

CALIFORNIA MARINE LIFE PROTECTION ACT INITIATIVE

~~REVISED~~FINAL DRAFT MASTER PLAN FRAMEWORK

**Strikeout and underline version
for comparison purposes**

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Executive Summary

Section 1. Introduction

In 1999, the legislature approved and the governor signed the Marine Life Protection Act (MLPA: FGC Section 2851-2863). The MLPA requires that the Department of Fish and Game prepare and present to the Fish and Game Commission a master plan that will guide the adoption and implementation of a Marine Life Protection Program, which includes a statewide network of marine protected areas (MPAs). Other recent related legislation includes the Marine Life Management Act of 1998, Marine Managed Areas Improvement Act of 2000, and the California Ocean Protection Act of 2004.

This legislation continues a long tradition of legislation addressing the conservation of California's diverse coastal and marine wildlife and habitats. Since World War II especially, pressures on these resources have grown as fishing effort and capacity have increased and as coastal development has transformed coastal habitats and generated pollutants. In the last 35 years, both federal and state government programs have addressed, if not solved, all of these problems. Marine and coastal wildlife populations also are affected by environmental factors, such as long-term shifts in oceanographic conditions.

Since passage of the Marine Life Management Act (MLMA) in 1998, restrictions on commercial and recreational fishing have grown as fishery managers have sought to maintain sustainable fisheries in the face of uncertainty and of declining populations. The MLMA reflects shifts in the goals of fishery management away from a single-species focus on maximum yields toward sustainable yields and an ecosystem perspective.

The MLPA reflects prevailing views regarding the role of MPAs in conserving biological diversity, protect habitats, aiding in the recovery of fisheries, and promoting recreation, study, and education. There remains disagreement whether MPAs, particularly no-take marine reserves, do provide benefits to fisheries.

In August 2004, the California Resources Agency, California Department of Fish and Game, and Resources Legacy Fund Foundation launched an effort to implement the MLPA, after two unsuccessful earlier attempts. The MLPA Initiative established a task force, together with a science advisory team and stakeholder advisory groups, to oversee the completion of several objectives. The first of these objectives is this master plan framework, which includes guidance, based on the MLPA, for the development of alternative proposals of MPAs in an initial central coast study region. The task force will forward both the master plan framework and, by March 2006, a package of alternative MPA proposals to the Department of Fish and Game for its consideration and submission to the California Fish and Game Commission for its consideration and action.

Section 2. Process for Designing Alternative Marine Protected Area Network Proposals

Rather than attempting to design a single network for the entire state at one time, the MLPA Initiative envisions the assembly of a statewide network by 2011 from a series of regional processes, beginning with an area along the central coast. This master plan framework will

guide that process. The master plan framework describes a series of activities, most of which will be undertaken by a regional stakeholder group and a sub-team of a statewide science advisory team.

The overall aim of this five-step process is the development of alternative MPA proposals for consideration by the Department of Fish and Game and the Fish and Game Commission. These five steps are:

1. Regional MPA planning, starting with the identification of a study region and ending with the identification of alternative approaches to networks and potential MPA sites;
2. MPA planning, in which proposals for MPAs are developed at potential MPA sites, after evaluation of existing MPAs and other management activities,
3. Assembling alternative MPA network proposals, in which MPAs developed in the previous stage are assembled into alternative networks, which are evaluated generally;
4. Evaluating the alternative MPA proposals, in which the MLPA Blue Ribbon Task Force evaluates the proposals and forwards a package to the Department of Fish and Game, which sponsors a peer review and develops initial regulatory documents;
5. Fish and Game Commission action on MPA proposals, which includes preparing regulatory analyses (including California Environmental Quality Act review), public testimony, and action by the commission.

Section 3. Considerations in the Design of MPAs

Achieving the MLPA's goals and objectives to improve a statewide network of MPAs will require consideration of a number of issues, each of which is discussed in this section.

Goals of the Marine Life Protection Program

The MLPA identifies a set of goals for the Marine Life Protection Program, of which the principal element is a statewide network of MPAs. The goals include conservation of biological diversity and the health of marine ecosystems, recovery of wildlife populations, provision of recreational and educational opportunities consistent with biodiversity conservation, and protection of representative and unique habitats for their intrinsic value. This section of the MLPA also identifies major deficiencies in the existing array of MPAs.

The MLPA also calls for an "improved marine life reserve component" that protects a representative variety of marine habitat types and communities across a range of depths and conditions, includes replicates of similar types of habitats in each biogeographical region, and avoids activities that upset the natural functions within reserves. The MLPA also acknowledges the value of other, less-restrictive types of MPAs, and requires that they have goals and objectives and be of adequate size, number, type and location.

MPA Networks

The MLPA calls for improving and managing the state's MPAs as a network, to the extent possible. The MLPA itself does not define a network. However, there are two common approaches to MPA networks: MPAs linked biologically and/or oceanographically, and MPAs

linked through administrative function. Biological and oceanographic linkages are described in more detail in this section.

Science Advisory Team Advice on MPA Network Design

Explained in more detail in the master plan framework, the Master Plan Science Advisory Team for the MLPA Initiative developed the following guidelines regarding the design of MPA networks:

- The diversity of species and habitats to be protected, and the diversity of human uses of marine environments, prevents a single optimum network design in all environments.
- 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 5-10 km of coastline, and preferably 10-20km. Larger MPAs would be required to fully protect marine birds, mammals, and migratory fish.
- To facilitate dispersal among MPAs for important bottom-dwelling fish and invertebrate groups, based on currently known scales of larval dispersal, MPAs should be placed within 50-100 km of each other.
- To provide analytical power for management comparisons and to buffer against catastrophic loss of an MPA, at least 3-5 replicate MPAs should be designed for each habitat type within bioregions.
- 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.

Consideration of Habitats in the Design of MPAs

The MLPA calls for protecting representative types of habitat in different depth zones and conditions. The science advisory team generally confirmed all but one of the habitats identified in the MLPA: rocky reefs, intertidal zones, sandy or soft ocean bottoms, underwater pinnacles, kelp forests, submarine canyons, and seagrass beds. The Master Plan Science Advisory Team noted that rocky reefs, intertidal zones, and kelp forests are actually broad categories that include several types of habitat.

The science advisory team identified five depth zones: intertidal, intertidal to 30 meters, 30 meters to 100 meters, 100 meters to 200 meters, and deeper than 200 meters. The science team also called for special delineation of estuaries as a critical California coastal habitat.

Finally, the science team recommended expanding the habitat definitions to include ocean circulation features, principally upwelling centers, freshwater plumes from rivers, and retention areas.

Species Likely to Benefit from MPAs

The MLPA requires the identification of species likely to benefit from MPAs. Identifying these species may also assist in identifying habitat areas that can contribute to achieving the goals of the MLPA. The Department of Fish and Game prepared a list of such species, which appears in Appendix G. The master plan framework calls for the department to work with the science advisory team in refining this list for each region.

Geographical Regions

The MLPA requires that representative habitats be protected by more than one “marine life reserve” in each biogeographical region. The MLPA identifies the following three biogeographical regions:

- The area extending south from Point Conception,
- The area between Point Conception and Point Arena, and
- The area extending north from Point Arena.

The MLPA also authorizes a master plan science team to modify these regions. A variety of options for the possible definition of biogeographic regions are presented:

- 1) The three biogeographic regions defined in the MLPA;
- 2) The two *biogeographic provinces* recognized by many scientists with a boundary at Point Conception;
- 3) The four *marine regions* identified by the master plan team convened by the Department of Fish and Game in 2000, with boundaries at Pt. Conception, Pt. Año Nuevo, and Pt. Arena; and
- 4) The biogeographic regions recognized by scientists who have identified borders based on species distributional patterns or on abundance and diversity data with boundaries at Pt. Conception, Monterey Bay and/or San Francisco Bay, and Cape Mendocino.

Types of MPAs

The MLPA recognizes the role of different types of MPAs in achieving the objectives of the Marine Life Protection Program. Three types of MPAs are defined by the Marine Managed Areas Improvement Act: state marine reserve, state marine park, and state marine conservation area. Each designation provides authority for different levels of restriction on human uses and includes various objectives. The MLPA sets other requirements for the use of marine reserves. The master plan framework briefly describes these differences and discusses their use in zoning of areas.

Setting Goals and Objectives for MPAs

The MLPA requires that all MPAs have clearly identified goals and objectives and suggests several possible objectives. The master plan framework calls for beginning the MPA design process by setting regional goals and objectives that are consistent with the MLPA, then identifying goals and objectives for individual MPAs. Once set, goals and objectives will influence crucial decisions regarding size, location and boundaries, as well as management measures and the focus of monitoring and evaluation programs. The master plan framework also calls for consulting the goals and objectives of other complementary programs, such as the nearshore fishery management plan adopted under the Marine Life Management Act.

Enforcement and Public Awareness Considerations in Setting Boundaries

Public acceptance, understanding and compliance with MPAs can be increased if certain criteria are considered in the design of MPAs. First, boundaries should be clear, well-marked, 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.

Information Supporting the Design of MPAs

The MLPA calls for the use of the “best readily available science” in designing and managing MPAs. The master plan framework calls for identifying baseline data needs in regional profiles and MPA management plans, and offers several examples of these types of information. 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 alternatives. The master plan framework then describes considerations in evaluating the economic value of marine ecosystems and the economic effects of specific MPAs.

Other Programs and Activities Other than Fishing

The master plan framework calls for describing current and anticipated human activities that may affect representative habitats and focal species in each region and at each MPA site. Where non-fishing activities may have a significant impact, a proposal for an MPA may include recommendations to appropriate agencies for reducing the impacts of those activities. Such recommendations generally should be referred also to the California Ocean Protection Council established under the California Ocean Protection Act of 2004.

Section 4: Management

In several passages, the MLPA requires that California’s MPAs have effective management measures. Under the master plan framework, the initial focus for meeting this requirement is the preparation of a regional management plan, a suggested outline of which is found in Appendix L. Besides generally guiding day-to-day management of MPAs, a management plan also distills the reason for key elements of MPAs that should be monitored, evaluated and revised in response to new information and experience.

A management plan should describe the allocation of responsibility to various government agencies, non-governmental organizations and industry groups. Where possible, management of MPAs should rely on collaboration among groups, including volunteer efforts. Finally, advisory committees formed for the purpose of designing MPAs in a region may serve important purposes in the implementation of MPAs. Likewise, the master plan framework suggests the consideration of a statewide MPA advisory committee that can assist with implementation. Much of the material required for a management plan will be developed during the regional design of MPAs.

Section 5: Enforcement

The MLPA identifies the lack of enforcement as one of the chief deficiencies in California's existing MPAs. Therefore, the MLPA requires that the Marine Life Protection Program provides for adequate enforcement and includes enforcement measures for all MPAs, and that the master plan include recommendations for improving enforcement.

The master plan framework includes a general discussion of the capacities of the Department of Fish and Game's enforcement program as well as the programs of other state and federal agencies, with whom the department may collaborate. The master plan framework also identifies a set of enforcement program objectives, including cooperative efforts, community involvement, education and operations. Appendix L sets out a draft enforcement action plan.

Section 6: Monitoring and Adaptive Management of MPAs

Like the Marine Life Management Act, the MLPA calls for adaptive management. The MLPA requires that the master plan include recommendations for monitoring and evaluation in selected areas for adaptive management. The MLPA also requires that all MPAs have measurable goals and objectives.

The master plan framework describes a process for developing monitoring and evaluation programs in different regions. The master plan framework also calls for a communications plan that will help ensure that results of monitoring are provided to decision makers and the public in terms that they can understand and act upon. A comprehensive review of monitoring results and performance should be conducted every three to five years. If monitoring results are not consistent with the goals and objectives of an individual MPA, the region, and overall network, recommendations should be developed for altering the MPAs and their management.

The master plan framework discusses general considerations in identifying indicators as part of a monitoring and evaluation program, and provides specific examples of indicators for biophysical, socio-economic and governance objectives. The master plan framework also encourages collaborative monitoring efforts with fishermen and other groups.

Section 7. Financing

The MLPA requires that the master plan include recommendations for funding MPA management activities and for implementing the Marine Life Protection Program. The master plan framework briefly discusses inclusion of financing considerations in management plans

for regional MPAs and provides examples of various sources of funding. The MLPA Initiative will produce a long-term funding strategy for implementating the MLPA by the end of 2006.

Appendices

A separate volume of the master plan framework includes appendices with more extensive information on a number of issues raised in the master plan framework.

FINAL DRAFT

Section 1. Introduction

The rich natural heritage of California has supported commercial and recreational fisheries, which have provided consumers with a healthy source of high-quality protein, recreational anglers with a unique enjoyable experiences, and many coastal communities with sources of employment and revenues. California's nearshore waters ~~have become~~ are among the top destinations for ~~sport~~ recreational SCUBA divers from around the world. Whether watching the flight of birds or the graceful forms of dolphins and whales, ~~Californians~~ people also have increasingly sought enjoyment from observing marine wildlife. The dramatic growth of marine aquaria along the coast also serves as evidence of growing public interest in ocean wildlife, while California's century-long renown as a leader in marine science has only grown. California enjoys beautiful and productive marine resources.

In 1999, the State of California adopted the Marine Life Protection Act (MLPA), one in a long history of statutes and regulations designed to protect California's ocean and estuarine waters and the species and habitats found within them (FGC Section 2851-2863). The Department of Fish and Game is required to prepare and present to the Fish & and Game Commission a master plan that will guide the adoption and implementation of the Marine Life Protection Program, including a statewide network of MPAs (FGC Section 2855[b]1). ~~The Commission is required to adopt a master plan, based on the best readily available science, which includes recommendations for a statewide network of marine protected areas (FGC Section 2855[a]).~~

Another relevant law, the Marine Managed Areas Improvement Act (Public Resources Code, Sections 36600 et seq.), was adopted in ~~1998~~ 2000. The two measures, taken together, represent a ~~very strong state policy declaration~~ that California intends to protect its oceans and the marine species that live there and provide direction on how to proceed.

In 2004 the legislature approved and the Governor signed the ~~The~~ California Ocean Protection Act, (Public Resources Code, Sections 35500 et seq.). One purpose of this law ~~was~~ is to coordinate activities of state agencies that are ~~related to~~ charged with the protection and conservation of coastal waters and ocean ecosystems, in order to improve the effectiveness of state efforts to protect ocean resources within existing fiscal limitations. Related to this legislation, on October 18, 2004, Governor Arnold Schwarzenegger released an ocean action plan, Protecting Our Ocean: California's Action Strategy, with four primary goals:

- Increase the abundance and diversity of California's oceans, bays, estuaries and coastal wetlands.
- Make water in these bodies cleaner.
- Provide a marine and estuarine environment that Californians can productively and safely enjoy.
- Support ocean dependent economic activities.

~~A major p~~Part of this ocean action plan is ~~the work of the MLPA Blue Ribbon Task Force and full implementation of the MLPA. These plans and laws are but the latest in California's growing efforts to ensure protection and long-term conservation, use, and enjoyment of its living marine resources.~~ Among other policies, the ocean action plan also addresses the relationship between California's management activities and the Department of Defense as follows:

- Coordinate California ocean and coastal management activities that impact military facilities/operations with the Department of Defense, as well as requesting the Department of Defense to coordinate their activities and operational needs with the State of California to the extent possible without compromising national security objectives.

Early Years

From its very first days as a state in 1850, California has adopted statutes and regulations dealing with the ocean, fisheries, and protection of resources, commerce and industry. In an historic sense, California's history of involvement (as with most other states) has been through early steps to regulate fishing and define health and safety requirements for those who earn a living on the waters, and to protection and preservation of unique outstanding areas and features along the California coastline and in state waters. ~~The third bill adopted in the First Session of the California Legislature recognized and regulated the Bay Pilots, the professionals who to this day, guide commercial ships into San Francisco Bay.~~

In the early decades of statehood, California's policy toward natural resources reflected the desire of government at all levels to promote economic expansion by bringing natural resources into production (McEvoy 1986). Even so, lawmakers in California, as elsewhere, began becoming concerned that the expansion of fishing might well threaten the long-term economic health of the fishing industry. In 1852, the California State Legislature passed its first fishing statute to regulate the Sacramento River salmon fishery, and continued to do so over the next several decades. In 1870, the Legislature responded to the concerns of sport fishermen by establishing a State Board of Fish Commissioners, which later became ~~today's~~ the Fish and Game Commission. In this and other ways, California led the nation. By the end of the 19th century, the California State Legislature had adopted a body of fisheries management law that was a model for its time.

At the same time, the courts repeatedly upheld the importance of the state's role in protecting its resources. In 1894, for instance, the California State Supreme Court found that: "The wild game within a state belongs to the people in their collective, sovereign capacity; it is not the subject of private ownership, except in so far as the people may elect to make it so; and they may, if they see fit, absolutely prohibit the taking of it, or any traffic or commerce in it, if deemed necessary for its protection or preservation, or the public good."

Californians often feel strongly about both available fisheries and regulations on access. Some assert that article 1, section 25, of the California Constitution seems to give the public a "right to fish." It states "The people shall have the right to fish upon and from the public lands of the State and in the waters thereof...provided, that the legislature may by statute, provide for the season when and the conditions under which the different species of fish may be taken."

However, this "right to fish" is not absolute. In 1918, the California Supreme Court considered whether a law providing for the licensing of fishermen was unconstitutional because it violated article 1, section 25. The court rejected the argument, finding that the provision authorizing the legislature to fix the seasons and conditions under which fish are taken was intended to leave the matter ~~in~~ under the legislature's discretion [*Paladini v. Superior Court* (1918) 178 Cal. 369]. As recently as 1995, a court reaffirmed the qualified, not fundamental, right to fish and that the

language of the State Constitution was not intended to curtail the ability of the legislature (or the Fish and Game Commission through legislated authority) to regulate fishing [*California Gillnetters Association v. Department of Fish and Game* (1995) 39 Cal.App.4th 1145].

Also, section 25 must be read in connection with article 4, section 20 (formerly section 25½), which states that the California State Legislature may enact appropriate laws for protection of fish and game, and may delegate to the Fish and Game Commission such powers relating to protection and propagation of fish and game [Ex parte Parra (1914) 24 Cal.App. 339, 340]. In that respect, the California Supreme Court found it “most apparent” that the purpose of (now) article 4, section 20 “was to clothe the Legislature with ample power to adequately protect the fish and game of the state.” Further, the California Supreme Court has long declared that the power to regulate fishing has always existed as an aspect of the inherent power of the legislature to regulate the terms under which a public resource may be taken by private citizens [In re Phoedovius (1918) 177 Cal. 238, 245-246; People v. Monterey Fish Products Company (1925) 195 Cal. 548, 563]. This regulatory power clearly includes the regulation of fishing within MPAs [Section 2860, FGC].

Like other economic activities, from agriculture to manufacturing, fishing began expanding rapidly in the first few decades of the 1900s. In 1912, the legislature responded by authorizing staff for the California Fish and Game Commission, which found itself with greater and greater responsibilities for managing industrial fisheries, in particular. In 1927, the legislature responded to growing fishing pressures by creating a Department of Natural Resources, within which it housed a Division of Fish and Game. ~~Over the coming decades, California state agencies and universities became leaders in the relatively new field of marine fisheries research and management.~~ In 1945, the legislature granted the Fish and Game Commission discretionary authority over recreational fisheries. In 1947, the legislature instituted a tax on sardine landings that was used to fund research into causes for the decline in sardine abundance. These activities led to the inauguration of one of the world’s longest series of fisheries research cruises, the California Cooperative Oceanic Fisheries Investigations, CalCOFI, a cooperative venture of the California Department of Fish and Game, Scripps Institution of Oceanography and the National Marine Fisheries Service.

Post World War II

After World War II, the marine policies of California and other state and federal governments were based largely on several assumptions that reflected the progressive thinking of the time. 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, the value of marine wildlife was principally 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.

Several factors combined to challenge these assumptions. Changing fishing technologies and expanding fleets increased harvests. Poor forestry practices resulted in sediments that impeded spawning. Development decreased wetlands reducing their important capacities in marine life cycles and in filtering run off.

In the face of disturbing declines in a number of fisheries, state and federal fisheries agencies around the country began an intensive review of prevailing policies in the mid-1960s. In 1967, the California State Legislature passed the California Marine Resources Conservation and Development Act to develop a long-range plan for conservation and development of marine and coastal resources (1967 California Statutes Ch. 1,642). In the same year, Governor Ronald Reagan imposed an emergency two-year moratorium on commercial sardine fishing (1967 California Statutes Ch. 278).

Beginning in the 1970s, views slowly shifted. Marine wildlife and ecosystems were increasingly valued for themselves and for uses such as tourism, education, and scientific research. Recognition ~~has been growing~~ of the need to balance the fishing capacity of fishing fleets with the often limited and uncertain productive capacity of marine species wildlife populations ~~grew~~. Rather than seeking to extract ~~only the maximum yield from marine species wildlife populations~~, fisheries managers began seeking levels that would be ~~are likely to be~~ ecologically and economically sustainable into the distant future.

Changes also occurred in marine recreational activities. Catch and release programs became important in some fisheries. The value of the experience of fishing was recognized as being greater than just the monetary value of fish caught. Non-consumptive recreation including surfing, diving, sightseeing, and other activities increased dramatically. Additionally, the public became more interested in the value of healthy marine environments for both recreational use and the intrinsic value of the ocean itself.

California's Marine Heritage

For 1,100 miles, the spectacular mass of California's lands meets the Pacific Ocean. In many areas, mountains plunge into the oceans. Elsewhere, ancient shorelines stand as terraces above the surf. Streams and rivers break through the coastal mountains and, in some places, flow into bays and lagoons rimmed with wetlands. Offshore, islands and rocks break the surface.

This is what we can easily see. But beneath the surface of the water offshore, California's dramatic geological formations continue. Unlike the Atlantic or Gulf coasts, California's shallow continental shelf is quite narrow, generally no wider than 5 miles. At its broadest point off San Francisco, the shelf extends 30 miles offshore before plunging from 600 feet to the abyssal region at 6,000 feet. Beyond state waters, peaks called seamounts rise from the depths to the photic zone where sunlight spurs plant growth and attracts life.

Whether near or far from shore, the ocean bottom may be rocky, sandy, or silty. It may be flat or formed of rocky reefs. In many areas along the coast, great canyons cut into the continental shelf quite close to shore. For example, the Monterey submarine canyon, which is larger than the Grand Canyon of the Colorado, begins within miles of the shoreline. There, as in other submarine canyons, marine life normally found far offshore is drawn close to land by the deep waters. Off southern California, the ocean bottom appears like a piece of crumpled paper, with basins, troughs, canyons, peaks, and cliffs alternating in a checkerboard pattern.

Ocean currents introduce other dimensions to California's coastal waters. For much of the year, the California Current brings colder northern waters southward along the shore as far as

southern California. There, where the coastline juts eastward, the California Current moves offshore. In the gap between the California Current and the mainland, the Southern California Countercurrent flows into the Santa Barbara Channel. Around Point Conception, these two currents meet, creating a rich transition zone. Closer to shore and deeper, the California Undercurrent also carries warmer water northward.

Seasonal changes in wind direction commonly create seasonal patterns for these currents. In March, for instance, northwesterly winds combine with the rotation of the Earth to drive surface waters offshore, triggering the upwelling of cold, nutrient-rich water from the depths. Fueled by sunlight and the nutrients, single-celled algae bloom and create a rich soup that fuels a blossoming of marine life, attracting larger animals from seabirds and swordfish to humpback and blue whales.

By September, as the northwesterly winds die down, the cold water sinks again and warmer waters return to the coast. This oceanic period lasts into October, when the predominant winds move to the southwesterly direction. These winds drive a surface current, called the Davidson Current, which flows north of Point Conception and inside the California Current, generally lasting through February.

Laid over this general pattern are both short-term and long-term changes. Local winds, topography, tidal motions, and discharge from rivers create their own currents in nearshore waters. Less frequently, a massive change in atmospheric pressure off Australia floods the eastern Pacific with warm water, which suppresses the normal pattern of upwelling. These short-term climatic changes, called El Niño, reduce the productivity of coastal waters, causing some fisheries and seabird and marine mammal populations to decline and others to increase. For instance, warm waters that flow north in an El Niño carry the larva of sheephead and lobster from the heart of their geographical range in Mexico into the waters off California.

Other oceanographic changes last for a decade or more and these natural fluctuations can have significant impacts on the health and composition of marine life. In these regime shifts, water temperatures rise or fall significantly, causing dramatic changes in the distribution and abundance of marine life. The collapse of the California sardine fishery occurred when heavy commercial fishing continued on sardine populations that were greatly reduced by a cooling of offshore waters in the late 1940s and early 1950s. In response to the decline in sardines, California law severely curtailed the catch. In 1977, waters off California began warming and remained relatively warm. The warmer water temperatures were favorable for sardines, whose abundance greatly increased. But the warmer waters also reduced the productivity of other fish, including many rockfishes, lingcod, sablefish, and those flatfishes that favor cold water for successful reproduction.

Currents and other bodies of water may differ dramatically in temperature and chemistry, as well as speed and direction. These factors all influence the kinds of marine life found in different bodies of water. In general terms, geography, oceanography, and biology combine to divide California marine fisheries and other marine life into two major regions north and south of Point Conception. Within each region, other differences emerge. Conservation and use of California's marine life depends partly upon recognizing these differences.

Marine Life of California

The waters off California are host to hundreds of species of fish. Thousands of species of marine invertebrates inhabit the sea floor from tidepools along the shoreline to muddy plains 8,000 feet deep. Dozens of species of coastal and offshore birds spend some part of the year in California's waters, as do 35 species of marine mammals.

This great variety of marine life reflects the different responses of groups of animals and plants to changing environmental conditions over long periods of time. In successfully meeting their needs for growth, survival, and reproduction, individual species have developed a set of characteristics that biologists call life history traits. These traits include age at maturity, maximum age, maximum size, growth rate, natural mortality, and feeding and reproductive strategies.

Differences among species can be dramatic. For instance, California market squid mature within 12 months and die soon after spawning, whereas widow rockfish do not mature until age five at the earliest and may live as long as 59 years. This has profound consequences for managing fisheries so that they are sustainable.

Reproductive strategies also vary. Queenfish, for instance, may spawn 24 times in a season, releasing their body weight in eggs into the open water, where most will be eaten whether or not they are fertilized. In contrast, species such as olive rockfish spawn just once a year, releasing up to 500,000 larvae, which have been fertilized and developed internally. Other species, including sharks and surfperches, bear a small number of fully functional and live young each year.

Amid the variety, the life histories of fish tend to fall into several larger categories. For instance, fish species that have low rates of mortality as adults, such as many species of sharks, bluefin tuna, and billfish, also mature late and reproduce in smaller numbers. Organisms that have high rates of mortality as adults, such as anchovies and squid, grow quickly, mature early, and reproduce in large numbers. Some species spend the first several months of their lives floating as planktonic larvae in ocean currents. Climate and oceanographic changes influence the abundance of these species more than does the number of spawning adults. Other species, including most sharks and surfperches, give birth to well-developed young which immediately take up residence on the reef. Many mollusks and some sharks produce eggs which are physically attached to the substrate until hatching. For these species, local conditions and predation play a major role in abundance.

Species differ also in their movements. For instance, during winter Dover sole move into deep water where they reproduce, then move into shallow water in the summer to feed. Pacific whiting migrate from their summer feeding grounds off Oregon and Washington to their winter spawning grounds off southern California and Baja California. By contrast, kelp bass, which can live to 30 years, venture less than a mile from their home range.

Individual plants and animals are part of larger communities that are linked in many ways. One of the clearest of relationships concerns who eats whom, also known as the food web. Generally, the eating begins with herbivores, who consume plants that have manufactured food through photosynthesis. These herbivores may be as small as the larva of an anchovy or

as large as a basking shark. The smaller herbivores pass along much of the food value of the plants when they are eaten by primary carnivores, which in turn may be consumed by higher level carnivores. Humans enter the food web at a variety of levels, removing not only higher level carnivores, but herbivores, and even the lowest level algae.

These relationships among wildlife populations differ considerably among different habitats and communities. A decrease in the abundance of some species, due to fishing, habitat alteration, or climate changes, for instance, can affect species that feed upon them. Healthy habitat can also play an important role in the abundance of marine wildlife. Ninety percent of the state's coastal wetlands have been destroyed, causing incalculable losses in coastal wildlife. Pollution of coastal waters can expose marine animals to toxic chemicals and can foster changes in plant communities that wildlife depends upon. A decrease in the abundance of some species, due to habitat alteration, pollution, fishing, or climate changes, can produce a ripple effect throughout the marine environment. Considering these interrelationships when managing fisheries requires an ecosystem perspective. In addition, it is important to consider existing risk-averse fishery management regulations that have, for example, restored species such as sardine to "fully recovered" status, and integrate these considerations into the ecosystem management context.

Healthy habitat can also play an important role in the abundance of marine wildlife. Some species of fish and shellfish are so dependent upon particular types of habitat, such as kelp forests or coastal wetlands, that the destruction or natural alteration of these habitats can devastate wild populations. Damming many major coastal rivers in California has driven most runs of Pacific salmon to dangerously low levels. Since the 1850s, 90 percent of the state's coastal wetlands have been destroyed, causing incalculable losses in coastal wildlife. Finally, pollution of coastal waters can expose marine animals to toxic chemicals and can foster changes in plant communities that wildlife depends upon.

Environmental Factors Affecting Marine Wildlife Populations

The abundance and diversity of populations of marine wildlife are influenced by a wide range of natural and human-caused factors, including short-term and long-term shifts in oceanographic conditions and numerous human activities, which may have direct or indirect effects (Parrish and Tegner 2001; Sheehan and Tasto 2001; NRC 1995). The impact of each factor varies with distance from shore and with individual species.

Some types of natural phenomena, such as El Niño and La Niña fluctuations, may have transitory impacts on marine wildlife and their habitats, while 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 (Parrish and Tegner 2001). Increasingly, fisheries managers are attempting to adjust to these natural phenomena.

As in other coastal states, the development and growth of California's population and economy, especially since World War II, ~~has~~ introduced additional stresses to coastal ecosystems, ~~as Coastal development has transformed coastal watersheds, wetlands, and estuaries, and placed greater demands have been made on coastal ecosystems.~~ These stresses include chemical pollution and eutrophication, alteration of physical habitat and the invasion of exotic species (NRC 1995). Intake structures for "once-through" cooling systems at

electrical power plants impinge and entrain aquatic marine life, and the thermal discharges from these facilities contribute the largest volume of effluent into California's coastal ocean. Chemical pollution and eutrophication can alter the abundance and biodiversity of wildlife in estuaries and coastal environments, especially bays and estuaries (NRC 1995). ~~The types of~~ Pollution ranges from toxic chemicals to partially treated sewage, and the sources of potential pollution range from point sources, such as sewage treatment plants, to non-point sources, such as runoff from agricultural and urban lands (Sheehan and Tasto 2001). Similarly, estuarine and shoreline habitats have been especially affected by residential, commercial and industrial development (Sheehan and Tasto 2001).

The degree of impact from these stresses on water quality and habitats varies markedly along the state's coastline. ~~Along the southern coast,~~ Storm-water runoff is a particular problem in major urban areas, while some waters of the central coast are most affected by agricultural runoff (Sheehan and Tasto 2001). San Francisco Bay's waters are affected both by industrial discharges and by dairy farm runoff. In some areas, particularly bays and estuaries, waters are so impaired that certain uses are prohibited or restricted. Many north coastal streams are impaired due to sedimentation, habitat modification, altered temperature and eutrophication. Timber harvest activities in north coast watersheds are a particular concern.

In the last 35 years, both federal and state governments have carried out regulatory and other programs to reduce these threats to coastal ecosystems. At the federal level, the Clean Water Act launched an enormous effort to reduce the flow of sewage and industrial pollutants into coastal waters (Sheehan and Tasto 2001). Since 1990, the federal government, in cooperation with state governments, has encouraged efforts to reduce the flow of non-point source pollution. In July 2000, California was the first state in the nation to receive full federal approval of its Coastal Non-point Source Pollution Control Program by the U.S. Environmental Protection Agency and the National Oceanic and Atmospheric Administration (the lead federal agencies that administer the Clean Water Act and Coastal Zone Management Act, respectively). Storm water runoff from large and medium sized urban areas is now regulated as a point source under the National Pollutant Discharge Elimination System Program. The Governor's ocean action plan outlines many other such programs.

Passage and implementation of state coastal legislation in the 1970s slowed the rate of loss of sensitive coastal habitats, and in some areas, efforts are underway to restore converted wetlands. In the last several years, the state has devoted more resources to addressing coastal water quality and habitat, including major state bonds. Nonetheless, future population and economic growth will continue to place stress on coastal ecosystems.

The Marine Life Management Act

Like these other factors, fishing can have impacts on marine fish populations and other wildlife and has likely been having these effects since humans began to harvest marine species (NRC 1995, Jackson, et al. 2001) (Agardy pers comm.). ~~As described above,~~ California has long sought to manage fisheries in its waters for long-term sustainability. In 1998 the California State Legislature responded to the shifts in understanding and public values as well as declines in some fisheries and nearshore ecosystems by adopting the Marine Life Management Act (MLMA).

Before the MLMA, the responsibility for managing most of California's marine resources harvested by commercial fisheries within state waters lay with the State Legislature, while the Department of Fish and Game and the Fish and Game Commission managed the recreational fisheries and those commercial fisheries with catch quotas that changed periodically. Management of commercial fisheries under this division of responsibility was complicated, piecemeal, and oftentimes untimely, with necessary regulatory changes only occurring after much political deliberation and approval by both the California State Assembly and California State Senate.

The MLMA transferred permanent management authority to the Fish and Game Commission for the nearshore finfish fishery, the white seabass fishery, emerging fisheries, and other fisheries for which the commission had some management authority prior to January 1, 1999. As importantly, the MLMA broadened the focus of fisheries management to include consideration of the ecosystem ~~—that is, the species that interact with a fishery~~ the entire community of organisms (both fished and unfished) and the environment and habitats that those species depend on.

Recent Developments

The Marine Life Protection Act (MLPA) was enacted in 1999. (See Appendix A for text of the MLPA, as amended.) In doing so, the California State Legislature recognized the benefits of setting aside some areas under special protection and of ensuring that these marine protected areas (MPAs) were developed in a systematic manner, with clear goals and objectives, and ~~effective~~ management plans and programs for monitoring and evaluating their effectiveness. Rather than focusing on one use or value for marine protected areas, the MLPA recognized a wide range of values, including the conservation of biological diversity¹. ~~Although it may appear that the MLPA was contrary to the spirit of the MLMA in that the Legislature once again became more involved in fishery management, two points are worth noting: 1) the goals of the MLPA do not relate primarily to fishery management; 2) the ultimate decision of how to improve the existing array of MPAs resides with the Fish and Game Commission rather than the State Legislature.~~

~~The MLPA had two unsuccessful attempts at implementation between its passage~~ Between the MLPA's passage in 1999 and the creation of the MLPA Initiative in 2004, there were two other efforts at implementation. Each ~~Both~~ attempts suffered from a lack of adequate resources to ensure a robust multi-stakeholder involvement and to provide needed information, particularly ~~as related to~~ regarding the potential socioeconomic impacts of new MPAs. (See Appendix C for a more detailed description of MLPA implementation.)

~~The first attempt was particularly~~ became problematic when ~~DFG~~ the Department of Fish and Game and the MLPA Master Plan Team developed a set of initial proposals for a statewide network of MPAs without significant stakeholder input, even though the intent was to revise these initial proposals based on public comment as required by the MLPA. The second attempt

¹ Biological diversity or “biodiversity” is defined by Public Resources Code Section 12220(b) as: a component and measure of ecosystem health and function. It is the number and genetic richness of different individuals found within the population of a species, of populations found within a species range, of different species found within a natural community or ecosystem, and of different communities and ecosystems found within a region.

was much more inclusive of stakeholders input, but suffered from a lack of staff availability and funding for the large public involvement process. After these unsuccessful attempts, state legislators and the Department agencies realized that this is a much more complex and controversial process, requiring significant resources and time to implement and evaluate successfully and evaluate subsequently.

~~Shortly after, but unrelated to,~~ Since passage of the MLPA in 1999, the Pacific Fishery Management Council established several major recreational and commercial fishery closures were enacted to protect lingcod and certain populations of certain rockfish species and lingcod that were declared overfished by the National Marine Fisheries Service. The closures, which remain in effect today, are generally depth-based on depth and specific to affect certain types of bottom-fishing gear. Though still in effect, the closures have changed in both their total area and season several times. The primary closures are the Cowcod Conservation Areas (CCA) in southern California, which are almost entirely in federal waters, and the Rockfish Conservation Area (RCA), which is statewide and encompasses portions of state and federal waters. During 2000 and 2001 additional depth-based seasonal fishing restrictions for certain recreational fisheries were also established during 2000 and 2001 outside of the Cowcod Conservation Areas and Rockfish Conservation Area CCA and RCA and remain in effect today. While portions of the Rockfish Conservation Area RCA are open seasonally to bottom fishing, certain depth zones in certain parts of the state are closed year-round and thus function as de facto MPAs.

Such fishery conservation measures are similar to certain types of limited-take MPAs and can function as de facto MPAs. One important distinction between these closures and MPAs is that the former, while potentially of long-term duration, are not intended as permanent closures change in area and regulations based on assessments of specific stocks. Conversely, MPAs tend to be designed to protect habitats and ecosystems and, while they are subject to adaptive management based on new information, are not as closely tied to stock assessments and the management of single species or species groups.

A significant increase in the total amount of state waters included in MPAs occurred in 2003 when the Fish and Game Commission ~~adopted~~ established a system of 12 new MPAs (10 state marine reserves and 2 state marine conservation areas) around the Santa Barbara Channel Islands. The establishment of the 10 Channel Islands state marine reserves increased the area of state waters in marine reserves from 0.2% to 2.5%. This occurred following a stakeholder-based process that lasted approximately 5 years. Monitoring of the new MPAs, and of the effect they are having on local fishing patterns, is now occurring. The details of the Channel Islands monitoring program are available at www.dfg.ca.gov/mrd/channel_islands.

Marine Protected Areas Generally

California is able to take advantage of several decades of experience and study regarding MPAs elsewhere in the United States and abroad, as well as within its own waters. ~~As is the case in other areas of natural resource management and conservation, including fisheries management, there is much to learn about the effective design of MPAs and their benefits. Recent work supports the legislative findings of the MLPA. While most of this experience is with no-take reserves, it can be applied generally to other MPAs.~~ In 2001, for instance, a

committee of the National Academy of Sciences released its report *Marine Protected Areas: Tools for Sustaining Ocean Ecosystems*. Like other reports of the National Academy of Sciences, this report can be considered an authoritative general review of the science of marine protected areas (OMB 2004). Many of their conclusions, while directed to marine reserves, may have applicability to other MPAs. Among other things, this expert panel concluded:

- A growing body of literature documents the effectiveness of marine reserves for conserving habitats, fostering the recovery of overexploited species, and maintaining marine communities.
- Networks of marine reserves, where the goal is to protect all components of the ecosystem through spatially defined closures, should be included as an essential element of ecosystem-based management.
- Choosing a location for a marine reserve or protected area requires an understanding of probable socioeconomic impacts as well as the environmental criteria for siting.
- It is essential to involve all potential stakeholders at the outset to develop plans for MPAs that enlist the support of the community and serve local conservation needs.
- Marine reserves and protected areas must be monitored and evaluated to determine if goals are being met and to provide information for refining the design of current and future MPAs and reserves.
- Sufficient scientific information exists on the habitat requirements and life-history traits of many species to support implementation of marine reserves and protected areas to improve management.

Since the National Academy of Sciences report, a vigorous discussion among scientists and decision makers has explored the benefits and costs of MPAs, particularly marine reserves (Nowlis and Friedlander 2004; Hilborn et al. 2004; SSC 2004; NFCC 2004; FAO 2004). Many of these discussions have focused upon the use of marine reserves as a fisheries management tool, and on the effect of marine reserve designation on fishing operations, fisheries management, and fish populations outside reserves. ~~Scientists agree that empirical evidence for increased fish catches outside marine reserves is sparse. Without additional experience, assessing the appropriateness of marine reserves for fisheries enhancement purposes will remain difficult.~~ There has been virtually no discussion of the value and design of other types of MPAs, such as marine parks and marine conservation areas.

Recent literature ~~acknowledges supports the~~ potential value of marine reserves for protecting habitat and biodiversity within reserve boundaries (Nowlis and Friedlander 2004; Hilborn et al. 2004; FAO 2004). ~~For the purposes of fisheries management,~~ This same literature cites several potential benefits of marine reserves to fisheries management, including buffering against uncertainty, reducing collateral ecological impacts (e.g., bycatch and habitat damage), managing multi-species fisheries, and improving knowledge. Empirical evidence for increased fish catches outside marine reserves is sparse, although there are strong reasons to believe

that if designed properly, marine reserves can contribute to fisheries management in some circumstances (Nowlis and Friedlander 2004; Hilborn et al. 2004). Without experience gained from the establishment of additional marine reserves, assessing the appropriateness of marine reserves for fisheries enhancement purposes will remain difficult.

At the same time, potential problems with marine reserves have been cited, including possible shifts in fishing effort, disruption of stock assessment research, and socioeconomic impacts (Hilborn et al. 2004; FAO 2004; SSC 2004). Empirical evidence for these potential impacts is sparse, as well. These authors urge care in the design of marine reserves so as to minimize losses to fisheries and to increase the opportunity to obtain empirical information on marine reserves by careful experimental design (Hilborn et al. 2004; SSC 2004). These studies also note that for certain species, especially species with highly mobile adults, marine reserves are unlikely to benefit fisheries (Nowlis and Friedlander 2004; Hilborn et al.; SSC 2004; NFCC 2004). When designing marine reserves or other MPAs with a goal of enhancing fisheries, the target species and potential impacts must be considered.

It is important to remember that a primary purpose of the MLPA is to protect and restore marine biodiversity and ecosystems. The Act recognizes that MPAs may be a tool to accomplish those purposes, but they are not the only tool. Implementation of the MLPA must consider and respect other efforts, including traditional fishery management, water quality controls and coastal development management, in order to avoid duplication and conflicts in the state's efforts to protect California's ocean environment.

MLPA Initiative Process

In August 2004, a new effort was launched to implement the MLPA. Combining public and private sources of support, the MLPA Initiative has as four key objectives:

- the development of a draft master plan framework;
- the development of alternative proposals for an MPA network in a central coast study region;
- recommendations on funding sources for MPA implementation and management; and
- recommendations to increase the coordination between state and federal agencies with authority to manage ocean resources.

The first two of these products will be provided to the Department of Fish and Game for its consideration and submission to the Fish and Game Commission, which will take action through the normal commission process. It is hoped that these products will provide a strong foundation for completing the statewide network of MPAs by 2011.

~~A more inclusive, robust process for the~~The MLPA Initiative process includes ~~has been developed, with the inclusion of an~~ the following groups and organizations:

- MLPA Blue Ribbon Task Force (an oversight body),~~–~~
- MLPA Initiative staff,~~–a~~
- Master Plan Science Advisory Team (an expansion of the former Master Plan Team with additional expertise),~~–a~~

- Science sub-team for the central coast region
- MLPA Statewide Interests Group for providing advice on the initiative process,
- Regional stakeholder group for the central coast region each region of the phased process of developing alternative proposals for proposed MPAs, a
- Peer review group,
- DFG Department of Fish and Game staff, and
- Fish and Game Commission

Figure 1 portrays the links within among the various players in the initiative process, while Appendix D describes the role of the formal groups within the MLPA Initiative. A flow chart is provided to explain the links within the process (see Figure 1). See Appendix E D for a description of stakeholder participation strategies.

Role of the Master Plan Science Advisory Team

The Master Plan Science Advisory Team (SAT) is charged with assisting the task force in developing a draft Master Plan Framework by reviewing and commenting on scientific papers, reviewing draft Master Plan documents, and addressing scientific issues presented by those documents. The SAT may provide information concerning habitat mapping, which habitats to include in an MPA network, habitat requirements of species, regional species lists, and potential socioeconomic impacts of proposed MPAs, and may assist in the evaluation of the effectiveness of existing MPAs. The SAT will review alternative MPA proposals developed by the regional stakeholder groups and provide comment relative to the science-based requirements of the MLPA.

Role of the Regional Stakeholder Groups

Each regional stakeholder group (RSG) will be responsible for initially evaluating the existing MPAs within its region. This group will serve as a focus for regional discussions regarding the major aspects of designing MPA alternatives, including: 1) setting goals and objectives; 2) discussing the needs for additional MPAs within the region in order to meet the requirements of the MLPA; 3) evaluating existing relevant biological and socioeconomic information; 4) determining needs for additional information; and 5) developing options on the type, location, size, and boundaries for individual components of the network. The RSG should have the best available scientific information and mapping data for the region, and this information should be available to the public. A member of the SAT subteam will attend each RSG meeting to provide assistance. The RSG will work closely with a sub-team, and both of these groups will be provided organizational, process, and scientific support by DFG and MLPA Initiative staff.

The director of the Department of Fish and Game and the central coast project manager for the MLPA Initiative will solicit nominations, and select from the nominees a group representing the range of stakeholder interests in the study region.

Roles in the Marine Life Protection Act Initiative

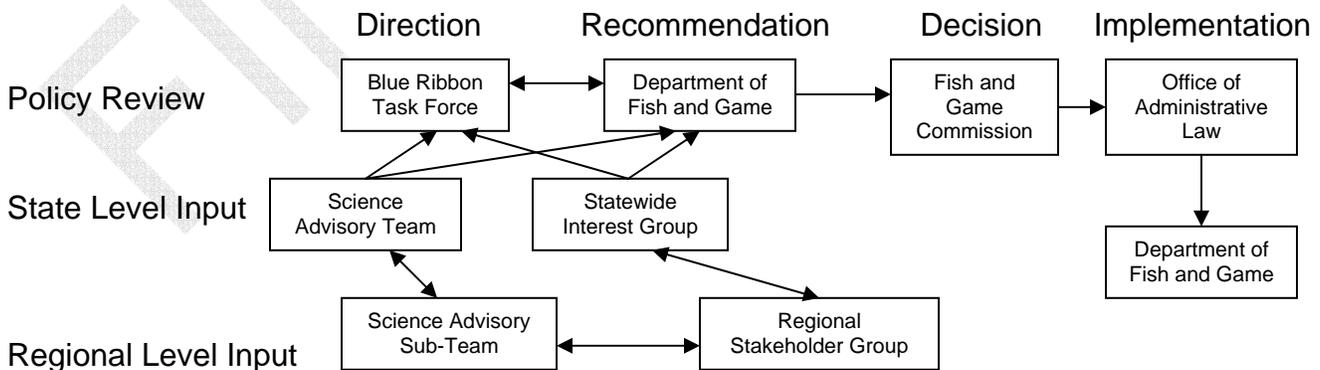
Organizational Partners

The Fish and Game Commission is the ultimate decision-making authority for implementation of the MLPA. Specifically, the commission will make all final decisions on the master plan, the proposed regional networks of marine protected areas, and supporting CEQA documentation, all after completing its own process of public reviews. The principal mission of the other partners is to support the commission in making sound policy decisions required by the MLPA. Although the commission will not be involved in the day-to-day work of the initiative, the initiative will include regular opportunities for informational meetings and strategic consultation with the commission.

The California Resources Agency will provide general oversight and public leadership for the initiative and implementation of the MLPA. Besides providing policy direction for coordinating funding and staffing, the agency will make critical decisions in shaping the initiative. The secretary of the California Resources Agency will select the chair and other members of the MLPA Blue Ribbon Task Force. The secretary will convene and charge the members of the task force with meeting the objectives identified in the task force description below. The California Resources Agency will also seek adequate current and future funding for agency and Department of Fish and Game personnel committed to the initiative and for completing future phases of the MLPA.

The Department of Fish and Game will serve as the lead agency for the design and implementation of the MLPA master plan and networks of marine protected areas. The department will continue its traditional support of the Resources Agency and the Fish and Game Commission. In consultation with the secretary of the agency, the president of the commission, and the chair of the task force, the director of the department will select the members of the Master Plan Science Advisory Team. Through the initiative's Steering Committee (described below), the department will also be involved in developing the draft master plan framework and proposed alternatives for marine protected areas along the central coast, and is ultimately responsible for presenting a final draft master plan and alternatives for marine protected areas to the commission. The department will also provide biological and other relevant information, participate in meetings as appropriate, review working documents, and act as lead agency under the California Environmental Quality Act, among other activities.

Figure 1. Players in the Marine Life Protection Act Initiative



Note: input is solicited from the interested public and stakeholders at each step, until adoption of regulations by the Fish and Game Commission.

The MLPA Blue Ribbon Task Force will be composed of seven to ten distinguished, knowledgeable and highly credible public leaders selected by the secretary of the California Resources Agency. The charge to the task force will be to oversee the preparation of the draft master plan framework, and the proposal for alternative networks of marine protected areas in an area along the central coast for the department to present to the commission; to prepare a comprehensive strategy for long-term funding of planning, management and enforcement of marine protected areas, and to develop recommendations for improved coordination of managing marine protected areas with federal agencies involved in ocean management. The task force will also work to resolve policy disputes and provide direction in the face of uncertainty, while meeting the objectives of the MLPA. The chair of the task force will select the executive director, senior MLPA project manager, operations & communications manager, and central coast MLPA project manager to the initiative; work with the director of the department to convene and direct the science advisory team; and serve as the principal link between the task force and initiative staff. At least one member of the task force will serve as liaison to the central coast project.

The Resources Legacy Fund Foundation will use its best efforts to obtain, coordinate and administer philanthropic investments to supplement public funding for the initiative, provide strategic advice to the California Resources Agency on public-private funding, and support the operations & communications manager in managing private contracts for staffing the initiative.

Committees and Teams

The Master Plan Science Advisory Team will be convened by the director of the department, in consultation with the chair of the task force, the secretary of the agency, and the president of the commission. The science advisory team will include the members required by the MLPA, including staff from the Department of Fish and Game, the Department of Parks and Recreation, the State Water Resources Control Board, one member appointed from a list provided by Sea Grant, and thirteen to fifteen leading scientists knowledgeable in marine ecology, fisheries science, marine protected areas, economics and the social sciences. The role of the science advisory team will be to assist the task force in developing a draft master plan framework by reviewing supporting and draft documents, addressing scientific issues, and framing and referring policy challenges to the task force. The science advisory team will report to the task force and the Director of the Department of Fish and Game, and will be supported by the senior project manager. A sub-team of the science advisory team will also serve the central coast project.

The Central Coast Science Advisory Sub-Team will be composed of three to five members of the science advisory team, and will work with the central coast project manager to develop alternative networks of marine protected areas by reviewing supporting and draft documents, addressing scientific issues and information provided by the central coast stakeholder group, and framing and referring policy challenges to the task force. At least one member of the science sub-team will attend each central coast stakeholder group meeting.

The Central Coast MLPA Stakeholder Group will include key, affected members of the central coast region who are able and willing to provide information that will assist in the development

of the proposed alternative networks of marine protected areas along the central coast. The Director of the Department of Fish and Game and the central coast liaison of the task force will solicit nominations, and select from the nominees a representative group that will meet regularly over no more than two years to provide input to the central coast manager, primarily by providing information and other input for framing key scientific questions to be addressed by the science sub-team.

The MLPA Statewide Interest Group will be composed of up to 20 members in addition to alternates who will advise the task force and professional staff to the initiative on the overall process to develop a draft master plan framework and network of marine protected areas along the California coast. The group will not vote or otherwise take formal positions on any procedural or substantive issues, but instead will alert the task force to issues and opportunities that may improve public involvement in the process.

The MLPA Steering Committee will be chaired by the executive director, and will include the senior project manager, the operations & communications manager, the central coast project manager, and the Department of Fish and Game's policy advisor, statewide technical advisor, and regional coordinator. The committee will be responsible for coordinating all work necessary to achieve each of the objectives of the initiative.

Master Plan Framework

The MLPA calls for the development of a master plan by the Department of Fish and Game, and its adoption by the Fish and Game Commission². The MLPA Initiative has divided the master plan into two principal parts: a section providing guidance in the application of the MLPA to the development of a statewide MPA network (the master plan framework), and a section describing the preferred alternatives for MPA proposals. The MLPA Initiative envisions a focus on portions of the state in a series of regional processes, beginning with the central coast. The requirement for a full master plan and implementing regulations will be met when the Fish and Game Commission adopts the final portion of the plan and all regions of the coast have been completed.

~~One of the objectives of the MLPA Initiative is to develop a master plan framework that can guide the design of MPA proposals in the central coast study region. By March 2006, the task force will have provided both the master plan framework and a recommended range of alternative MPAs in the central coast study region to the Department of Fish and Game for its consideration and submission to the California Fish and Game Commission. The MLPA Initiative intends that the master plan framework serve as a basis for future efforts by the Department of Fish and Game and the Fish and Game Commission in implementing the MLPA and in assembling a statewide network by 2011. However, the aim of this master plan framework is to guide the work of the task force over the next year.~~

~~This draft master plan framework is meant to establish and guide a process for implementing the MLPA through the design and adoption of MPAs in each region along the California coast.~~

² The Fish and Game Code currently requires the Department of Fish and Game to provide a draft master plan to the commission by January 2005 and for the commission to adopt a final master plan with regulations by December 2005 [Section 2859, FGC].

~~In the coming years, application of the master plan's guidance in individual regions will no doubt lead to changes in the guidance itself. In this sense, this master plan framework should be viewed as a living document that should change adaptively to experience. When a complete MPA network has been adopted by the Fish and Game Commission for all regions in 2011, the requirements of the MLPA for the adoption of a master plan will be met.~~

It is important to emphasize that this master plan framework is meant to guide decision making about MPAs in individual regions. Specific application of the framework will depend upon the physical, biological, social and economic conditions in the study region in each region of the state will affect the specific application of the MLPA and the framework recommended in this document. For example, California coastal waters, especially those in southern California, are critical for our nation's military both for training and testing as well as operations. ~~The military~~ United States Department of Defense controls two of the Channel Islands and has installations along significant portions of the coastline. Many of the operational ocean areas are significantly restricted to public access. Based on inputs from the ~~military services~~ Department of Defense, the designation of MPAs in designated specified operational areas of the military is not consistent with military readiness. Therefore, in assessing the overall MLPA network, the beneficial effects of military operational areas (as well as other de facto MPAs such as long-term closures implemented through fishing regulations), with respect to habitat conservation goals will be considered in the needs assessment.

The central coast effort will provide concrete experience ~~with in~~ with in applying the master plan framework and this more specific guidance to a specific area. This experience, ~~in turn,~~ may lead to recommendations to adjust the framework ~~and the guidance on~~ regarding specific topics. In this way, the master plan framework will serve as the foundation for an evolution of practice that adapts to new information as well as serve as a blueprint for developing a statewide MPA network.