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Photo © Steve Benevides

Story by Mary Patyten

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An underwater photograph showing a dense school of small, silvery fish swimming in the foreground. In the background, there is a kelp forest with long, brown fronds reaching towards the surface. Sunlight filters through the water, creating a bright, hazy atmosphere. The text is overlaid on the right side of the image.

Mysteries of the
Marine Protected
Areas Explained


ork of Protection

Photo © Julianna E. Steers



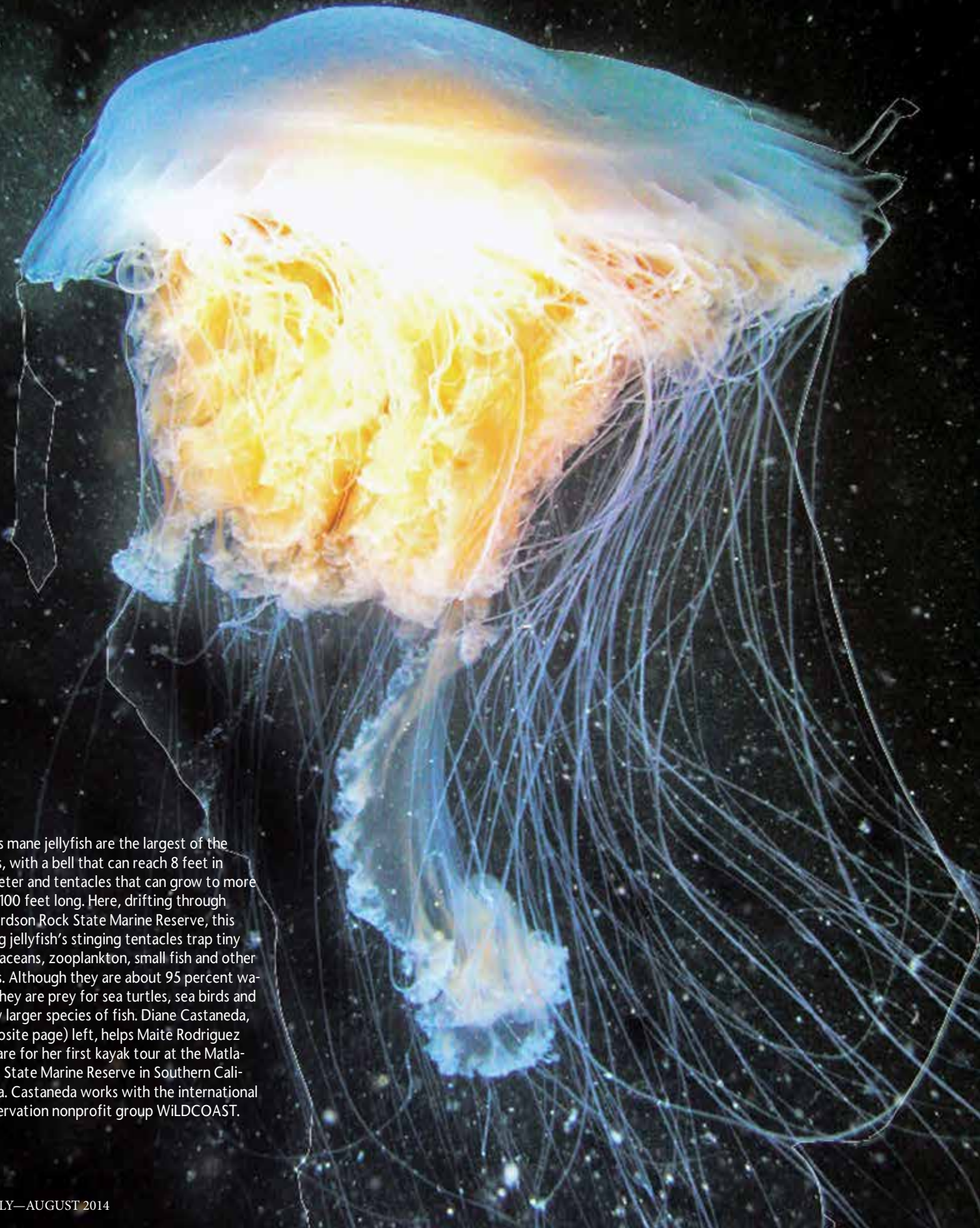


The kelp beds in Dana Point State Marine Conservation Area are protected from recreational and commercial harvest. Beds of giant kelp represent an important nearshore ecosystem that provides essential habitat for many different fishes and invertebrates. The marine conservation areas' giant kelp have something of value for a wide variety of people, from the sport and commercial fishing industries that target white seabass and spiny lobster, to recreational divers, photographers and tourists who seek the underwater forest for aesthetic reasons.

A photograph of a wolf-eel resting in a rocky crevice. The eel is positioned in the lower right, partially hidden by a large, green sea urchin. The surrounding environment is a diverse and colorful underwater ecosystem. In the foreground, there are large, reddish-orange anemones with long, flowing tentacles. Above them, a large, bright orange sea urchin is visible. The background is filled with various other marine organisms, including smaller sea urchins and possibly other fish, all set against a dark, rocky backdrop. The lighting is dramatic, highlighting the textures and colors of the marine life.

A wolf-eel in Richardson Rock State Marine Reserve rests among rock crevices and caves, surrounded by colorful, flower-like anemones, sea stars, sea urchins and other invertebrates. The wolf-eel, which isn't really an eel but a type of fish, will use these colorful surroundings as a nursery for the eggs it will produce and guard with its lifelong mate. Wolf-eels can reach 6 feet in length. Their powerful, canine-like teeth are perfect for cracking through the tough shells of clams, crabs and sea urchins.





Lion's mane jellyfish are the largest of the jellies, with a bell that can reach 8 feet in diameter and tentacles that can grow to more than 100 feet long. Here, drifting through Richardson Rock State Marine Reserve, this young jellyfish's stinging tentacles trap tiny crustaceans, zooplankton, small fish and other jellies. Although they are about 95 percent water, they are prey for sea turtles, sea birds and a few larger species of fish. Diane Castaneda, (opposite page) left, helps Maité Rodriguez prepare for her first kayak tour at the Matlahuayl State Marine Reserve in Southern California. Castaneda works with the international conservation nonprofit group WILDcoast.

Network of Marine Protected Areas Offers a New Way to Guard Ocean Species

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ost people know that California is nicknamed the *Golden State*, but many are unaware that a kaleidoscope of jewels has been added to the gold. Sprinkled along the coast, their vibrant colors— red, blue, purple, pink, green and yellow—represent the state’s network of marine protected areas, or MPAs.

On maps and posters developed by the California Department of Fish and Wildlife, the bright colors correspond to the type and amount of protection MPAs provide to marine life. Red, for example, signifies state marine reserves, where everything—living, geological or cultural—is fully protected. Blue signifies state marine conservation areas where certain types of recreational or commercial fishing may be allowed. Different levels of protection exist within each type of MPA.

Like state and national parks, MPAs are places where people meet, play and appreciate nature. Establishing MPAs has roused a variety of reactions from the people who live within the borders of the state. Some worry that livelihoods and traditions tied to the sea will be threatened by MPA restrictions. Others are pleased that MPAs offer help in protecting essential marine ecosystems.

The MPAs remain a mystery to some people, partly because the areas aren’t as accessible or easy to experience as California’s redwood forests or rolling golden hillsides. Although widely known marine explorers such as the late Jacques-Yves Cousteau and *National Geographic* explorer-in-residence Sylvia Earle have given people brief glimpses of the beautiful, thriving communities that exist in ocean waters, the question remains for many people: What are MPAs?



Photo © WILD COAST/Kriseel Rivas

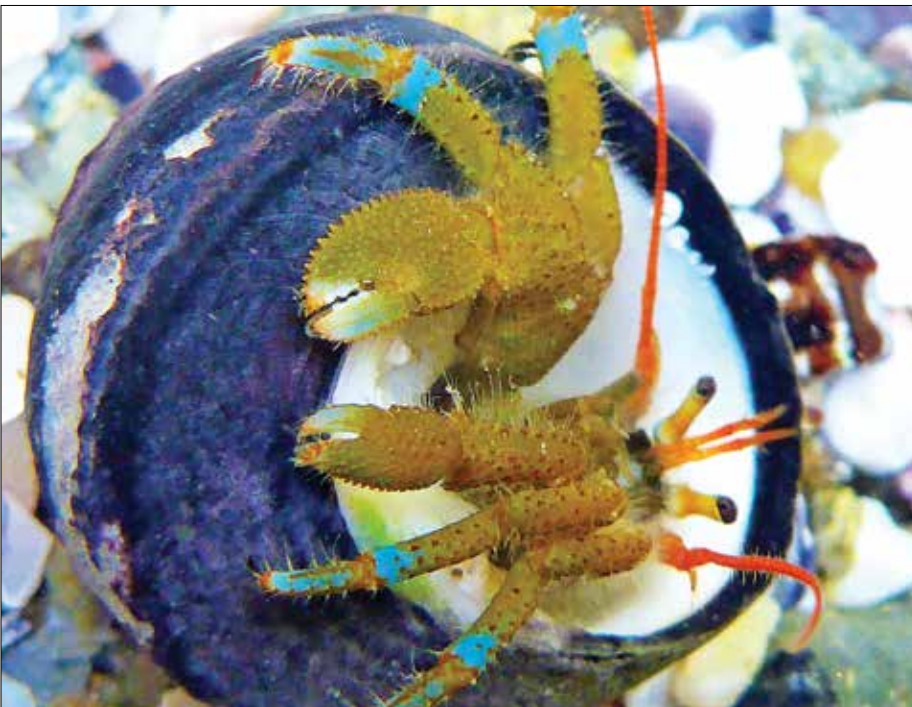
Photo © Julianna E. Steers



Photo © Gisele Martin/Tla-o-qui-aht First Nation



Photo © Patsee Ober Photography, www.pophotography.com



“MPAs are areas close to the beach, where you go to have fun,” said 12-year-old Eliana Rodriguez from Chula Vista. “They protect the animals so they won’t die. They’ll be there for future generations.”

Eliana and her sister, Maite, recently paddled kayaks through South La Jolla State Marine Reserve in Southern California with their Girl Scout troop. The girls watched, fascinated, as giant kelp swayed back and forth and a myriad of life including bright orange garibaldi swam around and under their boats.

“I think MPAs are good for the animals,” Eliana said.

Diane Castaneda, who served as the troop’s guide for the kayak tour, works for the international conservation nonprofit group called WiLDCOAST. Castaneda said the organization works to conserve marine places around the world and to educate young people about their importance.

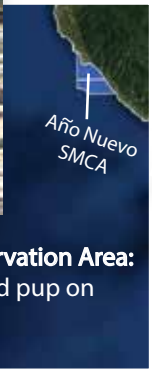
Castaneda comes from a long line of fishermen on her mother’s side, and says she appreciates the ocean as a source of food. She is also passionate about the need to conserve coastal and marine ecosystems and wildlife. She said her views align with the organization she works with. “We want to protect marine ecosystems not only for sustenance but also as a sort of

Off the California coast are designated 119 MPAs, five state marine recreational management areas and 15 special closures. The coastal network was completed in December 2012.

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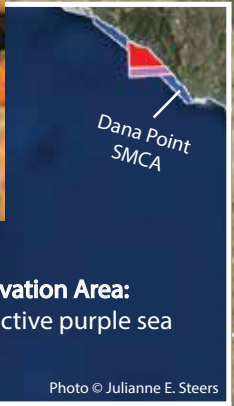
Blue speckles mark this brilliant orange juvenile garibaldi (top), at Dana Point State Marine Conservation Area. The garibaldi is one of the northernmost members of the damselfish family. Designated as the California State Marine Fish by the California Legislature in 1995, the garibaldi may not be harvested by commercial or recreational fishermen. As an adult, the garibaldi loses its blue speckling but remains a solid, vivid orange. Hawk Rosales (middle), is the executive director of the InterTribal Sinkyone Wilderness Council. The council represents 10 tribes in northern California’s Mendocino and Lake counties and participated in the establishment of the state’s marine protected areas. A little crab (bottom) spends much of its time scavenging for scraps of food in the tidepools of Laguna Beach State Marine Reserve. Blueband hermit crabs are the ultimate recyclers; not only do they eat stray bits of giant kelp and dead animal matter, they also seek out dead black turban snails, clean out their shells and use them as homes.

California's Network of Marine Protected Areas



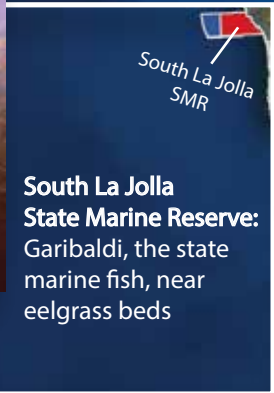
Año Nuevo State Marine Conservation Area: Steller sea lion male, female, and pup on Año Nuevo Island

Photo © Pat Morris



Dana Point State Marine Conservation Area: Octopus curls up beneath protective purple sea urchins

Photo © Julianne E. Steers



South La Jolla State Marine Reserve: Garibaldi, the state marine fish, near eelgrass beds

Photo © Rig2Reef Exploration

Lighting up a tidepool in Laguna Beach State Marine Reserve, a constellation of brightly colored ochre sea stars are surrounded by pink coralline algae and their own distant cousins, the anemones. These sea stars and other intertidal inhabitants compete for food and space in one of the most physically harsh environments on Earth, alternately pounded by waves during high tide and then exposed to extreme temperatures during low tide periods.





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legacy for future generations, she says. "Our local MPAs are a part of that effort."

CDFW Marine Region Manager Craig Shuman describes MPAs as portions of the ocean set aside to protect and conserve marine life and habitats. CDFW led the effort to develop the state's MPAs, and now heads up various projects to implement the MPA network.

"Each individual MPA is part of a conservation network that extends all along the California coast," Shuman said. "This network can provide us with a unique glimpse into the structure of marine communities that are protected from some human impacts."

Off the California coast are 119 designated MPAs, five state marine recreational management areas and 15 special closures. The coastal network was completed in December 2012.

"We encourage people to explore and learn more about the rocky coasts, sandy beaches, and underwater habitats of our MPA network, as well as respect and cherish the

MLPA Required Redesign of Effort to Protect Ocean Species

Passed by the California State Legislature in 1999, the Marine Life Protection Act (MLPA) required the California Department of Fish and Wildlife to redesign its system of marine protected areas to increase its coherence and effectiveness at protecting the state's marine life, habitats and ecosystems.

The state was divided into four coastal regions, each of which had its own marine protected area planning process. A public-private partnership commonly referred to as the MLPA Initiative was established to lead the planning processes. Development was guided by input from state and federal agencies, scientists and local stakeholders. The stakeholders included anglers, conservationists, educators and business owners. The coastal portion of the network was completed in December 2012.

It takes many years of scientific documentation before conclusions can be reached about how well MPAs are meeting conservation goals; academic researchers, state biologists and others are diligently monitoring and measuring progress at many of the sites. For more information, go to the CDFW's Marine Protected Area webpage at www.dfg.ca.gov/marine/mpa/monitoring.asp.



CDFW Photo by Matt Elyash

Despite its name, the giant spined sea star isn't so big. On average, giant spined sea stars are about the same size as other common sea stars. This one was caught climbing up the anchor chain of a dive boat in Richardson Rock State Marine Reserve. Giant spined sea stars are keystone predators that terrify intertidal snails, limpets, and chitons. Researchers have documented how these smaller species will flee an area when a giant spined sea star approaches. Ken Stagnaro (below left) and his family have operated a sport fishing charter business on Monterey Bay for generations. Jim Holden (below right) and his non-profit organization, Fish for Life!, have joined forces with CDFW's California Fishing Passport program to offer fishing experiences to special needs children.



Photo © santacruzwhalewatching.com



MPAs for their intrinsic value and the roles they play in the marine environment," he said.

The ocean is considered a sacred source of life that contributes to the well-being of everything on the planet, according to Hawk Rosales, executive director of the Inter-Tribal Sinkyone Wilderness Council. The council represents 10 tribes in northern California's Mendocino and Lake counties.

The newest MPAs along the state's north coast represent an important part of what Rosales called a sacred environment. He praised the efforts of the wilderness council in working with others for the establishment of the marine protected areas. "They will ensure the continuation and renewal of important marine species that are of great cultural importance to the tribes of this region," he said.

The MPAs provide ecological protections to designated areas while formally recognizing the traditional, non-commercial gathering harvesting and fishing practices of 22 federally recognized northern California tribes. Rosales said the recognition allows them to continue harvesting as their ancestors have "since the beginning of time."

Along the central coast, the Stagnaro family has owned a sport fishing business on Monterey Bay for the better part of the 20th century. Ken Stagnaro runs the family business today, still taking recreational anglers out fishing for bottom fish, salmon and other sport fish.

Stagnaro sees MPAs as one more government restriction that hampers his ability to take anglers where the fish are biting best. He says he has lost some of his hard-core anglers in part because some of the spots he used to visit, including those in Año Nuevo State Marine Conservation Area, are no longer open to sport fishing.

"I'm sure the intentions were good, but, to me, I think MPAs are overkill," Stagnaro says. "I'm not convinced they're necessary."

To make up for any lost revenue, he said the family business has added services, such as tours designed for whale watching, and memorial voyages for scattering remains. "I'm making the business work in other ways besides fishing," he said. "People have to move on."

Jim Holden is an avid ocean angler who lives in San Clemente. One of his favorite fishing spots is off the Ritz-Carlton Hotel in Laguna Niguel, now a part of Dana Point State Marine Conservation Area off Southern California. "MPAs don't affect me all that much where we go fishing off Dana Point," he says.

Sport fishing is allowed with fishing lines and spear guns in this MPA. Additionally, sea urchin and lobster can be taken by divers, and use of a hoop net for

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the smuggler would contact border patrol agents the next time he left to pick up contraband. The bad guy was going to lead undercover agents to the additional traffickers.

Potter made a call to a fellow warden in Los Angeles County and requested FBI involvement.

The case appeared strong as Ruben had already given the wildlife officers a map of three businesses where he routinely sold the smuggled clams.

Potter seized the live clams that Ruben

had tried to cross over with this last time. He contacted a California Department of Fish and Wildlife marine biologist who identified them as black clams. Disposition of the clams was easy to determine. The smuggler did not have importer's license or a sport fishing license so the clams would not be returned to him. There were not enough to amount to any commercial value, so after collecting a representative sample, Potter returned the rest to the wild. 🐻

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lobster is allowed. Some commercial fishing for bait fishes, mackerel and squid is allowed in the MPA, but all plant life and all but three types of invertebrates are protected.

Holden runs a nonprofit organization, called Fish for Life!, that regularly joins forces with Dana Wharf Sportfishing to take special-needs children on fishing trips in and around the MPA.

He believes there must be some wisdom in creating MPAs. "There is obviously a serious reason for MPAs, and if it is in the best interest of protecting certain species (then) I'm

generally in favor of very limited closures," he says. "I think they're meant to help species and populations that are low, give them time to replenish and bounce back. And really, they don't take up that much area."

Holden says that he lost a few of his favorite fishing spots off Laguna Beach, north of Dana Point, where a new state marine reserve was established. "That area is so scenic," he says with a smile. "I can't fish there anymore, but I can still enjoy it while chasing dolphins." 🐬

Mary Patyten is a research writer with the Department of Fish and Wildlife's Marine Region. Her stories have appeared before in Outdoor California.

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