Bottlenose dolphins have migrated to the Bay Area for the first time, adapting to the changing environment

sfchronicle.com/bayarea/article/bottlenose-dolphins-migrate-17717213.php

January 15, 2023

A pair of bottlenose dolphins swim off the coast of San Diego in 2013.
Provided by Dave Weller / NOAA

Bottlenose dolphins, the marine mammals best known for doing clever tricks in animal parks, have created a home in the Bay Area after previously spending their lives in Southern California and Baja, Mexico.

Surfers catch waves with them at Ocean Beach, hikers have spotted their mottled gray backs at Stinson and Montara Beach, and they've explored the edges of San Francisco Bay, at all different times of year.

Part of a population called California coastal bottlenose dolphins, the animals' smarts may be helping them adapt to climate change. Their move north, which has happened over decades and has been documented for the first time in a new study, began when water temperatures rose in Central and Northern California. Their ability to adapt and find new habitats may end up making them a success story in the face of global warming.

"When you talk about adaptation and the ability to persist in the changing environment, bottlenose dolphins are a good example of some of the species that are likely to do better than other species," said David Weller, director of the marine mammal and turtle division at

the Southwest Fisheries Science Center, part of the National Oceanic and Atmospheric Administration.

Take polar bears and walruses, he said. “If sea ice disappears they’re in real trouble. But for bottlenose dolphins, it’s not the same way. They can actually adapt to and invade and successfully use habitats that they otherwise have not had in the past.”

Weller is a co-author of the new study on the range expansion of California coastal bottlenose dolphins, which included 84 individuals that were documented in the Bay Area between 2007 and 2018. The study was published Sunday in the Aquatic Mammals Journal. Though there is some fossil evidence of bottlenose dolphins in San Francisco Bay, they likely hadn’t been here for hundreds of years, said Weller.

The dolphins can be identified in photographs by unique patterns of notches on their dorsal fins, similar to how whales are traced by distinct markings on their tails, and people have given them cheeky names like Smootch, Ahab and Skillet.

“We’ve known some individuals here for the duration of our study,” said Weller. The dolphins can live for an estimated 50 to 60 years.

About half of the dolphins in the study continue to be nomadic, regularly traveling back and forth from the Bay Area, Monterey Bay, San Diego and Ensenada in search of food, and some seem to be Bay Area regulars, based on photographic evidence.

A pair that had also been seen in San Diego swam over 1,500 miles to Puget Sound in 2017, breaking a global distance record previously held by a bottlenose that traveled all the way around Italy.

“Half Moon Bay is just a couple of hours away,” said Bill Keener, the study’s lead author, referring to the time it takes them to swim there from Montara Beach, where he was looking through binoculars to try to spot dolphins in the surf in November. A group including a dolphin known as Ernestina had been seen there two days before. “They’re moving up and down the coast all the time.”

Bill Keener of the Marine Mammal Center searches for dolphins near Mussel Rock in Daly City in November.
Noah Berger, Freelance / Special to The Chronicle

Keener, a cetacean field researcher at the Marine Mammal Center in Sausalito, took a Chronicle reporter and photographer to five different coastal lookouts in San Francisco and the Peninsula that day in the search for Ernestina and her ilk — without success. He later learned that Ernestina, a female dolphin seen around the Bay Area for 15 years, had likely been on the Mendocino Coast, where she was identified by her particular notch pattern a few weeks later.

Coastal bottlenose dolphins have a narrow habitat range of around 500 to 1,000 yards from shore, distinct from a separate offshore population of the same species, said Keener. There are about 454 cataloged animals in the total California coastal population, and many more younger ones that haven't yet been identified. They get their notches over time, during social interactions with each other, including play and sex, that can get aggressive, leading to tears in the thin skin on their dorsal fins.

"Once that heals and scars, it stays pretty much the same for life," said Weller.

The coastal bottlenose hadn't been known to stray north of Santa Barbara until 1983, when an El Niño brought warm water to Monterey Bay, and with it a group of the adventurous dolphins. That's the same time one was seen for the first time on the San Mateo coast, but

sightings in the Bay Area were scant until around 2006, when a group of the dolphins was reported swimming past San Francisco's Ocean Beach.

"It wasn't until 2007 that anybody took any photos," said Keener. "That's when the light when off. These guys have really truly moved north."

Keener and his colleagues then embarked on cataloging the dolphins, mostly by taking photographs from shore and the Golden Gate Bridge, with the help of citizen scientists. During an extreme marine heat wave from 2014 to 2016, dolphins were seen in Mendocino County.

Males are bigger than females, but it's hard to tell from shore. Researchers in Monterey Bay have established the gender of some of the marked dolphins by taking small skin samples. In other cases, they've assumed certain dolphins are female after they are seen with calves.

After weaning, bottlenose dolphins don't stick around each other for long. They don't travel in specific pods, but rather have a social structure called fission-fusion, meaning they come together in groups and then drift apart. Some male bottlenose dolphins find another male buddy they stick with for life.

Three bottlenose dolphins, including a known individual named Skillet (left) and a calf (center), swim off the coast of Ocean Beach in San Francisco in 2020.
Provided by Izzy Szczepaniak / The Marine Mammal Center

As the dolphins have moved north, they have aggressive interactions with harbor porpoises, a smaller marine mammal that was already in the area in much larger numbers. The dolphins attack the porpoises in what one scientist called "porpicide," perhaps because of sexual

aggression. Keener has seen porpicide play out at Ocean Beach.

There are tens of thousands of harbor porpoises versus hundreds of the dolphins, so it's not really a threat to the population, Keener said. The dolphins also may compete with other predators for food like salmon they can't find in Southern California.

But Weller and Keener have seen other sides to the dolphins. Weller once assisted a professor who was working on teaching them language skills in captivity.

"What the take-home for me from that experience was, when you look them in the eye, there's somebody there, there's somebody looking back at you," he said.

He said it's important to study the dolphins because they are major predators that are literally in our backyard.

"These dolphins occupy the same habitat that humans do. And they feed on the same prey that humans fish for and eat as well," he said. "They serve as a proxy for the health of the coastal environment."

Tara Duggan (she/her) is a San Francisco Chronicle staff writer. Email: tduggan@sfchronicle.com Twitter: @taraduggan