 Heisler Park SMR

Classification: Proposed Removal.

Proposed Modification of Boundaries: Under Alternative 1, boundaries of the existing Heisler Park SMR would be removed as the area is subsumed by the proposed Laguna SMR. For a description of the existing Heisler Park SMR, refer to the discussion of the No Project alternative (existing MPAs) in Section 10.1.1.15 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 2, existing regulations prohibiting the take of all living marine resources would persist under the proposed Laguna SMR.

Proposed Modification of Other Regulated Activities: Refer to Section 10.2.1.29 above.

10.2.1.31 Laguna Beach SMCA

Classification: Proposed Removal.

Proposed Modification of Boundaries: Under Alternative 1, boundaries of the existing Laguna Beach SMCA would be eliminated as the area is subsumed into the proposed Laguna SMR. For a description of the existing Laguna Beach SMCA, refer to the discussion of the No Project alternative (existing MPAs) in Section 10.1.1.16 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations allowing recreational take of lobster and selected species of pelagic finfish and finfish (14

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CCR 632(b)(103)(B)) would be lifted, and take of all living marine resources would become prohibited.

Proposed Modification of Other Regulated Activities: Refer to Section 10.2.1.29 above.

10.2.1.32 Dana Point SMCA

Classification: Proposed Expansion and Replacement.

Proposed Modification of Boundaries: Under Alternative 1, the existing Dana Point SMCA would be expanded to become contiguous with the proposed Laguna SMR to the North, and would subsume the existing South Laguna Beach and Niguel SMCAs. The proposed boundary revisions would yield a revised area of 4.15 square miles, and an alongshore span of 5.02 miles. Boundaries of the Dana Point SMCA under Alternative 1 are depicted on Figure 10-8 and on detailed figures provided in Appendix A. Depths within the proposed MPA would range from 0 to 152 feet.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations governing take of marine resources within the subsumed MPAs (see Sections 10.2.1.33 and 10.2.1.34) would be lifted, and take of living marine resources would become limited to the following:

1. The recreational take of lobster by hoop net; lobster by diving; urchin by diving; finfish by hook and line; and finfish by spearfishing.
2. The commercial take of lobster by trap; urchin by diving; coastal pelagic finfish by pelagic round haul nets; and market squid by pelagic round haul nets.
3. Recreational take of all finfish except sheephead.

Proposed Modification of Other Regulated Activities: Intentions of the SCRSW Work Group 1 are to allow kelp restoration activities. Regulations proposed under Alternative 1 would require that any commercial urchin fishermen entering this area must be collecting data, and must carry appropriate certification. Protocols would be established by the Department or a designated marine science institute or university. It is not the intent of this MPA to impede ongoing Clean Water Act mandated monitoring, maintenance and marine life sampling for pollutant effects associated with the Aliso Creek mid-level sewer outfall. This area was specifically designed to further cooperative fisheries research opportunities on kelp forest ecosystem interactions. Additional intended uses including CPS seine, recreational lobster hoopnet and kelp restoration were discussed in the work group.

10.2.1.33 South Laguna Beach SMCA

Classification: Proposed Removal.

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Proposed Modification of Boundaries: Under Alternative 1, the existing South Laguna Beach SMCA would be eliminated as the area is subsumed by the proposed Dana Point SMCA. For a description of the existing South Laguna Beach SMCA, refer to the discussion of the No Project alternative (existing MPAs) in Section 10.1.1.17 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations allowing recreational take of lobster, recreational take of selected species of pelagic finfish and finfish – taken by hook and line or spearfishing gear, and the commercial take of spiny lobster (14 CCR 632(b)(105)(B)) would be lifted, and take of all living marine resources would become prohibited, except for those discussed in Section 10.2.1.32 above.

Proposed Modification of Other Regulated Activities: Refer to Section 10.2.1.32.

10.2.1.34 Niguel SMCA

Classification: Proposed Removal.

Proposed Modification of Boundaries: Under Alternative 1, the existing Niguel SMCA would be removed as the area is subsumed into the proposed Dana Point SMCA. For a description of the existing Niguel SMCA, refer to the discussion of the No Project alternative (existing MPAs) in Section 10.1.1.18 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations allowing recreational take of lobster, recreational take of selected species of pelagic finfish and finfish taken by hook and line or by spearfishing gear, and the commercial take of spiny lobster (14 CCR 632(b)(106)(B)) would be lifted, and take of living marine resources would become limited to those listed under Section 10.2.1.33.

Proposed Modification of Other Regulated Activities: Refer to Section 10.2.1.33.

10.2.1.35 Doheny SMCA

Classification: Proposed Removal.

Proposed Modification of Boundaries: This is an existing SMCA that is proposed for removal under Alternative 1. For a description of this existing MPA, refer to the discussion of the No Project alternative (existing MPAs) in Section 10.1.1.20 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations allowing recreational take of select species of invertebrates and finfish, commercial take, and prohibiting take of all other living marine resources (14 CCR 632(b)(109)(B)) would be lifted.

Proposed Modification of Other Regulated Activities: None.

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10.2.1.36 Doheny Beach SMCA

Classification: Proposed Removal.

Proposed Modification of Boundaries: This is an existing SMCA that is proposed for removal under Alternative 1. For a description of this existing MPA, refer to the discussion of the No Project alternative (existing MPAs) in Section 10.1.1.21 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations in this area allowing recreational take of lobster; select species of pelagic finfish and finfish taken by hook and line or by spearfishing gear; commercial take of spiny lobster; and (14 CCR 632(b)(108)(B)) would be lifted.

Proposed Modification of Other Regulated Activities: None.

10.2.1.37 Agua Hedionda Lagoon SMR

Classification: Proposed Removal.

Proposed Modification of Boundaries: This is an existing SMR that is proposed for removal under Alternative 1. For a description of this existing MPA, refer to the discussion of the No Project alternative (existing MPAs) in Section 10.1.1.22 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations prohibiting take of all living marine resources (14 CCR 632(b)(111)(B)) would be lifted.

Proposed Modification of Other Regulated Activities: Under Alternative 1, existing regulations pertaining to management activities for fish and wildlife, flood control, vector control, and authorized operation and maintenance activities (14 CCR 632(b)(111)(C)) would be lifted.

10.2.1.38 Batiquitos Lagoon SMP and Batiquitos Lagoon SMR

Proposed Modification of Boundaries: Under Alternative 1, the existing Batiquitos Lagoon SMP would be slightly expanded and replaced by the Batiquitos Lagoon SMR. The proposed SMR would have an area of 0.48 square mile. Boundaries of this proposed SMR are depicted graphically on Figure 10-9 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations allowing recreational take of finfish by hook and line from shore (14 CCR 632(b)(112)(B)) would be lifted, and take of all living marine resources would become prohibited.

Proposed Modification of Other Regulated Activities: Intentions of the SCRSG Work Group 1 are to allow activities such as dredging and habitat restoration.

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10.2.1.39 Encinitas SMCA

Classification: Proposed Removal.

Proposed Modification of Boundaries: This is an existing SMCA that is proposed for removal under Alternative 1. For a description of this existing MPA, refer to the discussion of the No Project alternative (existing MPAs) in Section 10.1.1.24 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations allowing commercial and recreational take of finfish, and prohibiting take of all other living marine resources (14 CCR 632(b)(113)(B)) would be lifted.

Proposed Modification of Other Regulated Activities: None.

10.2.1.40 Cardiff-San Elijo SMCA

Classification: Proposed Removal.

Proposed Modification of Boundaries: This is an existing SMCA that has been proposed for removal under Alternative 1. For a description of this existing MPA, refer to the discussion of the No Project alternative (existing MPAs) in Section 10.1.1.25 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations allowing recreational take of select species of invertebrates and finfish and commercial take, and prohibiting take of all other living marine resources (14 CCR 632(b)(114)(B)) would be lifted.

Proposed Modification of Other Regulated Activities: None.

10.2.1.41 San Elijo Lagoon SMP and San Elijo SMR

Proposed Modification of Boundaries: Under Alternative 1, the existing San Elijo Lagoon SMP would be replaced by the San Elijo SMR. Boundaries of the existing SMP would remain unmodified in the proposed SMR. Boundaries of this proposed SMR are depicted graphically on Figure 10-9 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations allowing recreational take of finfish by hook and line from shore (14 CCR 632(b)(115)(B)) would be removed, and take of all living marine resources would become prohibited.

Proposed Modification of Other Regulated Activities: The SCRSG Work Group 1 has noted that a nine hundred acre wetland restoration project is proposed for this area.

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10.2.1.42 San Dieguito Lagoon SMP and San Dieguito Lagoon SMR

Classification: Proposed Replacement.

Proposed Modification of Boundaries: Under Alternative 1, boundaries of the existing San Dieguito SMP would be expanded and replaced with the San Dieguito Lagoon SMR. The proposed SMR would have an area of 0.52 square mile. Boundaries of the proposed MPA are illustrated on Figure 10-9 and on detailed figures provided in Appendix A. For a description of the existing SMP, refer to the discussion of the No Project alternative in Section 10.1.1.27 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations allowing recreational take of finfish by hook and line from shore and from the Grand Avenue bridge (14 CCR 632(b)(116)(B)) would be removed, and take of all living marine resources would become prohibited.

Proposed Modification of Other Regulated Activities: Intentions of the SCRSG Work Group 1 are to allow all restoration activities, including dredging.

10.2.1.43 Del Mar SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: This SMR has been proposed under Alternative 1 in an area of the SCSR with no existing MPA. The proposed SMR has an area of 13.30 square miles, and an alongshore span of 3.77 miles, and would extend from approximately two miles north of the proposed San Dieguito Lagoon SMR to the proposed Los Penasquitos Marsh SMR. The western boundary of this proposed SMR would follow the offshore limits of state jurisdiction, three nautical miles from shore. Boundaries of this proposed MPA are depicted on Figure 10-9 and on detailed figures provided in Appendix A. Depths within the MPA would range from 0 to 1,095 feet.

Proposed Modification of Take Regulations: Under Alternative 1, take of all living marine resources would be prohibited.

Proposed Modification of Other Regulated Activities: Intentions of the SCRSG Work Group 1 are to allow sand replenishment and beach nourishment activities to continue.

10.2.1.44 Los Penasquitos Marsh SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: This SMR has been proposed in an area of the coast with no existing MPA. The proposed SMR has an area of 0.35 square mile. The proposed

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SMR would be limited to the coastal area in the vicinity of the Los Penasquitos Salt Marsh, as depicted on Figure 10-9 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 1, the take of all living marine resources would be prohibited.

Proposed Modification of Other Regulated Activities: Intentions of the SCRSG Work Group 1 are to allow all restoration activities including dredging.

10.2.1.45 San Diego-Scripps SMCA

Classification: Proposed Removal.

Proposed Modification of Boundaries: This SMCA has been proposed for removal under Alternative 1. For a description of this existing MPA, refer to the discussion of the No Project alternative (existing MPAs) in Section 10.1.1.28 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations allowing recreational and commercial take of finfish, and prohibiting take of all other living marine resources (14 CCR 632(b)(117)(B)) would be lifted.

Proposed Modification of Other Regulated Activities: Under Alternative 1, existing regulations pertaining to take for scientific purposes (14 CCR 632(b)(117)(C)) would be lifted.

10.2.1.46 La Jolla SMCA and La Jolla Cove SMR

Classification: Proposed Replacement.

Proposed Modification of Boundaries: Under Alternative 1, boundaries of the existing La Jolla SMCA would expand and be replaced by the proposed La Jolla Cove SMR. The proposed La Jolla Cove SMR would have an area of 0.77 square mile and an alongshore span of 1.14 miles. Boundaries of the La Jolla Cove SMR are depicted graphically on Figure 10-9 and on detailed figures provided in Appendix A. Depths within the MPA would range from 0 to 214 feet.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations allowing commercial take of squid for bait from designated areas (14 CCR 632(b)(118)(B)) would be removed, and take of all living marine resources would become prohibited.

Proposed Modification of Other Regulated Activities: The SCRSG Work Group 1 notes that restrictions exist regarding boat launching areas and anchoring times.

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10.2.1.47 La Jolla South SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: This SMR has been proposed in an area of the SCSR with no existing MPA. Under Alternative 1, the proposed SMR would have an area of 2.11 square miles, and an alongshore span of 0.93 mile. This MPA is configured adjacent to the northern border of the proposed La Jolla South SMCA. Depths within the proposed MPA would range from 0 to 144 feet. Proposed boundaries are depicted graphically on Figure 10-9 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 1, the take of all living marine resources would be prohibited.

Proposed Modification of Other Regulated Activities: None.

10.2.1.48 La Jolla South SMCA

Classification: Proposed Addition.

Proposed Modification of Boundaries: Under Alternative 1, this SMCA has been proposed in an area of the SCSR with no existing MPA. The proposed boundaries would encompass an area of 2.79 square miles, and would measure an alongshore span of 0.96 mile. Depths within the proposed MPA would range from 0 to 176 feet. Boundaries of this proposed SMCA are depicted graphically on Figure 10-9 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 1, take of living marine resources would be limited to:

1. Recreational take of kelp bass and barred sand bass by hook and line; lobster by diving; pelagic finfish by hook and line; urchin by diving; pacific bonito by hook and line; white sea bass by spearfishing; and white sea bass by hook and line.
2. The commercial take of lobster by trap; and urchin by diving.

Proposed Modification of Other Regulated Activities: The SCRSG Work Group 1 notes that the area provides opportunities for education, study, and ongoing monitoring as well as collaborative research with local fishermen. The intent of the SCRSG Work Group 1 is that any commercial fishermen entering this area must be collecting data, with appropriate certification; protocol would be established by the Department or a designated marine science institute or university. The SCRSG Work Group 1 also intends to implement the MPA concurrently with State Water Resources Control Board designation as a SWQPA.

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10.2.1.49 Famosa Slough SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: This SMR has been proposed in an area of the SCSR with no existing MPA. The Famosa Slough SMR would be located within the Famosa Slough estuary, south of the San Diego River channel. The proposed SMR would have an area of 0.11 square mile. Boundaries of the SMR proposed under Alternative 1 are depicted on Figure 10-9 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 1 take of all living marine resources would be prohibited.

Proposed Modification of Other Regulated Activities: None.

10.2.1.50 Ocean Beach Pier SMCA

Classification: Proposed Addition.

Proposed Modification of Boundaries: This SMCA has been proposed in an area of the SCSR with no existing MPA. The proposed SMCA would be located adjacent to the northern boundary of the proposed Ocean Beach SMR, and would contain the existing Ocean Beach Pier. The proposed SMCA would have an area of 0.08 square mile, and an alongshore span of 0.12 mile under this alternative. Depths within the proposed MPA would range from 0 to 35 feet. Boundaries of the Ocean Beach Pier SMCA as proposed under Alternative 1 are depicted on Figure 10-9 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 1, take of living marine resources would be limited to pier fishing by hook and line.

Proposed Modification of Other Regulated Activities: None.

10.2.1.51 Ocean Beach SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: This SMR has been proposed in an area of the coast with no existing MPA. Under Alternative 1, the proposed SMR would have has an area of 9.00 square miles, and an alongshore span running 2.55 miles. Depths within the proposed MPA would range from 0 to 336 feet. Boundaries of the proposed Ocean Beach SMR are depicted graphically on Figure 10-9 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 1, take of all living marine resources would be prohibited.

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Proposed Modification of Other Regulated Activities: None.

10.2.1.52 Mia J. Tegner SMCA and Cabrillo SMR

Classification: Proposed Replacement.

Proposed Modification of Boundaries: Under Alternative 1, boundaries of the existing Mia J. Tegner SMCA would be expanded and replaced by the proposed Cabrillo SMR. The proposed SMR would have an area of 0.38 square mile, and an alongshore span running 0.26 mile. Boundaries of the proposed MPA are depicted on Figure 10-9 and on detailed figures provided in Appendix A. Depths within the proposed MPA would range from 0 to 30 feet.

Proposed Modification of Take Regulations: Under Alternative 1, existing regulations allowing recreational take of finfish and commercial take of finfish and marine aquatic plants (14 CCR 632(b)(119)(B)) would be removed, and take of all living marine resources would become prohibited.

Proposed Modification of Other Regulated Activities: None.

10.2.1.53 Tijuana River Mouth SMCA

Classification: Proposed Addition.

Proposed Modification of Boundaries: This SMCA has been proposed in an area of the coast with no existing MPA. The Tijuana River Mouth SMCA would be located at the mouth of the Tijuana River at the U.S.–Mexico border. The proposed SMCA has an area of 1.91 square miles, and an alongshore span running 1.60 miles, and is depicted on Figure 10-9 and on detailed figures provided in Appendix A. Depths within the proposed SMCA would range from 0 to 55 feet. The proposed MPA is adjacent to Tijuana River Estuary, a National Estuarine Research Reserve site.

Proposed Modification of Take Regulations: Under Alternative 1, take of living marine resources would be limited to:

1. The recreational take of coastal pelagic finfish by dip net; and pier fishing (any target) by hook and line.
2. The commercial take of coastal pelagic finfish by pelagic round haul nets.

Proposed Modification of Other Regulated Activities: Intentions of the SCRSG Work Group 1 are to allow deposition of sediment to be permitted in the near shore zone adjacent to the Tijuana River National Estuarine Research Reserve for any research, restoration, beach or dune nourishment projects including opening the mouth of the Tijuana River if it is blocked. This will be done in accordance with agency permitting.

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The City of Imperial Beach would be allowed to continue their beach replenishment and maintenance program. They would be made aware of the damage of kelp removal in beach grooming procedures.

10.2.2 Environmental Impacts of Alternative 1

As described above, under Alternative 1 existing MPA regulations would be modified, altering the boundaries, designations, and conditions governing the MPA network within the SCSR. This alternative would increase the number and area of MPAs and designate more protective regulations for those MPAs than currently exist in the Project area. The total extent of areas protected would increase from approximately 182 square miles under existing conditions (Alternative 0) to approximately 361 square miles under Alternative 1. Compared to the proposed Project IPA, this alternative would protect an additional 10.2 square miles in new or expanded MPAs.

10.2.2.1 Consumable Living Marine Resource Products

Adoption of regulatory changes as proposed by Alternative 1 would result in substantial expansion of the areas designated as MPAs within the SCSR. In locations where new or expanded MPAs would overlap existing fishing grounds or areas used for aquaculture, the take and use restrictions of the newly-imposed MPAs would apply. If the existing consumptive uses are not consistent with these restrictions, then the uses would be displaced into other areas where the uses would remain legal. Displacement of consumptive uses would not affect all fisheries equally, due to variation in the abundance and spatial distribution of marine resources. According to a report published by EcoTrust (Scholz et al. 2010), the nearshore trap fishery near Dana Point and the red sea urchin fishery near Oceanside would be disproportionately affected under this alternative, with effects on the stated value of total fishing grounds estimated at 29.3 percent and 60.9 percent, respectively. This level of displacement would be greater than that which would occur under the proposed Project IPA; the proposed Project IPA would disproportionately affect the nearshore trap fishery in Dana Point (28.0 percent of stated value), but would not disproportionately affect the red sea urchin fishery.

10.2.2.2 Air Quality

Like the proposed Project IPA, the primary source of operational emissions from this alternative would be from a change in marine vessel transit distances above the current practices due to displacement from MPAs. Because the regulatory changes proposed under this alternative would result in an MPA network that would protect approximately 10 square miles more than the proposed Project IPA, it is reasonable to assume that a concomitant increase in distance travelled by displaced fishing vessels would occur. Air quality impacts of Alternative 1 are therefore expected to be slightly greater than those of the proposed Project IPA.

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10.2.2.3 Global Climate Change and Greenhouse Gas Emissions

Because the effects of Alternative 1 on GHG emissions would pertain solely to mobile source emissions associated with vessel traffic patterns, GHG emissions under this alternative would be closely correlated with emissions of other air pollutants, discussed in Section 10.2.2.2 above. Effects of Alternative 1 on GHG emissions would be slightly greater than those of the proposed Project.

10.2.2.4 Water Quality

Similar to the proposed Project IPA, under Alternative 1 existing facilities, and ongoing research and monitoring in the proposed MPAs would be allowed to continue pursuant to any required federal, state and local permits. Although not a primary criterion for MPA designation, guidance during the SCRSG MPA design process included consideration of areas with more potential water contaminant influence. The water and sediment quality evaluation determined that Alternative 1 was located in an area of the SCSR with few water quality concerns except storm water discharges. However, based on a review of the Marine Map Decision Support Tool (Marine Map 2010), several of the MPAs proposed under this alternative would encompass existing offshore wastewater discharge locations. These include the Kashtayit SMCA, Mikiw SMCA, and Blue Cavern SMR (minor wastewater discharges), the San Elijo Lagoon SMR (intermediate wastewater discharge) and the Del Mar SMR and Tijuana River Mouth SMCA (stormwater discharges). Should the Commission elect to adopt this alternative, the proposed regulations would be fine-tuned to ensure compatibility with these existing uses permitted by other agencies. In some cases, this could require designating an MPA as an SMCA rather than an SMR. Expansion of the existing MPA network would be consistent with the RWQCB basin plans for the study area, and would not conflict with existing water quality standards or regulatory requirements.

Like the proposed Project IPA, this alternative could increase the potential for accidental release of pollutants such as oils and fuels and other hazardous materials into the water due to increased transit time or risk of accidents from overcrowding, as well as opening new areas where MPA designations have been removed. Similar to the proposed Project, potential shifts in non-consumptive uses with the implementation of Alternative 1 could have a minor localized effect on water quality but would be expected to be minimal. The potential impact from this alternative would be substantially similar to that of the proposed Project.

10.2.2.5 Mineral Resources

New or expanded MPAs under Alternative 1 would not substantially overlap existing oil and gas production facilities, salt producing facilities, beach nourishment areas, or geothermal resource areas. However, existing oil and natural gas pipelines are located adjacent to the proposed Povuu'nga Kornik SMR near Huntington Beach (CDC 2000). If Alternative 1 were to be adopted, the proposed regulations would be revisited to ensure that where these

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overlaps occur, the language allows for continuation of these existing uses permitted by other agencies. Because the proposed MPAs would not regulate existing mineral resource exploration and extraction activities, there would be no impact to the availability of known resources. Potential effects of implementing Alternative 1 relative to mineral resources would be comparable to those of the proposed Project IPA.

10.2.2.6 Biological Resources

Like the proposed Project IPA, Alternative 1 was developed in an effort to meet the goals of the MLPA and improve the state's existing system of MPAs. Because the protection and enhancement of marine ecosystems and habitats is a central objective of the MLPA, this alternative would be expected to benefit biological resources in the long term. Removal of a human predator is not anticipated to impact species and habitats inside MPAs created or expanded by Alternative 1; instead, it is expected that the proposed MPAs will result in the return of naturally balanced ecosystems. However, in the short-term, Alternative 1 could potentially result in adverse localized impacts on biological resources located at edges of MPAs, or within existing MPAs that would be removed under this alternative. Generally, these impacts would also occur under the proposed Project IPA. The existing Big Sycamore Canyon SMR, which contains the marine receiving waters of Big Sycamore Creek, a known historical steelhead creek, would be removed under this alternative, but would also be removed under the proposed Project IPA. Long-term benefits to biological resources resulting from Alternative 1 would be slightly greater than those of the proposed Project, as this alternative would preserve slightly more marine habitat within MPAs.

10.2.2.7 Cultural Resources

Neither Alternative 1 nor the proposed Project IPA would result in direct physical alteration of the ocean floor or the bottom of relevant bays or estuaries, and therefore would not directly disturb any historical, archaeological or paleontological resources present, whether they be recorded, known but unrecorded, or yet unknown. Both Alternative 1 and the IPA would remove many of the same MPAs; potential impacts would be negligible because many of the MPAs that would be removed currently allow boating, diving, and associated anchoring, so removing the MPAs would not result in a substantial change in conditions. Potential adverse impacts of Alternative 1, if any, would be similar to those of the proposed Project IPA.

10.2.2.8 Public Services and Utilities

Alternative 1 would not increase the need for public utilities or services significantly. The minor adjustments to the size and location of the proposed MPAs would not create a substantial difference in impact to law enforcement resources beyond what is described for the proposed Project IPA, and would not impact the existing utilities. All of the proposed MPAs are outside of the intake and discharge locations for power generation facilities

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utilizing once-through ocean cooling systems and existing desalination facilities with ocean intake and discharge systems. Further, if this alternative were to be adopted by the Commission, the regulatory language would be revisited to ensure that existing activities under the permitting authority of other federal or state agencies, such as operations of intake and outfall pipes, would continue to be allowed under Alternative 1. The effects of Alternative 1 on public services and utilities, including law enforcement resources, would be substantially similar to those of the proposed Project IPA.

10.2.2.9 Land Use and Recreational Resources

Alternative 1, like the proposed Project IPA, would increase the number and geographic extent of MPAs within the SCSR. On a large scale, this alternative would not be expected to increase the use of existing parks or recreational facilities within the SCSR, or require the construction or expansion of recreational facilities. However, it is possible that adoption of this alternative could result in angling or fishing activity becoming concentrated at certain access points where parking or other facilities may be limited. The likelihood of this situation occurring would be based on a number of factors, including the existing use/capacity ratio for the facility and the net change in user density caused by revision of the MPA network. It is foreseeable that although consumptive users of the marine environment would be displaced from MPAs into open fishing grounds, certain non-consumptive users, such as divers, kayakers, and wildlife viewers, would offset this trend by preferentially using protected areas. With regard to land use and recreation, potential effects of implementing Alternative 1 would be similar to those of the proposed Project IPA.

10.2.2.10 Vessel Traffic

Alternative 1, like the proposed Project IPA, would increase the number and geographic extent of MPAs within the SCSR. On a large scale, this alternative is not expected to add vessel traffic to the SCSR. On a smaller scale, however, it is possible that changing use patterns in response to the proposed regulatory changes would result in elevated vessel traffic levels at some locations; increased vessel traffic concentrations from this alternative would be approximately similar to those expected from the proposed Project IPA, and would be minor. The proposed MPAs would not regulate or preclude vessel traffic; and existing traffic separation schemes, vessel traffic system monitoring, safety reviews and recommendations by Harbor Safety Committees, USCG enforcement, and other systems to ensure safe navigation and vessel operations would remain in place. Similar to the proposed Project IPA, one of the MPAs proposed under Alternative 1 (the Palos Verdes SMR) abuts the northbound coastwise shipping lane just north of the Los Angeles/Long Beach port complex. With regard to vessel traffic, potential effects of implementing Alternative 1 would be comparable to those of the proposed Project IPA.

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10.2.2.11 Hazards and Hazardous Materials

Like the proposed Project IPA, Alternative 1 would not require the transport, use or disposal of hazardous materials, and there would be no reasonably foreseeable upset or accident condition involving the release of hazardous materials into the environment. While the MPA network proposed under Alternative 1 would be larger than that proposed under the proposed Project IPA, the proposed regulatory changes would not prohibit vessel transit through MPAs, and any emergency-related plans calling for sea evacuations or other marine components could be implemented without interference.

There are areas within the Southern California Bight that have been identified as having contaminated sediments (on lists compiled pursuant to Government Code Section 65962.5); however, because it does not involve any construction activities at these (or other) locations, Alternative 1 would not create a significant hazard, or result in substantial adverse effects, to the public or the environment. With respect to hazards and hazardous materials, potential effects of implementing Alternative 1 would be similar to those of the proposed Project IPA.

10.2.2.12 Environmental Justice

Like the proposed Project IPA, Alternative 1 would have the potential to affect commercial and recreational fishing patterns, and to displace existing fishing effort to locations outside the proposed MPAs. Because the MPAs proposed under Alternative 1 would be scattered throughout the SCSR, and because coastal areas adjacent to the SCSR are heavily urbanized and provide excellent mass transit and coastal access opportunities, it is not likely that the MPA network proposed under this alternative would result in disproportionate impacts on minority or low-income populations. Any effects of this nature would be similar to those of the proposed Project.

10.2.2.13 Alternative 1 Summary

Alternative 1 would meet the project objectives presented in Section 3.2 of this Draft EIR. This alternative would result in slightly greater impacts than the proposed Project relative to air quality and GHG emissions, because slightly greater displacement of existing fishing effort would occur. Other impacts of this alternative would be substantially similar to those of the proposed Project.

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10.3 ALTERNATIVE 2

Under Alternative 2 the existing MPA regulations at 14 CCR 632(b) would be modified, altering the boundaries, designations, and conditions governing the MPA network within the SCSR. A numerical summary of the changes in protected area that would occur under this alternative are presented in Table 10.3-1. The regulatory changes proposed under Alternative 2 would decrease the number of MPAs within the SCSR from 42 to 37, but would increase the geographic area protected from approximately 182 square miles to approximately 342 square miles. (These changes include the 13 existing MPAs surrounding the Channel Islands that would be retained without modification). The 8 existing SMPs previously designated by the Commission within the SCSR would not be retained under this alternative, and would be either removed or redesignated to other MPA classifications.

**TABLE 10.3-1
SUMMARY OF AREAS PROTECTED UNDER ALTERNATIVE 2²**

Type of MPA or Restricted Area ¹	Number of Existing MPAs	Number of MPAs Under Alternative 2	Area of Existing MPAs (sq mi)	Area of MPAs under Alternative 2 (sq mi) ²	Net Change In MPA Area (sq mi)
State Marine Reserve (SMR)	15	25	161.0	282.77	+121.77
State Marine Conservation Area (SMCA)	19	12	17.95	58.82	+40.87
State Marine Park (SMP)	8	0	2.68	0.00	-2.68
All MPAs in final configuration	42	37	181.66	341.59	+159.96

Sources: Department 2010 and Department 2009.

Note:

¹ Type of MPA refers to the type of designation as classified by Section 36710 of the California Public Resources Code.

² Data includes all MPAs within the SCSR, including those surrounding the northern Channel Islands.

10.3.1 Description of Regulations under Alternative 2

The changes to existing MPA boundaries, as well as allowed and prohibited uses, proposed under Alternative 2 are described below.

10.3.1.1 Point Conception SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: This is a newly proposed SMR. This SMR has a depth range of 0 to 489 feet, an area of 26.11 square miles, and an alongshore span of 6.2 miles. Boundaries of the proposed SMR are shown graphically on Figure 10-11 and on detailed figures provided in Appendix A.

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Proposed Modification of Take Regulations: Under Alternative 2, the take of all living marine resources would be prohibited.

Proposed Modification of Other Regulated Activities: Intentions of the SCRSG Work Group 2 are not to and will not regulate military activities. Additionally, incidental take of fouling organisms associated with the normal cleaning and maintenance of mooring facilities or within this area is intended to be allowed.

10.3.1.2 Refugio SMCA

Classification: Proposed Removal.

Proposed Modification of Boundaries: This is an existing SMCA that has been proposed for removal. For a description of this existing SMCA, refer to the discussion of the No Project alternative in Section 10.1.1.1 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 2, existing regulations allowing only the recreational take of certain marine invertebrates, in addition to the commercial take of finfish, some marine invertebrates, and algae (except giant kelp and bull kelp) (14 CCR 632(b)(74)(B)) would be lifted.

Proposed Modification of Other Regulated Activities: None.

10.3.1.3 Campus Point SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: This is a newly proposed SMR. This SMR has a depth range of 0 to 748 feet, an area of 10.36 square miles, and an alongshore span of 2.9 miles. Boundaries of this proposed SMR are depicted graphically on Figure 10-11 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 2, the take of all living marine resources would be prohibited.

Proposed Modification of Other Regulated Activities: Intentions of the SCRSG Work Group 2 are to allow incidental take related to the normal maintenance and cleaning of marine fouling organisms from, or normal operation of any included existing hydrocarbon mining infrastructure as currently placed.

10.3.1.4 Goleta Slough SMR

Classification: Proposed Replacement.

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Proposed Modification of Boundaries: The existing 0.25 square mile Goleta Slough SMP will be eliminated and replaced by a coterminous SMR of the same name. Boundaries of this proposed SMR are depicted graphically on Figure 10-11 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 2, existing regulations allowing recreational hook and line take of species other than marine aquatic plants (14 CCR 632(b)(75)(B)) would be removed, and the take of all living marine resources would become prohibited.

Proposed Modification of Other Regulated Activities: Intentions of the SCRSG Work Group 2 are to allow all activities as required under other law, wetland restoration activities, maintenance of adequate water circulation, required maintenance of existing infrastructure including bridges and pipelines, express intention for support of the issuance of permits as required to allow limited collecting for the purposes of education and research, express intent for the issuance of permits required to conduct small scale experimental manipulation for the purpose of scientific research, express intent not to increase the level of risk of liability otherwise inherent to the operation of the encircled Santa Barbara Airport facility or Goleta Sanitary District POTW.

10.3.1.5 Big Sycamore Canyon SMR

Classification: Proposed Removal.

Proposed Modification of Boundaries: Under Alternative 2 this existing SMR would be removed. For a description of this existing MPA, including boundaries and take regulations, refer to the description of the No Project alternative (existing MPAs) in Section 10.1.1.3 of this Draft EIR.

Proposed Modification of Take Regulations: The existing regulation prohibiting take of all living marine resources (14 CCR 632(b)(90)(B)) would be lifted.

Proposed Modification of Other Regulated Activities: Existing regulations at 14 CCR 632(b)(90)(C) through (J) limiting swimming, boating, firearms, public entry, pesticides, litter, use of aircraft, and pets would be lifted.

10.3.1.6 Point Dume SMCA

Classification: Proposed Addition.

Proposed Modification of Boundaries: This is a newly proposed SMCA which would have a depth range of 0 to 2,023 feet, an area of 19.96 square miles, and an alongshore span of 5.3

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miles. Boundaries of this proposed SMCA are depicted graphically on Figure 10-12 and 10-13 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 2, take of living marine resources would be limited to recreational take of pelagic finfish by spearfishing; white sea bass by spearfishing; coastal pelagic finfish by dip net; Humboldt squid by hook and line; and market squid by dip net and commercial take of Pacific bonito by round haul and net; coastal pelagic finfish by round haul net; coastal pelagic finfish by dip net; Humboldt squid by hook and line; market squid by round haul net; market squid by dip net; and swordfish by harpoon.

Proposed Modification of Other Regulated Activities: None.

10.3.1.7 Point Vicente SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: This is a newly proposed SMR, which would have a depth range of 0 to 2,640 feet. The area overlaps an EPA superfund study area.

Proposed Modification of Take Regulations: Under Alternative 2, the take of all living marine resources would become prohibited.

Proposed Modification of Other Regulated Activities: It is the intention of the SCRSG Work Group 2 to allow collection for monitoring wastewater discharge. Additionally, activities related to the EPA superfund site should continue in this area with valid permits.

10.3.1.8 Abalone Cove SMP and SMCA

Classification: Proposed Replacement.

Proposed Modification of Boundaries: The boundaries of the existing Abalone Cove SMP would be expanded, the SMP would be reclassified as an SMCA. This SMCA would have a depth range of 0 to 2181 feet, an area of 4.75 square miles, and an alongshore span running 1.2 miles. Boundaries of this proposed SMCA are depicted graphically on Figure 10-13 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 2, existing regulations allowing only the recreational take of finfish by hook and line or spear (14 CCR 632(b)(92)(B)) would be removed, and the take of all living marine resources would be prohibited with the exception of recreational take of pelagic finfish by spearfishing; Pacific bonito by spearfishing; white sea bass by spearfishing; coastal pelagic finfish by dip net; jumbo squid by hook and line; and market squid by dip net and commercial take of Pacific bonito by pelagic round haul nets; coastal pelagic finfish by pelagic round haul nets; coastal

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pelagic finfish by dip net; jumbo squid by hook and line; market squid by pelagic round haul nets; market squid by dip net; and swordfish by harpoon.

Proposed Modification of Other Regulated Activities: It is the intent of the SCRSG Work Group 2 to allow collection for monitoring wastewater discharge. Additionally, activities related to the EPA superfund site should continue in this area with valid permits.

10.3.1.9 Point Fermin SMP

Classification: Proposed Removal.

Proposed Modification of Boundaries: This existing Point Fermin SMR would be removed under Alternative 2. For a description of this existing MPA, including boundaries and take regulations, refer to the description of the No Project alternative (existing MPAs) in Section 10.1.1.5 of this Draft EIR.

Proposed Modification of Take Regulations: Existing regulations allowing only recreational take of lobster and some species of finfish and pelagic finfish by hook and line or by spearfishing gear would be lifted (14 CCR 632(b)(93)(B)).

Proposed Modification of Other Regulated Activities: None.

10.3.1.10 Bolsa Chica SMP and Bolsa Chica SMCA

Classification: Proposed Replacement.

Proposed Modification of Boundaries: The boundaries of the existing Bolsa Chica SMP will expand as the proposed Bolsa Chica SMCA replaces the existing Bolsa Chica SMP. This proposed SMCA has an area of 0.72 square mile. Boundaries of this proposed SMCA are depicted graphically on Figure 10-13 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 2, the currently allowed recreational take of any species except marine aquatic plants from designated areas around outer Bolsa Bay by hook and line (14 CCR 632(b)(94)(B)) would be disallowed, and the recreational take of shore fishing (any target) by hook and line would be allowed.

Proposed Modification of Other Regulated Activities: The SCRSG Work Group 2 recognizes this estuary has undergone extensive and continuing remediation. Therefore, it is their intent that these activities should be allowed to continue with appropriate permitting.

10.3.1.11 Arrow Point to Lion Head Point Invertebrate Area (Special Closure)

Classification: Proposed Removal.

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Proposed Modification of Boundaries: This existing SCA is proposed for removal under Alternative 2. For a description of this existing SCA, refer to the discussion of the No Project alternative (existing MPAs) in Section 10.1.1.7 of this Draft EIR.

Proposed Modification of Take Regulations: Existing regulations prohibiting recreational take of invertebrates would be lifted (14 CCR 632(b)(95)(B)).

Proposed Modification of Other Regulated Activities: None.

10.3.1.12 Catalina Marine Science Center SMR and Blue Cavern (Catalina Island) SMR

Classification: Proposed Replacement.

Proposed Modification of Boundaries: Under Alternative 2, the proposed Blue Cavern SMR would replace the existing Catalina Marine Science Center SMR. The proposed Blue Cavern SMR has a depth range of 0 to 691 feet, an area of 1.34 square miles, and an alongshore span of 2.3 miles. Boundaries of this proposed SMR are depicted graphically on Figure 10-14 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: No change in take regulation is proposed; existing regulations prohibiting take of all living marine resources would be retained (14 CCR 632(b)(96)(B)).

Proposed Modification of Other Regulated Activities: None.

10.3.1.13 Bird Rock (Catalina Island) SMCA

Classification: Proposed Addition.

Proposed Modification of Boundaries: The Bird Rock SMCA is a newly proposed MPA with a depth range of 75 to 2,616 feet, an area of 8.97 square miles, and an alongshore span of 2.3 miles. Boundaries of this proposed SMCA are depicted graphically on Figure 10-14 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 2, take of living marine resources would be limited to recreational take of pelagic finfish by hook and line; pelagic finfish by spearfishing; white sea bass by spearfishing; coastal pelagic finfish by dip net; Humboldt squid by hook and line; and market squid by dip net and commercial take of pelagic finfish by hook and line; coastal pelagic finfish by dip net; Humboldt squid by hook and line; market squid by dip net; and swordfish by harpoon.

Proposed Modification of Other Regulated Activities: None.

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10.3.1.14 Casino Point (Catalina Island) SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: This is a newly proposed SMR with a depth range of 0-73 feet, an area of 0.01 square mile, and an alongshore span of 0.1 mile. Boundaries of this proposed SMR are depicted graphically on Figure 10-14 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 2, the take of all living marine resources would become prohibited.

Proposed Modification of Other Regulated Activities: None.

10.3.1.15 Lover's Cove SMCA

Classification: Proposed Expansion.

Proposed Modification of Boundaries: The boundaries of the existing Lover's Cove SMCA would be expanded to the north, east, and west, and the SMCA's shape would be simplified. The expanded Lover's Cove SMCA has a depth range of 0 to 188 feet, an area of 0.06 square mile, and an alongshore span of 0.4 mile. Boundaries of this proposed SMCA are depicted graphically on Figure 10-14 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 2, existing regulations allowing only commercial take of finfish and kelp (14 CCR 632(b)(98)(B)) would be removed, and only recreational pier fishing (any target) by hook and line would be allowed.

Proposed Modification of Other Regulated Activities: It is the intent of the SCRSG Work Group 2 to prohibit anchoring within the MPA.

10.3.1.16 Farnsworth (Catalina Island) SMCA

Classification: Proposed Replacement.

Proposed Modification of Boundaries: The existing Farnsworth Bank SMCA has been replaced by the proposed Farnsworth SMCA. This offshore MPA has a depth range of 125 to 3,499 feet and an area of 10.18 square miles. Boundaries of the proposed Farnsworth SMCA extend from the island to the offshore extent of state jurisdiction, as shown on Figure 10-14 and on detailed figures provided in Appendix A. The proposed boundaries would protect endangered intertidal black abalone and subtidal white abalone habitat.

Proposed Modification of Take Regulations: Under Alternative 2, existing regulations prohibiting the take of purple coral, but allowing take of other marine resources (14 CCR

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632(b)(97)(B)) would be removed, and take of living marine resources would be limited to recreational take of pelagic finfish by hook and line or spearfishing; white sea bass by hook and line or spearfishing; coastal pelagic finfish by dip net; Humboldt squid by hook and line; and market squid by dip net and commercial take of pelagic finfish by hook and line or pelagic round haul nets; white sea bass by hook and line; coastal pelagic finfish by pelagic round haul nets or dip net; Humboldt squid by hook and line; market squid by pelagic round haul nets or by dip net; and swordfish by harpoon.

Proposed Modification of Other Regulated Activities: None.

10.3.1.17 Begg Rock SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: The proposed Begg Rock SMR would be established with the same boundaries and regulations as proposed in the IPA for this location. The proposed Begg Rock SMR has a depth range of 219 to 374 feet, an area of 37.96 square miles, and an alongshore span of 6.9 miles.

Proposed Modification of Take Regulations: Under Alternative 2, take of all living marine resources would be prohibited.

Proposed Modification of Other Regulated Activities: It is not the intent of the SCRSG Work Group 2 to have this SMR regulate military activities. The work group recommends that Department and US Department of Defense should coordinate regulatory language similar to Vandenberg SMR.

10.3.1.18 Upper Newport Bay SMP and SMCA

Classification: Proposed Replacement.

Proposed Modification of Boundaries: The proposed Upper Newport Bay SMCA would subsume the exiting Upper Newport Bay SMP, and would extend the southern boundary approximately one-quarter mile to the Pacific Coast Highway. The proposed SMCA has an area of 1.28 square miles. Boundaries of this proposed SMR are depicted graphically on Figure 10-15 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 2, existing regulations prohibiting take of all living marine resources except recreational hook and line take of species other than kelp (14 CCR 632(b)(99)(B)) would be removed, and take of all living marine resources except recreational shore fishing by hook and line; and finfish by hook and line would become prohibited.

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Proposed Modification of Other Regulated Activities: It is the intent of the SCRSG Work Group 2 to continue restrictions regarding: swimming areas, boat speed, shoreline access and access fees. Additionally, routine maintenance, dredging, monitoring, research and education, and habitat restoration would be allowed to continue.

10.3.1.19 Robert E. Badham SMCA

Classification: Proposed Removal.

Proposed Modification of Boundaries: This existing SMCA would be subsumed into the Laguna North SMCA, described below in Section 10.3.1.21 of this Draft EIR. For a description of the existing Robert E. Badham SMCA, refer to the discussion of the No Project alternative (existing MPAs) in Section 10.1.1.12 of this Draft EIR.

Proposed Modification of Take Regulations: The existing regulations limiting take of all living marine resources except the recreational take of lobster, and select species pelagic finfish and finfish, which shall be taken by hook and line or by spearfishing gear only, and the commercial take of spiny lobster (14 CCR 632(b)(100)(B)) would be lifted, and take regulations for the Laguna North SMCA would apply to this area (see Section 10.3.1.21 below).

Proposed Modification of Other Regulated Activities: None.

10.3.1.20 Crystal Cove SMCA

Classification: Proposed Removal.

Proposed Modification of Boundaries: Under Alternative 2, this existing SMCA would be subsumed into the Laguna North SMCA, described below in Section 10.3.1.21 of this Draft EIR. For a description of the existing Crystal Cove SMCA, refer to the discussion of the No Project alternative (existing MPAs) in Section 10.1.1.13 of this Draft EIR.

Proposed Modification of Take Regulations: Existing regulations prohibiting take of all living marine resources except the recreational take of certain invertebrates and finfish and commercial take of finfish, certain invertebrates, and algae (except giant kelp and bull kelp) would be lifted (14 CCR 632(b)(101)(B)), and take regulations for the Laguna North SMCA would apply to this area (see Section 10.3.1.21 below).

Proposed Modification of Other Regulated Activities: None.

10.3.1.21 Laguna North SMCA

Classification: Proposed Addition.

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Proposed Modification of Boundaries: The boundaries of the existing Robert E. Badham SMCA and Crystal Cove SMCA would expand to create this proposed SMCA. This proposed SMCA is located adjacent to the proposed Laguna SMR to the northwest and creates a continuous line of MPAs up the coast. The proposed SMCA has a depth range of 0 to 125 feet, an area of 2.23 square miles, and an alongshore span running 4.8 miles. Boundaries of the proposed Laguna North SMCA are depicted graphically on Figure 10-15 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under alternative 2, existing regulations governing take within the Robert E. Badham SMCA (see Section 10.1.1.12, above) and the Crystal Cove SMCA (see Section 10.1.1.13, above) would be replaced by regulations allowing only recreational take of lobster by hoop net or by hand; rock crab by hoop net; finfish by hook and line or by spearfishing and commercial take of sea cucumber by diving; lobster by trap; urchin by diving; rock crab by trap; and finfish by hook and line.

Proposed Modification of Other Regulated Activities: It is the intent of the SCRSG Work Group 2 to limit trampling of inter-tidal species.

10.3.1.22 Irvine Coast SMCA

Classification: Proposed Removal.

Proposed Modification of Boundaries: The existing Irvine Coast SMCA would be replaced by the proposed Laguna North SMCA. For a description of the Irvine Coast SMCA refer to the No Project alternative (existing MPAs) in Section 10.1.1.14.

Proposed Modification of Take Regulations: Existing regulations prohibiting take of all living marine resources except the recreational take of lobster and selected species of pelagic finfish and finfish, finfish taken by hook and line or by spearfishing gear only, and the commercial take of spiny lobster (14 CCR 632(b)(102)(B)) would be eliminated, and take regulations for the Laguna North SMCA would apply to this area (see Section 10.3.1.21 above).

Proposed Modification of Other Regulated Activities: None.

10.3.1.23 Heisler Park SMR

Classification: Proposed Removal.

Proposed Modification of Boundaries: The existing Heisler Park SMR would be eliminated and replaced by the proposed Laguna SMR. For a description of this MPA refer to the No Project alternative (existing MPAs) in Section 10.1.1.15.

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Proposed Modification of Take Regulations: Existing regulations prohibiting take of all living marine resources will be eliminated (14 CCR 632(b)(104)(B)).

Proposed Modification of Other Regulated Activities: Existing regulations would be eliminated stating that boats may be launched and retrieved only in designated areas and may be anchored within the reserve only during daylight hours (14 CCR 632(b)(104)(C)).

10.3.1.24 Laguna SMR

Classification: Proposed Replacement.

Proposed Modification of Boundaries: Under Alternative 2, the newly proposed Laguna SMR would subsume a portion of the existing Laguna Beach SMCA and the entire Heisler Park SMR. The proposed Laguna SMR has an area of 9.18 square miles, and an alongshore span running 2.58 miles. Depths within the MPA would range from 0 to 1,801 feet. For a description of the existing Laguna SMCA and Heisler Park SMR, refer to the description of the No Project alternative (existing MPAs) in Section 10.1.1.15 and Section 10.1.1.16.

Take Regulations: Proposed regulations would prohibit the take of all living marine resources.

Proposed Modification of Other Regulated Activities: It is the intent of workgroup 2 to allow permitted wastewater activities to continue in the Aliso Creek area.

10.3.1.25 Laguna Beach SMCA

Classification: Proposed Replacement.

Proposed Modification of Boundaries: The Laguna Beach SMCA would be eliminated and replaced by the proposed Laguna South SMCA. For a description of the existing Laguna Beach SMCA, refer to the description of the No Project alternative (existing MPAs) in Section 10.1.1.16.

Proposed Modification of Take Regulations: Existing regulations prohibiting take of all living marine resources except the recreational take of lobster and selected species of pelagic finfish and finfish (14 CCR 632(b)(103)(B)) would be eliminated and take regulations for the Laguna South SMCA would apply to this area (see Section 10.3.1.29 below).

Proposed Modification of Other Regulated Activities: None.

10.3.1.26 South Laguna Beach SMCA

Classification: Proposed Replacement.

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Proposed Modification of Boundaries: Existing boundaries would be eliminated as the existing SMCA is replaced by the proposed South Laguna SMCA. For a description of this existing MPA refer to the No Project alternative (existing MPAs) in Section 10.1.1.17.

Proposed Modification of Take Regulations: Existing regulations would be altered to reduce the number of living marine resources that may be taken recreationally and increase the number of living marine resources that may be taken commercially. Refer to Section 10.3.1.30 below for a description of the new take regulations under the proposed Laguna South SMCA. Existing regulations prohibiting take of all living marine resources except the recreational take of lobster and selected species of pelagic finfish and finfish would be eliminated. Additionally, take of finfish would be permitted by hook and line or spearfishing gear only. The commercial take of spiny lobster would also be allowed.

Proposed Modification of Other Regulated Activities: None.

10.3.1.27 Niguel SMCA

Classification: Proposed Replacement.

Proposed Modification of Boundaries: The existing Niguel SMCA would be subsumed into the proposed Laguna South SMCA. For a description of this existing SMCA, refer to the No Project alternative (existing MPAs) in Section 10.1.1.18.

Proposed Modification of Take Regulations: Existing regulations prohibiting take of all living marine resources with the exception of recreational take of lobster and selected species of pelagic finfish and finfish would be eliminated (14 CCR 632(b)(106)(B)), and take regulations for the Laguna South SMCA would apply to this area (see Section 10.3.1.29 below).

Proposed Modification of Other Regulated Activities: None.

10.3.1.28 Dana Point SMCA

Classification: Proposed Replacement

Proposed Modification of Boundaries: The existing Dana Point SMCA would be subsumed into the proposed Laguna South SMCA. For a description of the existing Dana Point SMCA, refer to the No Project alternative (existing MPAs) in Section 10.1.1.19.

Proposed Modification of Take Regulations: Existing regulations prohibiting take of all living marine resources with the exception of recreational take of lobster and selected species of pelagic finfish and finfish below the mean lower low-water mark would be lifted, as would existing regulations allowing finfish to be taken by hook and line or by spearfishing gear

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only (14 CCR 632(b)(107)(B)). Take regulations for the Laguna South SMCA would apply to this area (see Section 10.3.1.29 below).

Proposed Modification of Other Regulated Activities: Existing regulations regarding take and impact in the intertidal zone, scientific collection, and allowed management activities (14 CCR 632 (b) (107) (C-G)) would be lifted.

10.3.1.29 Laguna South SMCA

Classification: Proposed Replacement.

Proposed Modification of Boundaries: As described above, the proposed Laguna South SMCA would subsume and replace the following existing SCMAs: Laguna Beach, South Laguna Beach, Dana Point, and Niguel. The proposed SCMA is located adjacent to the southern boundary of the proposed Laguna SMR, and would extend southeast alongshore down to Dana Point. The proposed SCMA has a depth range of 0 to 58 feet, an area of 1.43 square miles, and an alongshore span running 8.46 miles. Boundaries for the proposed Laguna South SMCA are depicted graphically on Figure 10-15 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 2, regulations would allow only recreational take of lobster by hoop net, lobster by hand, rock crab by hoop net, finfish by hook and line, and finfish by spear fishing; and commercial take of sea cucumber by diving, lobster by trap, urchin by diving, rock crab by trap, and finfish by hook and line.

Proposed Modification of Other Regulated Activities: It is the intent of the SCRSG Work Group 2 to allow local agencies to limit terrestrial access to prevent trampling of inter-tidal species.

10.3.1.30 Doheny SMCA

Classification: Proposed Removal.

Proposed Modification of Boundaries: Under Alternative 2, the existing Doheny SMCA would be removed from the MPA regulations. For a description of this existing MPA, refer to the discussion of the No Project alternative in Section 10.1.1.20 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 2, existing regulations prohibiting take of all living marine resources with the exception of recreational take of certain invertebrates and finfish (14 CCR 632(b)(109)(B)) would be lifted.

Proposed Modification of Other Regulated Activities: None.

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10.3.1.31 Doheny Beach SMCA

Classification: Proposed Removal.

Proposed Modification of Boundaries: Under Alternative 2, the existing Doheny Beach SMCA would be removed from the MPA regulations. For a description of this existing MPA, refer to the discussion of the No Project alternative in Section 10.1.1.21 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 2, existing regulations allowing only recreational take of lobster and selected species of pelagic finfish and finfish would be eliminated (14 CCR 632(b)(108)(B)).

Proposed Modification of Other Regulated Activities: None.

10.3.1.32 Agua Hedionda Lagoon SMR

Classification: Proposed Removal.

Proposed Modification of Boundaries: Under Alternative 2, the existing Agua Hedionda Lagoon SMR would be removed from the MPA regulations. For a description of this existing MPA, refer to the discussion of the No Project alternative in Section 10.1.1.22 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 2, existing regulations prohibiting take of all living marine resources (14 CCR 632(b)(111)(B)) would be lifted.

Proposed Modification of Other Regulated Activities: Other restrictions pertaining to management activities for fish and wildlife, flood control and vector control, as well as authorized operation and maintenance activities (14 CCR 632(b)(111)(C)) would be lifted.

10.3.1.33 Batiquitos Lagoon SMP

Classification: Proposed Removal.

Proposed Modification of Boundaries: Under Alternative 2, the existing Batiquitos Lagoon SMP would be removed from the MPA regulations. For a description of this existing MPA, refer to the discussion of the No Project alternative in Section 10.1.1.23 of this Draft EIR.

Proposed Modification of Take Regulations: Existing regulations prohibiting all take of living marine resources within the Batiquitos Lagoon SMP would be lifted (14 CCR 632(b)(112)(B)).

Proposed Modification of Other Regulated Activities: None.

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10.3.1.34 Encinitas SMCA

Classification: Proposed Removal.

Proposed Modification of Boundaries: Under Alternative 2, the existing Encinitas SMCA will be removed from the MPA regulations. For a description of this existing MPA, refer to the discussion of the No Project alternative in Section 10.1.1.24 of this Draft EIR.

Proposed Modification of Take Regulations: Existing regulations prohibiting all take of living marine resources within the Batiquitos Lagoon SMR would be lifted (CCR 632(b)(114)(B)).

Proposed Modification of Other Regulated Activities: None.

10.3.1.35 Cardiff-San Elijo SMCA

Classification: Proposed Removal.

Proposed Modification of Boundaries: Under Alternative 2, the existing Cardiff-San Elijo SMCA would be removed from the MPA regulations. For a description of this existing MPA, refer to the discussion of the No Project alternative in Section 10.1.1.25 of this Draft EIR.

Proposed Modification of Take Regulations: Existing regulations prohibiting all take of living marine resources except for the recreational take of finfish, chiones, clams, cockles, rock scallops, native oysters, crabs, lobster, ghost shrimp, sea urchins, mussels and marine worms; and commercial take; within the Cardiff-San Elijo SMCA would be lifted (14 CCR 632(b)(114)(B)).

Proposed Modification of Other Regulated Activities: None.

10.3.1.36 Del Mar SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: The newly-proposed Del Mar SMR is located offshore, south of the City of Encinitas, and would extend offshore to the state jurisdictional line. This proposed SMR has a depth range of 0 to 1,057 feet, an area of 12.78 square miles, and an alongshore span running 3.61 miles. Boundaries of this proposed MPA are shown on Figure 10-16 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 2, the take of all living marine resources would be prohibited.

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Proposed Modification of Other Regulated Activities: It is the intent of the SCRSG Work Group 2 to allow activities regarding beach replenishment, dredging, and lagoon restoration to continue, as they are important activities in the area. The SCRSG believes the City of Del Mar should be able to continue beach replenishment and dredging activities in the same locations and periodicity that they have been for years. Restoration projects such as the North park restoration project should be allowed to continue with appropriate permitting.

10.3.1.37 San Elijo Lagoon SMP

Classification: Proposed Removal.

Proposed Modification of Boundaries: The existing San Elijo Lagoon SMP would be removed from the MPA regulations. For a description of this existing MPA, refer to the discussion of the No Project alternative in Section 10.1.1.26 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 2, existing regulations prohibiting all take of living marine resources except recreational take of finfish by hook and line from shore within the San Elijo SMP would be lifted (14 CCR 632(b)(115)(B)).

Proposed Modification of Other Regulated Activities: Under Alternative 2, existing regulations prohibiting boating, swimming, wading, and diving within the park would be lifted. Additionally, regulations allowing San Diego County, after consultation with the department, to carry out management activities for fish and wildlife management, flood control, vector control and regional park recreational activities would be lifted.

10.3.1.38 San Dieguito Lagoon SMP and SMR

Classification: Proposed Replacement.

Proposed Modification of Boundaries: The existing San Dieguito SMP would be expanded and redesignated as an SMR of the same name. The proposed SMR has an area of 0.52 square mile, and is comprised mainly of estuarine habitat. Boundaries of the proposed MPA are illustrated on Figure 10-16 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 2, existing regulations allowing only recreational take of finfish by hook and line from shore and from the Grand Avenue bridge (14 CCR 632(b)(116)(B)) would be removed, and the take of all living marine resources would become prohibited.

Proposed Modification of Other Regulated Activities: Intentions of the SCRSG Work Group 2 are to maintain existing regulations regarding boating, swimming, wading, and diving. The designation is not intended to restrict restoration and/or associated dredging

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activity. Dredging is required as part of the ongoing restoration managed by Southern California Edison as a mitigation project.

10.3.1.39 San Diego-Scripps SMCA

Classification: Proposed Removal.

Proposed Modification of Boundaries: The existing San Diego-Scripps SMCA will be removed from the MPA regulations. For a description of this existing MPA, refer to the discussion of the No Project alternative in Section 10.1.1.28 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 2, existing regulations prohibiting all take of living marine resources except for the commercial and recreational take of finfish and take for scientific purposes would be lifted (14 CCR 632(b)(117)(B)).

Proposed Modification of Other Regulated Activities: None.

10.3.1.40 La Jolla SMCA and La Jolla SMR

Classification: Proposed Replacement.

Proposed Modification of Boundaries: Under Alternative 2, the existing La Jolla SMCA would be replaced by the proposed La Jolla SMR, but no boundary change would occur. The proposed La Jolla SMR has a depth range of 0 to 214 feet, an area of 0.77 square mile, and an alongshore span of 1.1 miles. The boundaries of the La Jolla Cove SMR are depicted graphically on Figure 10-16 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 2, existing regulations allowing only the commercial take of squid for bait (14 CCR 632(b)(118)(B)) would be removed, and the take of all living marine resources would become prohibited.

Proposed Modification of Other Regulated Activities: It is the intention of the SCRSG Work Group 2 to maintain existing regulations regarding boat launching, retrieval, and anchoring within designated areas during daylight hours.

10.3.1.41 Famosa Slough SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: The newly-proposed Famosa Slough SMR has an area of 0.03 square mile. The proposed boundaries are shown on Figure 10-16 and on detailed figures provided in Appendix A.

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Proposed Modification of Take Regulations: Under Alternative 2, the take of all living marine resources would become prohibited.

Proposed Modification of Other Regulated Activities: It is the intention of the SCRSG Work Group 2, to allow future restoration activities to continue with appropriate permitting. All activities as required under other laws, wetland restoration activities, maintenance of adequate water circulation, express intention for support of the issuance of permits as required to allow limited collecting for the purposes of education and research, express intent for the issuance of permits required to conduct small scale experimental manipulation for the purpose of scientific research.

10.3.1.42 Ocean Beach Pier SMCA

Classification: Proposed Addition.

Proposed Modification of Boundaries: The newly-proposed Ocean Beach Pier SMCA is located adjacent to the northern boundary of the proposed Ocean Beach SMR, and contains the Ocean Beach Pier. The proposed SMCA has a depth range of 0 to 28 feet, an area of 0.15 square mile, and an alongshore span of 0.2 miles under this alternative. Boundaries of the Ocean Beach Pier SMCA are shown on Figure 10-16 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 2, only recreational pier fishing (any target) by hook and line, hoop net, or by dip net would be allowed; all other take of living marine resources would be prohibited.

Proposed Modification of Other Regulated Activities: None.

10.3.1.43 Sunset Cliffs SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: The newly-proposed Sunset Cliffs SMR is located offshore near San Diego, adjacent to the proposed Ocean Beach Pier SMCA, and extends west to the offshore limits of state jurisdictional. The proposed SMR has a depth range of 0 to 336 feet, an area of 9.27 square miles, and an alongshore span running 2.6 miles. The boundaries for the newly proposed Sunset Cliffs SMR are depicted on Figure 10-16 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 2, the take of all living marine resources would become prohibited.

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Proposed Modification of Other Regulated Activities: It is the intent of the SCRSG Work Group 2 to maintain regulations regarding U.S. Department of Defense training exercises for national defense, such as acoustic monitoring.

10.3.1.44 Cabrillo SMR

Classification: Proposed Replacement.

Proposed Modification of Boundaries: The existing Mia J. Tegner SMCA would be expanded and replaced by the proposed Cabrillo SMR. The proposed SMR has a depth range of 0 to 30 feet, an area of 0.38 square mile, and an alongshore span running 1.3 miles. Boundaries of the proposed MPA are shown on Figure 10-16 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 2, existing regulations allowing only recreational take of finfish and commercial take of finfish and marine aquatic plants (14 CCR 632(b)(119)(B)) would be removed, and the take of all living marine resources would become prohibited.

Proposed Modification of Other Regulated Activities: It is the intent of the SCRSG Work Group 2 to have terrestrial access times and places posted by signage and enforced by local national park rangers.

10.3.2 Environmental Impacts of Alternative 2

As described above, under Alternative 2 existing MPA regulations would be modified, altering the boundaries, designations, and conditions governing the MPA network within the SCSR. This alternative would increase the area of MPAs and designate more protective regulations for those MPAs than currently exist in the Project area. The geographic area protected from would increase from approximately 182 square miles under existing conditions (Alternative 0) to approximately 342 square miles under Alternative 2. This alternative would protect 9.01 fewer square miles than the proposed Project IPA.

10.3.2.1 Consumable Living Marine Resource Products

Similar to the proposed Project IPA, Alternative 2 would result in substantial expansion of the areas designated as MPAs within the SCSR. In locations where new or expanded MPAs would overlap existing fishing grounds or areas used for aquaculture, the take and use restrictions of the newly-imposed MPAs would apply, and inconsistent consumptive uses would be displaced from the MPAs. Displacement of consumptive uses would not affect all fisheries equally, due to variation in the abundance and spatial distribution of marine resources. According to a report published by EcoTrust (Scholz et al. 2010), the red sea urchin fishery near Oceanside would be disproportionately affected under Alternative 2, with

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effects on the stated value of total fishing grounds estimated at 38.7 percent. Displacement of Oceanside's red urchin fishery would be greater under this alternative compared to the IPA; however, the proposed Project IPA would disproportionately affect the nearshore trap fishery at Dana Point, which Alternative 2 would not.

10.3.2.2 Air Quality

Like the proposed Project IPA, the primary source of operational emissions from this alternative would be from a change in marine vessel transit distances above the current practices due to displacement from MPAs. Because the regulatory changes proposed under Alternative 2 would result in an MPA network that would protect approximately nine square miles less than the proposed Project IPA, it is reasonable to assume that a concomitant decrease in distance travelled by displaced fishing vessels would occur. Based on this, air pollutant emissions of Alternative 2 are expected to be very slightly less than those of the proposed Project IPA.

10.3.2.3 Global Climate Change and Greenhouse Gas Emissions

Because GHG emissions associated with Alternative 2 would pertain solely to mobile source emissions associated with vessel traffic patterns, GHG emissions under this alternative would be closely correlated with emissions of other air pollutants, discussed in Section 10.3.2.2 above. Effects of Alternative 2 on GHG emissions would be slightly less than those of the proposed Project.

10.3.2.4 Water Quality

Similar to the project IPA, under Alternative 2 existing facilities, and ongoing research and monitoring in the proposed MPAs would be allowed to continue pursuant to any required federal, state and local permits. Although not a primary criterion for MPA designation, guidance during the SCRSG MPA design process considered areas of known water contamination. However, based on a review of the Marine Map Decision Support Tool (Marine Map 2010), several of the MPAs proposed under Alternative 2 would encompass existing offshore wastewater and stormwater discharge locations. These include the Blue Cavern SMR (minor wastewater discharge), and the Del Mar SMR and Sunset Cliffs SMR (stormwater discharges). Should the Commission elect to adopt this alternative, the proposed regulations would be fine-tuned to ensure compatibility with these existing uses permitted by other agencies. In some cases, this could require designating an MPA as an SMCA rather than an SMR. Expansion of the existing MPA network would be consistent with the RWQCB basin plans for the study area, and would not conflict with existing water quality standards or regulatory requirements.

Alternative 2 could increase the potential for accidental release of pollutants such as oils and fuels and other hazardous materials into the water due to increased transit time or risk of

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accidents from overcrowding, as well as opening new areas where MPA designations have been removed. Similar to the proposed Project, potential shifts in non-consumptive uses with the implementation of Alternative 2 could have a minor localized effect on water quality but would be expected to be minimal. When measured against the CEQA criteria for water quality, potential effects of implementing Alternative 2 would be comparable to those of the proposed Project IPA.

10.3.2.5 Mineral Resources

The new and expanded MPAs proposed under Alternative 2 are not located over existing oil and gas production facilities, salt producing facilities, beach nourishment areas, or geothermal resource areas. There are no known solid mineral resources or active sand and gravel mining operations within the SCSR. Current federal and state moratoria do not permit issuance of new offshore oil and gas leases. Existing oil and natural gas pipelines are located adjacent to the Bolsa Chica SMCA/SMR near Huntington Beach (CDC 2000). If Alternative 2 were to be adopted, the proposed regulations would be revisited to ensure that the language allows for continuation of these existing uses permitted by other agencies. Because the proposed MPAs would not regulate existing mineral resource exploration and extraction activities, there would be no impact to the availability of known resources under this alternative. Potential effects on mineral resources of implementing Alternative 2 would be comparable to those of the proposed Project IPA.

10.3.2.6 Biological Resources

Like the proposed Project IPA, Alternative 2 was developed in an effort to meet the goals of the MLPA and improve the state's existing system of MPAs. Because the protection and enhancement of marine ecosystems and habitats is a central objective of the MLPA, this alternative would be expected to benefit biological resources in the long term. Removal of a human predator is not anticipated to impact species and habitats inside MPAs created or expanded by Alternative 2; instead, it is expected that the proposed MPAs will result in the return of naturally balanced ecosystems. However, in the short-term, Alternative 2 could potentially result in adverse localized impacts on biological resources located at edges of MPAs, or within existing MPAs that would be removed under this alternative. Generally, these impacts would also occur under the proposed Project IPA. The existing Big Sycamore Canyon SMR, which contains the marine receiving waters of Big Sycamore Creek, a known historical steelhead creek, would be removed under this alternative, but would also be removed under the IPA. Long-term benefits to biological resources resulting from Alternative 2 would be slightly lesser than those of the proposed Project, as this alternative would preserve slightly less marine habitat within MPAs.

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10.3.2.7 Cultural Resources

Neither Alternative 2 nor the proposed Project IPA would result in direct physical alteration of the ocean floor or the bottom of relevant bays or estuaries, and therefore would not directly disturb any resources present, whether they be recorded, known but unrecorded, or yet unknown. Both Alternative 2 and the proposed Project IPA would remove many of the same MPAs; removal of MPAs would not result in potential impacts to cultural resources because many of the MPAs that would be removed currently allow boating, diving, and associated anchoring, so removing the MPAs would not result in a substantial change in conditions. Potential adverse impacts of Alternative 2 on cultural resources, if any, would be equivalent to those of the proposed Project IPA.

10.3.2.8 Public Services and Utilities

Alternative 2 would not increase the need for public utilities or services significantly. The minor adjustments to the size and location of the proposed MPAs would not create a substantial difference in impact to law enforcement resources beyond what is described for the proposed Project IPA, and would not impact the existing utilities. All of the proposed MPAs are outside of the intake and discharge locations for power generation facilities utilizing once-through ocean cooling systems and existing desalination facilities with ocean intake and discharge systems. Further, if this alternative were to be adopted by the Commission, the regulatory language would be revisited to ensure that existing activities under the permitting authority of other federal or state agencies, such as operations of intake and outfall pipes, would continue to be allowed under Alternative 2. The effects of Alternative 2 on public services and utilities, including law enforcement resources, would be similar to those of the proposed Project IPA.

10.3.2.9 Land Use and Recreational Resources

Like the proposed Project IPA, Alternative 2 would increase the number and geographic extent of MPAs within the SCSR. On a large scale, this alternative would not be expected to increase the use of existing parks or recreational facilities within the SCSR, or require the construction or expansion of recreational facilities. However, it is possible that adoption of this alternative could result in angling or fishing activity becoming concentrated at certain access points where parking or other facilities may be limited. The likelihood of this situation occurring would be based on a number of factors, including the existing use/capacity ratio for the facility and the net change in user density caused by revision of the MPA network. It is foreseeable that although consumptive users of the marine environment would be displaced from MPAs into open fishing grounds, certain non-consumptive users, such as divers, kayakers, and wildlife viewers, would offset this trend by preferentially using protected areas. With regard to land use and recreation, potential effects of implementing Alternative 2 would be similar to those of the proposed Project IPA.

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10.3.2.10 Vessel Traffic

Like the proposed Project IPA, Alternative 2 would increase the number and geographic extent of MPAs within the SCSR. On a large scale, this alternative is not expected to add vessel traffic to the SCSR. On a smaller scale, however, it is possible that changing use patterns in response to the proposed regulatory changes would result in elevated vessel traffic levels at some locations; increased vessel traffic concentrations from this alternative would be approximately similar to those expected from the proposed Project IPA, and would be minor. The proposed MPAs would not regulate or preclude vessel traffic; and existing traffic separation schemes, vessel traffic system monitoring, safety reviews and recommendations by Harbor Safety Committees, USCG enforcement, and other systems to ensure safe navigation and vessel operations would remain in place. Similar to the proposed Project IPA, one of the MPAs proposed under Alternative 2 (the Point Vicente SMR) abuts the northbound coastwise shipping lane just north of the Los Angeles/Long Beach port complex. With regard to vessel traffic, potential effects of implementing Alternative 2 would be comparable to those of the proposed Project IPA.

10.3.2.11 Hazards and Hazardous Materials

Like the proposed Project IPA, Alternative 2 would not require the transport, use or disposal of hazardous materials, and there would be no reasonably foreseeable upset or accident condition involving the release of hazardous materials into the environment. While the MPA network proposed under Alternative 1 would be larger than that proposed under the IPA, the proposed regulatory changes would not prohibit vessel transit through MPAs, and any emergency-related plans calling for sea evacuations or other marine components could be implemented without interference.

There are areas within the Southern California Bight that have been identified as having contaminated sediments (on lists compiled pursuant to Government Code Section 65962.5); however, because it would not involve any construction activities at these (or other) locations, Alternative 1 would not create a significant hazard, or result in substantial adverse effects, to the public or the environment. With respect to hazards and hazardous materials, potential effects of implementing Alternative 2 would be similar to those of the proposed Project IPA.

10.3.2.12 Environmental Justice

Like the proposed Project IPA, Alternative 2 would have the potential to affect commercial and recreational fishing patterns, and to displace existing fishing effort to locations outside the proposed MPAs. Because the MPAs proposed under Alternative 1 would be scattered throughout the SCSR, and because coastal areas adjacent to the SCSR are heavily urbanized and provide excellent mass transit and coastal access opportunities, it is not likely that the MPA network proposed under this alternative would result in disproportionate impacts on

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minority or low-income populations. Any effects of this nature would be similar to those of the proposed Project.

10.3.2.13 Alternative 2 Summary

Alternative 2 would meet the Project objectives presented in Section 3.2 of this Draft EIR. This alternative would result in slightly less impact than the proposed Project relative to air quality, because less displacement of existing fishing effort would occur. Other impacts of this alternative would be substantially similar to those of the proposed Project.

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10.4 ALTERNATIVE 3

Under Alternative 3 the existing MPA regulations at 14 CCR 632(b) would be modified, altering the boundaries, designations, and conditions governing the MPA network within the SCSR. A numerical summary of the changes in protected area that would occur under this alternative are presented in Table 10.4-1. The regulatory changes proposed under Alternative 3 would expand the extent of marine areas protected from approximately 182 square miles under existing conditions to approximately 349 square miles (including the 13 existing MPAs surrounding the northern Channel Islands, which would be retained without modification under all alternatives considered in this Draft EIR). However, the number of discrete MPAs within the SCSR would decrease under this alternative, from an existing total of 42 to a revised total of 39. The 8 existing SMPs previously designated by the Commission within the SCSR would not be retained under this alternative, and would be either removed or redesignated to other MPA classifications.

**TABLE 10.4-1
SUMMARY OF AREAS PROTECTED UNDER ALTERNATIVE 3**

Type of MPA or Restricted Area ¹	Number of Existing MPAs ²	Number of MPAs Under Alternative 3	Area of Existing MPAs (sq mi)	Area of MPAs under Alternative 3 (sq mi)	Net Change In MPA Area (sq mi)
State Marine Reserve (SMR)	15	30	161.00	291.00	+130.00
State Marine Conservation Area (SMCA)	19	9	17.95	57.85	+39.90
State Marine Park (SMP)	8	0	2.68	0.00	-2.68
All MPAs in final configuration	42	39	181.66	348.92	+167.22

Sources: Department 2010 and Department 2009.

Note:

¹ Type of MPA refers to the type of designation as classified by Section 36710 of the California Public Resources Code.

² Data includes all MPAs within the SCSR, including those surrounding the northern Channel Islands.

Alternative 3 would also designate one area as a State Marine Recreational Management Area (SMRMA), a designation allowed pursuant to Section 36700(e) of the Public Resources Code for areas where restricting recreational opportunities may be necessary for the preservation of resource values. The restrictions imposed within a SMRMA are focused on recreational uses, and the MLPA (Section 2852(c)) does not include SMRMAs among the classifications considered to be MPAs. Thus, while a SMRMA would be designated under this alternative, that designation would not affect the extent of the MPA network. The SMRMA is also not included in the MPA summary statistics presented in this section. For more information related to the proposed SMRMA, refer to Section 10.4.1.8 of this Draft EIR.

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10.4.1 Description of Regulations under Alternative 3

The changes to existing MPA boundaries, as well as allowed and prohibited uses, proposed under Alternative 3 are described below.

10.4.1.1 Point Conception SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: The Point Conception SMR under Alternative 3 is proposed in an area of the coast with no existing MPA. This proposed SMR would extend due west from Point Conception, and approximately 5 miles east along the coast; the offshore boundary would be the limits of state jurisdiction. The proposed SMR is the largest MPA proposed under Alternative 3, encompassing a total area of 29.41 square miles and alongshore span of 7.48 miles. Depths within the MPA would range from 0 to 489 feet. Boundaries of the proposed SMR are depicted graphically on Figure 10-18.

Proposed Modification of Take Regulations: Under Alternative 3, take of all living marine resources would be prohibited.

Proposed Modification of Other Regulated Activities: None.

Implementation Notes: Designation is not intended to, and would not, regulate military activities. The work group recommends that the Department and U.S. Department of Defense should coordinate regulatory language similar to Vandenberg SMR.

10.4.1.2 Refugio SMCA

Classification: Proposed Removal.

Proposed Modification of Boundaries: This existing SMCA has been proposed for removal under Alternative 3. For a description of this existing SMCA, refer to the discussion of the No Project alternative in Section 10.1.1.1 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 3, existing take regulations prohibiting the recreational take of marine invertebrates and the commercial take of finfish, marine invertebrates, and algae (14 CCR 632(b)(74)) would be lifted.

Proposed Modification of Other Regulated Activities: None.

10.4.1.3 Naples SMR

Classification: Proposed Addition.

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Proposed Modification of Boundaries: This SMR has been proposed in an area of the SCSR with no existing MPA. The proposed Naples SMR is located along the Gaviota Coast, approximately 5 miles east of the existing Refugio SMCA that is proposed for removal under this Alternative. The proposed SMR would encompass an area of 2.57 square miles, and would run an alongshore span of 1.91 miles. Depths within the MPA range would range from 0 to 162 feet. Boundaries of the Naples SMR as proposed under Alternative 3 are presented graphically on Figure 10-18.

Proposed Modification of Take Regulations: Under Alternative 3, the take of all living marine resources would be prohibited.

Proposed Modification of Other Regulated Activities: None.

10.4.1.4 UCSB SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: This SMR has been proposed in an area of the SCSR with no existing MPA. The proposed UCSB SMR is located near the City of Goleta and the University of California, Santa Barbara (UCSB). The nearshore boundaries of this MPA would extend from the eastern edge of Santa Barbara Shores County Park, to Goleta Point, and the offshore boundary would travel to the offshore limits of state jurisdiction. The resulting area would be 10.42 square miles, and depths within the MPA would range from 0 to 748 feet. Boundaries of the proposed UCSB SMR are depicted graphically on Figure 10-18.

Proposed Modification of Take Regulations: Under Alternative 3, the take of all living marine resources would be prohibited.

Proposed Modification of Other Regulated Activities: The Alternative 3 designation is not intended to impede ongoing operation, maintenance, and monitoring associated with the UCSB Marine Science Institute seawater intake and outfall.

10.4.1.5 Goleta Slough SMP and Goleta Slough SMR

Classification: Proposed Replacement.

Proposed Modification of Boundaries: Boundaries would remain unmodified; under Alternative 3, the existing 0.25 square mile Goleta Slough SMP would be eliminated and redesignated as the Goleta Slough SMR. Boundaries of this proposed SMR are depicted graphically on Figure 10-18.

Proposed Modification of Take Regulations: Under Alternative 3, take of all living marine resources would be prohibited.

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Proposed Modification of Other Regulated Activities: This designation is not intended to impede protection, restoration, maintenance management, scientific research, study activities including rivermouth opening, dune restoration, and dredge spoils deposition. Boating, swimming, wading and diving not related to the activities described above would be prohibited as well.

10.4.1.6 Mishopsno SMCA

Classification: Proposed Addition.

Proposed Modification of Boundaries: This SMCA has been proposed in an area of the SCSR with no existing MPA. The proposed Mishopsno SMCA is located approximately 1.5 miles south of Carpinteria Salt Marsh. The western boundary of the proposed SMCA originates from the east end of Carpinteria State Beach and travels southward to the offshore limits of state jurisdiction. The northern boundary of the MPA stretches along the coast approximately 8.25 miles, abutting Rincon Beach County Park and Rincon Point. From its southernmost coastal point, the MPA extends due west to the offshore limits of state jurisdiction (where it meets the western boundary). Depths within the MPA would range from 0 to 140 feet. Boundaries of this proposed SMCA are depicted graphically on Figures 10-18 and 10-19.

Proposed Modification of Take Regulations: Under Alternative 3, the take of all living marine resources would be prohibited, with allowances added for the commercial take of coastal pelagic finfish by pelagic round haul nets.

Proposed Modification of Other Regulated Activities: None.

10.4.1.7 Mugu Lagoon SMRMA

Classification: Proposed Addition.

Proposed Modification of Boundaries: As stated previously, SMRMAs are not among the designations considered to be MPAs under the MLPA. However, the Mugu Lagoon SMRMA is proposed under Alternative 3 because SMRMA designations may provide additional benefits to the protection already provided by the proposed MPA network. The proposed SMRMA would be located just west of Point Mugu State Park in Mugu Lagoon. The lagoon is within a Naval Air Weapons Station under Navy Control. The proposed SMRMA would have an area of 1.85 square miles. Boundaries of the proposed Mugu Lagoon SMRMA are depicted graphically on Figure 10-19.

Proposed Modification of Take Regulations: Under Alternative 3, all commercial and recreational take would be prohibited, except for currently allowed waterfowl hunting.

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Proposed Modification of Other Regulated Activities: Alternative 3, as intended by the work group, would not impede activities pertaining to protection, restoration, maintenance management, scientific research, or operations of the U.S. military.

10.4.1.8 Big Sycamore Canyon SMR

Classification: Proposed Removal.

Proposed Modification of Boundaries: Under Alternative 3 this existing SMR would be removed. For a description of this existing MPA including boundaries and take regulations, refer to the description of the No Project alternative (existing MPAs) in Section 10.1.1.3 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 3, existing regulations prohibiting take of all living marine resources (14 CCR 632(b)(90)(B)) would be lifted.

Proposed Modification of Other Regulated Activities: Under Alternative 3, existing regulations restricting swimming, boating, firearms, public entry, pesticides, litter, use of aircraft, and pets (14 CCR 632(b)(90)(C-L)) would be lifted.

10.4.1.9 Lachusa SMCA

Classification: Proposed Addition.

Proposed Modification of Boundaries: This SMCA has been proposed in an area of the SCSR with no existing MPA. The proposed Lachusa SMCA is located just south of the Los Angeles County line, southeast of Mugu Lagoon and near Point Dume. Bounded on the north by the Malibu coast, the western boundary originates just east of El Pescador State Beach and extends east 2.67 miles to the boundary of the proposed Point Dume SMR. The southern boundary of the SMCA stretches to the offshore limits of state jurisdiction, encompassing a total area of 14.06 square miles. The resulting SMCA would be adjacent to 2 state beaches – La Piedra and El Matador – and encompasses a depth range of 0 to 2,018 feet. Boundaries of this proposed SMCA are depicted graphically on Figures 10-19 and 10-20 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 3, the take of all living marine resources would be prohibited, except for the recreational take of pelagic finfish by spearfishing; Pacific bonito by spearfishing; white sea bass by spearfishing; coastal pelagic finfish by dip net; market squid by dip net; or the commercial take of sword fish by harpoon.

Proposed Modification of Other Regulated Activities: None.

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10.4.1.10 Point Dume SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: This SMR has been proposed in an area of the coast with no existing MPA. Under Alternative 3, the Point Dume SMR would share the eastern boundary of the proposed Lachusa SMCA, extending eastward 5.41 miles to Paradise Cove. The offshore boundary would extend to the limits of state jurisdiction, encompassing a total of 11.28 square miles. Depths within the MPA would range from 0 to 2,023 feet. Boundaries of this proposed SMR are depicted graphically on Figure 10-19 and 10-20 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 3, the take of all living marine resources would be prohibited.

Proposed Modification of Other Regulated Activities: None.

10.4.1.11 Palos Verdes SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: This SMR has been proposed in an area of the SCSR with no existing MPA. The proposed SMR is located adjacent to the Palos Verdes Peninsula: the northern boundary of the proposed SMR originates from Palos Verdes Point and travels diagonally (northwest) to the offshore limits of state jurisdiction; the southern boundary stretches due east from the offshore limits of state jurisdiction to Abalone Cove Shoreline Park. The area encompassed by this proposed SMR is 16.33 square miles, and depths within the MPA would range from 0 to 2,239 feet. Portions of the SMR overlay an EPA Superfund site. Boundaries of this proposed SMR are depicted graphically on Figure 10-20 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 3, the take of all living marine resources would be prohibited.

Proposed Modification of Other Regulated Activities: None.

10.4.1.12 Abalone Cove SMP

Classification: Proposed Removal.

Proposed Modification of Boundaries: This is an existing SMP that has been proposed for elimination under Alternative 3. For a description of this existing MPA, refer to the description of the No Project alternative (existing MPAs) in Section 10.1.1.4 of this Draft EIR.

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Proposed Modification of Take Regulations: Existing regulations prohibiting take of all living marine resources and the exception allowing recreational take of finfish by hook and line or spear (14 CCR 632(b)(92)(B)) would be lifted.

Proposed Modification of Other Regulated Activities: None.

10.4.1.13 Point Fermin SMP

Classification: Proposed Removal.

Proposed Modification of Boundaries: This is an existing SMP that has been proposed for elimination under Alternative 3. For a description of this existing MPA, refer to the description of the No Project alternative (existing MPAs) in Section 10.1.1.5 of this Draft EIR.

Proposed Modification of Take Regulations: Existing regulations prohibiting the take of all living marine resources would be lifted under Alternative 3. The existing allowances for limited recreational take of lobster and finfish by select methods (14 CCR 632(b)(93)(B)) would also be lifted.

Proposed Modification of Other Regulated Activities: None.

10.4.1.14 Bolsa Chica SMP and Bolsa Chica SMR

Classification: Proposed Replacement.

Proposed Modification of Boundaries: This SMR would eliminate and replace the existing Bolsa Chica SMP located in the Bolsa Chica Ecological Reserve. The proposed Bolsa Chica SMR would greatly increase the area encompassed by the existing SMP, expanding it from 0.25 square mile to 0.72 square mile. Boundaries of the proposed SMR are depicted graphically on Figure 10-20 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 3, existing regulations prohibiting take except for recreational hook and line fishing for species other than marine aquatic plants, would be retained.

Proposed Modification of Other Regulated Activities: Under Alternative 3, activities pertaining to protection, restoration, maintenance or management, and scientific research would be allowed as needed. Boating, swimming, wading and diving not related to the above activities would be prohibited as well as restrictions regarding time of entry and accessible areas.

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10.4.1.15 Arrow Point to Lion Head Point Invertebrate Area (Special Closure)

Classification: Proposed Removal.

Proposed Modification of Boundaries: This existing SCA is proposed for removal under Alternative 3. For a description of this existing SCA refer to the discussion of the No Project alternative (existing MPAs) in Section 10.1.1.7 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 3, existing regulations prohibiting the recreational take of invertebrates would be lifted.

Proposed Modification of Other Regulated Activities: None.

10.4.1.16 North Catalina SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: This SMR has been proposed in an area of the SCSR with no existing MPA. The proposed SMR is located on the north coast of Santa Catalina Island. Originating from the northwest tip of the island at Land's End, the nearshore boundary travels east approximately 3.92 miles to the western boundary of the existing Arrow Point to Lion Head Special Closure; the offshore boundary extends to the offshore limits of state jurisdiction. The resulting SMR would encompass an area of 14.05 square miles, with depths ranging from 0 to 2,035 feet. Boundaries of this proposed SMR are depicted graphically on Figure 10-21 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 3, take of all living marine resources would be prohibited.

Proposed Modification of Other Regulated Activities: None.

10.4.1.17 Catalina Marine Science Center (Catalina Island) SMR and Blue Cavern SMR

Classification: Proposed Replacement.

Proposed Modification of Boundaries: Under Alternative 3, the existing Catalina Marine Science Center SMR would be subsumed and replaced by the proposed Blue Cavern SMR. The area encompassed by the MPA would increase significantly, from 0.06 square mile to 1.85 square miles. The alongshore span would also increase from 0.8 miles to 2.26 miles, and the maximum depth would change from 111 feet to 854 feet. Boundaries of this proposed SMR are depicted graphically on Figure 10-21 and on detailed figures provided in Appendix A.

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Proposed Modification of Take Regulations: Take regulations would not be modified under Alternative 3. Existing regulations prohibiting take of all living marine resources would be retained and applied to the expanded area encompassed by the proposed MPA.

Proposed Modification of Other Regulated Activities: None.

10.4.1.18 Long Point (Catalina Island) SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: This SMR has been proposed in an area of the SCSR with no existing MPA. The proposed SMR is located on the eastern side of Santa Catalina Island, southeast of the proposed Blue Cavern SMCA. Under Alternative 3, the proposed SMR would have an area of 1.67 square miles and an alongshore span of 1.98 miles. Depths within the SMR would range from 0 to 749 feet. The boundaries of the proposed SMR are depicted graphically on Figure 10-21 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 3, the take of all living marine resources would be prohibited.

Proposed Modification of Other Regulated Activities: None.

10.4.1.19 Lover's Cove SMCA

Classification: Proposed Removal.

Proposed Modification of Boundaries: This existing SMCA is proposed for removal under Alternative 3. For a description of this existing MPA, refer to the discussion of the No Project alternative (existing MPAs) in Section 10.1.1.10 of this Draft EIR.

Proposed Modification of Take Regulations: Existing regulations prohibiting take of all living marine resources with allowances for commercial take of finfish and kelp (14 CCR 632(b)(97)(B)) would be lifted.

Proposed Modification of Other Regulated Activities: None.

10.4.1.20 Farnsworth Bank SMCA and Farnsworth SMR

Classification: Proposed Replacement.

Proposed Modification of Boundaries: Under Alternative 3, the boundaries of the existing Farnsworth Bank SMCA would be eliminated and replaced by the significantly larger proposed Farnsworth SMR. The proposed SMR would extend the boundaries of the existing

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SMCA west to the offshore limits of state jurisdiction, and east to the coast of Santa Catalina Island. The southern boundary would also extend further – nearly 1.70 miles south – increasing the protected area from 1.68 square miles to 14.45 square miles. The alongshore span would also increase from 1.2 miles to 7.51 miles, and the maximum depth changes from 403 feet to 2,496 feet. Boundaries of this proposed SMR are depicted graphically on Figure 10-21 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 3, the take of all living marine resources is prohibited.

Proposed Modification of Other Regulated Activities: Under Alternative 3, it would be recommended that permanent moorings be installed at Farnsworth Bank to facilitate safe non-consumptive visitation of this special pinnacle area while protecting the colonies of purple hydrocoral from anchor damage.

10.4.1.21 Upper Newport Bay SMP and Upper Newport Bay SMR

Classification: Proposed Replacement.

Proposed Modification of Boundaries: No boundary modifications are proposed; the existing 1.10 square mile Upper Newport Bay SMP would be redesignated as an SMR with the same name. The boundaries of the existing SMP and the proposed SMCA are depicted graphically on Figures 10-20 and 10-22 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 3, the take of all living marine resources would be prohibited.

Proposed Modification of Other Regulated Activities: Under Alternative 3, existing restrictions on swimming areas, boat speed, shoreline access, and access fees (14 CCR 632(b)(99)(C-F)) would be retained, with allowances made for the continuance of activities related to protection, restoration, maintenance management, and scientific research.

10.4.1.22 Newport Coast SMCA

Classification: Proposed Addition.

Proposed Modification of Boundaries: Boundaries would be expanded; the proposed Newport Coast SMCA would subsume the existing Robert E. Badham, Irvine Coast, and Crystal Cove SMCAs, expanding the area encompassed by MPAs from 2.17 square miles, to 2.37 square miles. The boundary of the proposed SMCA would originate from Corona Del Mar State Beach, and travel 2.37 miles south to Abalone Point. Depths with the MPA would range from 0 to 136 feet. Boundaries of this proposed SMR are depicted graphically on Figure 10-22 and on detailed figures provided in Appendix A.

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Proposed Modification of Take Regulations: For a description of the existing take regulations for the MPAs to be replaced, please refer to the discussion of the No Project alternative in Section 10.1.1.12 through Section 10.1.1.14 of this Draft EIR. Under Alternative 3, commercial and recreational take of sheephead, rockfish, rays, sharks, marine plants and invertebrates, would be prohibited, except for the following allowances: recreational take of lobster and urchin; commercial take of lobster, including incidental catch taken under the authority of a lobster permit (Current allowed incidental catch includes crab other than Dungeness [FGC 8250.5], Kellet's whelk, and octopus) and urchin. Also allowed under general regulations are the take of species not mentioned above and the take of all species when fishing from the Newport Jetty.

Proposed Modification of Other Regulated Activities: None.

10.4.1.23 Robert E. Badham SMCA

Classification: Proposed Removal.

Proposed Modification of Boundaries: Under Alternative 3, the existing Robert E. Badham SMCA would be subsumed by the proposed Newport Coast SMCA. For a description of the existing Robert E. Badham SMCA, refer to the No Project alternative (existing conditions) in Section 10.1.1.12 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 3, take regulations would become less restrictive, lifting existing regulations prohibiting take of all living marine resources and allowances for limited and recreational commercial take (14 CCR 632(b)(100)(B)). Refer to Section 10.4.1.22 above for changes in take regulations under Alternative 3.

Proposed Modification of Other Regulated Activities: None.

10.4.1.24 Irvine Coast SMCA

Classification: Proposed Removal.

Proposed Modification of Boundaries: Boundaries would be eliminated as the existing SMCA is subsumed by the proposed Newport Coast SMCA. For a description of this MPA refer Section 10.1.1.14 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 3, take regulations would become less restrictive, lifting existing regulations prohibiting take of all living marine resources and allowances for limited recreational and commercial take (14 CCR 632(b)(102)(B)). Refer to Section 10.4.1.22 above for changes in take regulations under Alternative 3.

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Proposed Modification of Other Regulated Activities: None.

10.4.1.25 Crystal Cove SMCA

Classification: Proposed Removal.

Proposed Modification of Boundaries: Boundaries would be eliminated as the existing SMCA is subsumed by the proposed Newport Coast SMCA. For a description of the existing Crystal Cove SMCA, refer to the discussion of the No Project alternative in Section 10.1.1.13 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 3, take regulations would become less restrictive, lifting existing regulations prohibiting take of all living marine resources and allowances for limited recreational and commercial take (14 CCR 632(b)(101)(B)). Refer to Section 10.4.1.22 above for changes in take regulations under Alternative 3.

Proposed Modification of Other Regulated Activities: None.

10.4.1.26 Laguna Beach SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: Boundaries would be expanded; the proposed Laguna Beach SMR would subsume the existing Heisler Park SMP, Laguna Beach SMCA and South Laguna Beach SMCA, significantly expanding the area encompassed by the existing MPAs. The proposed SMR would be located between the proposed Newport Coast SMCA and the proposed Dana Point SMCA, stretching 4.12 miles from Abalone Point through Mussel Cove. The most significant boundary change under Alternative 3 would be the extension of the offshore boundary, which would increase the maximum depth encompassed within the MPA from 41 feet to 1,635 feet. The existing area would increase from 0.86 square mile, to 15.16 square miles. Boundaries of the proposed Laguna Beach SMR under Alternative 3 are depicted graphically on Figure 10-22 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 3, take of all living marine resources would be prohibited.

Proposed Modification of Other Regulated Activities: The Alternative 3 designation is not meant to impede ongoing Clean Water Act mandated monitoring, maintenance and marine life sampling for pollutant effects associated with the Aliso Creek sewer outfall. Designation is not meant to impede Aliso Creek outlet maintenance and other public safety operations necessary to comply with public health and safety issues for the community.

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Implementation Notes: Due to the incompatibility of SMR designation maintenance and operations of the Aliso Creek outfall, the SCRSG workgroup recommends that the Aliso sewer line and outfall be covered by a Department-approved shape SMCA with the same fishing regulations as the surrounding SMR designation.

10.4.1.27 Heisler Park SMCA

Classification: Proposed Replacement.

Proposed Modification of Boundaries: Boundaries would be eliminated as the existing Heisler Park SMCA is subsumed by the proposed Laguna Beach SMR. For a description of this existing SMCA, refer to the No Project alternative (existing MPAs) in Section 10.1.1.15 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 3, take modifications would remain unmodified as existing regulations prohibiting the take of all living marine resources would be retained under the proposed Laguna Beach SMR. Refer to Section 10.4.1.26 above for changes in take regulations under Alternative 3.

Proposed Modification of Other Regulated Activities: None.

10.4.1.28 Laguna Beach SMCA

Classification: Proposed Replacement.

Proposed Modification of Boundaries: Boundaries of the existing Laguna Beach SMCA would be eliminated and the area formerly protected within the MPA would be subsumed by the proposed Laguna Beach SMR. For a description of the existing SMCA, refer to the No Project alternative (existing MPAs) in Section 10.1.1.16 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 3, take regulations would become more restrictive as existing regulations prohibiting take of all living marine resources would be retained, while allowances for recreational take of lobster and selected species of pelagic finfish and finfish (14 CCR 632(b)(103)(B)) would be lifted. Refer to Section 10.4.1.26 above for changes in take regulations under Alternative 3.

Proposed Modification of Other Regulated Activities: Under Alternative 3, allowances would be made for the continuation of activities related to water quality monitoring and maintenance of the Aliso Creek sewer outfall.

Implementation Notes: Due to the incompatibility of SMR designation maintenance and operations of the Aliso Creek outfall, the SCRSG workgroup recommends that the Aliso sewer line and outfall be covered by a Department-approved shape SMCA with the same fishing regulations as the surrounding SMR designation.

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10.4.1.29 South Laguna Beach SMCA

Classification: Proposed Replacement.

Proposed Modification of Boundaries: Boundaries of the existing South Laguna Beach SMCA would be eliminated and the area formerly protected within the MPA would be subsumed by the proposed Laguna Beach SMR. For a description of this existing SMCA, refer to the No Project alternative (existing MPAs) in Section 10.1.1.17 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 3, take regulations would become more restrictive as existing regulations prohibiting take of all living marine resources would be retained, while allowances for recreational take of lobster, select species of finfish, and commercial take of spiny lobster (14 CCR 632(b)(103)(B)) would be lifted. Refer to Section 10.4.1.26 above for changes in take regulations under Alternative 3.

Proposed Modification of Other Regulated Activities: Under Alternative 3, allowances would be made for the continuation of activities related to water quality monitoring and maintenance of the Aliso Creek sewer outfall.

Implementation Notes: Due to the incompatibility of SMR designation maintenance and operations of the Aliso Creek outfall, the SCRSG workgroup recommends that the Aliso sewer line and outfall be covered by a Department-approved shape SMCA with the same fishing regulations as the surrounding SMR designation.

10.4.1.30 Dana Point SMCA

Classification: Proposed Replacement.

Proposed Modification of Boundaries: Boundaries would be expanded; the proposed Dana Point SMCA would subsume the existing Dana Point SMCA and Niguel SMCA, expanding the area encompassed by the existing MPAs from 0.69 square mile to 2.35 square miles. The most significant boundary modification would occur with an extension of the offshore boundary, which would increase the maximum depth encompassed by the MPA from 53 feet to 125 feet. Boundaries of the proposed SMCA under Alternative 3 are depicted graphically on Figure 10-22 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 3, take regulations would become more restrictive: existing regulations prohibiting take of all living marine resources would be lifted, as well as allowances under the existing MPAs (refer to Section 10.1.1.18 and 10.1.1.19 for detailed descriptions of take regulations in the subsumed SMCAs). Alternative 3 prohibits commercial and recreational take of sheephead, rockfish, rays, sharks, marine plants and invertebrates. Allowable take would include recreational take of lobster and urchins, commercial take of lobster, including incidental catch taken under the authority

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of a lobster permit (crab other than Dungeness [FGC 8250.5], Kellet's whelk, and octopus), urchin, and the take of species not mentioned above but allowed under general take regulations.

Proposed Modification of Other Regulated Activities: None.

10.4.1.31 Niguel SMCA

Classification: Proposed Replacement.

Proposed Modification of Boundaries: Boundaries would be eliminated as the existing SMCA is replaced and the area formerly protected within the MPA is subsumed by the proposed Dana Point SMCA. For a description of this existing SMCA, refer to the No Project alternative (existing MPAs) in Section 10.1.1.18 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 3, take regulations would become less restrictive: existing regulations prohibiting take of all living marine resources would be lifted, as well as allowances for recreational take of lobster and select species of finfish, and commercial take of spiny lobster (14 CCR 632(b)(106)(B)). Refer to Section 10.4.1.30 above for changes in take regulations under Alternative 3.

Proposed Modification of Other Regulated Activities: None.

10.4.1.32 Doheny SMCA

Proposed Modification of Boundaries: This existing SMCA has been proposed for removal under Alternative 3. For a description of this SMCA, refer to the No Project alternative (existing MPAs) in Section 10.1.1.20 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 3, existing regulations prohibiting take of all living marine resources would be lifted, as well as existing allowances for recreational take of select species of invertebrates and finfish and commercial take (14 CCR 632(b)(109)(B)).

Proposed Modification of Other Regulated Activities: None.

10.4.1.33 Doheny Beach SMCA

Classification: Proposed Removal.

Proposed Modification of Boundaries: This is an existing SMCA that has been proposed for removal under Alternative 3. For a description of this SMCA, refer to the No Project alternative (existing MPAs) in Section 10.1.1.21 of this Draft EIR.

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Proposed Modification of Take Regulations: Under Alternative 3, existing regulations prohibiting take of all living marine resources would be lifted, as well as existing allowances for recreational take of lobster and selected species of finfish, and commercial take of spiny lobster (14 CCR 632(b)(108)(B)).

Proposed Modification of Other Regulated Activities: None.

10.4.1.34 Agua Hedionda Lagoon SMR

Classification: Proposed Removal.

Proposed Modification of Boundaries: This is an existing SMR that is proposed for removal under Alternative 3. For a description of this existing MPA, refer to the No Project alternative (existing MPAs) in Section 10.1.1.22 of this Draft EIR.

Proposed Modification of Take Regulations: Existing regulations prohibiting the take of all living marine resources (14 CCR 632(b)(111)(B)) would be lifted.

Proposed Modification of Other Regulated Activities: Under Alternative 3, existing regulations pertaining to management activities for fish and wildlife, flood and vector control, and authorized operation and maintenance activities (14 CCR 632(b)(111)(C)) would be lifted.

10.4.1.35 Batiquitos Lagoon SMP and Batiquitos Lagoon SMR

Classification: Proposed Replacement.

Proposed Modification of Boundaries: Under Alternative 3, the existing Batiquitos Lagoon SMP is proposed for removal, and would be replaced by the larger Batiquitos Lagoon SMR. The proposed SMR would extend the area of the existing MPA from 0.28 square mile, to 0.67 square mile. Boundaries of the existing SMP and the proposed SMR are depicted graphically on Figure 10-23 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 3, take of all living marine resources would be prohibited.

Proposed Modification of Other Regulated Activities: Designation is not intended to impede protection, restoration, maintenance or management activities including estuary mouth opening, scientific research, dune restoration, deposition of sediment and related activities as needed. However, boating, swimming, wading, and diving not related to the activities described above would be prohibited.

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10.4.1.36 Swami's SMCA

Classification: Proposed Replacement.

Proposed Modification of Boundaries: Boundaries would be expanded; the proposed Swami's SMCA would subsume the existing Encinitas SMCA and Cardiff-San Elijo SMCA, expanding the offshore boundary to the offshore limits of state jurisdiction. The resulting area protected within the MPA would increase from 1.32 square miles to 9.67 square miles. The alongshore span of the proposed SMCA would be 2.68 miles, and depths within the MPA would range from 0 to 979 feet. Boundaries of the existing SMCA and the proposed SMCA are depicted graphically on Figure 10-23 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 3, the take of all living marine resources is prohibited except the recreational take of pelagic finfish by spearfishing. Refer to Section 10.4.1.37 and Section 10.4.1.38 for descriptions of regulations that would be lifted with the elimination of the subsumed MPAs.

Proposed Modification of Other Regulated Activities: Under Alternative 3, activities pertaining to beach nourishment, monitoring, maintenance, and marine life sampling for pollutant effects associated with the San Elijo sewer outfall would be allowed to continue.

10.4.1.37 Encinitas SMCA

Classification: Proposed Replacement.

Proposed Modification of Boundaries: Under Alternative 3, the existing Encinitas SMCA would be eliminated and subsumed into the proposed Swami's SMCA. For a description of this existing MPA refer to the No Project alternative (existing conditions) in Section 10.1.1.24 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 3, take regulations would become more restrictive: current allowances for commercial and recreational take of finfish (14 CCR 632(b)(114)(B)) would be changed to allow only the recreational take of pelagic finfish by spearfishing. Refer to Section 10.4.1.36 above for details on new proposed take regulations.

Proposed Modification of Other Regulated Activities: None.

10.4.1.38 Cardiff-San Elijo SMCA

Classification: Proposed Removal.

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Proposed Modification of Boundaries: The existing Cardiff-San Elijo SMCA would be eliminated and subsumed into the proposed Swami's SMCA under Alternative 3. For a description of this existing MPA refer to the No Project alternative (existing conditions) in Section 10.1.1.25 of this Draft EIR.

Proposed Modification of Take Regulations: Under Alternative 3, take regulations would become more restrictive: existing regulations prohibiting take of all living marine resources would be retained, while allowances for recreational take of select species of invertebrates and finfish and commercial take (14 CCR 632(b)(114)(B)) changes to an allowance only for the recreational take of pelagic finfish by spearfishing. Refer to Section 10.4.1.36 above for details on new proposed take regulations.

Proposed Modification of Other Regulated Activities: None.

10.4.1.39 San Elijo Lagoon SMP and San Elijo SMR

Classification: Proposed Replacement.

Proposed Modification of Boundaries: Boundaries remain unmodified; this SMR would eliminate and replace the existing 0.44 square mile San Elijo Lagoon SMP. Boundaries of this SMR are depicted graphically on Figure 10-23 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 3, existing regulations prohibiting take of all living marine resources is prohibited. However, the exception allowing recreational take of select species of invertebrates and finfish, and commercial take (14 CCR 632(b)(114)(B)), would be lifted.

Proposed Modification of Other Regulated Activities: The Alternative 3 designation is not intended to impede protection, restoration, maintenance or management activities including estuary mouth opening, scientific research, dune restoration, deposition of sediment and related activities as needed. Boating, swimming, wading, and diving not related to the activities described above are prohibited.

10.4.1.40 San Dieguito Lagoon SMP and San Dieguito Lagoon SMR

Classification: Proposed Replacement.

Proposed Modification of Boundaries: Under Alternative 3, the existing San Dieguito Lagoon SMP would be eliminated and replaced by the San Dieguito Lagoon SMR. Boundaries would expand, increasing the area encompassed by the MPA from 0.19 square mile, to 0.52 square mile. Boundaries of this SMR are depicted graphically on Figure 10-23 and on detailed figures provided in Appendix A.

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Proposed Modification of Take Regulations: Under Alternative 3, the take of all living marine resources is prohibited.

Proposed Modification of Other Regulated Activities: This designation will not impede protection, restoration, maintenance or management activities including estuary mouth opening, scientific research, dune restoration, deposition of sediment or related activities as needed. Boating, swimming, wading, and diving not related to the activities described above are prohibited. Other restrictions exist regarding access to the California Least Tern nesting island, hours of entry, and allowed management activities.

10.4.1.41 San Diego-Scripps SMCA and San Diego-Scripps Coastal SMCA

Classification: Proposed Replacement.

Proposed Modification of Boundaries: Under Alternative 3, boundaries of the existing San Diego-Scripps SMCA would be eliminated and replaced by the proposed San Diego-Scripps Coastal SMCA. The northern boundary of the proposed SMCA would extend further north along the coast, beyond San Diego-La Jolla Underwater Park; the offshore boundary would extend further, increasing the maximum depth from 10 feet to 366 feet. The resulting SMCA would increase the existing protected area from 0.11 square mile to 1.41 square miles. The alongshore span would also lengthen from 0.5 mile to 1.14 miles. Boundaries of this SMCA are depicted graphically on Figure 10-23 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 3, the take of all living marine resources is prohibited except the recreational take of Coastal pelagic finfish by dip net.

Proposed Modification of Other Regulated Activities: The Alternative 3 designation is not intended to impede pier maintenance or research activities, scientific collection by Scripps Institute of Oceanography/UC San Diego, the Southwest Fisheries Science Center and Birch Aquarium or laboratory tank ocean water intake and discharge activities by these entities.

10.4.1.42 Matlahuayl SMR

Classification: Proposed Replacement.

Proposed Modification of Boundaries: Under Alternative 3, boundaries of the existing La Jolla SMCA would be eliminated and replaced by the proposed Matlahuayl SMR. The proposed SMR would be adjacent to the San Diego-Scripps Coastal SMCA also proposed under Alternative 3. The resulting SMR would increase the area encompassed by the existing SMCA from 0.53 square mile to 1.10 square miles. The alongshore span would run 1.21 miles, and depths within the proposed SMR would range from 0 to 331 feet. Boundaries of

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this SMR are depicted graphically on Figure 10-23 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 3, existing regulations allowing only commercial take of squid for bait by use of hand-held scoop net in designated areas (14 CCR 632(b)(118)(B)) would be removed and all take of living marine resources would become prohibited.

Proposed Modification of Other Regulated Activities: Intentions of the SCRSG Work Group 3 are to maintain existing restrictions regarding boat launching areas and anchoring times. The designation is not intended to impede pier maintenance or research activities, scientific collection by SIO/UCSD, the Southwest Fisheries Science Center and Birch Aquarium or laboratory tank ocean water intake and discharge activities by these entities.

Implementation Notes: Due to the incompatibility of a SMR designation with structure maintenance, water discharges, and other activities identified, the Commission may redesignate this MPA as a “no-take” SMCA.

10.4.1.43 South La Jolla Reefs SMR

Classification: Proposed Addition.

Proposed Modification of Boundaries: The South La Jolla Reefs SMR is proposed in an area of the SCSR with no existing MPA. This SMR is located approximately 1.40 miles south of the Matlahuayl SMR proposed under Alternative 3. With the offshore boundary reaching the limits of state jurisdiction, the total area encompassed by this MPA would be 9.99 square miles. The alongshore span would run 2.68 miles, and depths within the MPA would range from 0 to 290 feet. Boundaries of this SMR are depicted graphically on Figure 10-23 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 3, take of all living marine resources would be prohibited.

Proposed Modification of Other Regulated Activities: This SMR is not intended to regulate, and would not regulate, activities and operations of the U.S. military.

Implementation Notes: Due to the incompatibility of SMR designation with the military use area located in the northwestern corner of the proposed SMR, part of this MPA may need to be instead designated as a “no-take SMCA” if this alternative is adopted.

10.4.1.44 Mia J. Tegner SMCA and Cabrillo SMR

Classification: Proposed Replacement.

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Proposed Modification of Boundaries: Under Alternative 3, boundaries of the existing Mia J. Tegner SMCA would be eliminated and replaced by the proposed Cabrillo SMR. The Cabrillo SMR would double the protected area encompassed by the MPA from 0.02 square mile to 0.43 square mile. The alongshore span would increase from 0.6 miles to 1.75 miles, and maximum depth within the MPA would grow from 10 feet to 30 feet. Boundaries of the proposed Cabrillo SMR, as well as the SMCA proposed for replacement, are depicted on Figure 10-23 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 3, existing regulations prohibiting the take of all living marine resources would be retained, removing, exceptions allowing the recreational take of finfish and commercial take of finfish and marine aquatic plants (14 CCR 632(b)(119)(B)).

Proposed Modification of Other Regulated Activities: None.

10.4.1.45 Tijuana River Mouth SMCA

Classification: Proposed Addition.

Proposed Modification of Boundaries: The Tijuana River Mouth SMCA is proposed in an area of the SCSR with no existing MPA. Located adjacent to the Tijuana River National Estuarine Research Reserve, the SMCA would abut the United States-Mexico border and extend north 3.43 miles, just past the city of Imperial Beach. Extending approximately 1.60 miles offshore, the depths within the MPA would range from 0 to 55 feet. The total area encompassed by the MPA would be 4.04 square miles. Boundaries of the proposed Tijuana River Mouth SMCA are depicted on Figure 10-23 and on detailed figures provided in Appendix A.

Proposed Modification of Take Regulations: Under Alternative 3, the take of all living marine resources is prohibited except the recreational take of Pier fishing (any target) by Hook and line; Pier fishing (any target) by Hoop net; and Pier fishing (any target) by Dip net.

Proposed Modification of Other Regulated Activities: The Alternative 3 designation is not intended to impede restoration, deposition of sediment, sand borrowing or dredging activities in the near shore zone adjacent to the Tijuana River National Estuarine Research Reserve for any research, beach or dune nourishment projects, opening the mouth of the Tijuana River if it is blocked, or implementation of the City of Imperial Beach's beach replenishment and maintenance programs.

10.4.2 Environmental Impacts of Alternative 3

As described above, under Alternative 3 existing MPA regulations would be modified, altering the boundaries, designations, and conditions governing the MPA network within the

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SCSR. This alternative would increase the area of MPAs and designate more protective regulations for those MPAs than currently exist in the Project area. Alternative 3 would expand the extent of marine areas protected from approximately 182 square miles under existing conditions (Alternative 0) to approximately 349 square miles. This alternative would protect 1.7 fewer square miles than the proposed Project IPA.

10.4.2.1 Consumable Living Marine Resource Products

Adoption of regulatory changes as proposed by Alternative 3 would result in substantial expansion of the areas designated as MPAs within the SCSR. In locations where new or expanded MPAs would overlap existing fishing grounds or areas used for aquaculture, the take and use restrictions of the newly-imposed MPAs would apply. If the existing consumptive uses are not consistent with these restrictions, then the uses would be displaced into other areas where the uses would remain legal. Displacement of consumptive uses would not affect all fisheries equally, due to variation in the abundance and spatial distribution of marine resources. According to a report published by EcoTrust (Scholz et al. 2010), the nearshore trap fishery near Dana Point and the hook and line California halibut fishery near Santa Barbara would be disproportionately affected under Alternative 3, with effects on the stated value of total fishing grounds estimated at 29.5 percent and 16.2 percent, respectively. This level of displacement would be greater than that which would occur under the proposed Project IPA; the proposed Project IPA would disproportionately affect the nearshore trap fishery in Dana Point (28.0 percent of stated value), but would not disproportionately affect Santa Barbara's hook and line California halibut fishery.

10.4.2.2 Air Quality

Like the proposed Project IPA, the primary source of operational emissions from this alternative would be from a change in marine vessel transit distances above the current practices due to displacement from MPAs. The regulatory changes proposed under this alternative would result in an MPA network of approximately the same size as that proposed under the IPA (less than two square miles difference throughout the SCSR). Based on this fact alone, it is not clear that the air quality impacts of Alternative 3 would be substantively different from those of the proposed Project IPA. However, as discussed in Section 10.4.2.1 above, Alternative 3 would result in greater displacement of existing fishing effort than the IPA. Therefore, it is reasonable to conclude that despite the similar sizes of the MPA networks proposed, Alternative 3 would result in greater vessel transit distances, and therefore greater air pollutant emissions, than the proposed Project IPA.

10.4.2.3 Global Climate Change and Greenhouse Gas Emissions

Because GHG emissions associated with Alternative 3 would pertain solely to mobile source emissions associated with vessel traffic patterns, GHG emissions under this alternative would be closely correlated with emissions of other air pollutants, discussed in Section 10.3.2.2

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above. Effects of Alternative 3 on GHG emissions would be slightly greater than those of the proposed Project.

10.4.2.4 Water Quality

Similar to the project IPA, under Alternative 3 existing facilities, and ongoing research and monitoring in the proposed MPAs would be allowed to continue pursuant to any required federal, state and local permits. Although not a primary criterion for MPA designation, guidance during the SCRSG MPA design process included consideration of areas with more potential water contaminant influence. However, based on a review of the Marine Map Decision Support Tool (Marine Map 2010), several of the MPAs proposed under Alternative 3 would encompass existing offshore wastewater and stormwater discharge locations. These include the Naples SMR, Blue Cavern SMR, and Matlahuayl SMR (minor wastewater discharges), the Laguna Beach SMR (intermediate wastewater discharge), and the Swami's SMCA, San Elijo Lagoon SMR, San Dieguito Lagoon SMR, and Tijuana River Mouth SMCA (stormwater discharges). Should the Commission elect to adopt this alternative, the proposed regulations would be fine-tuned to ensure compatibility with these existing uses permitted by other agencies. In some cases, this could require designating an MPA as an SMCA rather than an SMR. Expansion of the existing MPA network would be consistent with the RWQCB basin plans for the study area, and would not conflict with existing water quality standards or regulatory requirements.

Alternative 3 could increase the potential for accidental release of pollutants such as oils and fuels and other hazardous materials into the water due to increased transit time or risk of accidents from overcrowding, as well as opening new areas where MPA designations have been removed. Similar to the proposed Project, potential shifts in non-consumptive uses with the implementation of Alternative 3 could have a minor localized effect on water quality but would be expected to be minimal. Potential water quality-related effects of implementing Alternative 3 would be comparable to those of the proposed Project IPA.

10.4.2.5 Mineral Resources

The new and expanded MPAs proposed under Alternative 3 are not located over existing oil and gas production facilities, salt producing facilities, beach nourishment areas, or geothermal resource areas, with the exception of oil and gas pipelines located within the proposed Mishopsno SMCA for (between Ventura and Santa Barbara). In addition, existing oil and natural gas pipelines are located adjacent to the Bolsa Chica SMR near Huntington Beach (CDC 2000). If Alternative 3 were to be adopted, the proposed regulations would be revisited to ensure that the language allows for continuation of these existing uses permitted by other agencies. Because the proposed regulations would not regulate existing mineral resource exploration and extraction activities, there would be no impact to the availability of

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known resources under this alternative. Potential effects on mineral resources of implementing Alternative 3 would be comparable to those of the proposed Project IPA.

10.4.2.6 Biological Resources

Like the proposed Project IPA, Alternative 3 was developed in an effort to meet the goals of the MLPA and improve the state's existing system of MPAs. Because the protection and enhancement of marine ecosystems and habitats is a central objective of the MLPA, this alternative would be expected to benefit biological resources in the long term. Removal of a human predator is not anticipated to impact species and habitats inside MPAs created or expanded by Alternative 3; instead, it is expected that the proposed MPAs will result in the return of naturally balanced ecosystems. However, in the short-term, Alternative 3 could potentially result in adverse localized impacts on biological resources located at edges of MPAs, or within existing MPAs that would be removed under this alternative. Generally, these impacts would also occur under the proposed Project IPA. The existing Big Sycamore Canyon SMR, which contains the marine receiving waters of Big Sycamore Creek, a known historical steelhead creek, would be removed under this alternative, but would also be removed under the IPA. Long-term benefits to biological resources resulting from Alternative 3 would be substantially similar to those provided by the proposed Project IPA, as this alternative would preserve approximately the same total habitat area as the proposed Project IPA.

10.4.2.7 Cultural Resources

Neither Alternative 3 nor the proposed Project IPA would result in direct physical alteration of the ocean floor or the bottom of relevant bays or estuaries, and therefore would not directly disturb any resources present, whether they be recorded, known but unrecorded, or yet unknown. Alternative 3 and the proposed Project IPA would delete many of the same MPAs. Potential impacts from this removal would be minimal because many of the MPAs that would be deleted currently allow boating, diving, and associated anchoring, so removing the MPAs would not result in a substantial change in conditions. Potential adverse impacts of Alternative 3, if any, would be equivalent to those of the proposed Project IPA.

10.4.2.8 Public Services and Utilities

Alternative 3 would not increase the need for public utilities or services significantly. The minor adjustments to the size and location of the proposed MPAs would not create a substantial difference in impact to law enforcement resources beyond what is described for the proposed Project IPA, and would not impact the existing utilities. All of the proposed MPAs are outside of the intake and discharge locations for power generation facilities utilizing once-through ocean cooling systems and existing desalination facilities with ocean intake and discharge systems. Further, if this alternative were to be adopted by the Commission, the regulatory language would be revisited to ensure that existing activities

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under the permitting authority of other federal or state agencies, such as operations of intake and outfall pipes, would continue to be allowed under Alternative 3. The effects of Alternative 3 on public services and utilities, including law enforcement resources, would be similar to those of the proposed Project IPA.

10.4.2.9 Land Use and Recreational Resources

Like the proposed Project IPA, Alternative 3 would increase the number and geographic extent of MPAs within the SCSR. On a large scale, this alternative would not be expected to increase the use of existing parks or recreational facilities within the SCSR, or require the construction or expansion of recreational facilities. However, it is possible that adoption of this alternative could result in angling or fishing activity becoming concentrated at certain access points where parking or other facilities may be limited. The likelihood of this situation occurring would be based on a number of factors, including the existing use/capacity ratio for the facility and the net change in user density caused by revision of the MPA network. It is foreseeable that although consumptive users of the marine environment would be displaced from MPAs into open fishing grounds, certain non-consumptive users, such as divers, kayakers, and wildlife viewers, would partly offset this trend by preferentially using protected areas. Because the individual MPAs proposed under Alternative 3 are larger than those proposed under the IPA, and span greater alongshore distances, this alternative would have a greater potential to displace shore fishing. With regard to land use and recreation, potential effects of implementing Alternative 3 would be generally similar to those of the proposed Project IPA.

10.4.2.10 Vessel Traffic

Like the proposed Project IPA, Alternative 3 would increase the number and geographic extent of MPAs within the SCSR. On a large scale, this alternative is not expected to add vessel traffic to the SCSR. On a smaller scale, however, it is possible that changing use patterns in response to the proposed regulatory changes would result in elevated vessel traffic levels at some locations; increased vessel traffic concentrations from this alternative would be approximately similar to those expected from the proposed Project IPA, and would be minor. The proposed MPAs would not regulate or preclude vessel traffic; and existing traffic separation schemes, vessel traffic system monitoring, safety reviews and recommendations by Harbor Safety Committees, USCG enforcement, and other systems to ensure safe navigation and vessel operations would remain in place. The Palos Verdes SMR proposed under this alternative would allow some separation between the MPA and the northbound coastwise shipping lane; the MPA proposed at this location under the IPA does not feature this separation and abuts the shipping lane directly. Because of the increased separation between the MPAs and designated shipping lanes, which would reduce the risk of fishing vessels being displaced into a hazardous area, potential impacts of Alternative 3 relative to vessel traffic would be slightly less than those of the proposed Project IPA.

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10.4.2.11 Hazards and Hazardous Materials

Like the proposed Project IPA, Alternative 3 would not require the transport, use or disposal of hazardous materials, and there would be no reasonably foreseeable upset or accident condition involving the release of hazardous materials into the environment. While the MPA network proposed under Alternative 1 would be larger than that proposed under the IPA, the proposed regulatory changes would not prohibit vessel transit through MPAs, and any emergency-related plans calling for sea evacuations or other marine components could be implemented without interference.

There are areas within the Southern California Bight that have been identified as having contaminated sediments (on lists compiled pursuant to Government Code Section 65962.5); however, because it would not involve any construction activities at these (or other) locations, Alternative 1 would not create a significant hazard, or result in substantial adverse effects, to the public or the environment. With respect to hazards and hazardous materials, potential effects of implementing Alternative 3 would be similar to those of the proposed Project IPA.

10.4.2.12 Environmental Justice

Like the proposed Project IPA, Alternative 3 would have the potential to affect commercial and recreational fishing patterns, and to displace existing fishing effort to locations outside the proposed MPAs. However, because the alongshore span of the MPAs proposed under Alternative 3 is generally greater than that of the MPAs under the proposed Project, shore-based fishing could be displaced a greater distance under this alternative. Nonetheless, the MPAs proposed under Alternative 3 would be scattered throughout the SCSR, and substantial stretches of coastline would remain open to fishing. Because coastal areas adjacent to the SCSR are heavily urbanized and provide excellent mass transit and coastal access opportunities, it is not likely that the MPA network proposed under this alternative would result in disproportionate impacts on minority or low-income populations. Any effects of this nature would be similar to those of the proposed Project.

10.4.2.13 Alternative 3 Summary

Alternative 3 would meet the Project objectives identified in Section 3.2 of this Draft EIR. Compared to the proposed project, Alternative 3 would result in slightly less impact relative to vessel traffic because it does not propose MPAs immediately abutting the coastwise shipping lanes., Impacts of this alternative related to air quality and GHG emissions would be slightly greater than those of the proposed project, because this alternative would displace a greater proportion of existing fishing effort. Other environmental impacts of this alternative would generally be similar to those of the proposed Project.

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10.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Based on the information presented above, the No Project alternative would not be environmentally superior to the other alternatives evaluated in this Draft EIR. The No Project alternative would not remedy the deficiencies in the existing MPA network in the SCSR and would not be compliant with the mandates of the MLPA. Foreseeable significant impacts on marine biological resources would occur under the No Project alternative. Because the No Project alternative is not the environmentally superior alternative, identification of an environmentally superior alternative among the other alternatives is not required (State CEQA Guidelines section 126.6(b)(2)).

**SECTION 11.0
OTHER CONSIDERATIONS REQUIRED BY CEQA**

11.1 INTRODUCTION

In addition to an examination of project-level impacts, California Environmental Quality Act (CEQA) requires an Environmental Impact Report (EIR) to evaluate a project's effect in relation to broader changes occurring or potentially occurring in the surrounding environment. This section presents a discussion of CEQA-mandated analysis for irreversible impacts, growth inducement, and cumulative impacts associated with the Project Integrated Preferred Alternative (IPA).

11.2 IRREVERSIBLE IMPACTS

11.2.1 Significant Irreversible Environmental Changes

State CEQA Guidelines Section 15126.2(c) requires an EIR to discuss a project's irreversible environmental changes associated with use of nonrenewable resources during its initial phases and continued operation. It also requires a discussion of the proposed Project IPA's irreversible changes related to potential environmental accidents.

The establishment of marine protected areas (MPAs) would limit species take and activities in the affected areas and would not directly commit the Department or other agencies to future usage of fossil fuels or other types of nonrenewable resources. No specific development activities are proposed or authorized under the proposed MPAs that would result in the irreversible commitment of resources. Indirect impacts of MPA creation include an increase in fossil-fuel use that would potentially result from the increased activity of Department officers and wardens engaged in regulatory enforcement within the MPAs, and also would potentially result from increased transit times of displaced commercial and recreational fishing vessels.

The creation of MPAs would not directly result in potential environmental accidents. The increased activity of officers and wardens would slightly increase the potential for plane or boating accidents that could release hazardous chemicals into the water. In addition, displacement of fishing effort could result in vessel abandonment by individual fishermen. These indirect impacts have minimal chance of occurrence and do not represent a significant threat to the environment.

11.2.2 Significant and Unavoidable Impacts

No significant unavoidable impacts have been identified for the proposed Project or alternatives 1, 2, or 3.

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11.3 GROWTH INDUCEMENT

State CEQA Guidelines Section 15126(d) requires an EIR to discuss the extent to which a project would directly or indirectly foster economic or population growth or the construction of new housing, including through removal of obstacles to growth.

The proposed Project IPA would not have any direct growth-inducing impacts because no development is proposed. It would not indirectly induce growth because it proposes no extension of infrastructure or other environmental modifications that could foster population or economic growth. The protection of species and habitats proposed by the IPA does not enable or encourage development elsewhere.

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**SECTION 12.0
LIST OF PREPARERS**

12.1 INTRODUCTION

URS Corporation prepared this Draft Environmental Impact Report under the direction of the California Department of Fish and Game. Individuals that were directly involved in the preparation and/or review of this report are included below.

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- Beth Anna Cornett – Deputy Project Manager, Preparation of Project Description, Public Services and Utilities, Land Use and Recreation, Vessel Traffic, Environmental Justice
- Matt O'Brien – Principal in Charge, Preparation of Biological Resources
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- Cindy Poire – Preparation of Land Use and Recreation, Public Services and Utilities
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**SECTION 13.0
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