

Chapter 5. Physical Resources

5.1. Air Quality

This chapter describes the environmental setting for air quality, impacts on air quality that would result from the Proposed Project and its alternatives and, mitigation measures that would reduce these impacts, as appropriate. It also discusses federal and state ambient air quality standards and existing air quality conditions in the north central coast study region, identifies sensitive receptors in the north central coast study region, and describes the overall regulatory framework for air quality management in California and the north central coast study region. A discussion of global climate change and the project's potential contribution to greenhouse gas emissions is provided in Chapter 8, *Other Considerations Required by CEQA*.

5.1.1. Environmental Setting

Climate along the coastline of California varies with cooler temperatures, more rainfall, and more extensive cloud cover in the northern portions of the state. Conditions become milder in a continuum southward. California is divided into 15 air basins to better manage air pollution. The study area encompasses two air basins, the San Francisco Bay Area Air Basin (SFBAAB) and the North Coast Air Basin (NCAB).

The north central coast study region incorporates five coastal California counties: Mendocino, Sonoma, Marin, San Francisco, and San Mateo. Mendocino and Sonoma Counties are located within the NCAB. The NCAB consists of the entirety of Del Norte, Humboldt, Trinity, and Mendocino Counties, along with the northern portion of Sonoma County. Within the NCAB, three air districts have jurisdiction over air quality issues. The North Coast Unified Air District (NCUAD) has jurisdiction over Del Norte, Humboldt, and Trinity Counties (located north of and outside of the north central coast study region); the Mendocino County Air Quality Management District (MCAQMD) has jurisdiction over Mendocino County; and the Northern Sonoma Coast Air Pollution Control District (NSCAPCD) has jurisdiction over the northern portion of Sonoma County.

Marin, San Francisco, and San Mateo Counties are all located in the SFBAAB. The SFBAAB consists of the southern portion of Sonoma County and the western portion of Solano County, as well as the entirety of Napa, Marin, San Francisco, Contra Costa, Alameda, San Mateo, and Santa Clara Counties. Within the SFBAAB, the Bay Area Air Quality Management District (BAAQMD) has jurisdiction over air quality issues.

5.1.1.1. 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 north central coast study region.

5.1.1.2. Existing Air Pollution Concentrations

Existing air quality conditions in the north central coast study region can be characterized in terms of the ambient air quality standards that the federal and state governments have established for several different pollutants. For some pollutants, separate standards have been set for different measurement periods. Most standards have been set to protect public health; for others, standards are based on other values (e.g., protection of crops, protection of materials, and avoidance of nuisance conditions). Table 5-1 lists the state and federal standards for a variety of pollutants. The pollutants of greatest concern to the Proposed Project are described below. Toxic air contaminants, though not a criteria pollutant¹, are also described below.

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 oxides of nitrogen (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. Ozone is considered a regional pollutant. Because photochemical reactions take time to occur, high ozone levels often occur downwind of the emission source. The north central coast study region is a receptor of regional pollutants from inland areas. Therefore, ozone conditions in the area result from a combination of locally generated and transported emissions.

Inhalable Particulate Matter

Inhalable particulate matter consists of many different substances suspended in air in the form of particles (solids or liquid droplets) that vary widely in size. Examples include dust and smoke. Particulate matter that is 10 microns or less in diameter (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. Particulates also reduce visibility and corrode materials. Particulate 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.

¹ Criteria Pollutant – refers to pollutants identified by the EPA as indicators of air quality. These include ozone, CO, lead, nitrogen dioxide (NO₂), particulate matter, and sulfur dioxide (SO₂).

Table 5-1. Ambient Air Quality Standards Applicable in California

Pollutant	Symbol	Average Time	Standard (parts per million)		Standard (micrograms per cubic meter)		Violation Criteria	
			California	National	California	National	California	National
Ozone	O ₃	1 hour	0.09	NA	180	NA	If exceeded	NA
		8 hours	0.070	0.075	137	147	If exceeded	If fourth highest 8-hour concentration in a year, averaged over 3 years, is exceeded at each monitor within an area
Carbon monoxide (Lake Tahoe only)	CO	8 hours	9.0	9	10,000	10,000	If exceeded	If exceeded on more than 1 day per year
		1 hour	20	35	23,000	40,000	If exceeded	If exceeded on more than 1 day per year
		8 hours	6	NA	7,000	NA	If equaled or exceeded	NA
Nitrogen dioxide	NO ₂	Annual average	0.030	0.053	57	100	If exceeded	If exceeded on more than 1 day per year
		1 hour	0.18	NA	339	NA	If exceeded	NA
Sulfur dioxide	SO ₂	Annual average	NA	0.030	NA	80	NA	If exceeded
		24 hours	0.04	0.14	105	365	If exceeded	If exceeded on more than 1 day per year
		1 hour	0.25	NA	655	NA	If exceeded	NA
Hydrogen sulfide	H ₂ S	1 hour	0.03	NA	42	NA	If equaled or exceeded	NA
Vinyl chloride	C ₂ H ₃ Cl	24 hours	0.01	NA	26	NA	If equaled or exceeded	NA
Inhalable particulate matter	PM10	Annual arithmetic mean	NA	NA	20	NA	NA	NA
		24 hours	NA	NA	50	150	If exceeded	If exceeded on more than 1 day per year
	PM2.5	Annual arithmetic mean	NA	NA	12	15	NA	If 3-year average from single or multiple community-oriented monitors is exceeded
		24 hours	NA	NA	NA	35	NA	If 3-year average of 98 th percentile at each population-oriented monitor within an area is exceeded
Sulfate particles	SO ₄	24 hours	NA	NA	25	NA	If equaled or exceeded	NA

Pollutant	Symbol	Average Time	Standard (parts per million)		Standard (micrograms per cubic meter)		Violation Criteria	
			California	National	California	National	California	National
Lead particles	Pb	Calendar quarter	NA	NA	NA	1.5	NA	If exceeded no more than 1 day per year
		30-day average	NA	NA	1.5	NA	If equaled or exceeded	NA

Notes: All standards are based on measurements at 25°C and 1 atmosphere pressure.
National standards shown are the primary (health effects) standards.
NA = not applicable.

* The U.S. Environmental Protection Agency recently replaced the 1-hour ozone standard with an 8-hour standard of 0.08 part per million. EPA issued a final rule that revoked the 1-hour standard on June 15, 2005. However, the California 1-hour ozone standard will remain in effect.

Source: California Air Resources Board 2008a

Carbon Monoxide (CO)

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.

Toxic Air Contaminants

Many pollutants are identified as toxic air contaminants (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 California Air Resources Board (ARB) 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 ARB 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 regards to the proposed project is diesel exhaust particulate matter, which was identified by the ARB as a TAC in October 2000.

5.1.1.3. Monitoring Data

Existing air quality conditions in the north central coast study region can be characterized in terms of the ambient air quality standards that the federal and state governments have established for various pollutants (Table 5-1) and by monitoring data collected in the region. Monitoring data 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 were chosen as data resources because they are closest to the study region:

- Eureka—Jacobs Monitoring Station.
- Santa Rosa—5th Street Monitoring Station.
- San Francisco—Arkansas Street Monitoring Station.

Air quality monitoring data from the above monitoring stations is summarized in Table 5-2. This data represents air quality monitoring data for the last three years (2005–2007) in which complete data is available.

As shown in Table 5-2, the Eureka-Jacobs monitoring station has experienced no federal or state violations. The Santa Rosa-5th Street monitoring station has experienced two violations to the state PM10 standard, and the San Francisco-Arkansas Street monitoring station has experienced 29.3 violations of the state PM10 standard during the 3-year monitoring period.

5.1.1.4. Attainment Status

If monitored pollutant concentrations meet state or federal standards over a designated period of time, the area is classified as being in *attainment* for that pollutant. If monitored pollutant concentrations violate the standards, the area is considered a *nonattainment* area for that pollutant. If data are insufficient to determine whether a pollutant is violating the standard, the area is designated *unclassified*. Generally, the ARB designates whether areas are in attainment of air quality standards by air basin or county (see “Regulatory Setting” below). When areas in an air basin or county have distinctly different air quality deriving from sources and conditions not affecting the entire air basin or county, the ARB may designate a smaller area.

North Coast Air Basin

The EPA has classified the NCAB as unclassified/attainment for ozone, PM2.5, and CO, and unclassified for PM10. Within the NCAB, Del Norte, Humboldt, Trinity, and Mendocino Counties are classified as attainment for ozone and nonattainment for PM10. Sonoma County is classified as nonattainment for ozone and attainment for PM10.

The ARB has classified the entire NCAB as unclassified for PM2.5. For CO, the ARB has classified Del Norte, Trinity, and northern Sonoma Counties as unclassified, and Humboldt and Mendocino Counties as attainment.

San Francisco Bay Area Air Basin

The EPA has classified the SFBAAD as nonattainment for ozone, unclassified for PM10, and unclassified/attainment for PM2.5 and CO.

Table 5-2. Ambient Air Quality Monitoring Data Measured at the Eureka-Jacobs, Santa Rosa-5th Street, and San Francisco-Arkansas Street Monitoring Stations

Pollutant Standards	Eureka-Jacobs			Santa Rosa-5 th Street			San Francisco-Arkansas Street		
	2005	2006	2007	2005	2006	2007	2005	2006	2007
Ozone									
Maximum 1-hour concentration (ppm)	–	0.039	0.055	0.072	0.077	0.071	0.058	0.053	0.060
Maximum 8-hour concentration (ppm)	–	0.037	0.052	0.051	0.058	0.059	0.054	0.046	0.053
Number of days standard exceeded ^a									
NAAQS 1-hour (>0.12 ppm)	–	0	0	0	0	0	0	0	0
CAAQS 1-hour (>0.09 ppm)	–	0	0	0	0	0	0	0	0
NAAQS 8-hour (>0.08 ppm)	–	0	0	0	0	0	0	0	0
Carbon Monoxide (CO)									
Maximum 8-hour concentration (ppm)	–	1.09	1.33	1.98	1.70	1.71	2.09	2.09	1.60
Maximum 1-hour concentration (ppm)	1.7	1.9	1.7	0.072	0.077	0.071	2.5	2.7	2.5
Number of days standard exceeded ^a									
NAAQS 8-hour (≥9.0 ppm)	0	0	0	0	0	0	0	0	0
CAAQS 8-hour (≥9.0 ppm)	0	0	0	0	0	0	0	0	0
NAAQS 1-hour (≥35 ppm)	0	0	0	0	0	0	0	0	0
CAAQS 1-hour (≥20 ppm)	0	0	0	0	0	0	0	0	0
Particulate Matter (PM10)^b									
National ^c maximum 24-hour concentration (µg/m ³)	–	37.0	35.6	36.5	87.1	36.6	44.6	58.0	65.7
National ^c second-highest 24-hour concentration (µg/m ³)	–	25.2	35.5	35.0	48.3	36.5	43.3	57.7	58.2
State ^d maximum 24-hour concentration (µg/m ³)	–	39.6	38.0	38.9	89.5	37.2	46.4	61.4	69.8
State ^d second-highest 24-hour concentration (µg/m ³)	–	27.0	37.6	37.0	50.7	36.4	45.7	59.6	62.1
National annual average concentration (µg/m ³)	–	4.8	15.9	15.4	18.3	16.7	19.2	22.0	20.9
State annual average concentration (µg/m ³) ^e	–	–	–	15.9	18.8	17.1	20.1	22.9	21.9
Number of days standard exceeded ^a									

Table 5-2. Continued

Pollutant Standards	Eureka-Jacobs			Santa Rosa-5 th Street			San Francisco-Arkansas Street		
	2005	2006	2007	2005	2006	2007	2005	2006	2007
NAAQS 24-hour (>150 µg/m ³) ^f	–	0	0	0	0	0	0	0	0
CAAQS 24-hour (>50 µg/m ³) ^f	–	0	0	0	2	0	0	17.3	12.0
Particulate Matter (PM2.5)									
National ^c maximum 24-hour concentration (µg/m ³)	–	21.2	25.2	33.6	59.0	32.0	43.6	54.3	45.2
National ^c second-highest 24-hour concentration (µg/m ³)	–	17.8	23.5	32.6	32.4	30.5	43.4	37.2	44.5
State ^d maximum 24-hour concentration (µg/m ³)	–	21.2	25.2	29.7	59.0	32.0	44.2	54.3	45.2
State ^d second-highest 24-hour concentration (µg/m ³)	–	17.8	23.5	28.2	32.4	30.5	43.4	37.2	44.5
National ^b annual average concentration (µg/m ³)	–	–	7.1	7.6	–	7.6	9.5	–	8.7
State ^c annual average concentration (µg/m ³) ^e	–	–	–	7.6	–	7.6	9.5	8.7	8.9
Number of days standard exceeded ^a									
NAAQS 24-hour (>65 µg/m ³)	–	–	0	0	–	0	0	–	–

Notes: CAAQS = California ambient air quality standards.
NAAQS = national ambient air quality standards.
– = insufficient data available to determine the value.

^a An exceedance is not necessarily a violation.

^b Measurements usually are collected every 6 days.

^c National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.

^d State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, State statistics are based on California approved samplers.

^e State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

^f Mathematical estimate of how many days concentrations would have been measured as higher than the level of the standard had each day been monitored.

Sources: California Air Resources Board 2006; U.S. Environmental Protection Agency 2006.

The ARB has classified the SFBAAD as nonattainment for ozone, PM10, and PM2.5. The ARB has classified the SFBAAD as attainment for CO.

Class I Areas

Under the Federal Clean Air Act Amendments of 1977, Congress established a system for the prevention of significant deterioration to protect 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. California coastal Class 1 areas include Redwood National Park, Point Reyes National Seashore, Pinnacles National Monument, and the Ventana Wilderness. A portion of the north central coast study region contains Point Reyes National Seashore.

5.1.2. Regulatory Framework

5.1.2.1. Federal Regulations

Federal Clean Air Act

The Federal Clean Air Act (CAA), enacted in 1970 and amended twice thereafter (including most recently in 1990), establishes the framework for modern air pollution control. The act directs the U.S. Environmental Protection Agency (EPA) to establish national ambient air quality standards (NAAQS) for the six criteria pollutants. 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 north central coast study region include the *North Coast Unified Air Quality Management District Particulate Matter (PM10) Attainment Plan* (NCUAQMD 1995) and the *2005 Bay Area Ozone Strategy* (BAAQMD 2006).

5.1.2.2. State Regulations

The ARB 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.

The California Clean Air Act (CCAA) requires local and regional districts that are not attaining one or more of the CAAQS for ozone, CO, SO₂, or NO₂ to expeditiously adopt plans specifically designed to attain these standards. Each plan must be designed to achieve an annual 5% 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. More specifically, local districts with moderate air pollution that did not achieve “transitional nonattainment” status by December 31, 1997, must implement the more stringent measures applicable to districts with serious air pollution.

5.1.2.3. Local Regulations

Three air quality management agencies have jurisdiction in the north central coast study region: the MCAPCD, the NSCAPCD, and the BAAQMD. The EPA has established NAAQS for which the ARB and these districts have primary implementation responsibility. The ARB and the districts are also responsible for ensuring that CAAQS are met. The districts are also responsible for implementing strategies for air quality improvement and recommending mitigation measures for new growth and development.

5.1.3. Impact Analysis

5.1.3.1. Methodology

Commercial Fishing

Criteria pollutant emissions resulting from potential project-derived changes in commercial fishing vessel activities (i.e., potential increases in vessel transit times and operation over current or baseline conditions) were quantitatively estimated based on a number of factors and assumptions. Factors influencing criteria pollutant emission calculations included the number of commercial vessels homeported within the north central coast study region, the number of these vessels potentially displaced by MPA designations, additional distances and transit times resulting from such displacement, and the application of appropriate air pollution control district (APCD) emissions thresholds. These factors and assumptions are described further below. Relevant APCD emission thresholds are described in Section 5.1.3.2—Criteria for Determining Significance.

Ports and Vessels Considered

Criteria pollutant emissions were calculated for a portion of all commercial fishing vessels whose homeports were within the north central coast study region and that reported species landings from fishing blocks within the study region. Commercial vessels homeported within the north central coast study region were found to be

primarily associated with the ports of Point Arena, Bodega Bay, Tomales Bay, Point Reyes, Bolinas Bay, and Princeton-Half Moon Bay. Commercial vessels homeported outside of the north central coast study region in the greater San Francisco Bay area also were considered in the analysis as these vessels typically fish within the north central coast study region. These included homeports in San Francisco, Sausalito, San Rafael, Richmond, Berkeley, Oakland, and Alameda. Commercial vessels transiting into the north central coast study region from other California or Oregon coastal ports were not considered in the emissions analysis as project-derived changes to the activities of these vessels is highly speculative (California Department Fish Game 2007a)..

Calculating Displaced Vessel

The number of commercial vessels displaced within each homeport was calculated on a species level using the Ecotrust data for percentage area of commercial fishing grounds impacted by the Proposed Project and Alternatives 1, 2 and 3 (Scholz, et.al. 2008)(see Table 5-3). The number of potentially displaced commercial vessels was determined based on the fishery with the highest percentage loss of fishing area as identified in the table.

Table 5-3. Number of Commercial Vessels Potentially Displaced by Homeport and Fishery

Homeport/Fishery Affected	Number of Vessels in Port ^a	Number of Vessels Potentially Displaced			
		Proposed Project	Alternative 1	Alternative 2	Alternative 3
Point Arena					
Deeper Nearshore Rockfish	7	2	2	1	2
Bodega Bay					
Dungeness crab	76	12	12	10	16
Princeton-Half Moon Bay ^b					
Deeper Nearshore Rockfish	40	4	6	4	11
San Francisco Bay ^c					
Deeper Nearshore Rockfish	190	28	34	23	48

^a Equals total number of vessels reporting landings in each homeport in 2007.

^b Includes vessels nine vessels homeported in Bolinas Bay, Tomales Bay, and Point Reyes.

^c Includes all vessels homeported in San Francisco, Sausalito, Richmond, San Rafael, Berkeley, Oakland, and Alameda.

Source: CDFG 2007a

Calculating Project-Related Transit Distances and Times

Additional distances that commercial vessels may transit as a result of MPA designations were based on the average MPA along-shore span in miles within each of the APCDs in the north central coast study region for the Proposed Project and Alternatives 1, 2, and 3 (Table 5-4). Additional travel times were based on averaged vessel characteristics (i.e., length, beam, horsepower) from the CDFG's 2003 catch data.

Table 5-4. Average MPA Along-Shore Span by Air Pollution Control District for the Proposed Project and Alternatives 1, 2, and 3

Air Pollution Control District	Average MPA Along-Shore Span (miles)			
	Proposed Project	Alternative 1	Alternative 2	Alternative 3
Mendocino APCD	2.1	2.3	3.5	2.2
Northern Sonoma Coast APCD	2.5	2.2	2.6	3.0
Bay Area AQMD	4.0	3.9	4.0	4.0

Other Considerations in Modeling Criteria Pollutant Emissions

The methodology described above is believed to represent a reasonably foreseeable conservative consequence of the Proposed Project and Alternatives 1, 2, and 3. However, it should be noted that it is not possible to completely accurately model project-induced commercial fishing vessel emission scenarios as it isn't possible to predict all of the responses of individual fishermen to the proposed MPA networks. There are many factors that influence the decision to go to sea on a given day that make modeling emission scenarios speculative. It is also possible that in some instances, appropriate fishing grounds may not occur immediately adjacent to the proposed MPA which displaces the vessel, and thus additional transit distances may be greater than the average MPA along-shore span. Conversely, it is also possible that some vessels may transit to alternate fishing grounds at comparable distances to their current situation.

Recreational Fishing

Emissions contributions resulting from potential project-derived changes in recreational fishing activities (e.g., shifts in recreational fishing vessels travel and land-based vehicular traffic associated with abalone diving) are qualitatively considered in the impact analysis. Quantitative analysis is not provided as shifts in recreational fishing activities cannot be adequately determined given the substantial number of existing registered recreational vessels in the north central coast study region (over 50,000)

(CDFG 2007a), the unquantifiable additional recreational vessels and vehicles that may arrive from outside the north central coast study region, and the inability to predict the likely choices recreational fishermen may make on a given day regarding their fishing experience given factors such as weather, travel distances and times to desired fishing locations, and rising fuel costs.

Furthermore, recreational fishing activity within the north central coast study region is not anticipated to 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 based on locations identified in the California Recreational Fisheries Survey (CRFS) and landing data/report cards (CDFG 2007a). 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 possible and 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.

5.1.3.2. Criteria for Determining Significance

State CEQA Guidelines

Based on the standards of significance from the State CEQA Guidelines and professional judgment, a project would result in a significant impact if it would result in any of the following.

- conflict with or obstruction of implementation of an applicable air quality management plan;
- violation of any air quality standard or substantial contribution to an existing or projected air quality violation;
- cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable NAAQS or CAAQS, including releasing emissions that exceed quantitative thresholds for ozone precursors;
- exposure of sensitive receptors to substantial pollutant concentrations; or
- objectionable odors affecting a substantial number of people.

These thresholds would apply to the entire Proposed Project.

Individual District Thresholds

In addition to the thresholds indicated above, the three air quality management districts in the north central coast study region have thresholds of significance for actions within the respective air basins. These thresholds are described below.

Mendocino County Air Pollution Control District

According to the MCAPCD's Regulation 1 Rule 130, Proposed Project emissions within the MCAPCD that would equal or exceed any of the following rates would be considered significant:

- 550 pounds per day (ppd) of CO;
- 220 ppd of NO_x;
- 135 ppd of Particulate Matter;
- 80 ppd of PM10; or
- 220 ppd of VOCs.

Northern Sonoma County Air Pollution Control District (NSCAPCD)

According to the NSCAPCD's Regulation 1 Rule 104, Proposed Project emissions within the NSCAPCD that would equal or exceed any of the following rates would be considered significant:

- 40 tons per year (tpy) (220 ppd) of NO_x or VOC;
- 100 tpy (550 ppd) of CO; or
- 15 tpy (80 ppd) of PM10.

Bay Area Air Quality Management District (BAAQMD)

The BAAQMD's operational thresholds are contained in the BAAQMD's CEQA Guidelines for Assessing the Air Quality Impacts of Projects and Plans (BAAQMD 1999). Proposed Project emissions within the BAAQMD that would equal or exceed any of the following rates would be considered significant:

- 80 ppd or 15 tpy of ROG, NO_x, or PM10; or
- 550 ppd of CO, reduction of roadway level of service (LOS) of intersections operating at LOS E or F, reduction of intersection LOS to E or F, or increase

in traffic volumes on nearby roadways by 10% or more, or violation of state CO concentration standards as determined by the modeling of CO emissions.

5.1.3.3. Environmental Impacts

Impact AIR-1: Conflict with or Obstruct Implementation of Applicable Air Quality Plans

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, proposed projects need to be evaluated to determine whether they would generate population and employment growth and, if so, whether that growth would exceed the growth rates included in the relevant air quality plans.

Proposed Project: No Impact

The Proposed Project would not result in an increase in population since it is not a growth-inducing project. Further, the Proposed Project would not result in a net increase in employment, as the Proposed Project would not propose activities that increase employment within the fishing industry. It is possible that displacement of fishing effort resulting from the Proposed Project, 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 would not conflict with or obstruct implementation of any of the applicable air quality plans.

Mitigation—No mitigation is required because there would be no impact.

Alternative 1: No Impact

Potential effects associated with Alternative 1 would be the same as those described above for the Proposed Project. Therefore, Alternative 1 would not result in an impact.

Mitigation—No mitigation is required because there would be no impact.

Alternative 2: No Impact

Potential effects associated with Alternative 2 would be the same as those described above for the Proposed Project. Therefore, Alternative 2 would not result in an impact.

Mitigation—No mitigation is required because there would be no impact.

Alternative 3: No Impact

Potential effects associated with Alternative 3 would be the same as those described above for the Proposed Project. Therefore, Alternative 3 would not result in an impact.

Mitigation—No mitigation is required because there would be no impact.

Impact AIR-2: Violate an 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 the Regulatory Setting) 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 and its alternatives are focused on 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 would result from a change in marine vessel transit distances above the current practices due to displacement from MPAs.

Mobile Source Emissions

Emissions associated with an increase in commercial vessel trip lengths resulting from the Proposed Project and Alternatives 1, 2 and 3 are shown in Table 5-5.

Table 5-5. Projected Additional Operational Air Emissions of Displaced Commercial Vessels for the Proposed Project and Alternatives 1, 2 and 3 (lbs/day)

Port of Call	ROG	NO _x	CO	PM10
<i>Proposed Project</i>				
Point Arena	0.0	0.8	0.1	0.0
Bodega Bay	0.1	5.6	0.9	0.2
Princeton-Half Moon Bay ^a	0.1	2.6	0.4	0.1
Other San Francisco Bay ^b	0.5	17.9	2.8	0.9
<i>Alternative 1</i>				
Point Arena	0.0	0.9	0.1	0.0
Bodega Bay	0.1	4.9	0.8	0.2
Princeton-Half Moon Bay ^a	0.1	3.8	0.6	0.2
Other San Francisco Bay ^b	0.6	21.8	3.5	1.1
<i>Alternative 2</i>				
Point Arena	0.0	0.7	0.1	0.0
Bodega Bay	0.1	4.8	0.8	0.2
Princeton-Half Moon Bay ^a	0.1	2.6	0.4	0.1
Other San Francisco Bay ^b	0.4	16.6	2.6	0.9
<i>Alternative 3</i>				
Point Arena	0.0	0.9	0.1	0.0
Bodega Bay	0.2	8.9	1.4	0.4
Princeton-Half Moon Bay ^a	0.2	7.1	1.1	0.4
Other San Francisco Bay ^b	0.8	28.8	4.6	1.5
APCD Thresholds^c				
MCAPCD	220	220	550	80
NSCAPCD	220	220	550	80
BAAQMD	80	80	550	80

^a Includes nine vessels homeported in the north central coast study region in same APCD including Bolinas Bay, Tomales Bay, and Point Reyes.

^b Includes vessels homeported outside of the north central coast study region in the BAAQMD including those in San Francisco, Sausalito, Richmond, San Rafael, Berkeley, Oakland, and Alameda.

^c The MCAPCD thresholds apply to the port of Point Arena. The NSCAPCD thresholds apply to the port of Bodega Bay. The BAAQMD thresholds apply to the port of Princeton-Half Moon Bay and other San Francisco Bay ports.

Proposed Project: Less than Significant

As indicated in Table 5-5, the Proposed Project's operational emissions would be well below the criteria pollutant significance thresholds of each APCD; therefore, resulting in a less than significant air quality impact.

Recreational fishing vessels also contribute to air emissions in the north central coast study region. As with commercial vessels, there is a possibility that emissions could increase due to the same mechanism as for commercial vessels, i.e., displacement from fishing area. The extent of displacement of recreational fishing effort, and associated increases in travel distances by recreational vessels and vehicles, if any, are speculative as identified in the factors noted above (Section 5.1.3.1 Methodology). In addition, any increase in transit distances and associated emissions would be at least partially offset by more restrictive air quality standards for outboard motors (emissions associated with recreational vessels are subject to ARB regulation), which over time results in the phasing out of older outboard motors and replacement with newer, lower-emission motors. Project-related emission contributions resulting from shifts in recreational fishing activities are therefore considered to be less than significant.

Mitigation—No mitigation is required because impacts are not significant.

Alternative 1: Less than Significant

Criteria pollutant emissions associated with Alternative 1 would be similar that of the Proposed Project, thereby resulting in a less than significant impact.

Mitigation—No mitigation is required because impacts are not significant.

Alternative 2: Less than Significant

Criteria pollutant emissions associated with Alternative 2 would be similar to and slightly less than that of the Proposed Project, thereby resulting in a less than significant impact.

Mitigation—No mitigation is required because impacts are not significant.

Alternative 3: Less than Significant

Criteria pollutant emissions associated with Alternative 3 would be somewhat higher than that of the Proposed Project. These emissions would also be well below the APCD significance thresholds, thereby resulting in a less than significant impact.

Mitigation—No mitigation is required because impacts are not significant.

Impact AIR-3: Exposure of 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.

Proposed Project: No Impact

There are no new major sources of pollution associated with the Proposed Project that would affect sensitive receptors. Regardless, any emission increases would happen offshore, and not in close proximity to sensitive receptors. Therefore, the Proposed Project would not result in an impact to sensitive receptors.

Mitigation—No mitigation is required because there would be no impact.

Alternative 1: No Impact

Potential effects associated with Alternative 1 would be the same as those described above for the Proposed Project. Therefore, Alternative 1 would not result in an impact.

Mitigation—No mitigation is required because there would be no impact.

Alternative 2: No Impact

Potential effects associated with Alternative 2 would be the same as those described above for the Proposed Project. Therefore, Alternative 2 would not result in an impact.

Mitigation—No mitigation is required because there would be no impact.

Alternative 3: No Impact

Potential effects associated with Alternative 3 would be the same as those described above for the Proposed Project. Therefore, Alternative 3 would not result in an impact.

Mitigation—No mitigation is required because there would be no impact.

Impact AIR-4 Creation of Objectionable Odors Affecting a Substantial Number of People

Proposed Project: No Impact

The Proposed Project is not anticipated to generate any objectionable odors affecting a substantial number of people. As discussed above, the notion that offshore vessel traffic patterns would differ substantially from current patterns is speculative. Furthermore, offshore fishing vessels would not be anticipated to come into contact with a substantial number of people. Therefore, the Proposed Project would not result in an impact.

Mitigation—No mitigation is required because there would be no impact.

Alternative 1: No Impact

Potential effects associated with Alternative 1 would be the same as those described above for the Proposed Project. Therefore, Alternative 1 would not result in an impact.

Mitigation—No mitigation is required because there would be no impact.

Alternative 2: No Impact

Potential effects associated with Alternative 2 would be the same as those described above for the Proposed Project. Therefore, Alternative 2 would not result in an impact.

Mitigation—No mitigation is required because there would be no impact.

Alternative 3: No Impact

Potential effects associated with Alternative 3 would be the same as those described above for the Proposed Project. Therefore, Alternative 3 would not result in an impact.

Mitigation—No mitigation is required because there would be no impact.

5.2. Water Quality

5.2.1. Environmental Setting

The coastal marine waters of north central California are strongly influenced by oceanographic and meteorological processes. The California current brings cool water from the North Pacific southward along the coast, contributing to the generally mild coastal air temperatures. Seasonally strong northwesterly winds drive coastal upwelling,

in which deep, cold, nutrient-rich waters are brought to the surface in nearshore regions (Pennington & Chavez, 2000). This upwelling contributes to high coastal primary and secondary productivity, which support a very diverse biota.

Within the context of such broad oceanographic and meteorological conditions, it is generally recognized that land uses affect adjacent nearshore coastal water quality (Conrad et al. 2005). Refer to Figures 5.2-1a and 5.2-1b for areas of water quality concern in the north central coast study region. 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). Along the north central California coast, there are seven permitted wastewater discharges, some of which discharge wastewater from other municipalities and unincorporated areas. These discharges average 36 million gallons per day (mgd; see Table 5-6). They include discharges of seawater from Bodega Marine Laboratory and an abalone growing operation in Bodega Bay. In addition to these discharges, freshwater flows from the Gualala and Russian rivers to coastal waters average more than 1,100 mgd. Moreover, the Sacramento and San Joaquin rivers discharge an average of 19,600 mgd to San Francisco Bay, which contains contaminants with agricultural, industrial and urban/municipal origins. This river discharge mixes with runoff from urbanized areas around San Francisco Bay and is carried tidally out the Golden Gate (California Department of Fish and Game 2007a).

Table 5-6. Wastewater Discharges to Marine Waters along the North Central California Coast

Discharge	MGD
Mendocino County Water Works District No. 2, Anchor Bay	0.024
Bodega Marine Laboratory (seawater)	1.5
Bodega Farms (aquaculture)	0.45
City and County of San Francisco Southwest Ocean Outfall	18
North San Mateo County	8
City of Pacifica	4
Sewer Authority Mid-Coastline	4
Total daily discharge of municipal wastewater	36

Source: CCLEAN 2007.

As expected, water quality along the north central California coast reflects the mix of land uses and discharges in the region. Data on coastal water quality in the region typically come from studies or monitoring programs whose efforts are concentrated in the more urbanized areas or that target suspected problem areas. Consequently, there are relatively few data for water quality along the more pristine sections of coastline between Point Arena and Bolinas, where water quality is expected

to be high. Concentrations of contaminants in mussels measured by several programs over the past 28 years from eight sites between Point Arena and Point Reyes show that concentrations of chlorinated pesticides and other persistent organic pollutants are generally low along this north central coast of California. For example, concentrations of the chlorinated pesticide dieldrin² in mussels from Bodega Head have exceeded two screening levels established to protect human health on only a few occasions, while the same two screening values were not exceeded at any site for PCBs (Chart 5-1). Moreover, since 1993, the Regional Monitoring Program for Trace Substances has sampled water at a station just outside the Golden Gate; the program provides data on ocean concentrations of contaminants at a location influenced by historic industrial sources, urban runoff and river discharges. Data indicates that concentrations of dieldrin periodically and PCBs regularly exceed objectives set by the California Ocean Plan (COP) for the protection of human health in the coastal waters near the Golden Gate (Chart 5-2).

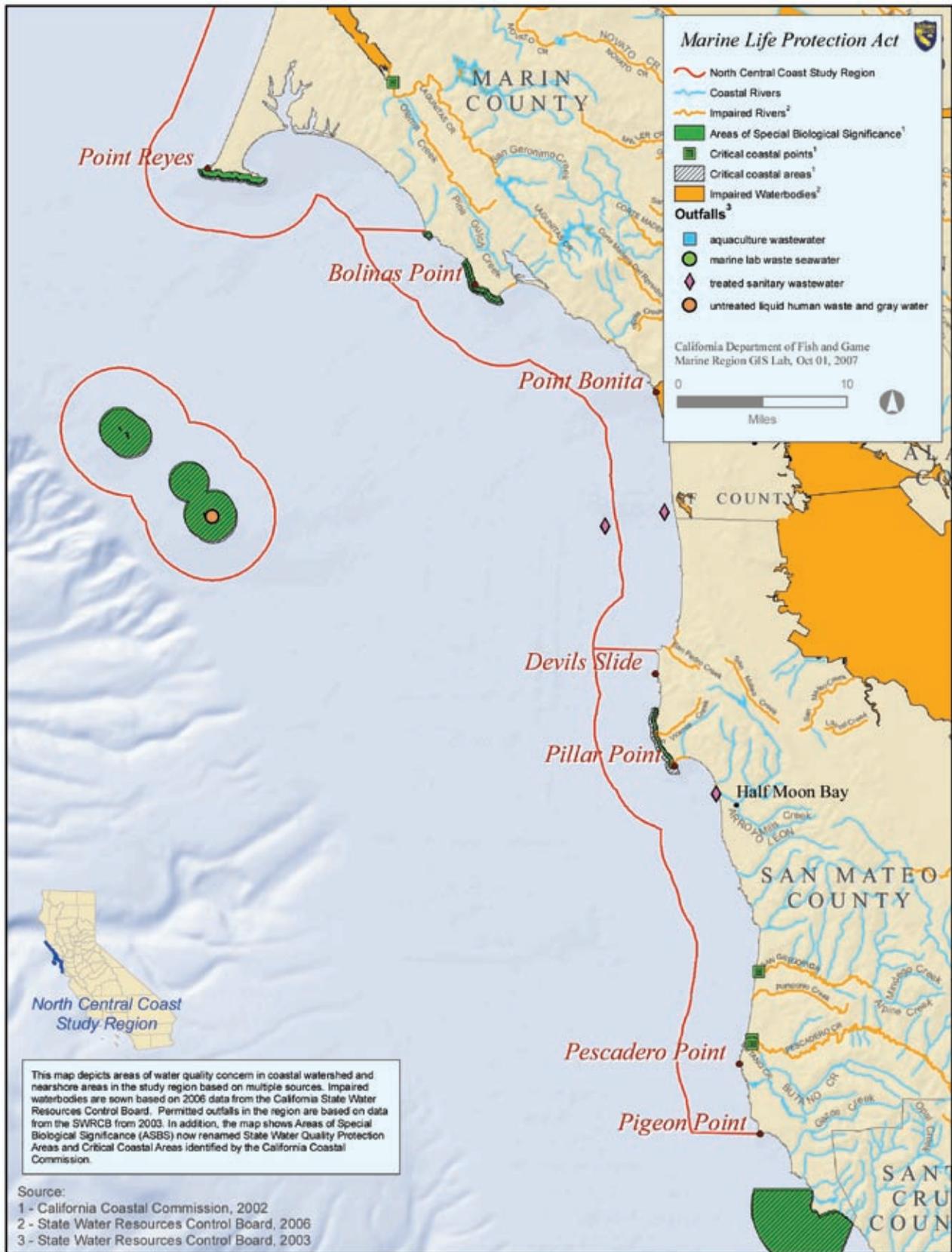
² Dieldrin, an organochlorine compound, was a commonly used insecticide for crops like corn and cotton and for termite control. Its use was banned in the United States in 1984.



00-447.08 (10/08)

Source: CDFG, 2007a

Note: Project features and data layers can be viewed online at <http://www.marinemap.org/mlpa/>

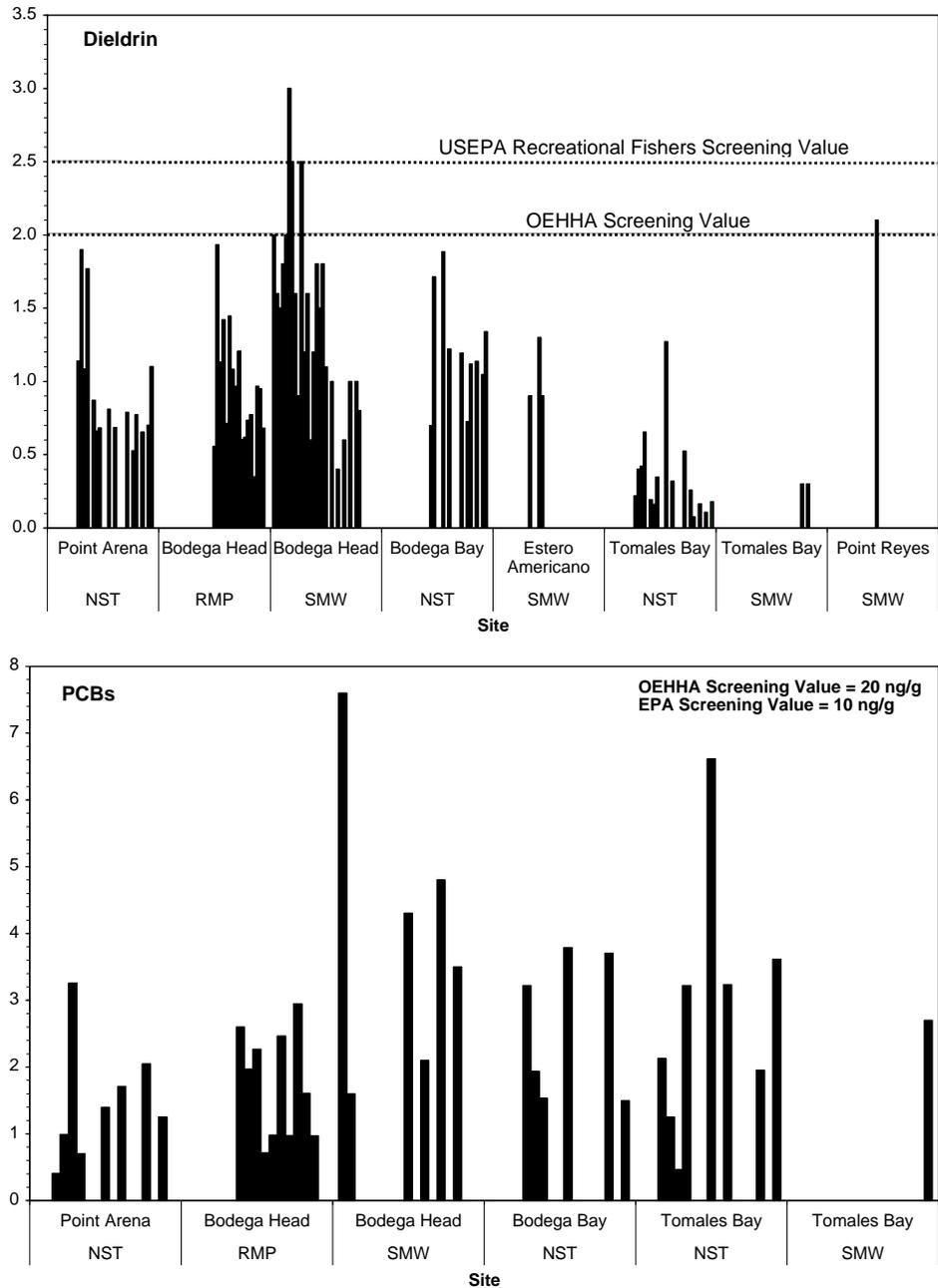


00-447.08 (10/08)

Source: CDFG, 2007a

Note: Project features and data layers can be viewed online at <http://www.marinemap.org/mlpa/>

Chart 5-1. Comparison of Dieldrin and PCB Concentrations in Mussels from 8 North Central Coast California Sites



Source: CCLEAN 2007; NOAA 2007

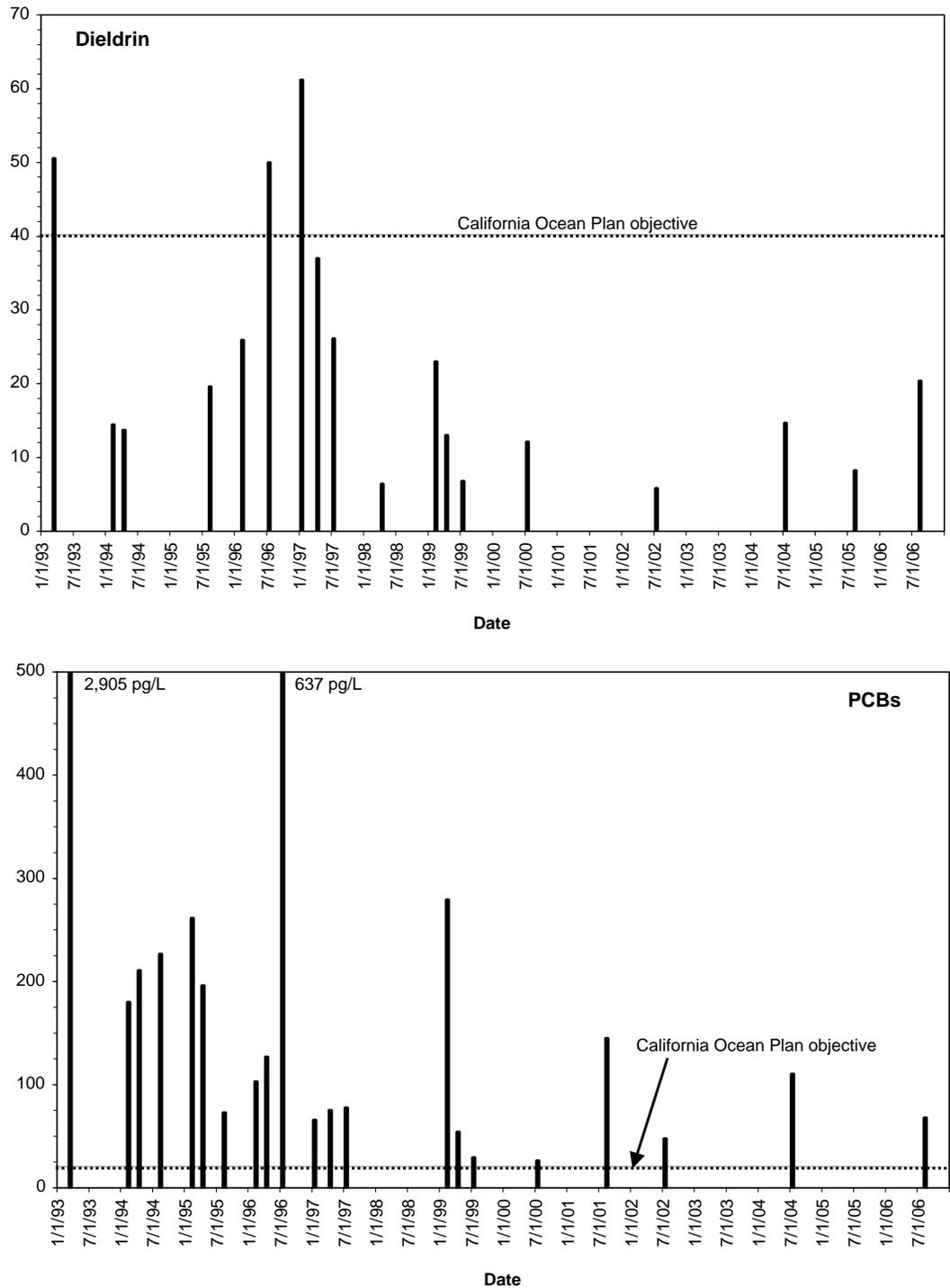
EPA = U.S. Environmental Protection Agency

OEHHA = California Office of Environmental Health Hazard Assessment

The EPA has set screening values for fish or shellfish taken by recreational fishers. These screening values are based on the toxicity of different contaminants and assume an average fisher body weight of 70 kilograms (154 pounds equivalent) with consumption of 17.5 grams per day by recreational fishers.

The OEHHA has determined screening values using the same methods used by the EPA, except that it assumed a consumption rate of 21 grams per day of fish or shellfish.

Chart 5-2. Comparison of Dieldrin and PCB Concentrations in Ocean Water Samples, Golden Gate



Source: CCLEAN 2007; NOAA 2007

Another indication of water quality is whether a water body has been designated as impaired for a particular pollutant. Such designations are made in California by Regional Water Quality Control Boards based upon available data and established regulatory policies, in order to guide implementation of corrective actions. No areas along the north central California coast have been designated as impaired.

While water quality along the north central California coast is generally good, freshwater runoff from the land has been implicated in infectious diseases affecting southern sea otters (*Enhydra lutris nereis*). Numerous fatal brain infections by the protozoan parasite *Toxoplasma gondii* have been recognized in southern sea otters from California (Thomas and Cole 1996 ; Miller et al. 2004). Researchers found that otters sampled near areas of maximal freshwater runoff were approximately three times more likely to be seropositive to *T. gondii* than otters sampled in areas of low flow. No association was found between seropositivity to *T. gondii* and human population density or exposure to sewage.

5.2.2. Regulatory Framework

Some of the north central California coastline falls within the Cordell Bank National Marine Sanctuary, Gulf of the Farallones National Marine Sanctuary and the Monterey Bay National Marine Sanctuary (MBNMS). The Management Plan for the Monterey Bay National Marine Sanctuary includes a Memorandum of Agreement between eight federal, state, and regional agencies, including the Central Coast Regional Water Quality Control Board, to develop an ecosystem-based Water Quality Protection Program for the Sanctuary.

The regulatory responsibility for water quality along the north central coast is split among three Regional Water Quality Control Boards (RWQCB): the North Coast RWQCB is responsible for the area from Dillon Beach northward, the San Francisco Bay RWQCB is responsible for the area from Dillon Beach to Pescadero, and the Central Coast RWQCB is responsible for the area from Pescadero to Pigeon Point. Regulation of water quality occurs through provisions of the federal Clean Water Act and the state Porter-Cologne Act. As part of their responsibility to protect water quality, regional boards grant discharge permits and enforce regulations that are designed to ensure sufficient water quality to protect beneficial uses designated by each RWQCB for every water body in its jurisdiction. RWQCBs have designated 10 beneficial uses for coastal waters in the north central coast study region (Table 5-7).

Each permit granted by the RWQCB to discharge waste to coastal waters includes limitations on the concentrations of contaminants that are allowed. Effluent limits are based upon the modeled or measured dilution provided by each wastewater outfall so that contaminant concentrations will not exceed limits set by the California Ocean Plan to protect marine life and human health. The national marine sanctuaries also are given the opportunity to comment on every discharge permit issued by each RWQCB within a sanctuary.

There are seven Areas of Special Biological Significance (ASBS beneficial use in Table 5-7) in north central California. ASBS are under the jurisdiction of the State Water Resources Control Board (SWRCB) and are given special protections that include a prohibition against discharge of any waste, unless specifically allowed by an exception granted by the SWRCB. Recent actions by the SWRCB to enforce the prohibition of waste discharges to ASBS have included making an inventory of freshwater flows to each ASBS (Table 5-8). For the purposes of this inventory, a discharge was defined as an anthropogenic source or location of a discernable volume of water that flows or was released directly into or immediately adjacent to the marine environment of an ASBS. An outlet was defined as any naturally occurring water body that drains into or immediately adjacent to an ASBS.

Table 5-8. Freshwater Flows to ASBS in the North Central Coast

ASBS	Number of Each Flow Type		
	Discharge	Outlet	Springs / Seeps
Gerstle Cove	8	6	7
Bird Rock	0	8	0
Point Reyes Headland Reserve and Extension	7	13	0
Double Point	0	2	1
Duxbury Reef Reserve and Extension	10	18	19
Farallon Islands	6	0	2
James V. Fitzgerald Marine Reserve	28	3	7

Source: SWRCB 2003.

The SWRCB and the relevant RWQCB would be given the responsibility for ensuring protection of the MPAs. Many of the proposed SMRs and SMCAs are adjacent to existing ASBS areas. For example, the Gerstle Cove SMCA is directly adjacent to the Gerstle Cove ASBS; the Point Reyes Headlands SMCA is directly adjacent to the Point Reyes Headland Reserve and Extension; the Duxbury Reef SMCA is directly adjacent to the Duxbury Reef Reserve and Extension; the Farallon Islands SMCA is directly adjacent to the Farallon Islands ASBS; and the James V. Fitzgerald SMP is directly adjacent to James V. Fitzgerald Marine Reserve.

5.2.3. Impact Analysis

5.2.3.1. Methodology

Effects on water quality were assessed by evaluating the potential change in use patterns between proposed consumptive and recreational activities in the context of the potential for water quality degradation at sea or on the adjacent mainland. Several

Table 5-7. Designated Beneficial Uses of Coastal Waters in the North Coast Study Region

	Beneficial Uses													
	REC 1	REC 2	IND	PRO	NAV	MAR	MIGR	SPWN	SHELL	COMM	AQUA	RARE	ASBS	WILD
Region 1 (North Coast)														
Ocean Waters	X	X	P ¹	P ¹	X	X	X	X	X	X	X	X	P ¹	X
Region 2 (SF Bay)														
Ocean Waters of Marin County	X	X	X		X	X	X	X	X	X		X		X
Ocean Waters of San Francisco and San Mateo counties	X	X	X			X	X	X	X	X		X	P ¹	X
Region 3 (Central Coast)														
Pescadero Pt. to Pt. Año Nuevo	X	X	X		X	X			X	X		X	X	X

Notes:

Water Contact Recreation (REC-1): Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible.

Non-Contact Water Recreation (REC-2): Uses of water for recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible.

Industrial Service Supply (IND): Uses of water for industrial activities that do not depend primarily on water quality.

Industrial Process Supply (PRO): Uses of water for industrial activities that depend primarily on water quality.

Navigation (NAV): Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.

Marine Habitat (MAR): Uses of water that support marine ecosystems including, but not limited to, preservation or enhancement of marine habitats, vegetation such as kelp, fish, shellfish, or wildlife (e.g., marine mammals, shorebirds).

Migration of Aquatic Organisms (MIGR): Uses of water that support habitats necessary for migration or other temporary activities by aquatic organisms, such as anadromous fish.

Spawning, Reproduction, and/or Early Development (SPWN): Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.

Shellfish Harvesting (SHELL): Uses of water that support habitats suitable for the collection of filter-feeding shellfish (e.g., clams, oysters, and mussels) for human consumption, commercial, or sport purposes.

Commercial and Sport Fishing (COMM): Uses of water for commercial or recreational collection of fish, shellfish, or other organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes.

Aquaculture (AQUA): Uses of water for aquaculture or mariculture operations including, but not limited to, propagation, cultivation, maintenance, or harvesting of aquatic plants and animals for human consumption or bait purposes.

Rare, Threatened, or Endangered Species (RARE): Uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened, or endangered.

Areas of Special Biological Significance (ASBS): are those areas designated by the State Water Resources Control Board as requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable.

Wildlife Habitat (WILD): Uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

¹ = Potential beneficial uses, depending on location.

mechanisms for effects were considered. Fishing activity displacement and shifts in vessel traffic patterns were considered for their potential to create water quality impacts. Shifts in recreational, research, and other human activities were examined for their potential to accelerate mainland erosion from foot or off-highway vehicle traffic, deposition of trash, and contribution of water quality contaminants such as nutrients and coliform from human and animal waste. Other activities, such as the potential for increased vessel abandonment, were reviewed in the context of the potential for release of toxic substances in coastal waters.

5.2.3.2. Criteria for Determining Significance

Based on State CEQA Guidelines Appendix G and professional judgment, the Proposed Project would result in a significant impact if it would:

- violate any water quality standards or waste discharge requirements, or
- otherwise substantially degrade water quality.

5.2.3.3. Environmental Impacts

Establishing the proposed network component of MPAs would restrict fishing activity within specific portions of state waters, but it would not directly result in any changes in point- and non-point-source discharges within the north central coast study region. It also would not result in land use changes that could affect discharges into the proposed MPA network component.

Impact WQ-1: Effects on Water Quality Standards and Waste Discharge Requirements

Proposed Project: No Impact

Establishing a network component of MPAs would not conflict with any aspect of the MBNMS's water quality protection plan or any other water quality regulation. An MPA network component would not affect the implementation of any of the strategies in the MBNMS's action plan to address contamination from boats and marinas. Moreover, creation of an MPA network component would be consistent with the wildlife and marine habitat beneficial uses designated by the three RWQCBs for the north central coast study region.

Creation of an MPA network component along the north central California coast may result in the displacement of fishing vessels and activities to locations outside the boundaries of individual MPAs. As identified in Chapter 4, potential direct impacts resulting from such displacement include overcrowding of areas open to fishing, transiting farther to areas open to fishing, and abandonment of vessels because of economic hardship. Indirect impacts could be associated with vessels transiting farther

to open fishing areas and vessel abandonment because of economic hardship because sunken, wrecked, or abandoned vessels often leak petroleum products and other hazardous materials into the water.

Although it cannot be accurately determined how individual fishermen will respond to an MPA network component, and given that fisherman are currently free to transit throughout state waters, it is not anticipated that longer transits would result in measurable changes in water quality beyond existing conditions or result in impairment of beneficial uses. Likely increased distances of travel potentially resulting from the implementation of an MPA network component would be limited at most to the along-shore span of any individual MPA, representing approximately 0.2 to 7.5 additional miles traveled, based on the alternative MPA network components currently being considered. Therefore, this would not create a water quality impact.

Mitigation—No mitigation is required because there would be no impact.

Alternative 1: No Impact

Potential effects associated with Alternative 1 would be the same as those described above for the Proposed Project. Therefore, Alternative 1 would not result in an impact.

Mitigation—No mitigation is required because there would be no impact.

Alternative 2: No Impact

Potential effects associated with Alternative 2 would be the same as those described above for the Proposed Project. Therefore, Alternative 2 would not result in an impact.

Mitigation—No mitigation is required because there would be no impact.

Alternative 3: No Impact

Potential effects associated with Alternative 3 would be the same as those described above for the Proposed Project. Therefore, Alternative 3 would not result in an impact.

Mitigation—No mitigation is required because there would be no impact.

Impact WQ-2: Vessel Abandonment Resulting from Displacement

As described in Chapter 4, some displacement of fishing effort may result from implementation of either the Proposed Project or alternatives. One of the potential impacts of displacement would be for individual commercial or recreational fishermen to leave the industry because of increased business costs, and potentially to abandon their vessel. Vessel abandonment has long been illegal in California, and the state legislature passed AB 716 in 2005, which included provisions allowing vessels with registration expired for more than 1 year to be removed from public waterways by law enforcement officers; reducing the length of time abandoned vessels must be held by law enforcement before being sold at auction from 90 to 60 days; doubling the maximum fine for vessel abandonment on public waterways to \$3,000; and allowing the court to order violators to repay the enforcing agency for the actual cost of removing and disposing of a vessel.

Proposed Project: Less than Significant

Establishment of the proposed network component of MPAs would result in displacement of fishing effort, potentially causing individual fishermen to consider abandoning vessels as a result of individual economic losses. The increase in the amount of vessel abandonment compared to existing conditions cannot be established because it is not possible to predict the decisions of individual fisherman. On a local scale, vessel abandonment may result in a water quality impact on individual harbors, depending on how much time passes before the abandonment is identified; the vessel's location and hazardous content (e.g., fuels, oils); and how quickly the situation is remedied. However, vessel abandonment is illegal and the boat owner is held responsible for such actions.

On a regional scale, the potential for the Proposed Project to result in economic blight within the fishing industry, even at a localized level, leading to substantial losses and a potential corresponding substantial number of vessels to be abandoned, is speculative and is not supported by economic analysis completed to date (Scholz, et. al. 2008). Therefore, this impact would be less than significant.

Mitigation—No mitigation is required because impacts are not significant.

Alternative 1: Less than Significant

The potential for vessel abandonment associated with Alternative 1 would be approximately the same as described for the Proposed Project, as potential fishing displacement effects would be comparable. Therefore, this impact would be less than significant.

Mitigation—No mitigation is required because impacts are not significant.

Alternative 2: Less than Significant

The potential for vessel abandonment associated with Alternative 2 would be approximately the same as described for the Proposed Project, as potential fishing displacement effects would be comparable. Therefore, this impact would be less than significant.

Mitigation—No mitigation is required because impacts are not significant.

Alternative 3: Less than Significant

The potential for vessel abandonment associated with Alternative 3 would be approximately the same as described for the Proposed Project, as potential fishing displacement effects would be comparable. Therefore, this impact would be less than significant.

Mitigation—No mitigation is required because impacts are not significant.

Impact WQ-3: Effects of Potential Shifts in Non-Consumptive Recreational Uses*Proposed Project: No Impact*

Shifts in recreational, research, and other human activities can degrade water quality through accelerated mainland erosion from foot or off-highway vehicle traffic, deposition of trash, and contribution of water quality contaminants such as nutrients and coliform from human and animal waste, and vessel fuel and exhaust leakages. As discussed in section 7.4, the “hot spots” for nonconsumptive recreational uses in the north central coast study region include miles of heavily visited coastline and parks such as the Golden Gate National Recreation Area, Sonoma Coast State Beach, and Half Moon Bay State Beach, extensive boating facilities, specifically Pillar Point and Bodega Bay Harbor, surf spots such as Dillon Beach, Bolinas and Mavericks, and tidepooling sites such as Fitzgerald Marine Reserve and Mussel Point. The establishment of an MPA network component within the north central coast study region would not result in a substantial redistribution of users to different access points. Therefore, related impacts on water quality associated with recreational users and facilities are not expected to increase over existing conditions. Existing effects would continue to be managed by agencies such as the SWRCB, RWQCBs, National Park Service, California Department of Parks and Recreation, and local counties and cities.

Mitigation—No mitigation is required because there would be no impact.

Alternative 1: No Impact

Potential effects associated with Alternative 1 would be the same as those described above for the Proposed Project. Therefore, Alternative 1 would not result in an impact.

Mitigation—No mitigation is required because there would be no impact.

Alternative 2: No Impact

Potential effects associated with Alternative 2 would be the same as those described above for the Proposed Project. Therefore, Alternative 2 would not result in an impact.

Mitigation—No mitigation is required because there would be no impact.

Alternative 3: No Impact

Potential effects associated with Alternative 3 would be the same as those described above for the Proposed Project. Therefore, Alternative 3 would not result in an impact.

Mitigation—No mitigation is required because there would be no impact.

Impact WQ-4: Beneficial Water Quality Effects*Proposed Project: Beneficial Impact*

Some of the recommended SMRs or SMCAs are adjacent to, contain, or overlap existing ASBS. It is possible that the designation of the MPA network component would provide incentive to bring additional coastal waters under the special protections currently given ASBSs. This would be an indirect beneficial impact. If special protection also is given to water quality in the newly designated MPAs, the SWRCB or other three RWQCBs would be responsible for ensuring such protection. Parties such as local municipalities, the California Department of Transportation, and agricultural interests could be required to eliminate all dry-weather discharges and fund monitoring programs, as now required for dischargers into the current ASBS.

Mitigation—No mitigation is required.

Alternative 1: Beneficial Impact

Potential effects associated with Alternative 1 would be the same as those described above for the Proposed Project. Therefore, Alternative 1 may result in a beneficial impact.

Mitigation—No mitigation is required.

Alternative 2: Beneficial Impact

Potential effects associated with Alternative 2 would be the same as those described above for the Proposed Project. Therefore, Alternative 2 may result in a beneficial impact.

Mitigation—No mitigation is required.

Alternative 3: Beneficial Impact

Potential effects associated with Alternative 3 would be the same as those described above for the Proposed Project. Therefore, Alternative 3 may result in a beneficial impact.

Mitigation—No mitigation is required.