



CALIFORNIA MARINE LIFE PROTECTION ACT  
MASTER PLAN FOR MARINE PROTECTED AREAS

## APPENDIX E

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### Central Coast: MPA Background and Priorities

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August 24, 2016

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# 1. Introduction

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The Marine Life Protection Act (MLPA), passed by the California Legislature in 1999, required the state to redesign its previously existing system of 63 marine protected areas (MPAs), covering approximately 2.7% of state waters (less than 0.25% of which occurred in no-take MPAs), to increase its coherence and effectiveness at protecting the state's marine life, habitats, and ecosystems.<sup>1</sup> From 2004 to 2012, the California Resources Agency (now California Natural Resource Agency [CNRA]), California Department of Fish and Game (now California Department of Fish and Wildlife [CDFW]), and Resources Legacy Fund Foundation (now Resources Legacy Fund [RLF]), entered into a public-private partnership called the California Marine Life Protection Act Initiative (MLPA Initiative)<sup>2</sup> to implement the MLPA through science-based and stakeholder driven regional MPA planning processes (see Appendix A). By December 2012, the MPA planning processes for each of the four coastal regions were completed, resulting in a comprehensive, interconnected statewide network of 124 MPAs<sup>3</sup> and 15 special closures, constituting approximately 16% of state waters (9.4% of which in no-take MPAs).<sup>4</sup> Core to redesigning and siting California's MPAs, as well as to the ongoing management of the statewide MPA network, is the Marine Life Protection Program (MLPP), established pursuant to the MLPA.<sup>5</sup>

In recognition of the regional MPA planning processes and varying ecological, social, and economic conditions along California's approximately 1,100-mile coastline (Fox et al. 2013a), appended to the 2016 Master Plan are Regional MPA Background and Priorities documents (Appendices C-F). These four Regional MPA Background and Priorities documents have a standardized structure and correspond to each completed regional MPA network implemented through the MLPA Initiative from north to south, including the North Coast (Appendix C), North Central Coast (Appendix D), Central Coast (Appendix E), and South Coast (Appendix F). Regional MPA Background and Priorities documents include region-specific MPA design considerations and priorities moving forward; which together provide important context to base future informed statewide MPA management decisions upon. They are not meant to contain specific details for management protocols and methodologies; and instead are intended as living documents that are readily accessible for reference and adaptive management, and serve as a logical starting place for guiding regionally-based activities. Each Regional MPA Background and Priorities document includes unique regional features and considerations taken into account when designing the MPAs, regional goals and objectives, summaries of regional MPAs, and regional plans for scientific and enforcement considerations. For the purpose of keeping each Regional MPA Background and Priorities document concise and user friendly, many of these features are described in brief, and further in-depth information can be found through provided web links.

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<sup>1</sup> California Fish and Game Code (FGC) §2853(a)

<sup>2</sup> MLPA Initiative. (2004). Memorandum of Understanding among the California Resources Agency, the California Department of Fish and Game, and the Resources Legacy Fund Foundation for the California Marine Life Protection Act Initiative. Retrieved Apr 1, 2015 from <https://nrmsecure.dfg.ca.gov/FileHandler.ashx?DocumentID=30339>

<sup>3</sup> MPAs are a subset of Marine Managed Areas (MMAs), however throughout this document the more common term "MPA" is used as an umbrella to refer to all types of protected areas. Total number of MPAs includes 111 new or redesigned MPAs and 13 MPAs previously established in 2003 at the northern Channel Islands that were retained without change. Total number of MPAs does not include previously existing San Francisco Bay MPAs

<sup>4</sup> Options for a planning process in the fifth region, San Francisco Bay, have been developed for consideration at a future date. See Appendix A and CDFW's website for more information:

<http://www.wildlife.ca.gov/Conservation/Marine/MPAs/Network/San-Francisco-Bay>

<sup>5</sup> FGC §2853(b)

## 2. Description of Region

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### 2.1 UNIQUE REGIONAL FEATURES

The Central Coast regional planning process to design and site MPAs occurred from 2004 to 2007, and was the first of four planning regions completed through the MLPA Initiative. Encompassing 1,146 square miles (2,968 square kilometers) of coastal waters, the region extends from the shoreline (mean high tide) to the boundary between state and federal waters, three nautical miles from shore. An exception to the three nautical mile distance from shore exists within Monterey Bay, where the three nautical mile distance offshore is measured from a straight line between Point Pinos (Monterey County) and Point Santa Cruz (Santa Cruz County) instead of the actual shoreline.<sup>6</sup> The Central Coast region spans a straight-line distance of approximately 241 statute miles (388 kilometers) of the California coastline (with about 521 statute miles [838 kilometers] of actual coastline) from Pigeon Point in San Mateo County to Point Conception in Santa Barbara County. The region includes a broad array of habitats that range in depth. The maximum depth within this region is 4,793 feet (1,461 meters). A detailed description of the Central Coast region is found in the California MLPA Initiative Regional Profile of the Central Coast Study Region.<sup>7</sup> Data sources can be found on CDFW's website,<sup>8</sup> data viewer,<sup>9</sup> and file transfer protocol (FTP) site.<sup>10</sup> The following section is intended to summarize that description, including the key features and considerations used in the design and implementation of MPAs in the region.

The Central Coast region is part of the California Current Large Marine Ecosystem, one of only four temperate upwelling systems in the world, considered globally important for biodiversity because of its high productivity and the large numbers of species it supports.<sup>11</sup> Some of the unique features in the region include:

- Abundance of large submarine canyons within state waters near off the coast of Monterey and Carmel Bays and Big Sur
- Underwater pinnacles are found throughout the region and are abundant in certain locations
- Estuaries are rare in the region (i.e., Elkhorn Slough and Morro Bay)
- Kelp forests in the region include both giant kelp and bull kelp; giant kelp dominates south of Davenport (Santa Cruz County), while bull kelp is more dominant in the far northern part of the region
- Renowned as a diving, kayaking, fishing, and whale-watching destination; marine recreational activities help support coastal tourism and coastal communities
- High concentration of marine laboratories and research institutions

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<sup>6</sup> The boundary of state waters for the purposes of the 2016 Master Plan is from mean high tide to three nautical miles offshore of all intertidal rocks and mouths of embayments, including large open bays (excluding state waters in San Francisco Bay, which represent approximately 473 square miles). This method of measurement creates instances where the state water boundary is further offshore than three nautical miles (e.g., Monterey Bay and the area around Reading Rock).

<sup>7</sup> MLPA Initiative. (2005). *Regional Profile of the Central Coast Study Region (Pigeon Point to Point Conception, CA)*. Retrieved Apr 1, 2015 from [http://www.dfg.ca.gov/marine/pdfs/rpccsr\\_091905.pdf](http://www.dfg.ca.gov/marine/pdfs/rpccsr_091905.pdf)

<sup>8</sup> Descriptions and summaries of California's MPAs are provided on the CDFW website: <https://www.wildlife.ca.gov/MPAs>  
<sup>9</sup> CDFW's marine and coastal data viewer MarineBIOS can be found on the CDFW website: <https://www.wildlife.ca.gov/MarineBIOS>

<sup>10</sup> Additional data sources can be found on CDFW's FTP site: [ftp://ftp.dfg.ca.gov/R7\\_MR/](ftp://ftp.dfg.ca.gov/R7_MR/)

<sup>11</sup> World Wildlife Fund. (2000). *The Global 200 Ecoregions: A User's Guide*. WWF. Washington D.C.

# 3. Design Considerations for Central Coast MPAs

During the MLPA Initiative, the members of the Central Coast Regional Stakeholder Group (CCRSG) committed and participated in activities that included identifying and valuing alternative proposals for MPAs.<sup>12</sup> The CCRSG agreed that regional goals, objectives, and design and implementation considerations are all crucial to develop an effective system of MPAs that stakeholder support. While the same general MPA planning process structure was used throughout the four coastal planning regions, specific details regarding alternative MPA proposal development varied and the iterative nature of the process allowed for adaptation based on lessons learned and unique characteristics of each region. Multiple rounds of MPA proposal development also provided stakeholder groups with evaluations of the extent to which their draft proposals would meet science and feasibility design guidelines, built trust among stakeholders, increased awareness of constituencies' particular interests, allowed the stakeholder group to develop improved cross-interest proposals, accommodated decision support-tools that allowed stakeholders to collaboratively develop MPA designs, and increased and facilitated interactions between MLPA Initiative bodies and interested members of the public (see Appendix A). This section provides the regional goals and objectives, which are built from the MLPA goals, and design and implementation considerations to help fulfill those goals within the Central Coast planning region.

## 3.1 REGIONAL GOALS AND OBJECTIVES

Regional goals are statements of what the regional MPAs are ultimately trying to achieve (Pomeroy et al., 2004), and were largely taken directly from the MLPA itself. To support the regional goals, regional objectives are more specific statements that describe what MPAs may accomplish to attain a related goal (Pomeroy et al., 2004). The MPA design process included developing goals and regional objectives that were consistent with the six MLPA goals, then identifying the intent for a particular site and identifying objectives and site-specific rationales for individual MPAs. Once set, regional goals and objectives influence crucial decisions regarding MPA size, location and boundaries, and management measures, and inform monitoring, evaluation, and the adaptive management process. Regional objectives should reflect the MLPA goals and be reasonably measurable and achievable. Included below are the regional goals and objectives of the Central Coast planning region.

### **Goal 1. To protect the natural diversity and abundance<sup>13</sup> of marine life, and the structure, function, and integrity of marine ecosystems.**

1. Protect areas of high species diversity and maintain species diversity and abundance, consistent with natural fluctuations, of populations in representative habitats.

<sup>12</sup> MLPA Initiative. (2005). *Charter of the Central Coast Regional Stakeholder Group*. Retrieved Sept 21, 2015 from: [http://www.dfg.ca.gov/marine/pdfs/ccrsg\\_charter.pdf](http://www.dfg.ca.gov/marine/pdfs/ccrsg_charter.pdf)

<sup>13</sup> *Natural diversity* is the species richness of a community or area when protected from, or not subjected to, human-induced change (drawn from Allaby 1998 and Kelleher 1992). *Natural abundance* is the total number of individuals in a population protected from, or not subjected to, human-induced change (adapted from Kelleher 1992 and CDFW [2005]. Final Market Squid Fishery Management Plan. Retrieved Aug 10, 2015 from <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=33570&inline=true>).

2. Protect marine life communities associated with areas of diverse habitat types in close proximity to each other.
3. Protect natural size and age structure and genetic diversity of populations in representative habitats.
4. Protect natural trophic structure and food webs in representative habitats.
5. Protect ecosystem structure, function, integrity, and ecological processes to facilitate recovery of natural communities from disturbances, both natural and human induced.

**Goal 2. To help sustain, conserve, and protect marine life populations, including those of economic value, and rebuild those that are depleted.**

1. Help protect or rebuild populations of rare, threatened, endangered, depleted, or overfished species, where identified, and the habitats and ecosystem functions upon which they rely.<sup>14</sup>
2. Protect larval sources and enhance reproductive capacity of species most likely to benefit from MPAs through retention of large, mature individuals.
3. Protect selected species and the habitats on which they depend while allowing the harvest of migratory, highly mobile, or other species where appropriate through the use of state marine conservation areas and state marine parks.

**Goal 3. To improve recreational, educational, and study opportunities provided by marine ecosystems that are subject to minimal human disturbances, and to manage these uses in a manner consistent with protecting biodiversity.**

1. Ensure some MPAs are close to population centers and research and education institutions and include areas of traditional non-consumptive recreational use and are accessible for recreational, educational, and study opportunities.
2. To enhance the likelihood of scientifically valid studies, replicate appropriate MPA designations, habitats, or control areas (including areas open to fishing) to the extent possible.
3. Develop collaborative scientific monitoring and research projects evaluating MPAs that link with classroom science curricula, volunteer dive programs, and fishermen of all ages, and identify participants.
4. Protect or enhance recreational experience by ensuring natural size and age structure of marine populations.

**Goal 4. To protect marine natural heritage, including protection of representative and unique marine life habitats in central California waters, for their intrinsic value.**

1. Include within MPAs the following habitat types: estuaries, heads of submarine canyons, and pinnacles.

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<sup>14</sup> The terms “rare,” “threatened,” “endangered,” “depressed,” “depleted,” and “overfished” referenced here are designations in state and federal legislation, regulations, and fishery management plans (FMPs) - e.g., FGC, Marine Mammal Protection Act, Magnuson Stevens Fishery Conservation and Management Act, California Nearshore FMP, Federal Groundfish FMP. *Rare*, *endangered*, and *threatened* are designations under the California Endangered Species Act. *Depleted* is a designation under the federal Marine Mammal Protection Act. *Depressed* means the condition of a marine fishery that exhibits declining fish population abundance levels below those consistent with maximum sustainable yield (FGC, Section 90.7). *Overfished* means a population that does not produce maximum sustainable yield on a continuing basis (MSA) and in the California Nearshore FMP and federal Groundfish FMP also means a population that falls below the threshold of 30% or 25%, successively, of the estimated unfished biomass.

2. Protect species associated with, and replicate to the extent possible, representatives of all marine habitats identified in the MLPA or the Master Plan framework across a range of depths.

**Goal 5. To ensure that central California’s MPAs have clearly defined objectives, effective management measures, and adequate enforcement, and are based on sound scientific guidelines.**

1. Minimize negative socioeconomic impacts and optimize positive socioeconomic impacts for all users, to the extent possible, and if consistent with the MLPA and its goals and guidelines.
2. For all MPAs in the region, develop objectives, a long-term monitoring plan that includes standardized biological and socioeconomic monitoring protocols, and a strategy for MPA evaluation, and ensure that each MPA objective is linked to one or more regional objectives.
3. To the extent possible, effectively use scientific guidelines in the Master Plan framework.

**Goal 6. To ensure that the Central Coast’s MPAs are designed and managed, to the extent possible, as a component of a statewide network.**

1. Develop a process for regional review and evaluation of implementation effectiveness that includes stakeholder involvement to determine if regional MPAs are an effective component of a statewide network.
2. Develop a mechanism to coordinate with future MLPA regional stakeholder groups in other regions to ensure that the statewide MPA network meets the goals of the MLPA.

## 3.2 DESIGN CONSIDERATIONS

In addition to goals and objectives, design considerations are additional factors that may help fulfill provisions of the MLPA related to facilitating enforcement, encouraging public involvement, and incorporating socioeconomic considerations. Design considerations are cross-cutting (they apply to all MPAs) and not necessarily measurable. They were applied as the location, designation (reserve, park or conservation area), size, and other characteristics of potential MPAs were being developed. MPA alternatives developed by the CCRSG included analysis of how the proposals addressed regional goals and objectives as well as design guidelines. The CCRSG identified several issues that should be considered in the design and evaluation of MPAs. Like the Considerations in the Design of MPAs section in the master plan framework, these considerations may apply to all MPAs and MPA proposals regardless of the specific goals and objectives of that MPA. The design considerations below will be incorporated with the provisional goals and objectives and provided to the Master Plan SAT, the Blue Ribbon Task Force (BRTF), and the Commission. Design considerations with long-term monitoring components will be used in developing monitoring plans and informing the adaptive management process.

Primary design considerations include the following:

- In evaluating the siting of MPAs, considerations shall include the needs and interests of all users.
- Recognize relevant portions of existing state and federal fishery management areas and regulations, to the extent possible, when designing new MPAs or modifying existing ones.
- To the extent possible, site MPAs to prevent fishing effort shifts that would result in serial depletion.



- When crafting MPA proposals, include considerations for design found in the Nearshore Fishery Management Plan (NFMP)<sup>15</sup> and the draft Abalone Recovery and Management Plan.<sup>16</sup>
- In developing MPA proposals, consider how existing state and federal programs address the goals and objectives of the MLPA and the Central Coast region as well as how these proposals may coordinate with other programs.
- To the extent possible, site MPAs adjacent to terrestrial federal, state, county, or city parks, marine laboratories, or other "eyes on the water" to facilitate management, enforcement, and monitoring.
- To the extent possible, site MPAs to facilitate use of volunteers to assist in monitoring and management.
- To the extent possible, site MPAs to take advantage of existing long-term monitoring studies.
- To the extent possible, design MPA boundaries that facilitate ease of public recognition and ease of enforcement.

### 3.3 UNIQUE DESIGN CONSIDERATIONS

As the first study region completed, the members of the CCRSG were the first to develop goals and objectives. Regional goals were developed relative to the MLPA network goals, and intended to be specific, measurable, achievable, realistic, timely ("SMART"), and include an indicator or a way to gauge whether the goals and objectives of the MPAs are being achieved. Indicators were selected after the goals and objectives were identified with the intent to assist programmatic evaluation.

During the MLPA Initiative process, MPA design and implementation considerations were applied at the regional level. Each regional MPA planning process required the consideration of unique regional

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<sup>15</sup> Design considerations from NFMP:

1. Restrict take in any MPA [intended to meet the NFMP goals] so that the directed fishing or significant bycatch of the 19 NFMP species is prohibited.
2. Include some areas that have been productive fishing grounds for the 19 NFMP species in the past but are no longer heavily used by the fishery.
3. Include some areas known to enhance distribution or retain larvae of NFMP species
4. Consist of an area large enough to address biological characteristics such as movement patterns and home range. There is an expectation that some portion of NFMP stocks will spend the majority of their life cycle within the boundaries of the MPA.
5. Consist of areas that replicate various habitat types within each region including areas that exhibit representative productivity.

<sup>16</sup> Design considerations from draft Abalone and Recovery and Management Plan (Proposed MPA sites should satisfy at least four of the following criteria):

1. Include within MPAs suitable rocky habitat containing abundant kelp and/or foliose algae
2. Insure presence of sufficient populations to facilitate reproduction.
3. Include within MPAs suitable nursery areas, in particular crustose coralline rock habitats in shallow waters that include microhabitats of moveable rock, rock crevices, urchin spine canopy, and kelp holdfasts.
4. Include within MPAs the protected lee of major headlands that may act as collection points for water and larvae.
5. Include MPAs large enough to include large numbers of abalone and for research regarding population dynamics.
6. Include MPAs that are accessible to researchers, enforcement personnel, and others with a legitimate interest in resource protection.

design and/or policy considerations (Fox et al. 2013a, b). For example, during the Central Coast regional MPA planning process from 2004 to 2007, seven memorandums specific to the Central Coast were issued, including a four part memorandum from CDFW regarding the relationship between MPA planning and existing fisheries management measures. A complete historical record of all Central Coast MPA design and implementation considerations can be found on CDFW's website.<sup>17</sup>

### 3.4 IMPLEMENTATION CONSIDERATIONS

Once implemented, a regional MPA network component requires effective management, strong public outreach, and a sound monitoring plan. Implementation considerations serve an important role in providing recommendations to the Commission and to managing agencies to ensure the success of the newly established MPAs. Recommended implementation considerations were based on local knowledge and took into account the regional MPA network component. Implementation considerations include the following:

- Improve public outreach related to MPAs through the use of docents, improved signage, and production of an educational brochure for Central Coast MPAs.
- When appropriate, phase the implementation of Central Coast MPAs to ensure their effective management, monitoring, and enforcement.
- Ensure adequate funding for monitoring, management, and enforcement is available for implementing new MPAs. (In addition to approving this language, the BRTF also adopted three statements related to funding)
- Develop regional management and enforcement measures, including cooperative enforcement agreements, adaptive management, and jurisdictional maps, which can be effectively used, adopted statewide, and periodically reviewed.

The philosophy of participation from diverse stakeholder groups will continue throughout ongoing management of the MPAs. *The California Collaborative Approach: Marine Protected Area Partnership Plan* (the Partnership Plan)<sup>18</sup> describes the importance of engaging with unique and regionally diverse stakeholders for MPA implementation by leveraging the human and financial resources of state and local partners, ensuring transparent communication between management agencies and partners, and engaging in partnerships. The collaborative approach outlined in the Partnership Plan emphasizes that broad support and active engagement with marine policy and science across all partner and stakeholder groups are essential to the success of the implementation of the statewide network of MPAs.<sup>19</sup>

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<sup>17</sup> MLPA Blue Ribbon Task Force transmittal of Central Coast project recommendations to the California Department of Fish and Game (April 28, 2006) (Binder II, Legal and Policy Context Documents): <http://www.dfg.ca.gov/marine/mpa/transmittaldocs.asp>

<sup>18</sup> Ocean Protection Council. (2014). *The California Collaborative Approach: Marine Protected Areas Partnership Plan*. Retrieved Mar 4, 2015 from <http://www.opc.ca.gov/2014/05/draft-the-california-collaborative-approach-marine-protected-area-partnership-plan-open-for-public-comment/>

<sup>19</sup> Ibid.

## 4. Summary of Regional MPAs

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A network of 29 MPAs covering approximately 207 square miles (536 square kilometers) of state waters, or about 18% of the Central Coast region, went into effect in September 2007. The Central Coast MPA network was the first of four coastal regions to successfully establish MPAs pursuant to the MLPA (see Appendix A, Section 6.3). This section provides an overview of the Central Coast's MPAs, including summary statistics on the area within different types of MPAs in the region, the size and depth of each individual MPA, and habitat representation by MPA type and by individual MPA. Types of MPAs in the Central Coast planning region include State Marine Reserves (SMRs), State Marine Conservation Areas (SMCAs), State Marine Conservation Areas/State Marine Parks (SMCAs/SMPs), and a State Marine Recreational Management Area (SMRMA). Throughout all tables and figures in this section, all statistics are from CDFW's Marine Region Geographic Information Systems (GIS) unit.<sup>20</sup> Statistics in this section were updated March 2016 and are subject to change as improvements in geographic data become available. Detailed profiles of each Central Coast MPA can be found on the CDFW website, including designation type, size and location, key habitats protected, boundaries and regulations, rationale for why the MPA was chosen, species likely to benefit, and Central Coast regional resources with additional information.<sup>21</sup>

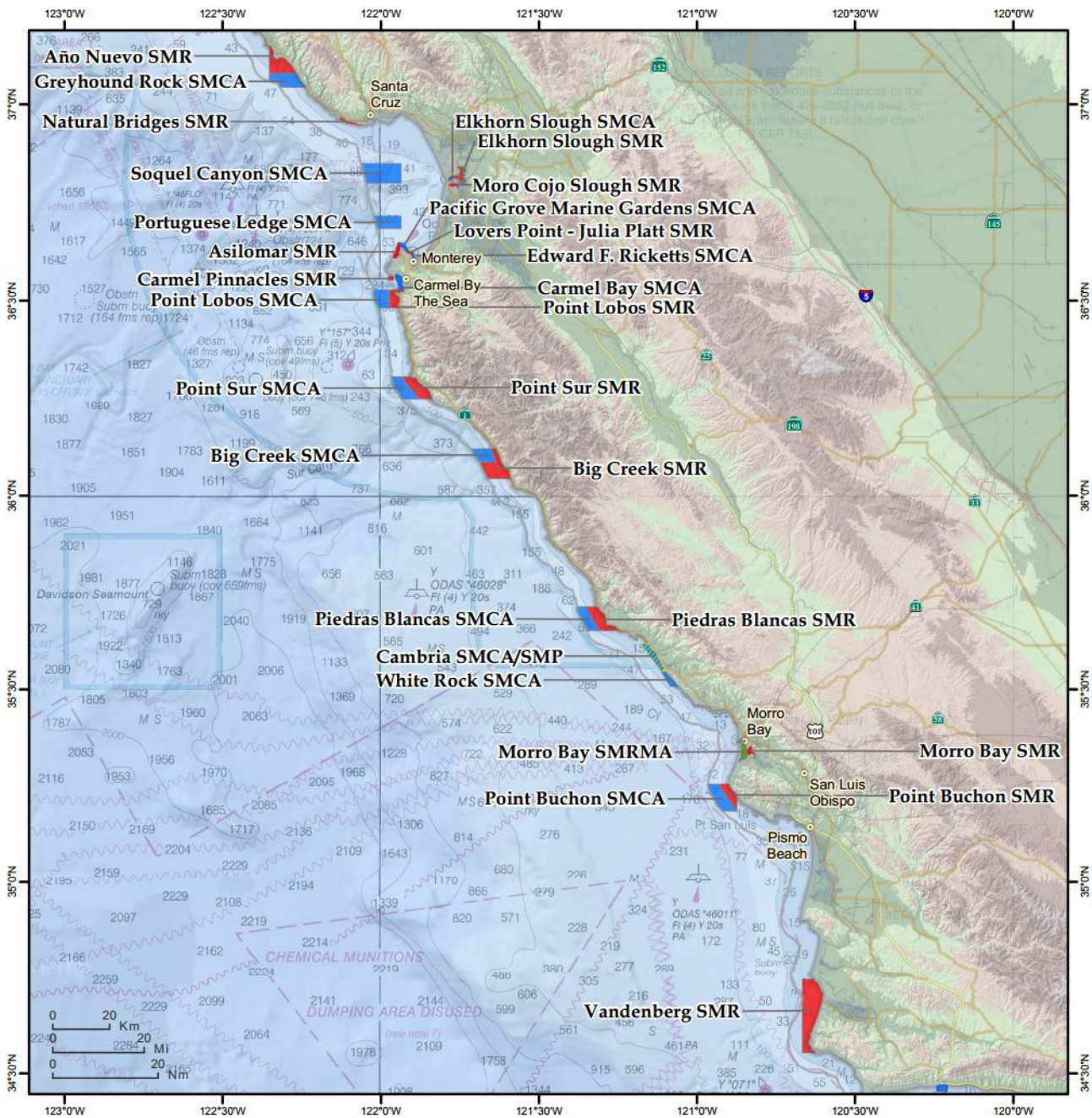
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<sup>20</sup> CDFW's Marine Region Geographic Information Systems Unit: <https://www.wildlife.ca.gov/Conservation/Marine/GIS>

<sup>21</sup> Individual MPA overview sheets can be found on the CDFW website: <https://www.wildlife.ca.gov/Conservation/Marine/MPAs/Outreach-Materials#la-26716428-mpa-overview-sheets>



# California Central Coast MPAs



THIS CHART DOES NOT REPLACE THE LEGAL DESCRIPTION FOUND IN TITLE 14, CALIFORNIA CODE OF REGULATIONS

|                                       |   |   |
|---------------------------------------|---|---|
| State Marine Reserve (SMR)            | State Marine Recreational Management Area (SMRMA) | Three Nautical Mile Maritime Limit (State Water Jurisdiction) |
| State Marine Conservation Area (SMCA) |   | 1:1,800,000<br>(@ print size 8.5" x 11")                      |

California Department of Fish and Wildlife, Marine Region GIS Lab – March 1, 2016

Figure 1. Adopted MPAs in the Central Coast region.

Table 1. Summary statistics for protected areas within state waters in the Central Coast region.

| Protected Area Designation | Count     | Area (square miles) | Area (percent) |
|----------------------------|-----------|---------------------|----------------|
| SMR                        | 14        | 97.37               | 8.51           |
| SMCA                       | 13        | 100.10              | 8.75           |
| SMCA/SMP <sup>22</sup>     | 1         | 6.26                | 0.55           |
| SMRMA                      | 1         | 3.07                | 0.27           |
| <b>Total</b>               | <b>29</b> | <b>206.79</b>       | <b>18.07</b>   |

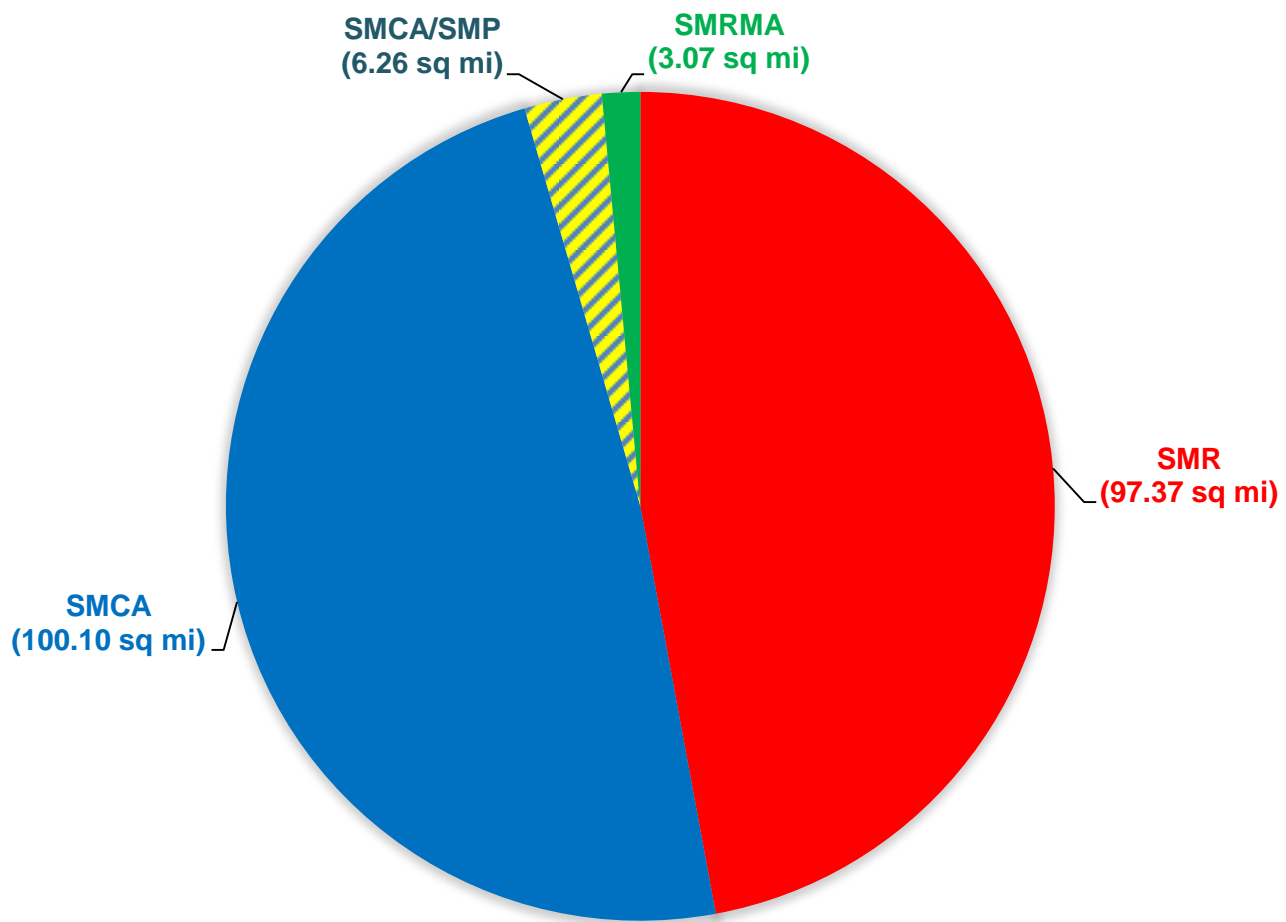


Figure 2. Area (square miles) in Central Coast region state waters of each MPA designation.

<sup>22</sup> SMCA/SMP - The Commission designated Cambria SMCA, which was subsequently also adopted as Cambria SMP by the State Park and Recreation Commission (August 2010) with the same boundaries and no change to regulations. Therefore, this marine protected area has dual designations, as reflected in the table

Table 2. Descriptive statistics for individual Central Coast region MPAs.

| MPA Name                          | Area<br>(square miles) | Along-Shore<br>Span<br>(miles) <sup>23</sup> | Depth Range<br>(feet) |
|-----------------------------------|------------------------|--|-----------------------|
| Año Nuevo SMR                     | 11.15                  | 7.9  | 0-175                 |
| Greyhound Rock SMCA               | 12.00                  | 3.0  | 0-220                 |
| Natural Bridges SMR               | 0.25                   | 3.9  | 0-10                  |
| Elkhorn Slough SMR                | 2.72                   | 0.7  | 0-10                  |
| Elkhorn Slough SMCA               | 0.22                   | 0.1  | 0-10                  |
| Moro Cojo SMR                     | 0.20                   | 0.1  | 0-10                  |
| Soquel Canyon SMCA                | 22.97                  | 3.4  | 274-2113              |
| Portuguese Ledge SMCA             | 10.64                  | 2.3  | 302-4793              |
| Edward F. Ricketts SMCA           | 0.23                   | 0.7  | 0-74                  |
| Lover's Point Julia-Platt SMR     | 0.30                   | 0.9  | 0-88                  |
| Pacific Grove Marine Gardens SMCA | 0.98                   | 1.3  | 0-151                 |
| Asilomar SMR                      | 1.51                   | 2.3  | 0-172                 |
| Carmel Pinnacles SMR              | 0.53                   | 0.6  | 69-223                |
| Carmel Bay SMCA                   | 2.20                   | 2.7  | 0-471                 |
| Point Lobos SMR                   | 5.50                   | 4.5  | 0-408                 |
| Point Lobos SMCA                  | 8.47                   | 3.2  | 268-1823              |
| Point Sur SMR                     | 9.79                   | 5.5  | 0-183                 |
| Point Sur SMCA                    | 10.62                  | 5.1  | 139-624               |
| Big Creek SMCA                    | 7.85                   | 2.5  | 107-1964              |
| Big Creek SMR                     | 14.51                  | 6.1  | 0-2393                |
| Piedras Blancas SMR               | 10.44                  | 6.5  | 0-157                 |
| Piedras Blancas SMCA              | 8.84                   | 4.8  | 94-337                |
| Cambria SMCA/SMP                  | 6.26                   | 5.9  | 0-105                 |
| White Rock SMCA                   | 2.91                   | 3.5  | 0-128                 |
| Morro Bay SMRMA                   | 3.07                   | 5.7  | 0-18                  |
| Morro Bay SMR                     | 0.88                   | 0.8  | 0-10                  |
| Point Buchon SMR                  | 6.68                   | 2.5  | 0-208                 |
| Point Buchon SMCA                 | 12.19                  | 5.9  | 191-391               |
| Vandenberg SMR                    | 32.91                  | 14.5   | 0-127                 |

<sup>23</sup> Alongshore span measured as direct line from one end of the MPA to the other

Table 3. Percentage of total known habitat representation in Central Coast region MPAs.

| Habitat Type                          | Habitats in Central Coast Region MPAs<br>(Percentage) |                    |       |                  |
|---------------------------------------|---|--------------------|-------|------------------|
|                                       | SMR   | SMCA <sup>24</sup> | SMRMA | Total (all MPAs) |
| <b>Intertidal</b>                     |   |                    |       |                  |
| Sandy or gravel beaches               | 20.7  | 6.5                | 0.6   | 27.9             |
| Rocky intertidal and cliff            | 26.3  | 8.2                | 0.1   | 34.6             |
| Coastal marsh                         | 39.0  | 4.3                | 15.5  | 58.8             |
| Tidal flats                           | 32.4  | 3.4                | 23.3  | 59.1             |
| Surfgrass beds (0-30m)                | 28.0  | 12.2               | 0     | 40.3             |
| Eelgrass beds (0-30m)                 | 2.5   | 0.6                | 92.3  | 100              |
| Estuary (total area)                  | 38.2  | 2.0                | 43.4  | 83.6             |
| <b>Soft bottom</b>                    |   |                    |       |                  |
| 0-30 meters                           | 13.3  | 2.8                | 0     | 16.1             |
| 30-100 meters                         | 5.2   | 9.0                | 0     | 14.2             |
| 100-200 meters                        | 2.2   | 21.0               | 0     | 23.1             |
| >200 meters                           | 5.9   | 15.0               | 0     | 20.9             |
| <b>Hard bottom</b>                    |   |                    |       |                  |
| 0-30 meters                           | 22.4  | 8.3                | 0     | 30.7             |
| 30-100 meters                         | 15.2  | 11.3               | 0     | 26.5             |
| 100-200m                              | 2.2   | 44.5               | 0     | 46.7             |
| >200 meters                           | 2.2   | 1.7                | 0     | 3.9              |
| <b>Kelp forest</b>                    |   |                    |       |                  |
| Average kelp ('89, '99, '02, '03-'08) | 22.8  | 13.0               | 0     | 35.8             |
| <b>Submarine canyon</b>               |   |                    |       |                  |
| 0-30 meters                           | 11.7  | 24.7               | 0     | 36.4             |
| 30-100 meters                         | 5.8   | 4.9                | 0     | 10.7             |
| 100-200 meters                        | 4.4   | 13.2               | 0     | 17.60            |
| >200 meters                           | 7.5   | 14.6               | 0     | 22.2             |

<sup>24</sup> Cambria SMCA was designated by the Commission as an SMCA, and was subsequently also adopted as Cambria SMP by the State Park and Recreation Commission (August 2010) with the same boundaries and no change to regulations. The dual designation is represented in this table as an SMCA

Table 4. Habitat representation for individual Central Coast region MPAs.<sup>25</sup>

| Habitat Type                 |                 | Año Nuevo SMR | Greyhound Rock SMCA | Natural Bridges SMR | Elkhorn Slough SMR | Elkhorn Slough SMCA | Moro Cojo Slough SMR | Soquel Canyon SMCA | Portuguese Ledge SMCA | Edward F. Ricketts SMCA | Lovers Point - Julia Platt SMR |
|------------------------------|-----------------|---------------|---------------------|---------------------|--------------------|---------------------|----------------------|--------------------|-----------------------|-------------------------|--------------------------------|
| Sandy or gravel Beaches      | mi              | 10.46         | 2.79                | 3.10                | 0                  | 0.11                | 0                    | 0                  | 0                     | 0.34                    | 0.45                           |
| Rocky intertidal and cliff   | mi              | 6.86          | 3.39                | 3.79                | 0                  | 0                   | 0                    | 0                  | 0                     | 0.87                    | 1.39                           |
| Tidal flats                  | mi              | 0             | 0                   | 0                   | 10.34              | 0.78                | 0                    | 0                  | 0                     | 0                       | 0                              |
| Coastal marsh                | mi              | 0.17          | 0                   | 0.68                | 10.34              | 1.15                | 0                    | 0                  | 0                     | 0                       | 0                              |
| Surfgrass                    | mi              | 5.28          | 3.38                | 3.53                | 0                  | 0                   | 0                    | 0                  | 0                     | 0.82                    | 1.14                           |
| Eelgrass                     | mi <sup>2</sup> | 0             | 0                   | 0                   | 0.03               | 0.01                | 0                    | 0                  | 0                     | 0                       | 0                              |
| Estuary                      | mi <sup>2</sup> | 0             | 0                   | 0                   | 1.65               | 0.11                | 0.10                 | 0                  | 0                     | 0                       | 0                              |
| Hard 0 - 30m                 | mi <sup>2</sup> | 2.59          | 1.12                | 0.22                | 0                  | 0                   | 0                    | 0                  | 0                     | 0.03                    | 0.05                           |
| Hard 30 - 100m               | mi <sup>2</sup> | 0.79          | 0.03                | 0                   | 0                  | 0                   | 0                    | 0.22               | 0.18                  | 0                       | 0                              |
| Hard 100 - 200m              | mi <sup>2</sup> | 0             | 0                   | 0                   | 0                  | 0                   | 0                    | 0.11               | 0.35                  | 0                       | 0                              |
| Hard 200 - 3000m             | mi <sup>2</sup> | 0             | 0                   | 0                   | 0                  | 0                   | 0                    | 0.00               | 0.00                  | 0                       | 0                              |
| Soft 0 - 30m                 | mi <sup>2</sup> | 3.56          | 1.14                | 0                   | 0                  | 0                   | 0                    | 0                  | 0                     | 0.14                    | 0.13                           |
| Soft 30 - 100m               | mi <sup>2</sup> | 1.63          | 8.61                | 0                   | 0                  | 0                   | 0                    | 14.54              | 1.51                  | 0                       | 0                              |
| Soft 100 - 200m              | mi <sup>2</sup> | 0             | 0                   | 0                   | 0                  | 0                   | 0                    | 2.72               | 5.28                  | 0                       | 0                              |
| Soft 200 - 3000m             | mi <sup>2</sup> | 0             | 0                   | 0                   | 0                  | 0                   | 0                    | 5.25               | 3.29                  | 0                       | 0                              |
| Average Kelp                 | mi <sup>2</sup> | 0.01          | 0.01                | 0                   | 0                  | 0                   | 0                    | 0                  | 0                     | 0.04                    | 0.06                           |
| Submarine Canyon 0 - 30m     | mi <sup>2</sup> | 0             | 0                   | 0                   | 0                  | 0                   | 0                    | 0                  | 0                     | 0                       | 0                              |
| Submarine Canyon 30 - 100m   | mi <sup>2</sup> | 0             | 0                   | 0                   | 0                  | 0                   | 0                    | 0.02               | 0                     | 0                       | 0                              |
| Submarine Canyon 100 - 200m  | mi <sup>2</sup> | 0             | 0                   | 0                   | 0                  | 0                   | 0                    | 0.60               | 0                     | 0                       | 0                              |
| Submarine Canyon 200 - 3000m | mi <sup>2</sup> | 0             | 0                   | 0                   | 0                  | 0                   | 0                    | 2.25               | 1.50                  | 0                       | 0                              |

<sup>25</sup> Mile (mi) is a linear measurement of a statute mile equal to 5,280 feet, and square mile (mi<sup>2</sup>) is an area measurement of statute miles squared



| Habitat Type                    |                 | Pacific Grove<br>Marine<br>Gardens<br>SMCA | Asilomar SMR | Carmel<br>Pinnacles<br>SMR | Carmel Bay<br>SMCA | Point Lobos<br>SMR | Point Lobos<br>SMCA | Point Sur SMR | Point Sur<br>SMCA | Big Creek<br>SMR | Big Creek<br>SMCA |
|---------------------------------|-----------------|--|--------------|----------------------------|--------------------|--------------------|---------------------|---------------|-------------------|------------------|-------------------|
| Sandy or gravel<br>Beaches      | mi              | 1.56                                       | 2.51         | 0                          | 3.09               | 2.10               | 0                   | 5.46          | 0                 | 2.79             | 0                 |
| Rocky intertidal and<br>cliff   | mi              | 2.41                                       | 2.61         | 0                          | 2.66               | 13.70              | 0                   | 4.11          | 0                 | 4.71             | 0                 |
| Tidal flats                     | mi              | 0  | 0            | 0                          | 0                  | 0                  | 0                   | 0.22          | 0                 | 0                | 0                 |
| Coastal marsh                   | mi              | 0  | 0            | 0                          | 0                  | 0                  | 0                   | 0.14          | 0                 | 0                | 0                 |
| Surfgrass                       | mi              | 1.50                                       | 1.50         | 0                          | 2.10               | 6.50               | 0                   | 4.97          | 0                 | 6.43             | 0                 |
| Eelgrass                        | mi <sup>2</sup> | 0  | 0            | 0                          | 0                  | 0                  | 0                   | 0             | 0                 | 0                | 0                 |
| Estuary                         | mi <sup>2</sup> | 0  | 0            | 0                          | 0.02               | 0                  | 0                   | 0.01          | 0                 | 0                | 0                 |
| Hard 0 - 30m                    | mi <sup>2</sup> | 0.30                                       | 0.58         | 0.10                       | 0.40               | 0.65               | 0                   | 2.12          | 0                 | 0.27             | 0                 |
| Hard 30 - 100m                  | mi <sup>2</sup> | 0.10                                       | 0.06         | 0.29                       | 0.12               | 1.38               | 0.21                | 0.95          | 1.09              | 0.06             | 0.01              |
| Hard 100 - 200m                 | mi <sup>2</sup> | 0  | 0            | 0                          | 0.02               | 0.02               | 0.26                | 0             | 0.00              | 0.01             | 0.01              |
| Hard 200 - 3000m                | mi <sup>2</sup> | 0  | 0            | 0                          | 0                  | 0                  | 0.00                | 0             | 0                 | 0.01             | 0.00              |
| Soft 0 - 30m                    | mi <sup>2</sup> | 0.22                                       | 0.34         | 0.02                       | 0.67               | 0.21               | 0                   | 2.49          | 0                 | 1.65             | 0                 |
| Soft 30 - 100m                  | mi <sup>2</sup> | 0.10                                       | 0.02         | 0.11                       | 0.36               | 2.05               | 0.08                | 2.91          | 8.65              | 3.17             | 1.01              |
| Soft 100 - 200m                 | mi <sup>2</sup> | 0  | 0            | 0                          | 0.05               | 0.33               | 3.45                | 0             | 0.19              | 0.93             | 0.68              |
| Soft 200 - 3000m                | mi <sup>2</sup> | 0  | 0            | 0                          | 0.02               | 0                  | 4.46                | 0             | 0.01              | 7.52             | 6.13              |
| Average Kelp                    | mi <sup>2</sup> | 0.13                                       | 0.08         | 0.01                       | 0.32               | 0.36               | 0                   | 0.91          | 0                 | 0.40             | 0                 |
| Submarine Canyon 0 -<br>30m     | mi <sup>2</sup> | 0  | 0            | 0                          | 0.14               | 0.07               | 0                   | 0             | 0                 | 0                | 0                 |
| Submarine Canyon 30<br>- 100m   | mi <sup>2</sup> | 0  | 0            | 0                          | 0.02               | 0.01               | 0.02                | 0             | 0.04              | 0.25             | 0.12              |
| Submarine Canyon<br>100 - 200m  | mi <sup>2</sup> | 0  | 0            | 0                          | 0                  | 0                  | 0.15                | 0             | 0.02              | 0.29             | 0.10              |
| Submarine Canyon<br>200 - 3000m | mi <sup>2</sup> | 0  | 0            | 0                          | 0                  | 0                  | 0.15                | 0             | 0                 | 3.16             | 2.22              |

| Habitat Type                    |                 | Piedras Blancas<br>SMR | Piedras Blancas<br>SMCA | Cambria<br>SMCA/SMP | White Rock<br>SMCA | Morro Bay<br>SMRMA | Morro Bay SMR | Point Buchon<br>SMR | Point Buchon<br>SMCA | Vandenberg<br>SMR |
|---------------------------------|-----------------|------------------------|-------------------------|---------------------|--------------------|--------------------|---------------|---------------------|----------------------|-------------------|
| Sandy or gravel<br>Beaches      | mi              | 5.48                   | 0                       | 5.31                | 1.55               | 1.46               | 0             | 1.46                | 0                    | 13.33             |
| Rocky intertidal and<br>cliff   | mi              | 6.09                   | 0                       | 4.11                | 4.02               | 0.18               | 0             | 2.71                | 0                    | 10.21             |
| Tidal flats                     | mi              | 0.43                   | 0                       | 0.57                | 0                  | 9.19               | 1.53          | 0                   | 0                    | 0.28              |
| Coastal marsh                   | mi              | 0.20                   | 0                       | 0.61                | 0                  | 6.25               | 4.24          | 0                   | 0                    | 0                 |
| Surfgrass                       | mi              | 6.37                   | 0                       | 3.90                | 3.87               | 0                  | 0             | 0                   | 0                    | 0                 |
| Eelgrass                        | mi <sup>2</sup> | 0                      | 0                       | 0                   | 0                  | 0.99               | 0             | 0                   | 0                    | 0                 |
| Estuary                         | mi <sup>2</sup> | 0.01                   | 0                       | 0.01                | 0                  | 3.02               | 0.83          | 0                   | 0                    | 0.04              |
| Hard 0 - 30m                    | mi <sup>2</sup> | 2.44                   | 0.06                    | 1.48                | 0.91               | 0                  | 0             | 0.84                | 0                    | 1.55              |
| Hard 30 - 100m                  | mi <sup>2</sup> | 0.54                   | 2.35                    | 0                   | 0.10               | 0                  | 0             | 0.47                | 0.32                 | 0.08              |
| Hard 100 - 200m                 | mi <sup>2</sup> | 0                      | 0                       | 0                   | 0                  | 0                  | 0             | 0                   | 0.04                 | 0                 |
| Hard 200 - 3000m                | mi <sup>2</sup> | 0                      | 0                       | 0                   | 0                  | 0                  | 0             | 0                   | 0                    | 0                 |
| Soft 0 - 30m                    | mi <sup>2</sup> | 3.63                   | 0.01                    | 3.40                | 0.68               | 0                  | 0             | 0.25                | 0                    | 17.35             |
| Soft 30 - 100m                  | mi <sup>2</sup> | 2.25                   | 6.28                    | 0.15                | 0.40               | 0                  | 0             | 4.56                | 8.11                 | 10.11             |
| Soft 100 - 200m                 | mi <sup>2</sup> | 0                      | 0                       | 0                   | 0                  | 0                  | 0             | 0                   | 3.02                 | 0                 |
| Soft 200 - 3000m                | mi <sup>2</sup> | 0                      | 0                       | 0                   | 0                  | 0                  | 0             | 0                   | 0                    | 0                 |
| Average Kelp                    | mi <sup>2</sup> | 0.45                   | 0                       | 0.54                | 0.43               | 0                  | 0             | 0.29                | 0                    | 0.02              |
| Submarine Canyon 0<br>- 30m     | mi <sup>2</sup> | 0                      | 0                       | 0                   | 0                  | 0                  | 0             | 0                   | 0                    | 0                 |
| Submarine Canyon<br>30 - 100m   | mi <sup>2</sup> | 0                      | 0                       | 0                   | 0                  | 0                  | 0             | 0                   | 0                    | 0                 |
| Submarine Canyon<br>100 - 200m  | mi <sup>2</sup> | 0                      | 0                       | 0                   | 0                  | 0                  | 0             | 0                   | 0                    | 0                 |
| Submarine Canyon<br>200 - 3000m | mi <sup>2</sup> | 0                      | 0                       | 0                   | 0                  | 0                  | 0             | 0                   | 0                    | 0                 |

## 5. Scientific Information

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Adhering to the provisions of the MLPA requiring monitoring, research, and evaluation, the MLPP has defined a process around a 10-year management review cycle to facilitate adaptive management (Figure 3). Partners in the MLPP provide oversight on all aspects of MPA monitoring and the adaptive management process, including developing regional MPA monitoring plans, regional MPA baseline monitoring programs, and long-term MPA monitoring activities; and contribute to five-year baseline management review, interim assessment and evaluation, and management review at the statewide level.

### 5.1 OVERVIEW OF REGIONAL MONITORING

California's MPAs were designed to generally reflect the integration of science and science-based MPA design guidelines from the MLPA, the 2008 Master Plan, and SAT guidance (see Appendix A, Section 4). While science guidelines strongly influenced MPA design, the iterative nature of the highly participatory, stakeholder-driven process led to some tradeoffs between ecosystem protection and socioeconomic considerations; which varied by region (Fox et al. 2013a, Saarman et al. 2013, Gleason et al. 2013). The development of science guidelines and methodologies, and how well MPA proposals met science and feasibility design guidelines and evaluations also varied among regions (see Appendix A, Section 3.3 and Section 4.3).

Following MPA design and implementation, the first step in MPA monitoring is regional monitoring planning. The goal of regional monitoring planning is to produce objective scientific data to inform management decisions at a regional, and ultimately at a statewide, scale through the development and implementation of regional MPA monitoring plans and MPA baseline monitoring programs. Regional monitoring plans developed to date include actions for baseline monitoring and guidance for long-term monitoring needs. Long-term monitoring and research activities will be designed to provide management decision support within the context of the Statewide MPA Monitoring Program and statewide adaptive management review process (see 2016 Master Plan, Chapters 4.3 – 4.5). A tremendous amount of data, often including large and varied datasets, can be generated from such programs. Therefore, an intensive phase of data analysis and reporting follows the implementation of MPA monitoring programs, which necessitates working collaboratively among many partners including principal investigators. Following data collection, monitoring results are communicated to managers and decision-makers, such as through baseline monitoring reviews, interim evaluations and assessments, and formal 10-year management reviews. Findings from these reviews, especially the formal 10-year management review in which the Commission may adopt changes in management measures, will sync back into the monitoring planning phase of the adaptive MPA management cycle (see 2016 Master Plan, Chapter 4.5).

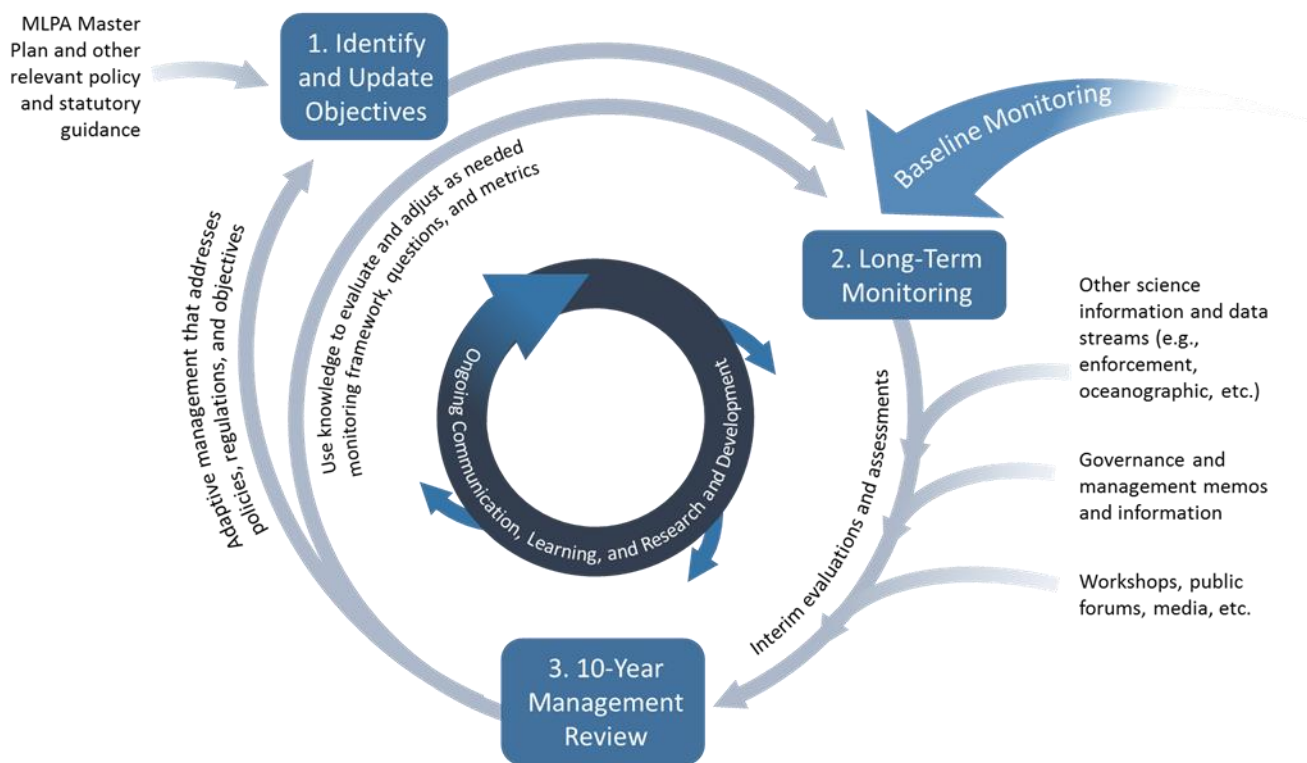


Figure 3. MLPP adaptive management process.

## 5.2 REGIONAL MONITORING PLAN

To develop regional MPA monitoring plans and update them over time, the MPA Monitoring Enterprise (now California Ocean Science Trust [OST]), in partnership with CDFW, created a framework for statewide MPA monitoring (see Figure 4). The statewide MPA monitoring framework to date serves as the primary basis for developing and updating regional MPA monitoring plans and guiding statewide monitoring. Overall, the goals of the statewide monitoring framework are to develop metrics that track trends in ecosystem condition and evaluate MPA design and governance to inform adaptive management. Consistent application of the statewide MPA monitoring framework will allow for regional and statewide approaches to monitoring.

The initial monitoring plan for Central Coast MPAs was developed by CDFW in 2007, and adopted by the Commission in 2008 for inclusion in the draft Master Plan.<sup>26</sup> In 2014, OST, and CDFW updated the original monitoring plan to apply the statewide MPA monitoring framework, reflect baseline program results, and ensure consistency with the North Central Coast and South Coast regional MPA monitoring plans previously adopted by the Commission.<sup>27,28</sup> OST and CDFW included broad input from

<sup>26</sup> CDFW. (2008). *Draft Master Plan for Marine Protected Areas, Appendix O, p. 51-86*. Retrieved Mar 5, 2015 from: <https://www.wildlife.ca.gov/Conservation/Marine/MPAs/Master-Plan>

<sup>27</sup> MPA Monitoring Enterprise, OST. (2010). *North Central Coast MPA Monitoring Plan*. Retrieved Apr 1, 2015 from [http://oceanspaces.org/sites/default/files/regions/files/ncc\\_monitoring\\_plan\\_and\\_appendices.pdf](http://oceanspaces.org/sites/default/files/regions/files/ncc_monitoring_plan_and_appendices.pdf)

stakeholders, scientists, tribal governments, and fishermen, among others to develop this plan. The updated Central Coast MPA Monitoring Plan was adopted by the Commission in October 2014.<sup>29</sup>

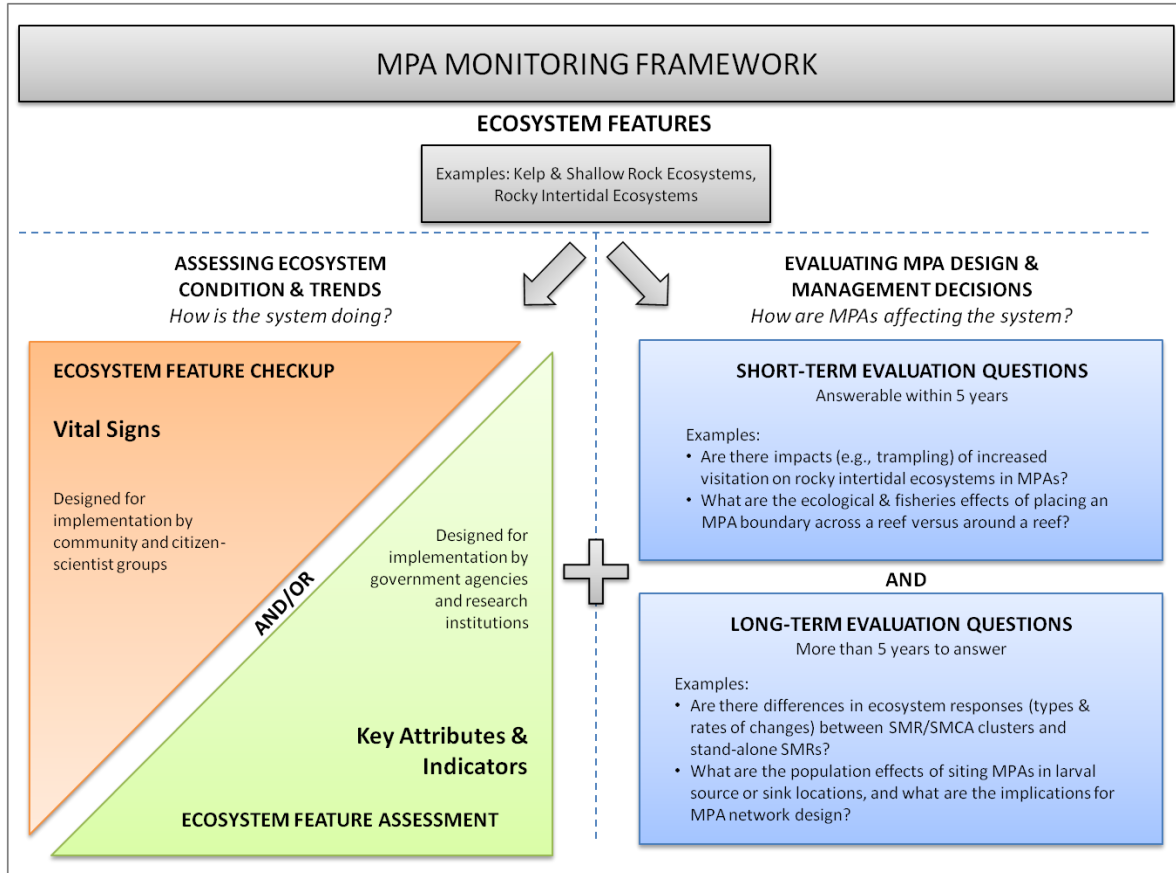


Figure 4. Statewide MPA monitoring framework, displaying the two primary monitoring elements: 1) assessing ecosystem condition and trends, and 2) evaluating MPA design and management decisions.<sup>30</sup>

### 5.3 REGIONAL MPA MONITORING PROGRAMS

Informed by the MLPA goals and objectives, the MLPP developed and implemented a program of baseline monitoring. After the baseline monitoring period concludes for each region, long-term monitoring will begin and continue into the future (see 2016 Master Plan, Chapter 4.3).

#### Baseline Monitoring

The Central Coast MPA Baseline Program, a collaboration between the Ocean Protection Council (OPC), CDFW, California State Coastal Conservancy, and California Sea Grant, began in 2007 to assess the baseline ecological and socioeconomic conditions of the Central Coast regional MPA network. The baseline program supported five projects to conduct collaborative fisheries sampling;

<sup>28</sup> MPA Monitoring Enterprise, OST. (2011). *South Coast MPA Monitoring Plan*. Retrieved Apr 1, 2015 from [http://oceanspaces.org/sites/default/files/regions/files/sc\\_mpa\\_monitoring\\_plan\\_full.pdf](http://oceanspaces.org/sites/default/files/regions/files/sc_mpa_monitoring_plan_full.pdf)

<sup>29</sup> MPA Monitoring Enterprise, OST. (2014). *Central Coast MPA Monitoring Plan*. Retrieved Apr 1, 2015 from [http://oceanspaces.org/sites/default/files/regions/files/central\\_coast\\_monitoring\\_plan\\_final\\_october2014.pdf](http://oceanspaces.org/sites/default/files/regions/files/central_coast_monitoring_plan_final_october2014.pdf)

<sup>30</sup> MPA Monitoring Enterprise, OST. (2010). *North Central Coast MPA Monitoring Plan*. Retrieved Sept 21, 2015 from [http://oceanspaces.org/sites/default/files/regions/files/ncc\\_monitoring\\_plan\\_and\\_appendices.pdf](http://oceanspaces.org/sites/default/files/regions/files/ncc_monitoring_plan_and_appendices.pdf)

survey kelp forests, nearshore fish populations, rocky intertidal habitats, and deep water habitats; and collect socioeconomic data. Data collection and analyses for the Central Coast MPA Baseline Program were completed in 2012, and all baseline monitoring data can be accessed on the OceanSpaces website.<sup>31</sup>

The Central Coast region was the first of the four regional MPA baseline programs. In February 2013, OST and CDFW collaborated with OPC, the baseline program principal investigators and other local researchers to develop a State of the California Central Coast (State of the Region) report including a summary of the Central Coast MPA Baseline Program.<sup>32</sup> In early 2013, a symposium was held to provide an opportunity for resource managers, decision makers, scientists, and stakeholders to present results from the Central Coast MPA Baseline Program, discuss perspectives on MLPA implementation, learn about the results from baseline MPA monitoring, and share results from their own research. A symposium proceedings document was also developed to summarize outcomes from the meeting.<sup>33</sup> The State of the Region report, symposium, and symposium proceedings provided guidance for CDFW's management review of the first five years of MPA implementation in the region, which was presented to the Commission in late 2013.<sup>34</sup>

The Central Coast MPA Baseline Program provided the state with a characterization of the habitats, biological communities, and socioeconomics of the Central Coast region and initial changes since the new and revised MPAs were implemented in 2007. The information gathered sets an important baseline for evaluating future changes in the Central Coast MPA network and region. The monitoring results and habitat data from the California Seafloor Mapping Program indicate that the Central Coast MPA network contains a variety of representative marine habitats and ecosystems with geographically distinct communities, including species of economic value, which contribute to achieving the ecological goals of the MLPA. Recreational and commercial fishermen reported the loss of some traditional fishing grounds and the need to travel longer distances due to MPAs. However, socioeconomic evaluations revealed that fishing continues to be an integral part of the Central Coast local ocean economy, along with recreational dive trips, whale watching tours, and research charters. These outcomes are a testament to the collaborative Central Coast MPA planning process, knowledgeable and dedicated public participants, strong scientific and policy guidance, and resulting Commission regulatory process.<sup>35</sup>

## Long-Term Monitoring

With the completion of the Central Coast MPA Baseline Program, long-term monitoring based on regional and statewide objectives, will begin and continue into the future (Figure 3; also see 2016 Master Plan, Chapter 4.3). Long-term monitoring will seek to understand conditions and trends of marine populations, habitats, and ecosystems across regions towards a statewide scale. For more information on Central Coast MPA monitoring, please visit the Central Coast page of the OceanSpaces website.<sup>36</sup>

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<sup>31</sup> OceanSpaces. Retrieved Apr 1, 2015 from <http://oceanspaces.org/>

<sup>32</sup> OST and CDFW. (2013). *State of the California Central Coast: Results from Baseline Monitoring of Marine Protected Areas 2007-2012*. California, USA. Retrieved Apr 1, 2015 from <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=133101&inline>

<sup>33</sup> MPA Monitoring Enterprise, CDFW, OPC, and OST. (2013). *State of the California Central Coast: Reflecting on the First 5 Years of Marine Protected Area Monitoring, Management, and Partnership. Symposium Proceedings*. Retrieved Sept 21 from: [http://oceanspaces.org/sites/default/files/regions/files/cc\\_symposium\\_proceedings\\_final\\_0.pdf](http://oceanspaces.org/sites/default/files/regions/files/cc_symposium_proceedings_final_0.pdf)

<sup>34</sup> CDFW. (2013). *Memorandum to the California Fish and Game Commission: Monitoring Results and Management Review for Central Coast Marine Protected Areas*. Retrieved Apr 1, 2015 from <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=80499&inline=1>

<sup>35</sup> Ibid.

<sup>36</sup> OceanSpaces. *Central Coast*. Retrieved Apr 1, 2015 from <http://oceanspaces.org/monitoring/regions/central-coast/planning>

## 5.4 INFORMING ADAPTIVE MANAGEMENT

MPA monitoring results, as well as additional information potentially collected from other scientific data, governance and management review, workshops, and public forums could be used to inform interim evaluation and assessment activities. These activities may take place at the regional scale and serve to inform the public about the state of the network and build understanding support for the MPAs. These assessments and evaluation can also feed into the formal 10-year management review (see 2016 Master Plan, Chapter 4.5).



## 6. Enforcement Plan

In order to facilitate enforcement, the CDFW proposes using a multi-tiered effort that targets high-risk areas (i.e., areas prone to infractions) with higher levels of enforcement while maintaining sufficient enforcement in all MPAs. In certain areas, CDFW will rely upon formal and informal partnerships to increase the number of “eyes-on-the-water,” person-hours of enforcement, and visibility of enforcement personnel. In some cases, formal memoranda of understanding will be developed to allow fund transfer between partner agencies. Table 5 lists MPA-specific enforcement considerations for each MPA in the Central Coast region.

Table 5. Enforcement considerations.

| MPA Name                                 | Primary Enforcement Method  | Special Considerations   |
|--|---|--|
| <b>Año Nuevo SMR</b>                     | <ul style="list-style-type: none"> <li>• Shoreline Patrol</li> <li>• Ocean/Vessel Patrol</li> </ul>                               | None   |
| <b>Greyhound Rock SMCA</b>               | <ul style="list-style-type: none"> <li>• Shoreline Patrol</li> <li>• Ocean/Vessel Patrol</li> </ul>                               | None   |
| <b>Natural Bridges SMR</b>               | <ul style="list-style-type: none"> <li>• Shoreline Patrol</li> </ul>  | None   |
| <b>Elkhorn Slough SMR</b>                | <ul style="list-style-type: none"> <li>• Shoreline Patrol</li> <li>• Small Skiff Patrol</li> <li>• Kayak Patrol</li> </ul>        | <ul style="list-style-type: none"> <li>• Patrols Subject to Tidal Influence</li> </ul> |
| <b>Elkhorn Slough SMCA</b>               | <ul style="list-style-type: none"> <li>• Shoreline Patrol</li> <li>• Small Skiff Patrol</li> <li>• Kayak Patrol</li> </ul>        | <ul style="list-style-type: none"> <li>• Patrols Subject to Tidal Influence</li> </ul> |
| <b>Moro Cojo Slough SMR</b>              | <ul style="list-style-type: none"> <li>• Shoreline Patrol</li> <li>• Kayak Patrol</li> </ul>                                      | None   |
| <b>Soquel Canyon SMCA</b>                | <ul style="list-style-type: none"> <li>• Ocean/Vessel Patrol</li> </ul>   | None   |
| <b>Portuguese Ledge SMCA</b>             | <ul style="list-style-type: none"> <li>• Ocean/Vessel Patrol</li> </ul>   | None   |
| <b>Edward F. Ricketts SMCA</b>           | <ul style="list-style-type: none"> <li>• Shoreline Patrol</li> <li>• Small Skiff Patrol</li> </ul>                                | None   |
| <b>Lovers Point-Julia Platt SMR</b>      | <ul style="list-style-type: none"> <li>• Shoreline Patrol</li> <li>• Small Skiff Patrol</li> </ul>                                | None   |
| <b>Pacific Grove Marine Gardens SMCA</b> | <ul style="list-style-type: none"> <li>• Shoreline Patrol</li> <li>• Ocean/Vessel Patrol</li> <li>• Small Skiff Patrol</li> </ul> | None   |
| <b>Asilomar SMR</b>                      | <ul style="list-style-type: none"> <li>• Shoreline Patrol</li> <li>• Ocean/Vessel Patrol</li> <li>• Small Skiff Patrol</li> </ul> | None   |
| <b>Carmel Pinnacles SMR</b>              | <ul style="list-style-type: none"> <li>• Shoreline Patrol</li> <li>• Ocean/Vessel Patrol</li> <li>• Small Skiff Patrol</li> </ul> | <ul style="list-style-type: none"> <li>• High Dive Activity</li> </ul>                 |
| <b>Carmel Bay SMCA</b>                   | <ul style="list-style-type: none"> <li>• Shoreline Patrol</li> <li>• Ocean/Vessel Patrol</li> <li>• Small Skiff Patrol</li> </ul> | None   |



| <b>MPA Name</b>             | <b>Primary Enforcement Method</b>   | <b>Special Considerations</b>  |
|-----------------------------|---|--|
| <b>Point Lobos SMR</b>      | <ul style="list-style-type: none"> <li>• Shoreline Patrol</li> <li>• Ocean/Vessel Patrol</li> <li>• Small Skiff Patrol</li> </ul> | None   |
| <b>Point Lobos SMCA</b>     | <ul style="list-style-type: none"> <li>• Ocean/Vessel Patrol</li> </ul>   | None   |
| <b>Point Sur SMR</b>        | <ul style="list-style-type: none"> <li>• Shoreline Patrol</li> <li>• Ocean/Vessel Patrol</li> </ul>                               | None   |
| <b>Point Sur SMCA</b>       | <ul style="list-style-type: none"> <li>• Ocean/Vessel Patrol</li> </ul>   | None   |
| <b>Big Creek SMR</b>        | <ul style="list-style-type: none"> <li>• Shoreline Patrol</li> <li>• Ocean/Vessel Patrol</li> </ul>                               | None   |
| <b>Big Creek SMCA</b>       | <ul style="list-style-type: none"> <li>• Ocean/Vessel Patrol</li> </ul>   | None   |
| <b>Piedras Blancas SMR</b>  | <ul style="list-style-type: none"> <li>• Shoreline Patrol</li> <li>• Ocean/Vessel Patrol</li> </ul>                               | None   |
| <b>Piedras Blancas SMCA</b> | <ul style="list-style-type: none"> <li>• Ocean/Vessel Patrol</li> </ul>   | None   |
| <b>Cambria SMCA/SMP</b>     | <ul style="list-style-type: none"> <li>• Shoreline Patrol</li> <li>• Ocean/Vessel Patrol</li> <li>• Small Skiff Patrol</li> </ul> | None   |
| <b>White Rock SMCA</b>      | <ul style="list-style-type: none"> <li>• Shoreline Patrol</li> <li>• Ocean/Vessel Patrol</li> <li>• Small Skiff Patrol</li> </ul> | None   |
| <b>Morro Bay SMR</b>        | <ul style="list-style-type: none"> <li>• Shoreline Patrol</li> <li>• Small Skiff Patrol</li> </ul>                                | None   |
| <b>Morro Bay SMRMA</b>      | None  | None   |
| <b>Point Buchon SMR</b>     | <ul style="list-style-type: none"> <li>• Shoreline Patrol</li> <li>• Ocean/Vessel Patrol</li> <li>• Small Skiff Patrol</li> </ul> | None   |
| <b>Point Buchon SMCA</b>    | <ul style="list-style-type: none"> <li>• Ocean/Vessel Patrol</li> <li>• Small Skiff Patrol</li> </ul>                             | None   |
| <b>Vandenberg SMR</b>       | <ul style="list-style-type: none"> <li>• Ocean/Vessel Patrol</li> </ul>   | <ul style="list-style-type: none"> <li>• Need to access Vandenberg Air Force Base for shoreline access.</li> </ul> |

## 6.1 PERSONNEL AND EQUIPMENT

CDFW has 26 enforcement staff located within the Central Coast region, covering the area between Pigeon Point and Point Conception. The five lieutenants and 21 wardens have a primary emphasis of at-sea and shore-based marine patrol within this area, and there are additional inland wardens that work non-marine issues along the same area of the Central Coast. These wardens may respond to inland hunting, fishing, pollution, habitat loss, and other related enforcement issues. This group of marine emphasis and land-based wardens can be diverted from normal regulatory activities to respond to MPA activity. However, such diversions may cause delays in service or coverage and increased costs for overtime shifts. Current MPA enforcement is accomplished using existing personnel resources, and positions cannot be redirected to concentrate on MPA enforcement due to duties and responsibilities currently facing enforcement. Therefore, current staff may not be able to adequately handle the added responsibilities of enforcement of these MPAs without assistance.

MPAs are patrolled by many techniques including large patrol boats, small patrol skiffs, aircraft, and foot patrols by wardens along the coast. Each MPA has special needs requiring specialized patrol efforts. For example, areas closer to ports will require less effort to access, but due to their proximity to population centers, these areas are likely to have a higher use than remote areas. Conversely, remote areas may have fewer users, but require a more significant travel for enforcement officers to access. New and emerging technology options such as remote surveillance, Vessel Management Systems, and other technologies may provide options for increased efficiency of enforcement efforts.

Table 6. Personnel and equipment.

| Pigeon Point to Big Sur  |               | Big Sur to Point Conception  |               | Totals          |
|--|---------------|--|---------------|-----------------|
| Land-Based   | Patrol Boat   | Land-Based   | Patrol Boat   |                 |
| 2 Lieutenants  | 1 Lieutenant  | 1 Lieutenant   | 1 Lieutenant  | 5 Lieutenants   |
| 9 Wardens  | 4 Wardens     | 4 Wardens  | 4 Wardens     | 21 Wardens      |
| 3 Patrol Skiffs  | N/A           | 1 Patrol Skiffs  | N/A           | 4 Patrol Skiffs |
| N/A  | 1 Patrol Boat | N/A  | 1 Patrol Boat | 2 Patrol Boats  |
| Individual MPAs  |               | Individual MPAs  |               |                 |
| Año Nuevo SMR<br>Greyhound Rock SMCA<br>Natural Bridges SMR<br>Elkhorn Slough SMR<br>Elkhorn Slough SMCA<br>Moro Cojo Slough SMR<br>Soquel Canyon SMCA<br>Portuguese Ledge SMCA<br>Edward F. Ricketts SMCA<br>Lovers Point-Julia Platt SMR<br>Pacific Grove Marine Gardens SMCA<br>Asilomar SMR<br>Carmel Pinnacles SMR<br>Carmel Bay SMCA<br>Point Lobos SMR<br>Point Lobos SMCA<br>Point Sur SMR<br>Point Sur SMCA |               | Big Creek SMR<br>Big Creek SMCA<br>Piedras Blancas SMR<br>Piedras Blancas SMCA<br>Cambria SMCA/SMP<br>White Rock SMCA<br>Morro Bay SMR<br>Morro Bay SMRMA<br>Point Buchon SMR<br>Point Buchon SMCA<br>Vandenberg SMR |               |                 |

## 6.2 TRAINING

Wardens working within the Central Coast region of California will receive training as necessary on the MPA regulations and the MPAs in their patrol districts. This training will include, but is not limited to, area boundaries and area-specific regulations.

## 6.3 ADDITIONAL CDFW ENFORCEMENT RESOURCES

CDFW has two large patrol boats in the 54 to 65 foot class stationed at major ports along the Central Coast region coastline. Each large patrol boat is staffed by one lieutenant and two wardens. CDFW also has a fleet of single and twin engine fixed wing aircraft that work in conjunction with both marine and land based wardens to help identify and investigate violations.

## 6.4 CONTINGENCIES AND EMERGENCY PLANNING

Details on contingencies for natural disasters and/or unforeseen changes in local conditions will be added if necessary.

# 7. Additional Resources

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Please refer to the following documents for additional historical information pertaining to the Central Coast Regional MPA Background and Priorities document.

1. Regional Profile of the Central Coast Study Region<sup>37</sup>
2. Central Coast Project Adopted Regional Goals and Objectives Package<sup>38</sup>
3. Central Coast Lessons Learned Project<sup>39</sup>
4. Central Coast Project: MPA Packages<sup>40</sup>
5. Species Likely to Benefit from the Establishment of MPAs in California<sup>41</sup>
6. Marine Life Protection Act, Central Coast Study Region, Final Environmental Impact Report<sup>42</sup>
7. Marine Life Protected Act. Central Coast Study Region, Draft Environmental Impact Report<sup>43</sup>
8. Central Coast Regulatory and Environmental Review Process Documents<sup>44,45</sup>

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<sup>37</sup> MLPA Initiative. (2005). *Regional Profile of the Central Coast Study Region (Pigeon Point to Point Conception, California)*. Retrieved Apr 1, 2015 from [http://www.dfg.ca.gov/marine/pdfs/rpccsr\\_091905.pdf](http://www.dfg.ca.gov/marine/pdfs/rpccsr_091905.pdf)

<sup>38</sup> MLPA Initiative. (2005) *Central Coast Project Adopted Regional Goals and Objectives*. Retrieved Jul 29, 2015 from <https://www.dfg.ca.gov/marine/pdfs/rqop092805.pdf>

<sup>39</sup> MLPA Initiative. (2006). *Central Coast Lessons Learned Project*. Retrieved Jul 29, 2015 from [http://www.dfg.ca.gov/marine/mpa/lessonslearned\\_phase1.asp](http://www.dfg.ca.gov/marine/mpa/lessonslearned_phase1.asp)

<sup>40</sup> MLPA Initiative. (2006). *Central Coast Project: MPA Packages*. [http://www.dfg.ca.gov/marine/mpa/centralcoast\\_mpa.asp](http://www.dfg.ca.gov/marine/mpa/centralcoast_mpa.asp)

<sup>41</sup> CDFW. (2007). *Species Likely to Benefit from the Establishment of Marine Protected Areas in California*. Retrieved Apr 1, 2015 from <http://www.dfg.ca.gov/marine/mpa/species.asp>

<sup>42</sup> MLPA Initiative. (2007). *Environmental Impact Report, MLPA Initiative Central Coast Marine Protected Areas Project*. Retrieved Jul 29, 2015 from <http://www.dfg.ca.gov/marine/pdfs/feir0307.pdf>

<sup>43</sup> MLPA Initiative. (2007). *Environmental Impact Report, MLPA Initiative Central Coast Marine Protected Areas Project*. Retrieved Jul 29, 2015 from <http://www.dfg.ca.gov/marine/mpa/impact.asp>

<sup>44</sup> CDFW. (2007). *Regulatory and Environmental Review Process Documents*. Retrieved Aug 10, 2015 from <http://www.dfg.ca.gov/marine/mpa/regulatorydocs.asp>

<sup>45</sup> California Fish and Game Commission (2007). *Marine Protected Areas*. Retrieved Aug 10, 2015 from [http://www.fgc.ca.gov/regulations/2007/#165\\_632](http://www.fgc.ca.gov/regulations/2007/#165_632)

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