

Chapter 2. PROJECT DESCRIPTION

Few people living along the California coast have failed to notice the wonder and beauty of the California kelp beds. The kelp beds not only provide scenic and recreational relief to humans but also provide food and habitat for numerous microscopic and macroscopic organisms such as plankton, zooplankton, invertebrates, fish, birds, mammals and other algal species (Quast, 1968a - d; North, 1971a and 1971b; Burge and Schultze, 1973; Miller and Giebel, 1973; Kimura and Foster, 1984; Foster and Schiel, 1985; McPeak *et al*, 1988). In southern California, kelp beds are primarily composed of giant kelp (*Macrocystis pyrifera*) while the beds along the central coast are a mix of giant and bull kelp (*Nereocystis luetkeana*). Bull kelp dominates the beds in northern California (Dawson and Foster, 1982; Foster, 1982; Ecoscan, 1989).

These two species are subject to harvesting pressure from both recreational and commercial user groups, and for this reason, are managed by the Fish and Game Commission. Numerous other species of algae, including another species of *Macrocystis* (*M. integrifolia*), are taken incidentally during harvest operations but, as they are not targeted for harvest, will not be considered in this document.

For the purposes of this document the term "kelp" will mean either *M. pyrifera* or *N. luetkeana* or both unless otherwise stated.

2.1 Proposed Project

The proposed project is the amendment of the regulations managing the human harvest of giant (*Macrocystis pyrifera* (Linnaeus) C. A. Agardh) and bull kelp (*Nereocystis luetkeana* (Mertens) Postels et Ruprecht) resources under the State's jurisdiction (Figure 2-1a, 2-1b, and 2-1c). The regulations are being considered for inclusion in the California Code of Regulations (CCR) to implement the State's policies for management of these species. Specifically, the Department is recommending the Commission continue the existing regulations (Sections 30 to 30.10 and Sections 165 and 165.5, Title 14, CCR (Appendix 1) that became effective May 9, 1984 and January 2, 1991, respectively, with the following substantive amendments:

- 1) Requirements for weighting harvested kelp (§165(b)) should be amended to clarify what weighing methods are acceptable;
- 2) Landing Record requirements for reporting harvest information (§165(b)) should be amended to clarify what information is needed and what reporting processes need to be used;
- 3) Regulations controlling the commercial harvest of bull kelp (§165(c)) should be amended to restrict acceptable harvest methods and seasons to protect that species near the southern limits of its geographic distribution; (Figure 2-2)
- 4) Regulations that specify which kelp beds are closed to harvest (§165(c)) should be amended to include those beds where there has historically been little resource to prevent focused or repeated harvest where the potential is highest for resource damage;

- 5) That section should also be amended to close a portion of bed 220 near Monterey to reduce user conflicts; (Figure 2-3)
- 6) The regulations should also be amended to provide a method for placing temporary harvest controls in beds or portions of beds where necessary for resource protection; and
- 7) Regulations guiding the leasing of kelp beds for exclusive harvest of kelp (§165.5 (b)) should be amended to provide a method where interested parties can easily determine which beds are currently available for leasing.

In general, existing regulations for the take of kelp provide the following:

Noncommercial

Under existing sportfishing regulations, kelp may be taken by anyone younger than 16 years of age without a license or anyone 16 years or older who possesses a valid fishing license. There is no closed season, closed hours or minimum size limit for any species of aquatic plants for which take is authorized. The bag limit is 10 pounds (wet weight) of kelp in aggregate except when taken during the herring roe-on-kelp season. The bag limit is then 25 pounds (wet weight) of roe and aquatic plants in combination. Furthermore, marine aquatic plants may not be cut or harvested in marine life refuges, ecological reserves, national parks or state underwater parks.

Commercial

Under existing law, kelp may be taken for commercial purposes only under a revocable permit, subject to specific regulations prescribed by the Commission. Current regulations specify: permit qualifications, permit limitations, landing and monitoring requirements for kelp harvesting and drying operations. Further regulations denote kelp lease and non-lease beds, closure areas, harvesting restrictions, harvesting fees and royalties, as well as the requirements for leasing kelp beds for the exclusive harvest of *Macrocystis* and *Nereocystis* beds.

Amendments

The modification of existing commercial harvesting regulations and the addition of regulations specific to bull kelp will provide for continuation of careful management of California's kelp resources.

Statute provides the department with the authority to approve any weighting method to determine the amount of kelp that has been landed or delivered. The first amendment clarifies that a harvester must obtain department approval to use a volume to weight conversion to determine the amount of kelp that has been harvested. Absent that approval, only direct weighing is acceptable.

The second regulation change provides explicit guidance as to what reporting processes need to be followed by the harvester in order to provide the department with the information it needs to meet its management responsibilities. The changes are

clarifying in nature and do not materially alter the reporting requirements.

The third substantive change extends an existing geographic restriction that requires hand harvesting of bull kelp from Point Montera southward to Santa Rosa Creek. Hand harvesting encourages the harvesting of mature bull kelp plants that have released reproductive tissue into the local area. It also protects that resource from the large-scale harvest that could occur if mechanical harvesters were used in large patches of bull kelp. The recommended change also imposes a restriction on all harvesting of bull kelp within the Monterey Bay National Marine Sanctuary from March 1 through July 31 each year (Figure 2-2). The seasonal closure was requested by the Sanctuary. Its inclusion will provide an opportunity to evaluate a seasonal closure during the plant's reproductive peak as a management tool for protecting bull kelp elsewhere in the state. It also recognizes the Sanctuaries mandated requirement to manage kelp resources within their boundaries.

The fourth recommended change expands the list of kelp beds that are closed to harvest. The beds that have been added to the list of beds closed to harvest are those where trend data suggest that the actual size of the surface canopy has been and continues to be very small (< 0.5 square miles). Research reviewed in Chapter 3 suggests that the repeated and frequent harvest of individual kelp plants poses the greatest potential for damage from harvesting. Small beds are, by virtue of limited option, exposed to a greater risk of this type of damage. Closures direct harvest pressure toward beds that are substantially larger and less susceptible to any potential harvest impacts.

The fifth recommended regulatory change seeks to limit conflict between consumptive and nonconsumptive users of the state's kelp resource in the Monterey area. The suggested change closes a portion of bed 220 that is closest to the harbor (Figure 2-3). If implemented, the closure would protect that portion of the bed that is most sensitive to overharvest during the winter. It simultaneously provides an area of canopy that is protected from harvest for non-consumptive uses where it would be most valued.

The sixth recommended change would provide the Commission with the authority to control the harvest of kelp in any bed or portion of a bed when circumstances suggest that the control is warranted. It specifically allows implementation of those controls through the use of emergency regulations, recognizing that in some circumstances formal adoption of regulations will not be warranted or desired. The control measure would limit the amount of kelp that a harvester could remove from a control area for a designated period of time. This provides a management tool that is less prohibitive than the only current option which is to close beds in circumstances where there is a potential for harvesting to destroy or impair a bed.

The final recommended regulation change provides a mechanism whereby interested parties can easily determine which beds are currently available for leasing.

2.2 Project Objectives

The proposed project objectives are as follows:

- * Insure that kelp harvesting does not impair the health and diversity of marine ecosystems and marine living resources;
- * Where compatible with that objective, endeavor to maintain a sustainable harvest and recognize the importance of aesthetic, educational, scientific, and recreational uses of the state's kelp resources; and
- * Insure a supply of kelp for all interested harvesters. At least one-fourth of the total area of the state's kelp beds, as designated by the Department, shall remain unleased and thus open to any licensed harvester.

2.3 Functional Equivalent

CEQA requires all public agencies in the State to evaluate the environmental impacts of projects that they approve or carry out. If there are potentially significant environmental impacts, most agencies satisfy this requirement by preparing an Environmental Impact Report (EIR). If no potentially significant impacts exist, a Negative Declaration (ND) is prepared. However, an alternative to the EIR/ND requirement exists for State agencies with activities that include protection of the environment as part of their regulatory program. Under this alternative, an agency may request certification of its regulatory program from the Secretary for Resources. With certification, an agency may prepare functional equivalent environmental documents in lieu of EIRs or NDs. The regulatory program of the Fish and Game Commission has been certified by the Secretary for Resources. Therefore, the Commission is eligible to submit an environmental document in lieu of an EIR (CEQA Guidelines Section 15252).

The Department and the Commission hold the public trust for managing the State's wildlife populations. That responsibility is fulfilled by a staff of experts including experts in marine resources management and enforcement issues related to the harvesting of kelp resources. The knowledge and training represented by that expertise qualifies them to perform the review and analysis of the proposed project contained in this document.

2.4 Scope and Intended Use of Environmental Document

This environmental document contains a description of the proposed project and its environmental setting, potential effects of the proposed project, and reasonable alternatives to the project. It has been prepared pursuant to the California Environmental Quality Act (CEQA, Public Resources Code Section 21080.5) and the CEQA Guidelines (Title 14, Sections 750 - 781.5, California Code of Regulations). The document fully discloses potential cumulative impacts and provides a discussion of mitigation of adverse environmental effects related to the proposed project and the alternatives. In addition, it considers relevant policies of the Legislature and Commission.

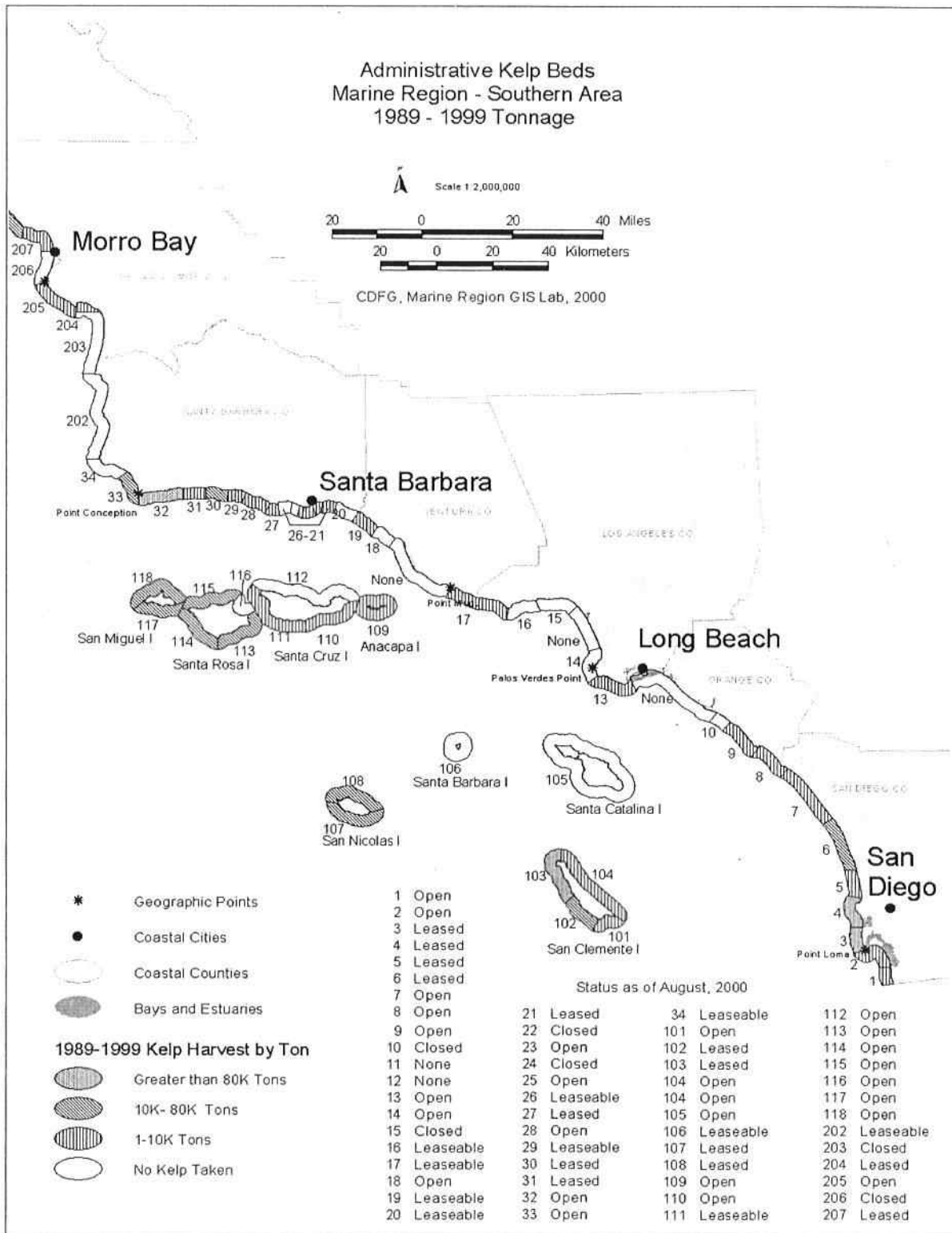


Figure 2-1a. Administrative Kelp Beds, Mexico to Morro Bay

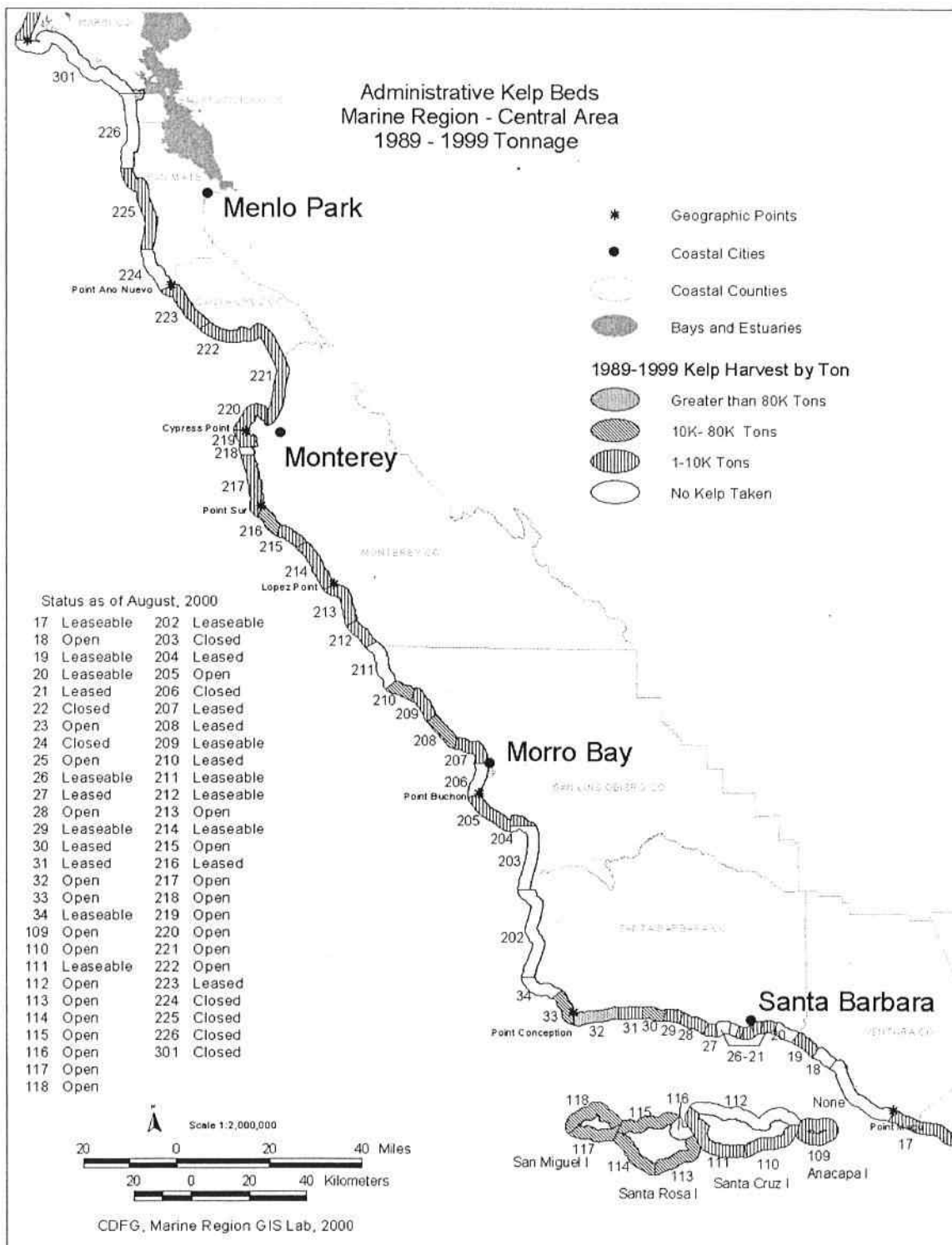


Figure 2-1b. Administrative Kelp Beds, Santa Barbara to Bodega Bay

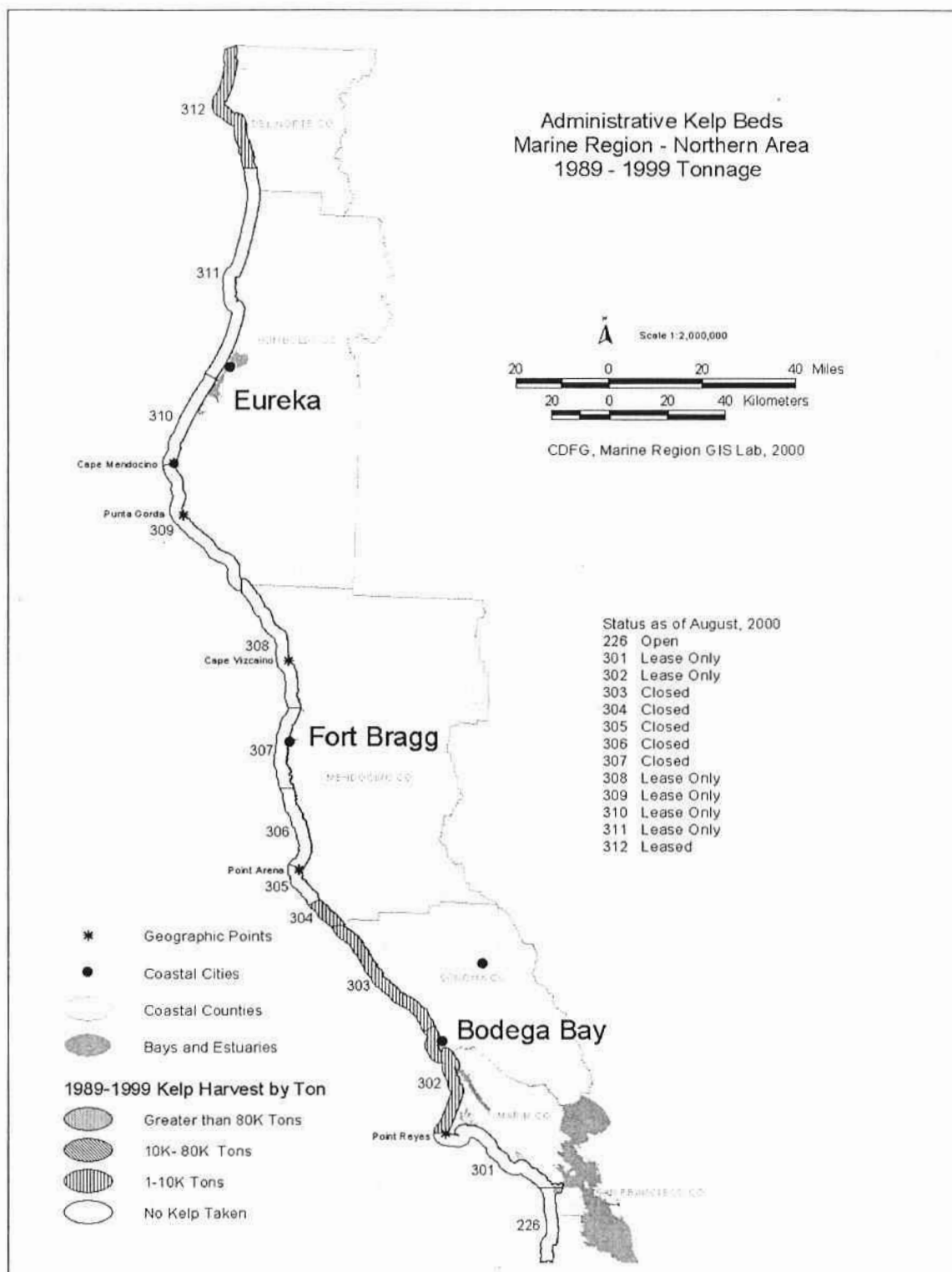


Figure 2-1c. Administrative Kelp Beds, Bodega Bay to Oregon.

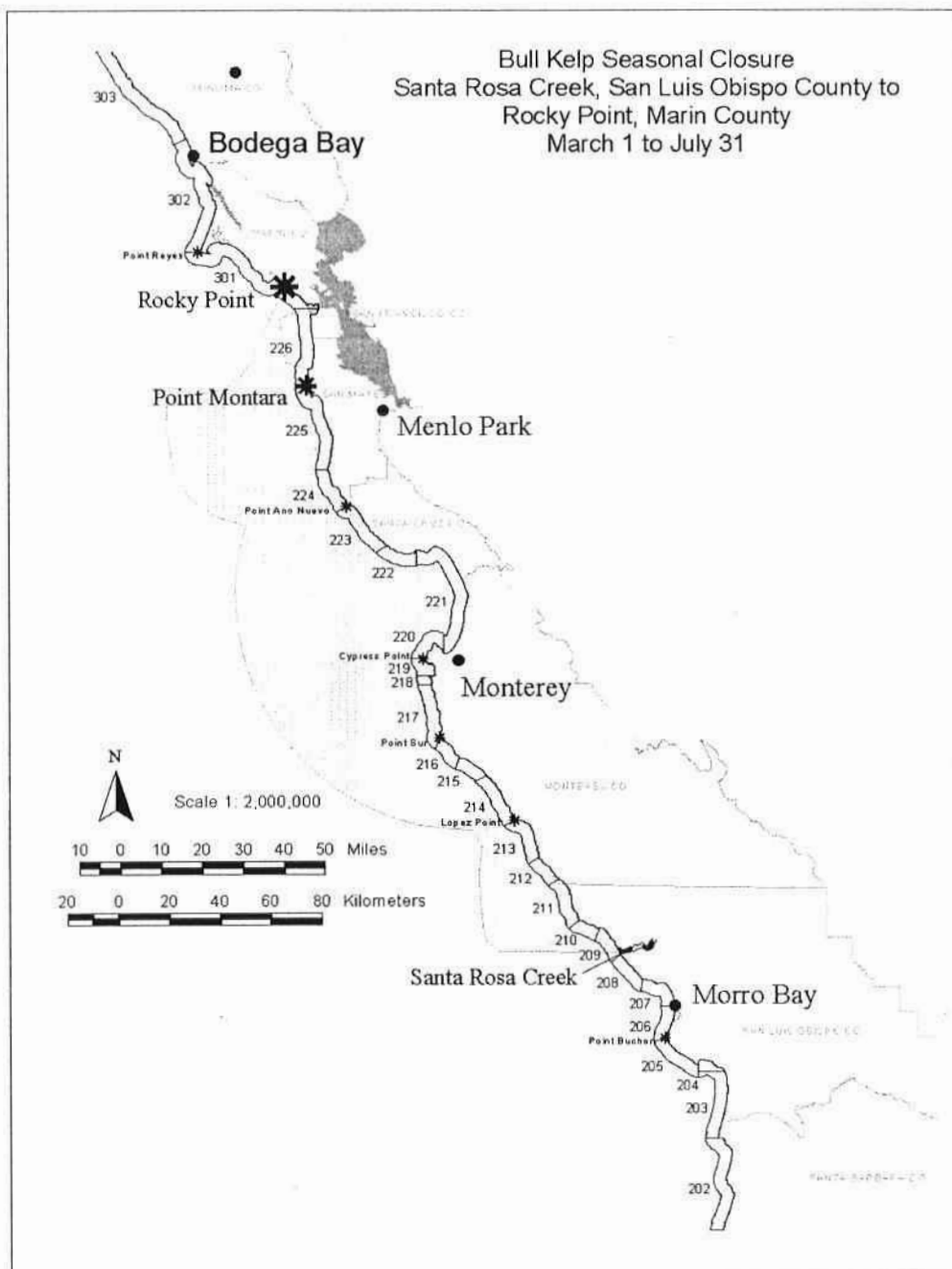
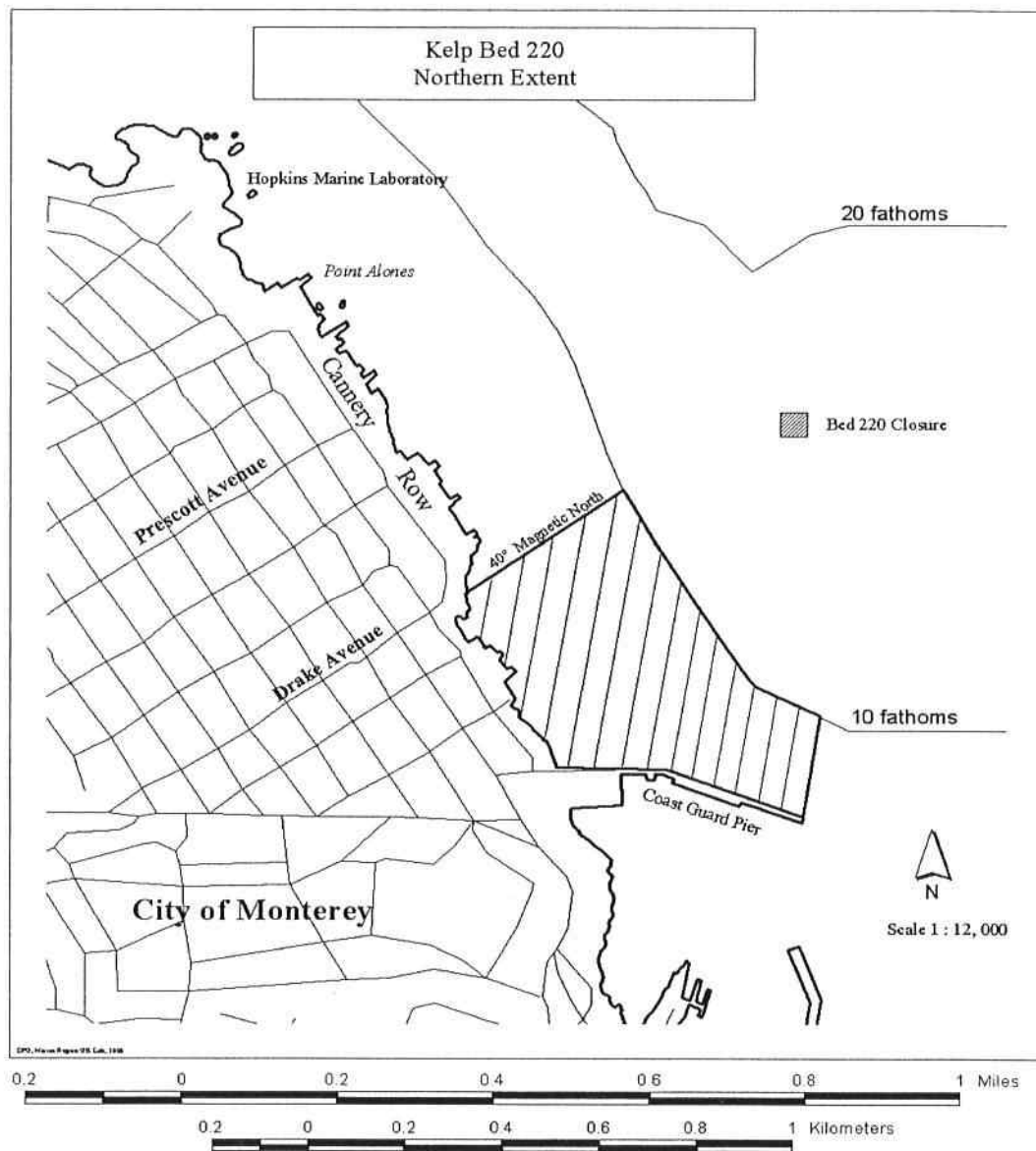


Figure 2-2. Proposed area/time closure in the Monterey Bay National Sanctuary.



2-3. Proposed closure area in Administrative Bed 220.

This environmental document presents information to allow a comparison of the potential effects of reasonable alternatives. All alternatives may not achieve the project's objectives equally well. They are presented to provide the Commission and the public with additional information related to the options available. The alternatives take the form of amendment, or change to an existing body of regulations (Section 165 and 165.5, Title 14, CCR). The no action alternative is also considered as required by CEQA (Section 15126, Public Resources Code).

2.5 Management Techniques

Many tools, some promulgated as regulations, are available for managing and regulating commercial and sport use of the State's aquatic resources. Management techniques available to the Department and the Commission include, but are not limited to, the following methods and restrictions.

2.5.1 Regulatory

2.5.1.1 Closures

The harvest of marine resources may be restricted, if necessary, in a number of ways, including: area of take, time of year, and the take of specific species. Time-area closures are used extensively to control human activity. These closures may be temporary or permanent. They are most applicable to species showing substantial changes in seasonal availability or area availability. Some of the first closed seasons for the taking of fish in California waters were established in 1901, others have been added from time to time since then.

2.5.1.1.1 Temporary Closures

Temporary closures are usually recommended when it is necessary to protect a species from harvest during a limited period of its life cycle. For fish, the time chosen for a closed season often coincides with spawning activities (grunion) or some similar critical life stage when a species is determined to be especially defenseless or vulnerable to capture, i.e., sturgeon-San Francisco Bay. For aquatic plants, such as kelp, temporary closure of kelp beds may be recommended by the Commission if it is found that harvesting activities are causing the destruction or impairment of any kelp bed or beds, or part thereof, or tending to impair or destroy the supply of food for fish. Notices of the closure would then be sent to all licensed harvesters. A kelp bed or beds may be closed to harvest for up to one year.

2.5.1.1.2 Permanent Closures

Generally, commercial and sport fishing regulations adopted by the Commission provide for the coastwide take of marine species. However, permanent closure areas have been established in certain waters of the state for species that have been determined to have limited populations or distribution or when continued fishing pressure could be detrimental to the resource. These areas have been set aside as reserves by both the Commission and the Legislature (section 630, Title 14; sections 1580 to 1584, 10500 to 10514, Fish and Game Code) (Smith and Johnson, 1989). Such reserves are generally established to protect selected forms of marine life, or areas of special biological significance.

The Commission has established two types of reserves: reserves where the taking of all forms of marine life is prohibited and reserves where limited consumptive uses are authorized. Marine reserves established by the Legislature generally allow for the take of specified fish, invertebrates and marine plants; but the Legislature has also established four refuges where only researchers, licensed by specified educational institutions, can remove invertebrates or marine plants. In 1972, legislation known as the "Tidal Invertebrate Act" (Smith and Johnson, 1989) was enacted to extend protection to all marine invertebrates along the entire California coast between the high tide line and 1,000 feet offshore. Marine invertebrates not utilized historically for food may not be taken in that area except under special collecting permits. Those species, however, for which the Commission has established seasons and bag limits to protect their stocks, may be taken within 1,000 feet of the low tide mark.

The net effect of the "Tidal Invertebrate Act" is that we now have only minor differences in the authorized uses of refuges and reserves established by Legislative act and Commission regulations.

The Commission also has the authority to close selected kelp beds to commercial harvest (§ 6653, Fish and Game Code). Under existing regulations (§ 165(c), Title 14) four kelp beds, with 5.29 square miles of canopy, are closed to commercial harvesting.

2.5.1.2 Method of Take

The marine resources of the state are many and varied, as are the methods used to capture them. Consequently, gear restrictions are utilized as valuable management tools in protecting immature fish, preventing overharvest, and to prevent unnecessary destruction of the resources or their habitat. Some types of gear are prohibited because they are so efficient at harvesting a targeted species that their use would place certain species in danger of destruction. A prime example of this occurred during the early years of kelp harvesting. A particularly destructive harvest method entailed encircling a portion of a [kelp] bed with a cable and power pulling the plants into a bundle so that the stems could be cut. Use of this method destroyed many holdfasts (Scofield, 1959).

The Commission has established regulations for the commercial harvest of giant and bull kelp. Both species must be taken by cutting, except that a harvester may pick

up drift or loose kelp, and giant kelp cannot be harvested at a depth greater than 4 feet (1.2 meters) below the surface of the water at the time of cutting. However, there are no specific gear restrictions placed on sport harvesters by the Commission. This lack of regulation is probably due to the small bag limit, and quantity of kelp harvested annually by sport harvesters (less than 25 tons per year) (Crooke, personal communication).

2.5.1.3 Harvest Limits

The establishment of harvest limits generally reflect the considered opinions of resource managers as to the amount or number of individuals of a given species or aggregate of species that can be taken daily, monthly, or annually, without placing the population in danger of over exploitation.

2.5.1.3.1 Commercial Harvest

The Commission has provided regulations to ensure the continued existence of the kelp resources in the state and to prevent wastage of kelp harvested. No more than 50 percent of the total kelp bed resources within the state may be leased. Additionally, commercial harvesters cannot exclusively lease more than 25 square miles (65 square kilometers) or 50 percent of the total area of the kelp resource (whichever is greater), as shown on the maps of the resource prepared by the Commission. Exclusive leases may be held for up to 20 years but come up for renewal prior to the end of the lease as negotiated by the lessee and the Commission. Further, the Commission can negotiate harvest limits as part of a harvester's lease agreement. For example, the Commission might stipulate, as terms of a lease agreement, that only half of any kelp bed or beds leased by a licensed harvester may be taken during a given period.

While there is no limit to the quantity of giant kelp canopy (only the upper 4 feet of giant kelp plants may be harvested) that can be taken by any one harvester, the Commission does limit the take of bull kelp north of Point Arguello, to protect this species at a time when biological knowledge and the effects of harvesting are being evaluated.

2.5.1.3.2 Sport Harvest

While numerical bag limits can be employed as a tool to control the take of many species of fish and shellfish, the harvest of kelp and other aquatic plants, because of their morphology, can best be controlled by use of weight limits.

A number of marine plant species, including kelp, are harvested for bait and for human food. In order to provide for a satisfying daily sport harvest, a limit of 10 pounds wet weight in the aggregate of marine aquatic plants was established by the Commission.

An exception to the 10 pound weight limit is made during the herring roe-on-kelp season. Pacific herring are school spawners that produce adhesive eggs

that stick to the substrate or marine vegetation when released. Herring spawn deposited on various species of edible marine algae is called *kazunoko kombu*, a product highly esteemed by Asian fishermen. To allow for a harvest of this commercially valuable product without endangering the herring resource and to prevent waste, a limit of 25 pounds of herring eggs on seaweed was authorized. A limit of 25 pounds in the aggregate was considered a satisfying day's sport.

2.5.2 Nonregulatory

In addition to regulatory programs used to manage the state's marine resources, there are a number of nonregulatory programs employed by the Department as well. These programs (artificial reefs, kelp restoration, artificial spawning and release of marine fish (Ocean Resources Enhancement Hatchery Program)) have been developed to increase marine fish, invertebrate and aquatic plant populations that have become depressed by natural (El Niño events, storms, disease) and human-induced (pollution, fishing pressure) causes.

Kelp restoration will be discussed in more detail in Chapter 3, Environmental Setting.

2.6 Authorities and Responsibilities

The Legislature formulates the laws and policies regulating the management of fish and wildlife in California. The State's policy with respect to aquatic resources is to encourage the conservation, maintenance and utilization of the living resources of the ocean and other waters under the jurisdiction and influence of the state for the benefit of all the citizens of the state. It is also the State's policy to promote the development of local fisheries and distant-water fisheries based in California in harmony with international law respecting fishing and the conservation of the living resources of the oceans and other waters under the jurisdiction and influence of the state (Section 1700, Fish and Game Code). This policy includes the following objectives:

- The maintenance of sufficient populations of all species of aquatic organisms to insure their continued existence;
- The recognition of the importance of the aesthetic, educational, scientific, and nonextractive recreational uses of the living resources of the California Current;
- The maintenance of a sufficient resource to support a reasonable sport use, where a species is the object of sport fishing, taking into consideration the necessity of regulating individual sport fishery bag limits to the quantity that is sufficient to provide a satisfying sport;
- The growth of local commercial fisheries, consistent with

aesthetic, educational, scientific, and recreational uses of such living resources, the utilization of unused resources, taking into consideration the necessity of regulating the catch within the limits of maximum sustainable yields, and the development of distant-water and overseas fishery enterprises;

- The management, on a basis of adequate scientific information promptly promulgated for public scrutiny, of the fisheries under the state's jurisdiction, and the participation in the management of other fisheries in which California fishers are engaged, with the objective of maximizing the sustained yield; and
- The development of commercial aquaculture.

A specific policy relating to the management of marine resources is contained in Fish and Game Code Sections 7050 through 7056 as follows:

- The Legislature finds and declares that the Pacific Ocean and its rich marine living resources are of great environmental, economic, aesthetic, recreational, educational, scientific, nutritional, social, and historic importance to the people of California.

It is the policy of the state to ensure the conservation, sustainable use, and, where feasible, restoration of California's marine living resources for the benefit of all the citizens of the state. The objective of this policy shall be to accomplish all of the following:

- (1) Conserve the health and diversity of marine ecosystems and marine living resources.
- (2) Allow and encourage only those activities and uses of marine living resources that are sustainable.
- (3) Recognize the importance of the aesthetic, educational, scientific, and recreational uses that do not involve the taking of California's marine living resources.
- (4) Recognize the importance to the economy and the culture of California of sustainable sport and commercial fisheries and the development of commercial aquaculture consistent with the marine living resource conservation policies of this part.
- (5) Support and promote scientific research on marine ecosystems and their components to develop better information on which to base marine living resource management decisions.
- (6) Manage marine living resources on the basis of the best available scientific information and other relevant information that the commission or department possesses or receives.
- (7) Involve all interested parties, including, but not limited to, individuals from the sport and commercial fishing industries, aquaculture industries, coastal and ocean tourism and recreation industries, marine conservation organizations,

local governments, marine scientists, and the public in marine living resource management decisions.

(8) Promote the dissemination of accurate information concerning the condition of, or management of, marine resources and fisheries by seeking out the best available information and making it available to the public through the marine resources management process.

(9) Coordinate and cooperate with adjacent states, as well as with Mexico and Canada, and encourage regional approaches to management of activities and uses that affect marine living resources. Particular attention shall be paid to coordinated approaches to the management of shared fisheries.

- The Legislature finds and declares that it is the policy of the state that:
 - (a) California's marine sport and commercial fisheries, and the resources upon which they depend, are important to the people of the state and, to the extent practicable, shall be managed in accordance with the policies and other requirements of this part in order to assure the long-term economic, recreational, ecological, cultural, and social benefits of those fisheries and the marine habitats on which they depend.
 - (b) Programs for the conservation and management of the marine fishery resources of California shall be established and administered to prevent overfishing, to rebuild depressed stocks, to ensure conservation, to facilitate long-term protection and, where feasible, restoration of marine fishery habitats, and to achieve the sustainable use of the state's fishery resources.
 - (c) Where a species is the object of sportfishing, a sufficient resource shall be maintained to support a reasonable sport use, taking into consideration the necessity of regulating individual sport fishery bag limits to the quantity that is sufficient to provide a satisfying sport.
 - (d) The growth of commercial fisheries, including distant-water fisheries, shall be encouraged.
- In order to achieve the primary fishery management goal of sustainability, every sport and commercial marine fishery under the jurisdiction of the state shall be managed under a system whose objectives include all of the following:
 - (a) The fishery is conducted sustainably so that long-term health of the resource is not sacrificed in favor of short-term benefits. In the case of a fishery managed on the basis of maximum sustainable yield, management shall have optimum yield as its objective.
 - (b) The health of marine fishery habitat is maintained and, to the extent feasible, habitat is restored, and where appropriate, habitat is enhanced.
 - (c) Depressed fisheries are rebuilt to the highest sustainable yields consistent with environmental and habitat conditions.
 - (d) The fishery limits bycatch to acceptable types and amounts, as determined for each fishery.
 - (e) The fishery management system allows fishery participants to propose methods to prevent or reduce excess effort in marine fisheries.

- (f) Management of a species that is the target of both sport and commercial fisheries or of a fishery that employs different gears is closely coordinated.
- (g) Fishery management decisions are adaptive and are based on the best available scientific information and other relevant information that the commission or department possesses or receives, and the commission and department have available to them essential fishery information on which to base their decisions.
- (h) The management decision making process is open and seeks the advice and assistance of interested parties so as to consider relevant information, including local knowledge.
- (i) The fishery management system observes the long-term interests of people dependent on fishing for food, livelihood, or recreation.
- (j) The adverse impacts of fishery management on small-scale fisheries, coastal communities, and local economies are minimized.
- (k) Collaborative and cooperative approaches to management, involving fishery participants, marine scientists, and other interested parties are strongly encouraged, and appropriate mechanisms are in place to resolve disputes such as access, allocation, and gear conflicts.
- (l) The management system is proactive and responds quickly to changing environmental conditions and market or other socioeconomic factors and to the concerns of fishery participants.
- (m) The management system is periodically reviewed for effectiveness in achieving sustainability goals and for fairness and reasonableness in its interaction with people affected by management.

In addition to this policy, the Legislature has provided further direction for the management of kelp resources in Chapter six (§6650 through §6751) of the Fish and Game Code (Appendix 1). The Legislature has delegated authority to the Commission to establish regulations to ensure the proper harvesting of kelp and other aquatic plants through §6653 of the Fish and Game Code. In addition, the Commission has the authority to regulate the taking, collecting, harvesting, gathering, or possession of kelp for purposes other than profit (§6750, Fish and Game Code; Appendix 1).

2.7 Location and General Characteristics of the Project Area

The commercial harvest of kelp is proposed statewide, in all areas defined as ocean waters (Sec. 27.00, Title 14, CCR) except where prohibited or restricted, as specified, in state parks, state beaches, state recreation areas, state underwater parks, state refuges and reserves, national parks, national monuments or national seashores.

The shoreline of California is one of the longest in the nation. There are approximately 1,072 miles of wave-washed shoreline along the mainland coast, and 300 miles around the offshore islands. The mainland shore is comprised of about 354 miles of rocky headlands and cliffs; 602 miles of sandy beaches; and 110 miles of rocky beach. The only enclosed bays of significance (in the state) are: Humboldt (17,000

surface acres); Tomales (7,760 surface acres); San Francisco (320,000 surface acres); Morro Bay (2,101 surface acres) and San Diego (11,500 surface acres).

The marine environment is composed of numerous micro-habitats, each of which supports a distinct assemblage of species uniquely adapted to their environment. Information about the specific habitat preferences and life history aspects of giant and bull kelp is provided in Chapter 3, Environmental and Biological Setting.