

## **12. Malibu Coastline SEA**

### ***Location***

#### *General*

The Malibu Coastline Significant Ecological Area (SEA) is located in the shoreline and offshore coastal area of Malibu, which is adjacent to the Santa Monica Mountains. The SEA supports significant areas of aquatic plant and other subtidal communities, which provide habitat for a variety of fishes, birds, marine mammals, and other wildlife. Rocky outcrops intermixed with sandy spaces are found to a depth of 600 feet, and the nearshore area down to about 100 feet depth is considered the most productive and dynamic of all the marine communities outside the tropics. All of the many offshore rocks within 12 nautical miles of the coast are part of the California Coastal National Monument that is managed by the Bureau of Land Management in the U.S. Department of the Interior.

The site is located in the Triunfo Pass, Point Dume, Malibu and Topanga Quadrangles of the United States Geological Survey (USGS) 7.5 Minute Map Series (USGS, 1964).

#### *General Boundary and Resources Description*

The SEA boundary encompasses parts of the shoreline and about a 0.8 mile offshore from Malibu. The SEA stretches between the Ventura-Los Angeles County line at Leo Carillo State Beach, all the way east to Topanga State Beach. The SEA is generally adjacent to the Santa Monica Mountains and Point Dume SEAs. Parts of the shore are included along many of the state beaches. The sandy beaches along this SEA are the least disturbed beaches of the County, some of them completely natural. This is the remnant of the typical rock and sand shoreline that once occurred all along the coast of Southern California. From Mugu Lagoon to Latigo Point (the County portion starting at the Ventura-Los Angeles County line), is an Area of Special Biological Significance (ASBS), which is a marine area designated by the State Water Resources Control Board as having exceptionally good water quality and natural community features. Populated and disturbed areas along the shore are largely in the City of Malibu and excluded from the SEA.

This area is a relatively undisturbed coastal region where the upwelling of nutrient-rich waters and a variety of habitats support highly productive and extremely diverse marine communities. The area possesses some of the best kelp bed habitat south of Santa Barbara, and supports the only remaining natural kelp beds off the mainland coast of the County. These kelp bed areas may be one hundred times more productive than adjacent sand bottom communities, and they provide refuge, food, and nursery grounds for thousands of species.

Rocky outcrops alternate with sandy stretches along this coastline and subtidally, outcrops are found to a depth of 600 feet. The stability of the substrate and the variety of exposures provide microhabitats for a great number of organisms. Characteristically, rocky shorelines from the lower intertidal zone to about 100 foot depth can be the most biologically active areas in the world. The adjacent Point Dume SEA is one of the few places that rocky intertidal habitat occurs between Palos Verdes Peninsula and Point Mugu in Ventura County. The rocky tidepools off Point Dume, Big Rock Beach, and the promontory where Topanga Canyon Creek enters the ocean are some of the very best remaining rocky intertidal habitat in the County, and these are within the SEA. The Marine Life Protection Act designated protected area in Malibu to be the Point Dume State Marine Conservation Area (SMCA) between El Matador State Beach west of Point Dume to the west side of Point Dume, which is approximately three miles of coastline, with the conservation area extending in due north-

south lines from mean high tide to about three nautical miles offshore. In the SMCA, fishing is restricted to certain species. From the west side of Point Dume to Paradise Cove on the east side is designated as the Point Dume State Marine Reserve (SMR), which has no fishing or other take allowed, and extends in due north-south lines (adjacent to the SMCA on the west) from the intertidal to offshore, which is about three nautical miles.

This coastline possesses the only undisturbed sandy beaches that remain in the County. Although very dynamic in physical stability, there is a biological, subtidal, sand-bottom community that has a great diversity of resident organisms and invertebrates ranging from bacteria through jellyfish, mollusks, and echinoderms, such as seastars, to fishes that habitually choose the sand-bottom substrate. An important micro-community of decomposers is present. Sandy beaches with their diverse invertebrate communities of interstitial organisms provide feeding areas for many bird species. In addition, the soft substrate offers a repository for eggs and nursery grounds for many species, including the grunion (*Leuresthes tenuis*) that spawns and deposits its eggs in the highest intertidal areas of the sand. This shoreline remains in essentially a native state as a remnant of what once was typical of rock and sand shoreline in Southern California. Artificial modifications have been limited to small local areas. West of Point Dume, some minor pollution does occur, but the kelp is healthy. East of Point Dume there is minor to moderate pollution, and kelp does not grow below 35 feet.

The SEA has critical habitat for the federally-threatened western snowy plover (*Charadrius alexandrinus nivosus*) along Zuma Beach and the northwest sandy area along Point Dume. This will eventually extend along the entire west side of the headland. The western snowy plover will also have critical habitat on the seaside of the barrier berm of the Malibu Lagoon. The snowy plover has over 300 individuals using the beaches of the County for winter roosts, and there is potential for some to over-summer and breed in the County after a hiatus of many decades (Ryan Ecological Consulting, 2010).

### **Vegetation**

The terrestrial component of this marine oriented SEA is limited to the narrow stretch of beach just above the high tide line. Sensitive plant species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Coastal Strand Vegetation: A community that occurs in the loose sand just above the high tide line of the beach. This community is characterized by a low species diversity because few plants can tolerate the harsh conditions on this dry, sandy, saline soil of high winds, salt spray and high summer temperatures.

Corresponding MCV communities:

- *Abronia latifolia* – *Ambrosia* spp. (dune mat) Herbaceous Alliance
- *Cakile (edentula, maritima)* (sea rocket stands) Semi-Natural Provisional Herbaceous Alliance

### **Marine Resources**

The Malibu coastline is a relatively undisturbed coastal region where the upwelling of nutrient-rich waters and a variety of habitats support highly productive and extremely diverse marine communities. The area possesses some of the best kelp bed habitat south of Santa Barbara, and the only remaining natural kelp beds on the mainline coast of the County. Rocky outcrops alternate with sandy stretches along this coastline and are found to a depth of 600 feet. This coastline also possesses the only undisturbed sandy beaches remaining in the County.

Surfgrass and Eelgrass Habitats: Characterized by two flowering plants that resemble grass and

form dense beds on different substrates and in different conditions. Both types form highly productive habitats for unique assemblages of marine species. NOAA Fisheries and the CDFG consider surfgrass and eelgrass as valuable habitats that should be protected. Surfgrass occurs from Mean Lower Low Water (MLLW) to about 25 feet depth on rocky substrate. Locations known to support substantial surfgrass beds include rocky points and rocky subtidal areas of canyons all along the northern border of the SEA. Eelgrass grows on soft substrate and typically occurs in bays. A form of eelgrass (thought to be *Zostera pacifica*) is found on open coast sand bottom. Eelgrass is an important habitat that supports a community of diverse species from sessile to mobile invertebrates and certain fishes, such as pipefish. A subtidal eelgrass bed is in the lee of Lechuza Point between about 25 and 45 feet depth, and subtidal eelgrass may still occur off Los Alisos Canyon.

Community dominant plant:

- *Phyllospadix scouleri*, or Scouler's surf grass and *P. torrey* or Torrey's surfgrass
- *Zostera pacifica* (eelgrass)

Intertidal Zone Habitats: Consist of a variety of coastal habitats periodically covered and uncovered by waves and tides. The rocky shores support a rich assortment of plants and animals including green, brown, and red algae. A wide variety of sessile invertebrates compete for space with the plants in this habitat. Mobile invertebrates, such as crabs and snails, can be found in great abundance. Fishes are limited to tidepools, although grunion do spawn and deposit their eggs in the high tide wash areas of sandy beaches. The sandy beaches have a diverse community of interstitial invertebrates. Shorebirds actively forage during low tide in all kinds of shoreline habitats. The federally-endangered black abalone (*Haliotis cracherodii* FE) was once abundant in this habitat all along the rocky coastlines of California. Whether it still persists in the Malibu coastline area is unknown, since its current populations are reduced and much more dispersed than before.

Nearshore Subtidal Habitat: Includes those marine habitats ranging from the lower level of the intertidal zone to 99 feet. This region supports a variety of assemblages of invertebrates and fishes, and in the SEA, this habitat is frequently dominated by giant kelp. Rocky areas have a diverse community of algae (in depths of sufficient light penetration), sessile and mobile invertebrates, and fishes. Subtidal areas are even more diverse than the intertidal areas, and this great variety can be appreciated by the examples of tidepools. There are a variety of subtidal sand-adapted organisms ranging from fishes to seastars, to many kinds of jellyfish, mollusks, and other invertebrates.

Kelp Forest Habitat: Giant kelp beds are located in many places along the SEA to a depth of approximately 99 feet in the ocean. The kelp beds are part of a productive habitat that provide food, attachment sites and shelter for invertebrates and fishes. Giant kelp, the dominant alga of this community, is the fastest lengthening organism known, and it thrives in nutrient-enriched waters of upwelling. It has been "clocked" at two feet per day extension of its stipe and blades. The kelp beds are an important nursery habitat and recruitment area for juvenile fishes and invertebrates. The National Oceanographic and Atmospheric Administration (NOAA) Fisheries as well as the CDFG consider kelp beds as sensitive, and lush kelp beds such as those from the Ventura-Los Angeles County line to Malibu Point are designated as ESHA (Environmentally Sensitive Habitat Areas, Malibu Local Coastal Plan, 1986).

Community dominant plant:

- *Macrocystis pyrifera* (Giant kelp)

### **Wildlife**

The terrestrial and aerial wildlife found in the SEA is dependent on the two basic regimes found there: marine and shoreline terrestrial. The shoreline beaches and rocky intertidal are home to or

visited by a wide variety of shorebirds, migrating birds and marine life. The sandy beaches with their shifting sands present an unstable substrate on which organisms can establish themselves, and their resident wildlife is a set of small specialists that live in the sand interstices. An important microcommunity of decomposers exists, which feed on the materials washed up by the waves.

The Malibu Coastline cliffs, bluffs, offshore rocks and beaches offer many undisturbed habitats for roosting, feeding and nesting by numerous kinds of shore- and seabirds. Sandy beaches provide feeding areas for many species. In addition, the soft substrate offers a repository for eggs and nursery grounds for many species.

The marine habitat has the greatest diversity of wildlife, with representatives from nearly all the phyla (major groupings of animals such as jellyfish, mollusks, echinoderms, etc.) and all parts of the food web (trophic levels) for several communities. Many of the marine phyla do not have terrestrial representatives. Some of the vertebrates, such as gray whales, and the plankton use the area as a migratory corridor. The major vegetation communities, each with its own great diversity and all trophic levels, are the benthic algae of rocky substrates, the kelp beds based on giant kelp holding onto rocky subtidal substrate and extending into the water column, and the planktonic, based on photosynthesizers that are all microscopic.

Sensitive wildlife species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section of this document.

#### *Wildlife Movement*

The SEA is on the Pacific Flyway migration route used by many birds seasonally. This shoreline plays an important role as a stopover because of its extensive undisturbed marine resources. The offshore major part of the SEA is on the annual migration route of the California gray whale (*Eschrichtius robustus*), a CITES Appendix I animal (Convention on International Trade in Endangered Species, endangered status, no trade or harvest except by strictly controlled export and import permits issued in countries that are party to the convention and have legislation of adoption, which includes the U.S.) The gray whale migrates close to shore on its transit during the winter months from the Bering Sea to lagoons of Baja California. This is migration to the Baja lagoons for calving and breeding. The whales generally return north offshore. The area may well be a migration corridor for other marine animals, as this is part of the great Southern California Bight, which has an eddy circling counterclockwise to the north off the southward flow of the California Current. This flow brings marine organisms (fishes, invertebrates, and plants) that may have major population concentrations in the south to this part of their ocean habitat. Most of these organisms have a planktonic stage that is absolutely dependent on the current system to maintain their populations and distribution. Pollution of the ocean waters by development on land will have significant effects that may not be appreciated immediately because of the cryptic nature of subtidal animals and plants.

#### ***Sensitive Biological Resources***

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, and/or rare. This is due to the species' declining or limited population sizes, which usually results from habitat loss. Watch lists of such resources are maintained by the California Department of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the SEA, which have been accorded special recognition. When species are federally-listed as endangered or threatened, they often have federally-designated, geographically-specific "critical habitat areas." Critical habitat areas, after extensive study by experts, are judged to be essential to conservation and maintenance of the

species. There are two critical habitat areas for the western snowy plover in this SEA.

#### *Sensitive Plant Communities and Habitats*

The SEA supports no terrestrial habitat types considered sensitive by resource agencies, but the California Department of Fish and Game (CDFG) does not list intertidal or subtidal plants in its California Natural Diversity Data Base (CNDDDB, 2011). NOAA Fisheries (National Oceanographic and Atmospheric Administration) as well as the CDFG do consider kelp beds as sensitive, and lush kelp beds such as those from the Ventura-Los Angeles County line to Malibu Point are designated as ESHAs by the County's Malibu Local Coastal Plan, 1986.

Kelp beds disappeared off of Palos Verdes Peninsula during the height of pollution by the White Point outfall in the mid 20<sup>th</sup> century. The Palos Verdes Peninsula's kelp beds are subsequently returning after reduction of pollution, some prodigious planting efforts, and incursion of the motile zoospores from areas like the Malibu coastline. The kelp beds are sensitive to effects like pollution and excessive sedimentation from development. They are one of the most productive communities of the world, and should be treated with care. Any development plan that might impact them, even with indirect effects, deserves scrutiny.

#### *Sensitive Plant Species*

NOAA Fisheries as well as the CDFG consider kelp beds as sensitive, and lush kelp beds, such as those from the Ventura-Los Angeles County line to Malibu Point, are designated as ESHA by the Malibu Local Coastal Plan, 1986. The principle structural component of Malibu offshore kelp beds is the giant kelp (*Macrocystis pyrifera*). NOAA Fisheries and the CDFG consider surfgrass a valuable habitat that should be protected. The principle structural component of surfgrass beds is Scouler's surf grass (*Phyllospadix scouleri*) and Torrey's surfgrass (*P. torreyi*).

#### *Sensitive Animal Species*

The western snowy plover (*Charadrius alexandrinus nivosus* [FT, CSC]), which feeds and resides in the wrack line areas, has designated critical habitat on Zuma Beach from Trancas Canyon to the northwestern side of Point Dume. This is proposed to expand to Point Dume. Critical habitat is also proposed to include Malibu Beach from Malibu Point to an area east of the pier, which is the seaward side of Malibu Lagoon. The Malibu Lagoon is part of the Santa Monica Mountains SEA, and the SEA is contiguous with the Santa Monica Mountains SEA at the barrier berm of the Lagoon.

The southern steelhead (*Oncorhynchus mykiss irideus* [FE, CSC]) lives in the oceanic and coastal waters for most of its life and uses the coastal streams for breeding and the first year of its young fish's lives. After one to two years in fresh water, the young fish change to smolts and make their run to the ocean, where they spend the majority of their lives. The lower Arroyo Sequit and its West Fork is designated critical habitat for the southern steelhead. This area has naturally occurring spawning beds and young fish habitat. The coastal ocean waters are within this SEA, and the linkage paths from the ocean to the coastal streams are within this SEA. The southern steelhead is known to currently use the Arroyo Sequit, Malibu Creek, and Topanga Canyon. Historically the steelhead was known from Solstice and Zuma canyons, and was probable in all the major drainages, which once had perennial water and extended to the shore in the rainy season.

The California gray whale (*Eschrichtius robustus* CITES Appendix I) uses this SEA during its calving-breeding migration cycle. The entire order of cetaceae (whales and beaked dolphins) are considered CITES Appendix I by the Australian rating system, the most stringent adoption.

The black abalone (*Haliotis cracherodii*) is a federally-endangered species and critically endangered species of the International Union for Conservation of Nature-Red List (IUCN). At one time, the black

abalone was plentiful in the rocky intertidal and nearshore rocky subtidal areas in the SEA, down to about 20 feet depth. Whether it still exists in the SEA is unknown, because its current occurrences are widely scattered and much reduced by overfishing and wasting disease.

- Black abalone (*Haliotis cracherodii*) FE
- Southern steelhead (*Oncorhynchus mykiss irideus*) FE, CSC
- Tidewater goby (*Eucyclogobius newberryi*) FE, SSC
- Western snowy plover (*Charadrius alexandrinus nivosus*) FT, CSC
- California gray whale (*Eschrichtius robustus*) CITES Appendix I

**Ecological Transition Areas (ETAs)**

There are no ETAs designated within this SEA.

**Regional Biological Value**

The SEA meets all SEA designation criteria and supports many regional biological values. Each criterion and how it is met is described below.

**CRITERIA ANALYSIS OF THE MALIBU COASTLINE SEA**

	<b>Criterion</b>	<b>Status</b>	<b>Justification</b>
A)	The habitat of core populations of endangered or threatened plant or animal species.	Met	California gray whale, tidewater goby, southern steelhead, western snowy plover, and black abalone, all spend critical periods of their life cycles in this SEA. Other CITES-listed marine mammals also use this SEA.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	This area is a relatively undisturbed coastal region where the upwelling of nutrient-rich waters provides for highly productive and extremely diverse marine communities. The area possesses some of the best kelp bed habitat south of Santa Barbara and is recognized as ESHA by NOAA and CDFG. The Malibu coastline section from the Ventura-Los Angeles County line boundary, southeast to Latigo Point is recognized as one of the principal natural areas in the (coastal) State Water Quality Protection Area Program. It is area ASBS-24 (Area of Special Biological Significance). The SEA has critical habitat for the southern steelhead, tidewater goby, and the western snowy plover.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	This relatively undisturbed coastal region possesses some of the best kelp bed habitat south of Santa Barbara and supports the only remaining natural kelp beds off the mainland coast of the County. The kelp beds are recognized as ESHA by NOAA, CDFG, and the Malibu Local Coastal Program. It has critical habitat for the southern steelhead,

	Criterion	Status	Justification
			tidewater goby, and the western snowy plover
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	This area protects the entry point of two of three of the (endangered) southern steelhead spawning streams in the County and provides connective area for the endangered tidewater goby, which breeds in the brackish-water areas of the streams of the Santa Monica Mountains. Kelpbeds are the macroforest of the ocean, and the habitat and breeding and/or spawning ground for many marine animals. The sandy beaches provide feeding areas for many bird species, and the soft substrate offers a repository for eggs and nursery grounds for many species. The migration of marine species occur in this area for the California gray whale and for innumerable marine species whose plankton ride the ocean currents.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	As the main kelp bed of the County, this area is of great interest to marine scientists. It is also an edge kelp forest, separated by the long stretch of beaches of the Santa Monica Bay from the kelp beds of the Palos Verdes Peninsular area.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Met	This shoreline remains in essentially a native state as a remnant of what once was typical of rock and adjacent sand shoreline in Southern California. The coastline possesses the only complete, undisturbed sandy beaches remaining in the County. An important microcommunity of decomposers is present. Artificial modifications have been limited to small local areas. West of Point Dume, there is minor pollution; east of Point Dume, there is minor to moderate pollution, and kelp does not grow below 35 feet.

In conclusion, the area is an SEA because it contains: A) the habitat of core populations of endangered and threatened plant and animal species; B-C) biotic communities, vegetative associations, and habitat of plant and animal species that are either unique or are restricted in distribution in the County, or regionally; D) concentrated breeding, feeding, resting, or migrating grounds, which are limited in availability in the County; E) biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community; and F) areas that provide for the preservation of relatively undisturbed examples of original natural biotic communities in the County.

## 12. Malibu Coastline SEA Sources

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