

Florida manatee deaths spur federal investigation

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Efforts to figure out what's killing scores of manatees in Florida's waters this year just got a big boost from the federal government.

This week, the National Oceanic and Atmospheric Administration declared Florida's [manatee](#) crisis an "unusual mortality event," triggering a [federal investigation](#) to determine the causes of a recent spike in deaths and directing more money and resources to state agencies and environmental groups involved in rescues.

As many as 539 manatees have died in Florida through March 19, according to the most recent tally by the Florida Fish and Wildlife Conservation Commission. That's almost seven manatees per day, and nearly 400 more than the five-year average of 146 deaths. At this rate, 2021 is on track to be one of the deadliest for the gentle mammals in the past decade. A total of 637 manatees died in all of 2020, and 607 died in 2019 in the state.

Wildlife managers say that a combination of cold temperatures and a reduction of food availability in key wintering areas may explain at least part of the spike in deaths, even if the winter wasn't as severe as in past years. The new unusual mortality event status will likely help speed up research into other factors that may be killing Florida's beloved sea cow, including ecological and habitat degradation.

Nearly half of all deaths—235—occurred in Brevard County, where Indian River Lagoon provides an important refuge for the mammals to gather to escape cold water temperatures during winter months. Pollution and recent algae blooms have killed off seagrass beds in the region in recent years, leaving manatees without enough food to make it through the winter.

"We know that there's been some water quality issues in the Indian River Lagoon and the loss of sea grasses. We don't yet know whether that is a primary cause or just a secondary cause. And the job of the investigation is to work through all that," said Gil McRae, director at the Fish and Wildlife Research Institute, a division of FWC, which is leading the

response to the manatee mortality and the investigation.

The COVID-19 pandemic is still disrupting necropsies, which adds to questions about the staggering death numbers. Of the 539 manatee carcasses found, 372 weren't necropsied, according to the agency. Cold stress killed 27 animals while 66 manatees died of what FWC considered natural deaths.

If manatees were more evenly distributed in the state, maybe mortality wouldn't be so high, McRae said.

Winter aggregation behavior puts a lot of manatees in just a few spots, including the Indian River Lagoon, an estuary spanning more than 150 miles that historically supported hundreds of species that live on Florida's east coast. Increased nutrient pollution in the northern end of the lagoon and the southern end wiped out much of the seagrass in those areas, forcing manatees to look for food elsewhere.

But water management structures and development have cut off much of their access to traditional wintering areas. Often manatees end up in polluted man-made canals that don't provide enough food and expose them to boat traffic, said Jaclyn Lopez, Florida director of the Center for Biological Diversity.

Habitat loss is a key threat that is only getting worse, Lopez said. Natural springs in central and northern Florida provide wintering refuges, but as springs have been developed or access cut off, the giant mammals began congregating near warm-water discharges from power plants. Those are not sustainable sources in the long term as Florida moves to expand solar power. And increased spring water use by Florida's growing population is also reducing areas that are available for manatees to spend winter months.

That's why the Center and other conservation organizations want the government to identify specific areas that can be protected to conserve the species, which lost its endangered status in 2017 and was downlisted to threatened.

In 2010, in response to a petition filed by the Center, Defenders of Wildlife and Save the Manatee Club, the U.S. Fish and Wildlife Service determined that the revision of critical habitat was needed. The Service agreed that the loss of Florida's warm water habitats is one of the leading threats to manatees.

But it never revised the manatee's critical habitat. Instead the agency downlisted the manatee to threatened in 2017 despite ongoing threats to the species and manatee habitat.

Adding to the challenges, a new study showed that manatees have been chronically exposed to glyphosate, a key ingredient in pesticides like Roundup, because of application in sugarcane fields and aquatic weeds.

The study by University of Florida scientists showed that the chemical was found in the plasma of about 56% of the 105 manatees that were analyzed between 2009 and 2019. The concentration of the herbicide has "significantly increased" in Florida manatees over the past decade, the study said.

"This chronic exposure in Florida water bodies may have consequences for Florida manatees' immune and renal systems which may further be compounded by other environmental exposures such as red tide or cold stress," said the study, published in the scientific journal *Environment International*.

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