

Case Study: Point Sur State Marine Reserve and Marine Conservation Area

Read the case study below. Use the Case Studies Comparison worksheet to record important information about the Marine Protected Area (MPA). As you read, think about how the two MPAs are similar to or different from one another.

With its 1,770-kilometer (1,100-mile) coastline, it is no surprise California has one of the most extensive networks of Marine Protected Areas (MPAs) in the United States.

The state has three types of MPAs: state marine reserves, state marine parks, and state marine conservation areas. California's Central Coast, the area between Monterey Bay in the north and Point Conception in the south, also has mixed-use state marine recreational management areas. Mixed-use areas incorporate scientific, educational, recreational, and commercial activities.

The Point Sur State Marine Reserve and the Point Sur State Marine Conservation Area are located next to each other near the small Central Coast town of Big Sur. The reserve touches the shoreline, and the conservation area is part of the open ocean just outside the reserve. Together, they cover about 50 square kilometers (19 square miles) of marine habitats.

Key habitats protected by the two MPAs include a large kelp forest, an offshore rocky reef, and the underwater Sur Canyon. These diverse habitats provide niches for numerous species of fish, seabirds, marine mammals, and invertebrates such as crab, shrimp, and mussels.

How Point Sur Became a State Marine Reserve and Marine Conservation Area

In 1999, California passed the Marine Life Protection Act. The act required the state to evaluate existing MPAs and possibly design new ones. The goal of the act was to create a more unified approach to protecting California's marine ecosystems. It also served to improve recreational and educational use of the area.

The act created five separate study regions: the Central Coast, North Central Coast, South Coast, North Coast, and San Francisco Bay. Regulations for each region go into effect over time. The California Fish and Game Commission phased in regulations for Central Coast Marine Protected Areas in 2007. In that region, 29 MPAs protect 528 square kilometers (204 square miles) of state waters. The protections are designed to help non-migratory species like rockfish, sea otters, and abalone.

The Goals of the Point Sur State Marine Reserve

Marine reserves and conservation areas differ slightly in their goals and the level of protection they provide to marine life. The Point Sur MPAs are good examples of a marine reserve and marine conservation area.



Case Study: Point Sur State Marine Reserve and Marine Conservation Area, continued

Marine reserves usually offer the most protection to the environment. There are more restrictions related to commercial and recreational fishing. Non-commercial use of the reserve is allowed, including scientific collection, research, and monitoring. Recreational activities like diving, surfing, swimming, and boating are also permitted.

No commercial or recreational take of living marine resources is allowed in the Point Sur State Marine Reserve. This mostly limits fishing, but it also prohibits the harvesting of crabs, abalone, or mussels.

In a marine conservation area, some commercial and recreational harvesting is allowed. People can also do scientific research as well as kayak, dive, snorkel, and swim.

In the Point Sur State Marine Conservation Area, commercial and recreational take of salmon and albacore tuna is allowed. This helps the local fishing and tourism industries, which employ thousands of people.

Environmental goals

Both marine reserves and marine conservation areas focus on maintaining the habitat of endangered or threatened species. One of the endangered species found in the Point Sur MPAs is the California sea otter. The California sea otter is listed as threatened under the Endangered Species Act. A survey by The Otter Project in spring 2009 found 2,654 otters up and down the coast, a decrease of about 4 percent from the year before.

Sea otters, marine mammals once hunted for their thick, soft fur, depend on kelp forests for survival. Kelp is a large type of seaweed that grows dozens of feet tall, rising from the ocean floor to form thick beds of ropy leaves on the surface. Hundreds of sea creatures live in the kelp forest.

Sea otters forage for food such as sea urchins, crabs, and abalone on the floor of the kelp forest. On the surface, they entangle themselves in its long ropes, which anchor them to the area so they don't drift away with a current or tide.

Crash of the U.S.S. Macon

Ships are not the only vehicles that face difficulty navigating near Point Sur, California. In 1935, the airship U.S.S. *Macon*, filled with helium, crashed near the area's rocky reef. The *Macon*, the largest (239 meters/785 feet) and last airship made in the United States, had her tail fin knocked off by the sharp coastal winds. The *Macon* drifted slowly into the Pacific. Two crewmembers drowned, while 81 escaped to safety.

The remains of the *Macon* were discovered in the Point Sur State Marine Conservation Area by fishermen in 1990.

Case Study: Point Sur State Marine Reserve and Marine Conservation Area, continued

By protecting the kelp forest, the Point Sur MPAs are helping maintain an entire ecosystem: the kelp itself; the organisms that feed on it, such as sea urchins; and the predators that feed on them, such as the sea otter.

The Habitat of Point Sur and the Uses of the State Marine Reserve and Marine Conservation Area

The habitats at the Point Sur MPAs are important for scientific, commercial, and recreational stakeholders. Stakeholders are individuals or communities with an interest in the area.

Scientific Use

Scientists often monitor the fish populations in the Point Sur MPAs. Different fish live in different habitats in the reserve, and require different techniques for study.

To help monitor the number of perch or rockfish, marine biologists may dive into the rocky reef. In the kelp forest, scientists may dive or use sonar to track large populations of sardines or garibaldi. Sometimes they may catch fish and record information about them—their weight, length, color, and sex. This is called “hook-and-line sampling.”

In the deep Sur Canyon area, biologists may need to use remote-operated vehicles to study the strange organisms living in the dark, cold depths. Krill is a shrimp-like animal and one of the most important parts of the ocean food web. Krill is common in Sur Canyon. Migrating gray whales, as well as non-migratory animals such as bat rays, eat tons of krill in the Point Sur area every year.

Commercial Use

Commercial activity takes different forms at the Point Sur State Marine Conservation Area. No commercial activity is allowed at the Point Sur State Marine Reserve. The salmon and albacore fisheries are two of the largest fisheries in California. Fishermen, buyers, and food companies employing thousands of Californians depend on the industry.

Point Sur Lighthouse

At the turn of the century, the lighthouse at Point Sur, California, provided help for ships navigating the rocky coast and dangerous California Current. The California Current runs along the coast from British Columbia, Canada, to Baja California, Mexico. During the Cold War, the lightstation tracked the movement of Soviet submarines in the Pacific.

Now, the lighthouse is a state historic park. Visitors can climb up the steep, rocky hill, study the antique lighthouse facilities, and gaze at the Point Sur marine protected areas.

Case Study: Point Sur State Marine Reserve and Marine Conservation Area, continued

Albacore, sold as “white meat tuna,” is caught using different techniques. One popular method is trolling. Trolling is a hook-and-line method where long fishing lines are towed behind or alongside a boat. According to the Monterey Bay Aquarium, trolling is a sustainable fishing method. Fish are reeled in soon after they are caught. If one of the hooks catches bycatch (an animal that is not an albacore tuna), fishermen can immediately return it to the ocean.

Less sustainable fishing methods include purse seining, which relies on a large net to catch entire schools of fish. The bycatch of purse seining may include dolphins and sea turtles.

Recreational Use

Recreation and tourism are important parts of the economy of California’s Central Coast. Millions of people from all over the world travel to the Point Sur area every year to enjoy the pristine coastal wilderness, redwood forests, mountains, creeks, and waterfalls.

Snorkeling, kayaking, and scuba diving are major recreational pursuits in both MPAs. Point Sur usually doesn’t have big waves, but some surfers still find opportunities. During the annual migration of the gray whale, the area is popular for whale watching, from both the shore and in commercial boats.