Climate

Florida's Shorebirds Saw a Big Breeding Bump After Hurricane Michael

The hurricane's storm surge created optimal nesting habitat for Snowy Plovers and other beach birds, newly released data show.

By Michael Stone
November 14, 2019

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Birds in This Story

Snowy Plover
Charadrius nivosus

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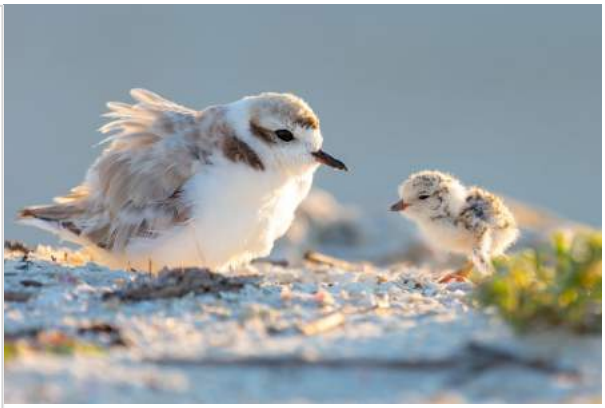


Snowy Plovers in the Florida Panhandle. Photo: Britt Brown

In October 2018, Hurricane Michael and its Category 5 winds inflicted tremendous destruction to Florida, causing an estimated $18.4 billion in damage and an eventual 50 deaths in the state.

More than a year later, human communities in the state's Panhandle are continuing to struggle to rebuild, but some Florida residents are thriving in the post-storm landscape. Along the Panhandle's protected beach lands, Snowy Plovers and other shorebird species are prospering, experts say. In fact, this summer marked the best breeding season in years for some species, with more young leaving the nest since 2004 and 2005 when impacts from Hurricanes Ivan and Dennis improved the birds' habitat. The same scenario appears to have played out after Hurricane Michael.

Many shorebirds prefer the sorts of coastal alterations created by tropical storms. The storm surges flatten dunes, giving nesting birds a clearer view to scan for predators like raptors, snakes, raccoons, opossums, and coyotes. They also wash away or bury vegetation in which predators conceal themselves. And pale birds like the Snowy Plover, along with their eggs and chicks, better blend in with the flattened, de-vegetated beach.

"We're usually thinking about storms from a human perspective, and that's fair—that's what's all around us," says Raya Pruner, the Florida Fish and Wildlife Conservation Commission's Panhandle shorebird project manager. But "all of our focal shorebird species benefited."

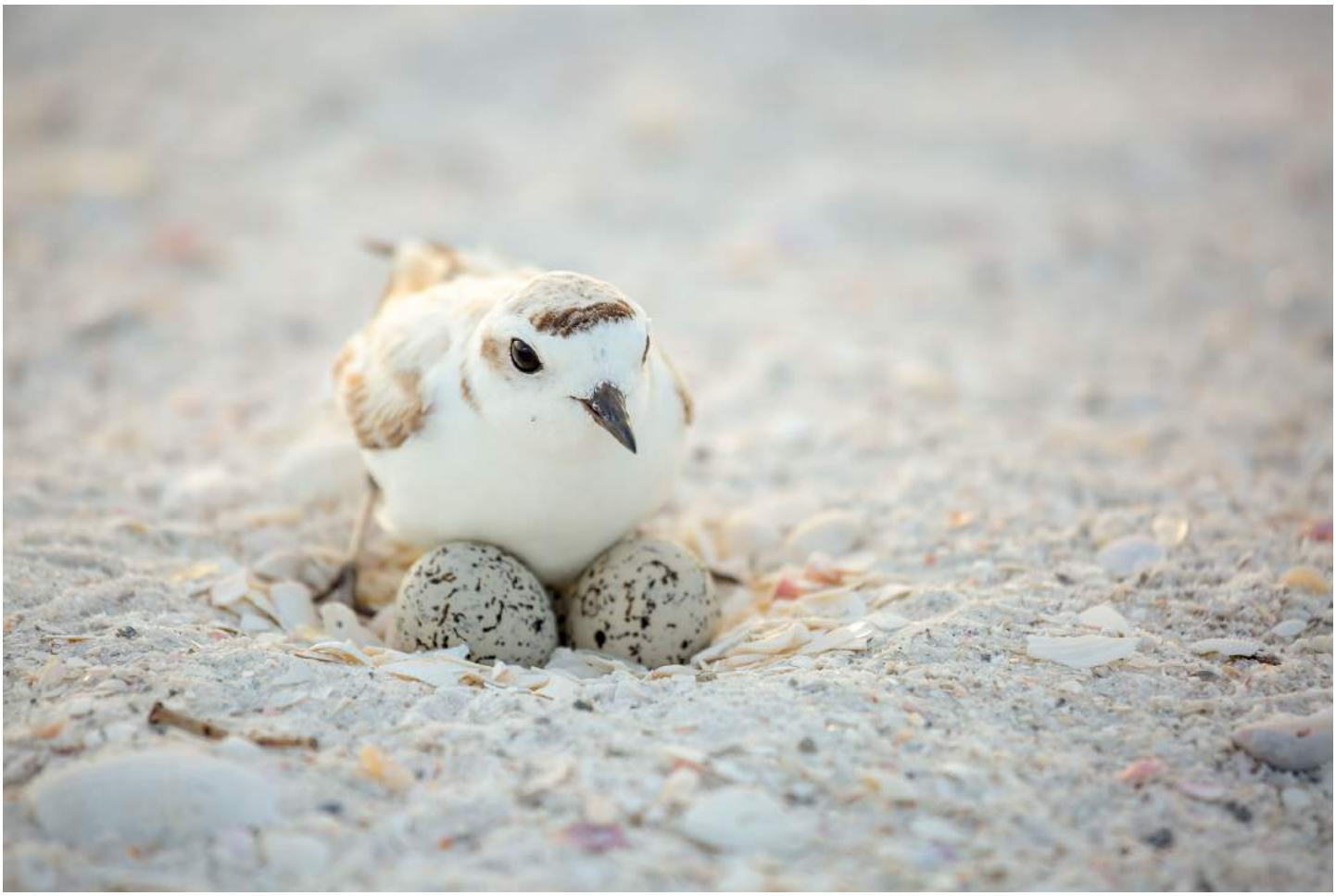
Initially, Michael took a toll on shorebird populations throughout the Panhandle, Pruner says. The greatest losses occurred closest to the hurricane's center. There, breeding adult

Snowy Plovers declined by up to 60 percent: The Shell Island population dropped from 20 individuals before the storm to eight afterwards, for example, and on western Crooked Island, the population of 39 individuals fell to 15.

Many banded individuals “were known to be present pre-storm and were not observed post-storm and have not been observed since,” Pruner says. In other words, they probably didn’t survive.

It was a significant loss for the Snowy Plover, which is designated as near-threatened by the International Union for Conservation of Nature and as threatened on Florida’s Endangered and Threatened Species List. An estimated 18,000 pairs of Snowy Plovers nest along beaches and lakes across the Americas and Caribbean, including around 200 pairs in Florida. That population mostly lives in the Panhandle, in its large tracts of uninhabited coastal conservation lands, as well as sparsely along the state’s southwestern edge.

With a population so small, the initial losses from Hurricane Michael were worrisome—but the new data suggest Florida's Snowy Plovers could soon recover. During the 2019 breeding season, which stretches from about February to August, 69 fledglings were documented among six Panhandle sites, according to data recently released by the Florida Fish and Wildlife Conservation Commission. In 2018, that number was only 12, and the yearly average from 2014 to 2018 was 23 fledglings. After Michael's storm surge destroyed beach vegetation, urban predators, attracted to shorelines by trash and other human development, are less able to hide and surprise the birds, letting parents safely raise their chicks to adulthood and even nest multiple times.



Snowy Plover nesting in the Florida Panhandle. Photo: Britt Brown

Though she doesn't yet have final data for other species, Pruner also noted hurricane-related improvements in breeding success for the Wilson's Plover, American Oystercatcher, Black Skimmer, and Least Tern—all state-threatened except for the Wilson's.

Such gains for the Snowy Plover were last seen after the major hurricanes in 2004 and 2005, Pruner says. Monitoring didn't formally begin until 2008 but, even then, the storm-related breeding boom was still going strong.

"From 2008 to 2012, we had really high productivity," she says. Then came the vegetation regrowth, and the trend turned around. "At that point, productivity and the adult population were in a steep decline" until 2019, Pruner says.

Snowy Plovers are highly polygamous, and once the chicks hatch, the male will often raise them as the female goes off to start another family. One particularly productive female at T.H. Stone Memorial St. Joseph Peninsula State Park fledged five chicks in 2019

among three nests, according to the Florida Fish and Wildlife Conservation Commission. In the seven prior breeding seasons, she averaged 0.83 fledglings per season.

"We're hopeful that we have this carry-over effect for multiple years because the population was severely impacted by the hurricane," Pruner says.

Management strategies to create "pristine, wide-open, vegetation-less" beach habitats without tropical-storm forces do exist, says Marianne Korosy, Audubon Florida's director of bird conservation. They include herbicides, which can kill non-target vegetation; controlled burns, if there's enough grass to fuel them; and mechanically slicing through the ground to chop through the vegetation (also known as discing), though this is time-consuming to the tune of roughly two days for each acre.

Positive habitat resets for shorebirds have been observed following other severe storms.

What's more, beach plants have "impressive roots and they don't like to let go," Korosy says, and sometimes persist despite the hard work. "That isn't the same level of reset that's achieved by a hurricane."

Positive habitat resets for shorebirds have been observed following other severe storms. After 2012's Hurricane Sandy slammed the Northeast, for example, a separate species, the federally threatened Piping Plover, saw marked improvement. It went from 30 nesting pairs that year across portions studied on New York's Fire and Westhampton islands to 86 pairs in 2019, according to research from the shorebird program in Virginia Tech's Department of Fish and Wildlife Conservation.

"It can certainly have a positive influence on plenty of birds, and not just for nesting habitat" but also foraging habitat, says Katie Walker, a graduate student in the shorebird program. Walker, whose findings were published in *Ecosphere* in June, is from Connecticut, which Sandy also ravaged. "It's hard for people at home to imagine that [the storm] could've done so much good for a bird."

And yet, while hurricanes can temporarily improve shorebird breeding habitat, powerful storms like Sandy and Michael ultimately remind of the long-term threats shorebird face. Climate change, which creates the warmer ocean waters that have helped fuel an increase in devestating storms, is likely to take a heavy toll on populations of Snowy Plover, Piping Plover, and other beach-nesting species. Survival

by Degrees: 389 Bird Species on the Brink, Audubon's new science report, shows that the species will lose beachfront habitat to sea-level rise by 2050 if global carbon emissions continue to rise. If so much of the landscape is permanently lost and not regained farther inland, any post-storm population bounce back would be much more difficult, if not highly unlikely.

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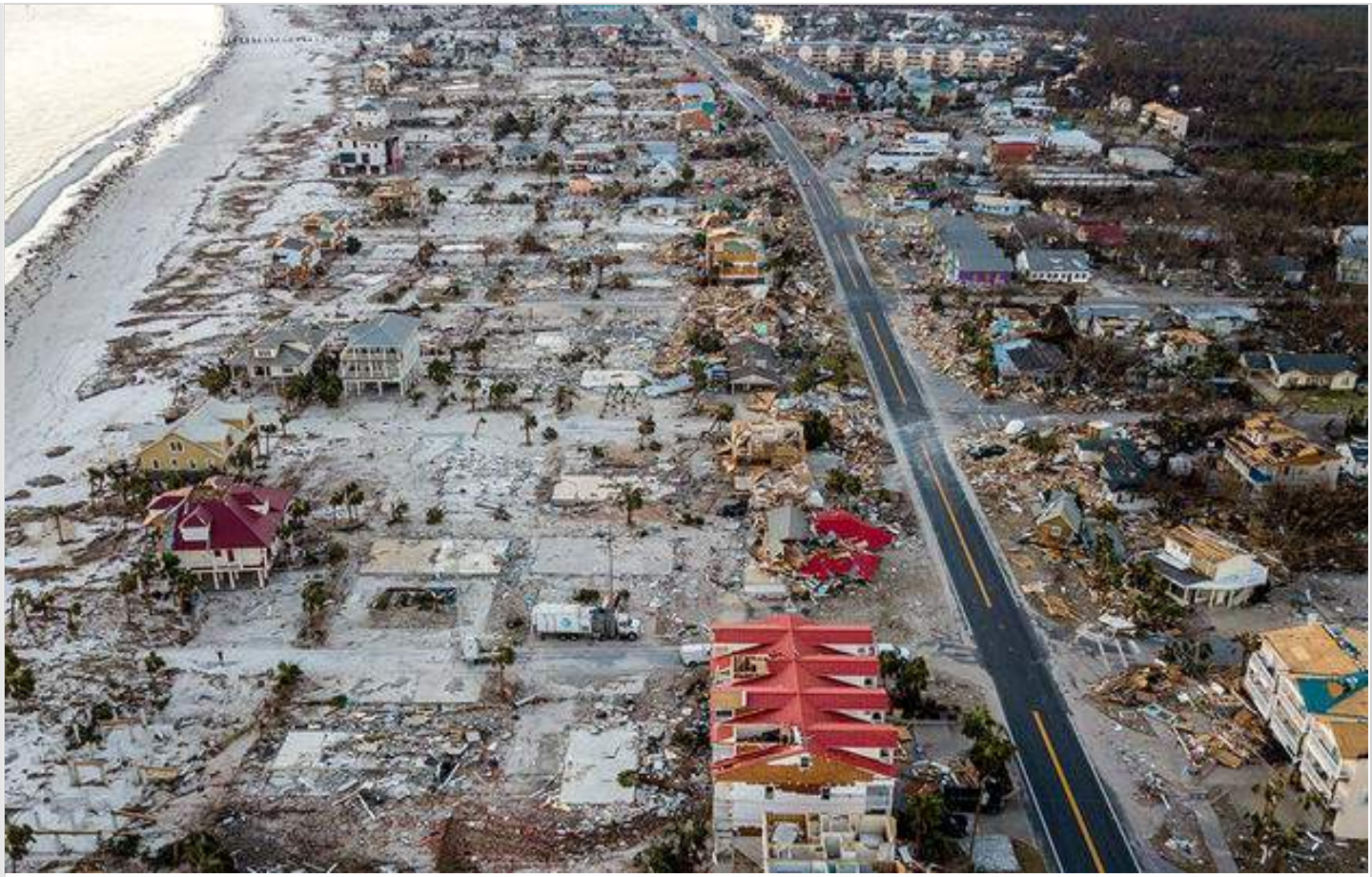

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