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SCIENCE

Gray whales starving, washing up dead in startling numbers along SF coast

Peter Fimrite May 11, 2019 Updated: May 11, 2019 12:23 p.m.

Comments

1of5Dr. Pádraig J. Duignan, Marine Mammal Center director of veterinary science, stands on top of a beached gray whale as scientists and volunteers with the Marine Mammal Center and California Academy of Sciences perform a necropsy on the whale in April in Tiburon. Photo: Justin Sullivan / Getty Images

2of5Dr. Pádraig Duignan (right), the chief research pathologist at the Marine Mammal Center in the Marin Headlands, examines a gray whale carcass during a necropsy at Angel Island State Park in March.Photo: Marine Mammal Center

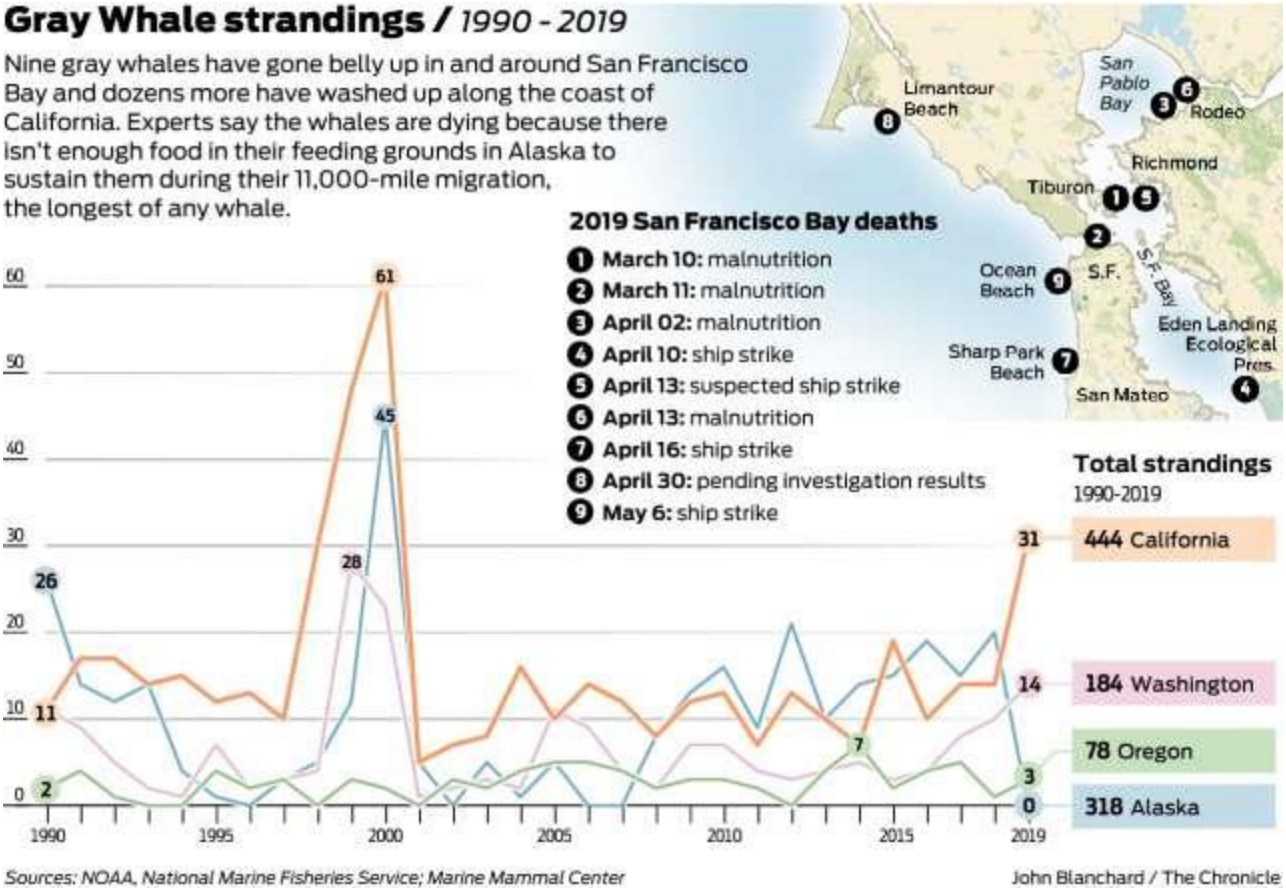
3of5Beachgoers view a dead gray whale that washed up on Ocean Beach, the ninth to be discovered recently in San Francisco Bay and along the coast.Photo: Justin Sullivan / Getty Images

Exhausted, emaciated gray whales are going belly up along the coast of San Francisco this year at a rate seen only once — during a two-year period 20 years ago — since whaling was banned and the leviathans were pulled from the brink of extinction.

The death toll, part of a disturbing mass die-off from Mexico to Alaska, is happening largely because there is too little food in the ecosystem to sustain the behemoths on one of the world's longest migrations, experts say.

The hulking carcasses of nine gray whales, several of them starving, have been found since March in San Francisco Bay and along the coast from Pacifica to Point Reyes. That's an unusually large number for the region.

"It's definitely not normal," said Mary Jane Schramm, spokeswoman for the Greater Farallones National Marine Sanctuary, which has for decades been monitoring the spectacular whale migrations along the San Mateo, San Francisco, Marin and Sonoma county coasts.



The desperately hungry grays are taking dangerous detours into San Francisco Bay to look for food, a treat for whale watchers who have been seeing the gargantuan beasts in the estuary since February — but not such a good sign for those who care about their survival.

“They are attempting to forage in the bay’s ‘dire straits’ with their ship-strike risk, unknown toxins in the bay mud, and other threats,” Schramm said. “Some cannot make it any farther and are simply giving up the ghost.”

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The strandings are happening along the entire coast of California, where 31 dead gray whales have been found this year, according to the National Marine Fisheries Service. In all, 48 gray whales have been found dead along the coasts of California, Washington, Oregon and Alaska, fisheries service officials said.

That’s not as bad as 1999, when 91 dead grays were recovered, or 2000, when 131 were found dead. But that die-off came in the wake of an unusually strong El Niño weather pattern that spread warm water along the entire West Coast and disrupted the food web.

There is a mild El Niño this year, and water temperatures are higher than normal, but marine biologists say the balmy conditions locally do not fully explain the increased death toll, which also rose the previous two years.

The cause of the decline, experts say, is an intricate and complicated cascade of events, including retreating polar ice, a lack of algae growth and a decline in the bottom-dwelling Arctic critters that gray whales eat.

“The majority of them have been skinnier, younger animals,” said Justin Viezbicke, the stranding coordinator for National Marine Fisheries Service in Long Beach. “I think the changing water conditions are what led to the changes in food.”

The trouble has not yet spread to other whale species, like humpbacks, which also migrate past San Francisco.

The difference is that eastern North Pacific gray whales are the only baleen whales that feed primarily on the bottom of the ocean. As such, they are considered by many scientists the sentinels of ecosystem change.

The Pacific grays feed in the shallow coastal shelf waters of the Arctic during the summer, where they scoop up mouthfuls of mud and siphon out benthic amphipods, tiny shrimp-like crustaceans, through their baleen.

The grayish barnacle-covered cetaceans, which can reach 45 feet in length, rely on the Arctic mud to supply them with enough calories for a 11,000-mile migration, the longest of any whale.

The remarkable journey starts when the grays head south from November to January toward the warm lagoons of Baja California, where they breed and give birth. The nursing mothers leave their breeding grounds and migrate with their calves north past California from February to May.

It is a perilous journey for the creatures, which generally do not eat as they make a beeline toward the cold, food-rich waters of the north. The mothers use enormous amounts of energy nursing their calves, which can consume as much as 50 gallons of milk a day.

Scientists believe the trouble started under the Arctic ice pack. The tiny crustaceans that the gray whales eat rely on algae that grows on the underside of the ice. When that algae dies, it sinks to the seafloor, where the mud-dwelling critters feast. The less ice there is, the less algae and, consequently, fewer crustaceans. Which means less whale food.

Measurements taken by NASA's snow and ice data center showed the ice coverage in 2018 was tied for the sixth-lowest summertime minimum in the satellite record dating back to 1979, well below what was normal between the 1970s and 1990s, according to Claire Parkinson, a climate change senior scientist at NASA's Goddard Space Flight Center in Maryland.

Parkinson and her colleague Nick DiGirolamo calculated that sea ice has shrunk on average about 21,000 square miles each year since the late 1970s. That's equivalent to losing a chunk of ice the size of Maryland and New Jersey combined every year for the past four decades, they said.

Scientists believe gray whales may be swimming farther to find less food, using up more energy.

Biologists monitoring the migration reported that 50% of the gray whales that arrived in Mexico last fall were already malnourished. The females also arrived later than usual to the lagoons and gave birth to fewer calves than normal, according to the annual assessment.

The constant stream of leviathans entering San Francisco Bay is a clear-cut sign all by itself that something is wrong, said Dr. Pádraig Duignan, the chief research pathologist at the Marine Mammal Center in the Marin Headlands.

The whales have been hanging out for long periods and feeding on bay mud, a highly abnormal practice for the species, he said.

Of the nine gray whale carcasses found in the Bay Area this year, six had entered San Francisco Bay, including a mother and calf seen recently trying to feed near the San Mateo Bridge. Four died of severe malnutrition, four after being hit by ships, and one found on the Point Reyes peninsula was too decomposed to tell what happened.

A necropsy performed Tuesday on a 41-foot female that washed up on Ocean Beach found injuries consistent with a ship strike, but Duignan said it also appeared to be malnourished.

"These mother whales are worn out and running on empty, making them even more susceptible to negative human interactions, including ship strikes and entanglements," Duignan said.

It's a troubling turn of events for gray whales, which rebounded after being hunted almost to extinction over the past 200 years. Fewer than 2,000 gray whales existed in the early 20th century.

International bans on commercial whaling in the 1930s and '40s helped the species recover.

The last die-off, in 1999 and 2000, caused the population to decline about 30%, to about 18,000 animals. At least 40 of the 109 dead gray whales documented in California those two years were found on Bay Area beaches, local biologists and federal officials said.

With the population again recovered, there are now about 27,000 North Pacific grays, which is close to their historic population.

Viezbicke said there is a possibility that the gray whale population has simply reached its carrying capacity and is experiencing the kind of natural selection that every species on land or in the sea goes through when it outgrows its food supply.

"When you have a larger population, you would expect to see more strandings," he said. "It's definitely something we are going to monitor and watch, but we know the size of the population is robust."

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https://www.seattletimes.com/seattle-news/environment/gray-whales-starving-to-death-in-the-pacific-and-scientists-want-to-know-why/

Gray whales starving to death in the Pacific, and scientists want to know why

May 3, 2019 at 12:05 pm Updated May 3, 2019 at 3:42 pm

Thirty-one dead gray whales have been spotted along the West Coast since

January, the most for this time of year since 2000. In this file photo from... (Mark Boster/ Los Angeles Times/TNS) **More**

By

Leila Miller

Los Angeles Times

LOS ANGELES — From Baja California to Puget Sound, scientists are seeing signs that gray whales are in distress. And they have no idea why.

Thirty-one dead gray whales have been spotted along the West Coast since January, the most for this time of year since 2000, when 86 whales died. Dozens more have shown visible signs of malnourishment, and sightings of mother-calf pairs are down sharply.

The gray whale death toll will probably climb through May as the animals continue their annual migration from their warm breeding lagoons in Mexico to their icy feeding grounds in the Arctic, said Justin Greenman, the assistant coordinator of stranded marine mammal response in California for the National Oceanic and Atmospheric Administration.

Experts said that, with about 27,000 gray whales thriving around the world, this year's deaths probably don't present a serious threat to the species. But the casualties can't be ignored, either.

"It's not like we're ringing the alarm bell that this population is threatened or at risk," said John Calambokidis, a biologist and co-founder of Cascadia Research who tracks gray whales in Washington state. "As a researcher, I feel that you want to at least understand what is going on."

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So far, scientists know little more than what they can see. They've documented 21 dead whales that have turned up in Long Beach, Los Angeles, San Francisco Bay and elsewhere on California shores. Most of them had not yet reached adulthood and looked like they might have starved to death.

Frances Gulland, a research associate at the University of California, Davis School of Veterinary Medicine, estimates that gray-whale deaths could hit 60 or 70 by the end of the season.

"If this continues at this pace through May, we would be alarmed," she said.

In a typical year, scientists at the Marine Mammal Center in Sausalito see two or three dead gray whales. So far this year, they've counted seven, according to Dr. Padraig Duignan, the center's chief pathologist.

Duignan performed necropsies on all of them and determined that four had died of malnutrition.

"Their skeleton seems to stick out more and more," he said.

Emaciated whales are also turning up with greater frequency along the West Coast. These whales are more angular in appearance, and have less muscle mass behind their heads.

Steven Swartz, a marine scientist who studies gray whales in Baja California's San Ignacio Lagoon, said 23 percent of the whales without calves his team has observed this year were skinny. That percentage is more than three times higher than usual.

And then there's the missing calves.

In San Ignacio Lagoon, researchers typically see at least 75 mother-calf pairs each year. This year, they've seen only about 40, Swartz said, though none of them appeared to be unusually thin. Calf sightings typically peak in March and early April.

Off the coast of Los Angeles, observers working with the American Cetacean Society have counted 31 gray-whale calves migrating northward since Dec. 1, said marine biologist Alisa Schulman-Janiger. Over the past decade, the number of northbound calves seen by this time of year has ranged from 28 to 164.

Giving birth requires lots of energy and blubber, and thin whales are in "no condition to be nurturing pregnancy or a calf," she said.

Scientists said they suspect the gray whales are malnourished because they didn't eat enough in the North Pacific and Arctic last summer — a time typically spent packing on as many calories as possible and building up reserves for their journey to Baja California and back.

But it's too soon to pinpoint the root causes, or to know whether it's the beginning of a more permanent trend, said Elliott Hazen, a research ecologist with NOAA's Southwest Fisheries Science Center in Monterey, Calif.

Researchers can't even tell if it's a problem of supply or demand.

"Whether it's not enough prey, too many whales, issues with the habitat — that is what we are currently investigating," Greenman said.

Adding to the mystery is the fact that other whale species do not seem to be affected, he added.

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- Gray whales starving to death in the Pacific, and scientists want to know why

Researchers at NOAA's Alaska Fisheries Science Center plan to study when and where gray whales feed in the Arctic to help them understand whether prey has become more scarce. NOAA researchers on the West Coast are currently surveying the number of calves migrating north, and in the fall they intend to count the number of gray whales that migrate south, including calves.

Scientists also have much to learn about the small crustaceans and other animals gray whales rely on for food. For instance, they think declines in Arctic sea ice or other ecological changes could be making prey more scarce.

In 2013, researchers spotted an area of warm water off the Gulf of Alaska, and that might be part of the problem. "That warm water layer — called 'the blob' or marine heat wave — had a number of ecosystem effects we're still trying to disentangle," Hazen said.

Other factors, like illness, can also prevent whales from eating as much as they should. “That’s a mystery that’s still being unraveled,” he said.

And the sooner, the better.

“We are concerned because whales are an indicator species for the health of the ocean,” Duignan said. “We use them to tell us what’s happening out there.”

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https://www.ocregister.com/2019/04/23/an-unusual-number-of-gray-whales-are-skinny-and-dying-along-the-west-coast-and-experts-are-trying-to-figure-out-why/

An unusual number of gray whales are skinny and dying along the West Coast — and experts are trying to figure out why

By **LAYLAN CONNELLY** | lconnelly@scng.com | Orange County Register
PUBLISHED: April 23, 2019 at 7:30 am | UPDATED: April 23, 2019 at 8:39 am

Thirty gray whales have died along the West Coast since the start of the year, a number that has experts concerned as they try to determine the cause of the spike.

So far, 21 dead whales making their migration from Alaska to the warm water lagoons in Mexico and back have been found along California, one off Oregon and eight off Washington, said Justin Greenman, assistant stranding coordinator for the National Oceanic and Atmospheric Administration’s Stranding Network.

This year already represents the third-largest gray whale mortality total on record, when compared the first four months of the year, and it’s not even the peak stranding season, which is typically late April through June, he said.

Eight whales have been found along the Los Angeles County coast, some floating near the Port of Los Angeles. One whale, in early March, washed up on the rocks near San Pedro and another, about a week later, was found just offshore in Hermosa Beach.
One whale was found off of Orange County, and two off San Diego.

Northern California, likewise, has had a large number of whale standings, including eight in the San Francisco Bay, one in Mendocino County and one in Humboldt County.

Local NOAA authorities are coordinating with counterparts in Mexico and Alaska to solve the mystery of the strandings, which are on pace to match 2000, the worst year on record, when more than 80 gray whales died.

Skinny whales, low calf counts
One clue to the mystery: Migrating gray whales have been unusually skinny, suggesting something is amiss in their food chain.

Alisa Schulman-Janiger, who runs the Gray Whale Census & Behavior Project from the Point Vicente Interpretive Center on the Palos Verdes Peninsula, said she noticed something was wrong months ago as she watched the whales passing the coastal cliffs on their way to the lagoons in Mexico.

“There’s definitely something going on,” she said. “We had more skinny whales than I’m used to seeing … they were emaciated, skeletons with skin, basically.”

Something else was odd, she said. The southbound whales were late, not showing up in the hundreds in December as they had in recent years.

Then came the strandings, dead whales dotting the coast.

Schulman-Janiger contacted researchers in Mexico, who said the calf counts at the lagoons there were extremely low, about a third of what they were the year before. Sixty percent of the whales were showing up skinny, they reported.

“Think of a woman with anorexia — you aren’t going to be able to get pregnant or sustain the pregnancy,” she said. “Or the mom can’t nurse because she doesn’t have blubber.”

This could be one reason so many juvenile whales have been appearing in the Los Angeles Harbor — to snack in a shallow-water habitat. It’s the same in San Francisco, Schulman-Janiger said, where whale experts have reported at least five skinny whales feeding in the harbor.

“Everyone is noticing skinny whales, everyone is noticing dying whales,” she said.

Schulman-Janiger said it's similar to what she observed in the 2000 season: whales late to start their migration; skinny; feeding in unexpected places; and dying, in what was termed an "unusual mortality event."

Greenman said he's been in touch with NOAA national headquarters and researchers in Alaska to find out what's happening at the food source, where whales spend their summers feeding.

Schulman-Janiger worries there's an "ecosystem crash," with warmer-than-normal waters in Alaska melting ice and having an impact on their food.

"They probably stayed longer to try and find food. And when they got to Mexico, it was a quick turn-around," she said. "Mom needs to go get food. She's not going to hang out socializing, she's going to go get food.

"If something is wrong with them, something is wrong with the ecosystem."

Examining dead whales

The 30 dead whales NOAA is reporting for 2019 along the West Coast represents just the deaths that officials know about. There could be some farther out to sea that no one has seen, or others that lifeguards towed out to sea without informing NOAA.

Experts study the dead whales, sampling the tissue in an effort to determine the cause of death. So far, authorities have been able to examine about half of the 30 whales.

For the most part, what they've found, are emaciated whales with empty stomachs and low muscle content, Greenman said. In one case, however, the cause of death appeared to have been a vessel collision and in another, it could have been health issues related to a prior entanglement, he said.

"There was a period where we had seven animals in six days," Greenman said. "I know we have a couple whales right now waiting for the team to logistically get to them."