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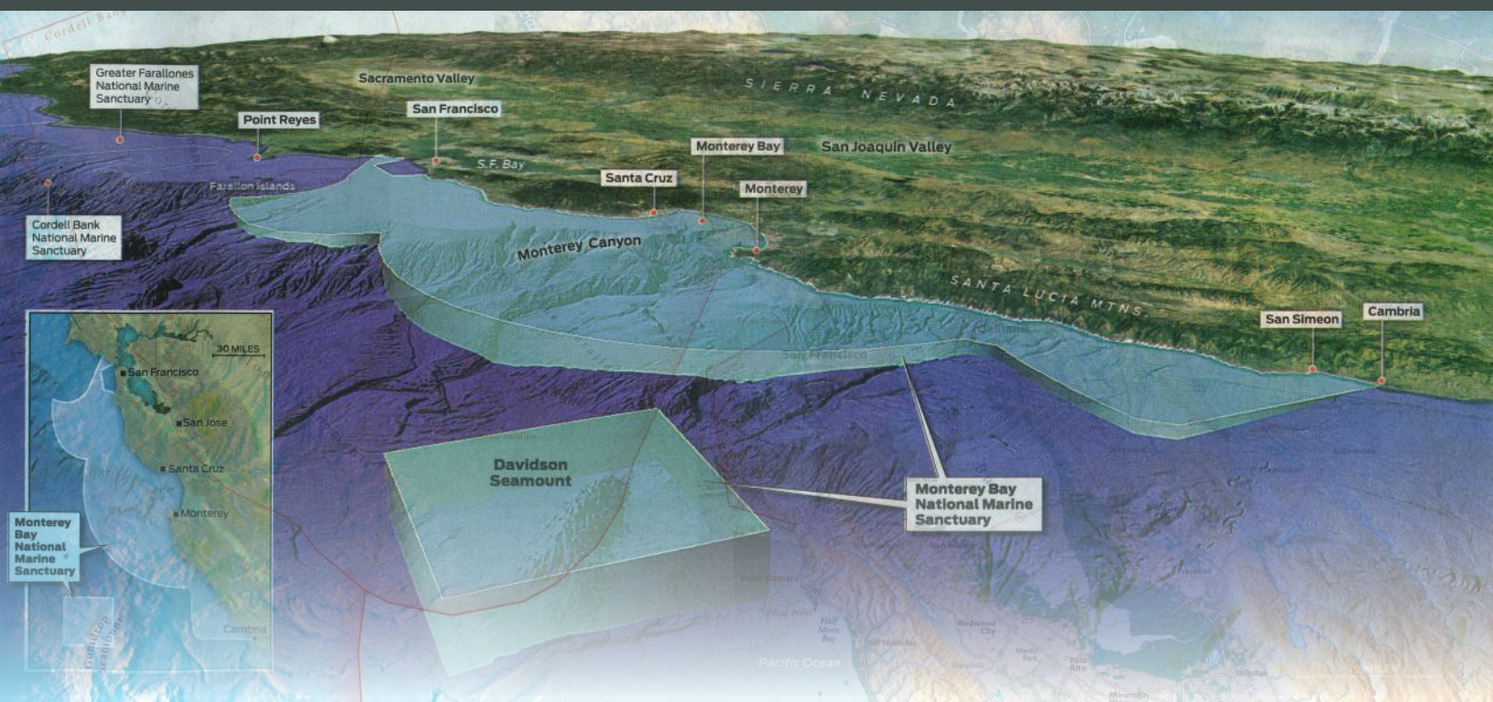
Monterey Bay National Marine Sanctuary



Marine Life


Squid


Sea anemone


Mushroom soft coral


Humpback whale


Pelagic octopus


Kelp forest


Pacific white-sided dolphin


Pacific grenadier


Basket star and sea sponge


Flytrap anemone


Ctenophore, "comb jelly"


Sea spider


Sea otter


Pelican


Elephant seal

Monterey sanctuary still a treasure trove of discovery

A quarter century after its creation, the Monterey Bay National Marine Sanctuary has become one of the world's largest outdoor laboratories, with teams of scientists spread across thousands of square miles of ocean studying everything from humpback whales to bone-eating worms that live on carcasses at the bottom of the sea.

Known to marine biologists as the "Serengeti of the Sea," the Monterey sanctuary is a wonderland of screeching seabirds, frolicking sea otters, breaching whales, great white sharks and giant sea turtles. But it is also a playground for kayakers, scuba divers and tourists who come from across the country to see one of the most biodiverse ecosystems in the world.

"The diversity of this area is just amazing," says Andrew DeVogelaere, research coordinator for the sanctuary, which protects sea life from the high tide line down to 12,800 feet deep. "Within 20 minutes, you can visit an estuary, sandy beaches, rocky shores, kelp forests and the underwater equivalent of the Grand Canyon."

The sanctuary, which turned 25 this fall, encompasses 6,094 square miles of the sea, from kelp forests to deep ocean, and 276 miles of rocky shoreline in five counties, from Marin County south to San Luis Obispo.

It is home to dozens of marine mammals and thousands of birds, including 26 species listed under the U.S. Endangered Species Act. It is an ornithologist's dream, a marine biologist's nirvana and a magnet for scientific research.

"In the broader Monterey area, we have about 50 different research institutions that are doing marine science," DeVogelaere says. "If you are a marine scientist, this is the place to be."

The dominant feature is, of course, Monterey Bay, which for 10,000 years provided American Indians with enough abalone, mussels, clams, snails and fish to sustain them. About 40 different Indian tribes lived between San Francisco Bay and Point Sur when the Spanish began settling the area in the 1700s.

At the time, sea otters, pelicans, sea lions and harbor seals were abundant, and every kind of shorebird imaginable lived in the wetlands and sloughs.

Offshore, there were gray, humpback, fin and blue whales, dolphins, harbor porpoises and great white sharks that came to feed on the rookeries.

"There is not a country in this world which more abounds in fish and game of every description," wrote visiting French explorer Jean Francoise de La Perouse after he visited Monterey Bay, marveling at how his ships were "surrounded by pelicans and spouting whales."

By the mid 1900s, whales, sea otters, abalone and many other species were all but gone. The Monterey Bay sardine trade — made famous by John Steinbeck's 1945 novel "Cannery Row" — peaked between 1910 and 1930 before that fishery, too, collapsed.

In the 1980s and early 1990s, a coalition of citizens' groups fought proposals to drill for oil in the Monterey Bay area. The fight prompted Leon Panetta, then a congressman, to propose legislation that led directly to the establishment of the Monterey Bay National Marine Sanctuary in 1992.

"I'm just one of many who have drawn inspiration from this very special piece of ocean," Julie Packard, executive director of the Monterey Bay Aquarium, wrote on the facility's website. "We'll never run out of stories to tell about this place but, more and more, they'll be about people, not fish — how humans are taking action to protect and restore the ocean that sustains us all."

Sanctuary officials report amazing increases in the populations of whales, sea lions and elephant seals, which migrate from Alaska's Aleutian Islands. Although sea otters are still in trouble, the lush refuge known as Elkhorn Slough is home to the largest population of the furry creatures on the West Coast.

Engangered Pacific leatherback sea turtles, which can weigh up to 1,500 pounds, swim across the Pacific Ocean every year from their breeding grounds in Indonesia to feed on the abundant jellyfish in the sanctuary.

And with the increase in wildlife has come an influx of biologists clamoring for an opportunity to study a recovering ecosystem.

Both scientists and tourists watch every spring as gray whales attempt to lead their calves through a gantlet of hungry orcas to reach their feeding grounds in Alaska. The annual extravaganza of death happens as the leviathans attempt to cross a deepwater depression, called the Monterey Submarine Canyon, at Point Pinos, that bisects their route from Baja, Mexico.

The canyon, which is 12,800 feet deep, is where scientists recently discovered a dozen species of bone-eating worms that devour the skeletons of whales. The bizarre, previously unknown creatures, soften bones enough for hundreds of other deep-sea scavengers, including anemones and crabs, to feed, according to scientists with the Monterey Bay Aquarium Research Institute.

Another study 2 miles below the surface off Point Sur found 300 new types of corals, sponges, sea stars, crabs and shrimp. Among the new discoveries were 8-foot-tall orange and pink coral that can live over 1,000 years in complete darkness, and bioluminescent jellies.

"When you look at them, it's like the Las Vegas strip, they light up so much," DeVogelaere says of the glowing jellyfish. The scenery is "almost like Dr. Seuss imagery of corals and sponges in the deep sea. And a lot of these species are yet to be named."

Sanctuary scientists are studying thousands of species of algae, octopus, mussels, sea stars and sea anemones in the lush intertidal zones and are working with UC Santa Cruz to collect endangered black abalone that are in danger of being smothered by landslides in the Big Sur area.

Meanwhile, on the first week of every month, volunteers walk the beaches and record every dead bird or mammal they find, an invaluable resource for scientists studying population trends, algae blooms and disease.

"This area of the world is amazing for the amount of science we know, but it is also daunting in that we are learning how little we know," DeVogelaere says. "We don't even know all of the species down there or how they interact ... but we are trying to better understand the area and protect it for future generations."

Excerpt from an *San Francisco Chronicle* (Sunday, November 26, 2017) article by Peter Fimrite.