California MLPA Master Plan Science Advisory Team
Key and Unique Habitats in the MLPA South Coast Study Region
Revised December 8, 2008

Key Habitats Identified in the MLPA and Draft Master Plan for MPAs

Different species use marine habitats in different ways. As a result, protection of all the key habitats along the California coast is a critical component of network design. The Marine Life Protection Act (MLPA) provides guidance that each bioregion should encompass a variety of marine habitat types and communities, across a range of depths and environmental conditions, and that similar habitats should be replicated, to the extent possible, in more than one state marine reserve (SMR). Similarly, the draft master plan for marine protected areas (MPAs) states that marine protected areas should include "key" marine habitats, and each of these habitats should be represented in multiple MPAs across bioeregions. “Key” habitat types provide particular benefits by harboring a different set of species or life stages, having special physical characteristics, or being used in ways that differ from the use of other habitats.

The MLPA identifies the following habitats: rocky reefs, intertidal zones, sandy or soft ocean bottoms, underwater pinnacles, sea mounts, kelp forests, submarine canyons, and seagrass beds. The key habitats are mapped in the draft regional profile of the south coast study region, which can be found at http://www.dfg.ca.gov/mlpa/index.asp.

> “The science team generally confirms that all but one of the habitats identified in the MLPA occur within state waters: rocky reefs, intertidal zones, sandy or soft ocean bottoms, underwater pinnacles, kelp forests, submarine canyons, and seagrass beds. Seamounts do not occur within state waters. The science team also notes that rocky reefs, intertidal zones, and kelp forests are actually broad categories that include several types of habitat.”
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> “The science team identifies five depth zones which reflect changes in species composition: intertidal, intertidal to 30 meters, 30 meters to 100 meters, 100 meters to 200 meters, and deeper than 200 meters. They also call for special delineation of estuaries as a critical California coastal habitat. Finally, the science team recommends expanding the habitat definitions to include ocean circulation features, principally upwelling centers, freshwater plumes from rivers, and larval retention areas.” [1]

Unique Natural Habitats in the MLPA South Coast Study Region

Natural habitats with unique features or those that are rare should be considered for inclusion in MPAs. Habitats that are uniquely productive (e.g., upwelling centers or kelp forests) or aggregative (e.g., fronts) or those that sustain distinct use patterns, should also receive special consideration in design planning. The MLPA Master Plan Science Advisory Team has identified the following unique habitats in the MLPA South Coast Study Region; surfgrass, eelgrass, oil seeps and shallow hydrothermal vents, and *Pelagophycus porra* (elk kelp) beds. These habitats warrant consideration for representation in marine protected areas.

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[1] Excerpt from: *California Marine Life Protection Act Draft Master Plan for Marine Protected Areas*, revised January 2008.

While estuary and underwater pinnacle habitats are listed in the draft master plan for MPAs, the SAT has suggested Farnsworth Bank as a unique underwater pinnacle and San Diego Bay as a unique bay/estuary complex in the study region. Additionally, the SAT has suggested Point Conception, as it is probably the most significant upwelling area in the study region due to the confluence of the California Current and Southern California Countercurrent. The SAT recognizes that unique habitats are not listed for inclusion in the evaluation of MPAs, but are habitats that warrant consideration for representation in MPAs.

Surfgrass habitat: The most common type of seagrass along the open coast is surfgrass (Phyllospadix spp.), which forms beds that fringe rocky coastline areas at the zero tide level down to several meters below the zero tide level. Surfgrass serves as an important habitat for a variety of fish and invertebrate life stages, including the California spiny lobster (Engle 1979) and algae (Stewart and Myers 1980).

***Eelgrass habitat*:** The most common type of seagrass in estuaries and sheltered coastal bays in California is eelgrass (*Zostera marina)* (Abbott and Hollenberg 1976). Eelgrass beds provide a variety of important functions. The long leaves and dense, matted root system of eelgrass beds helps prevent erosion and maintain stability in nearshore areas by slowing down water flow that consequently enhances sediment accumulation and faunal recruitment. Eelgrass beds also provide refuge, foraging, breeding, or nursery areas for invertebrates, fish, and birds (Hoffman, 1986).

***Oil seeps and shallow hydrothermal vents*:** Natural oil seeps are unique to California (Pete Raimondi pers com), but not rare in the south coast study region. The largest concentration of oil seeps are in the Santa Barbara Channel area (Wilkinson 1971). While most shallow hydrothermal vents co-occur with oil seeps, hydrogen sulfide vents located at White Point in Palos Verdes, California are not associated with oil seeps. These vents occur from the intertidal to shallow subtidal zones (0-10 meter depth). Benthic communities and environmental conditions around oil seeps and shallow hydrothermal vents differ from surrounding areas with some communities supported by hydrogen sulfide-oxidizing bacterial mats with localized different water chemistry and temperature (Dailey 1993).

Elk kelp beds: Elk kelp (*Pelagophycus porra*) has a narrow depth distribution (20 to 50+ meters) and is primarily found off Santa Catalina, San Clemente, Santa Barbara and Santa Cruz Islands, and along the mainland coast from San Diego to Baja California, Mexico. While common at some of the Channel Islands, it is rare along the mainland of southern California. Elk kelp grows on soft sediment habitats of the lee ward side of Santa Catalina and San Clemente Islands as well as on rocky habitat along the windward side of San Clemente, Santa Cruz, and Santa Barbara Islands (Miller et al. 2000).

Citations

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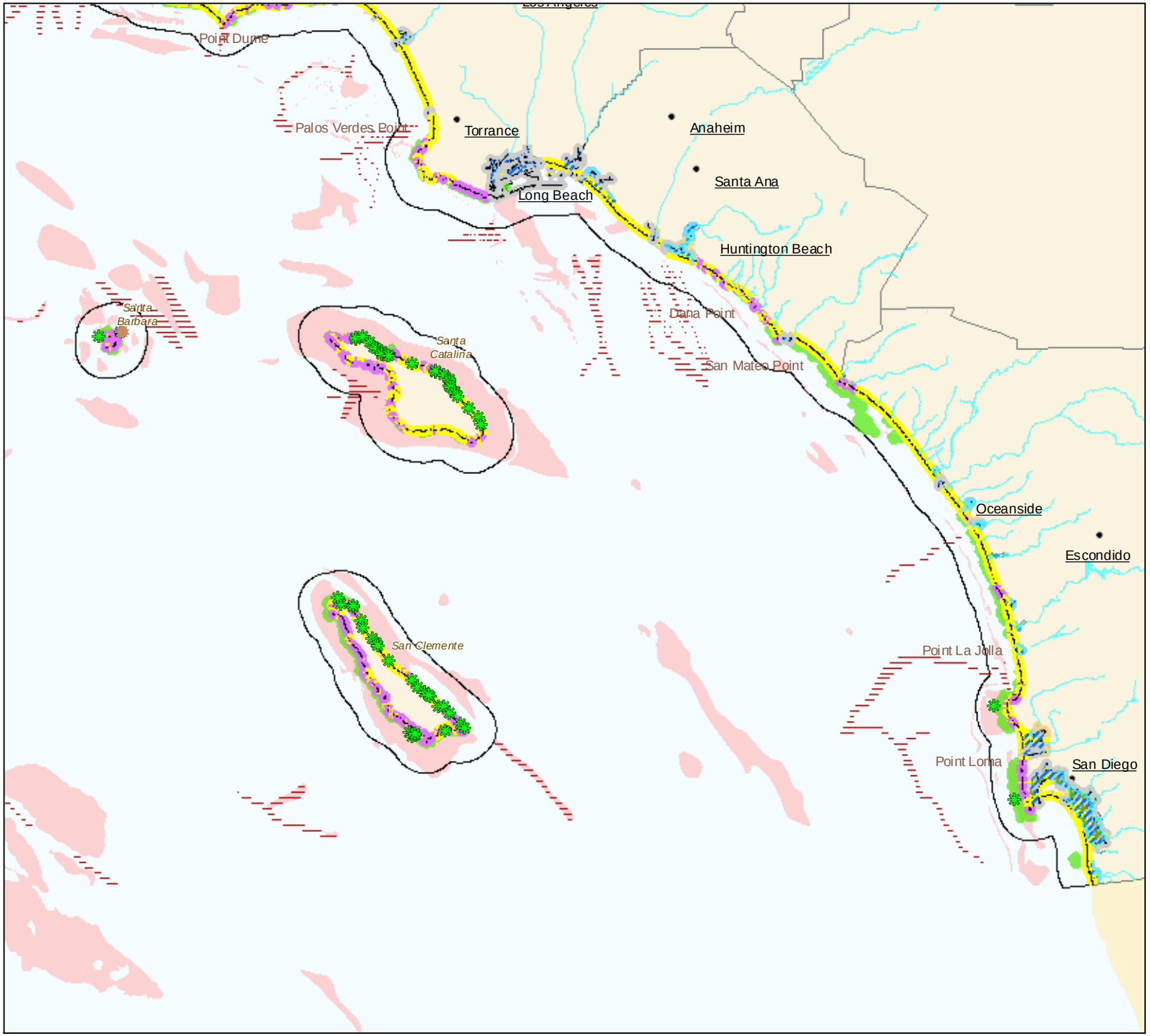
Key and Unique Habitats of the MLPA South Coast Study Region

Palos Verdes to the Californian border



Legend

- South Coast Study Region Boundary
- Elk Kelp
- Eelgrass
- Surf Grass
- Submarine Canyons
- Estuaries
- Beaches
- Coastal Marsh
- Hardened Shores
- Rocky Shores
- Tidal Flats
- Persistent Kelp
- Hard Seafloor Substrate
- Oil seeps
- Coastal Rivers

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Projection Information:

Name: NAD 1983 California Teale Albers
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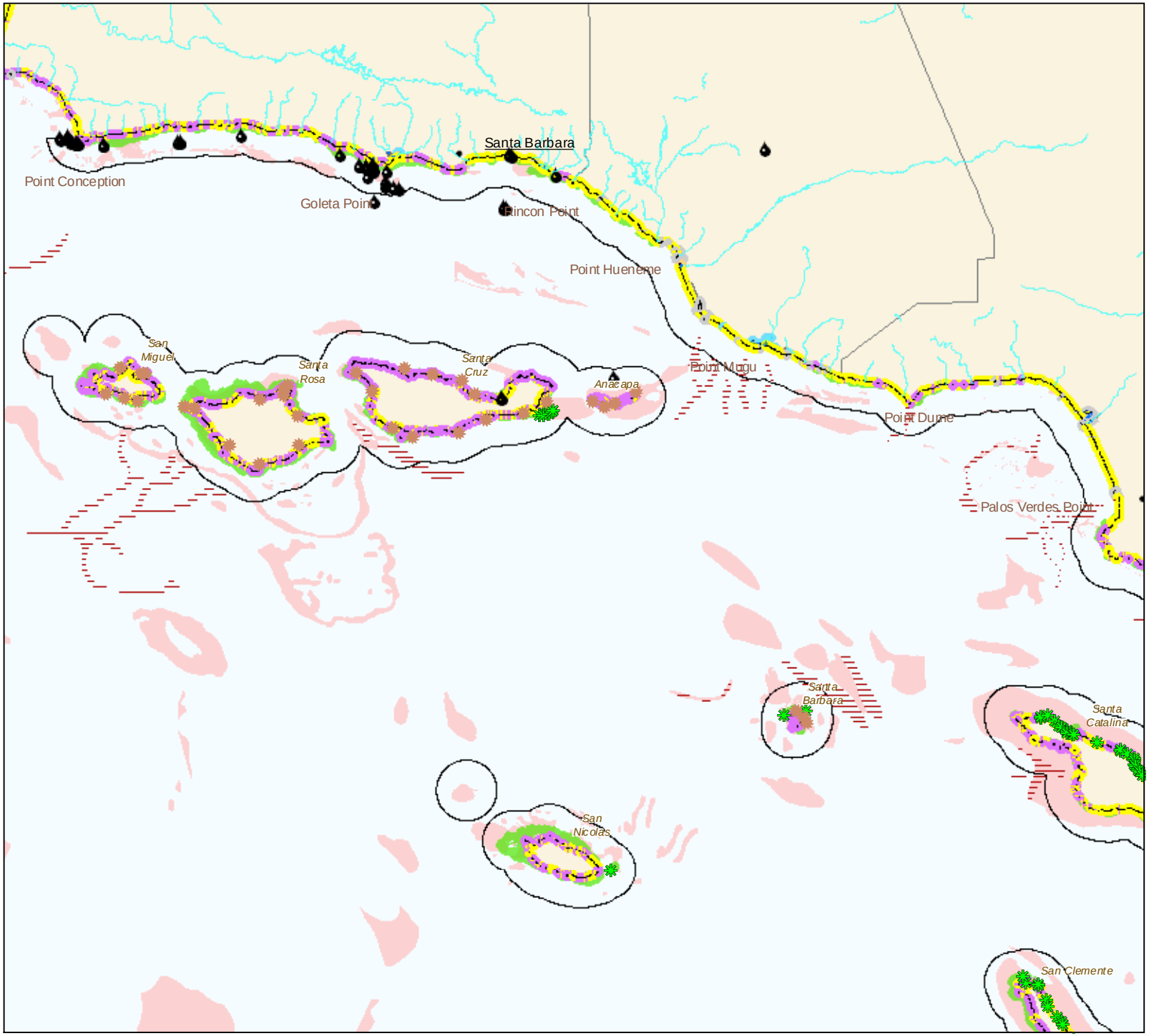
Point Conception to Palos Verdes



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