

## Though manatee population has grown, low diversity still a risk

December 19 2012, by Mickie Anderson

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(Phys.org)—A new research study gauging the outlook for the Florida manatee shows that it's a case of great news and not-so-great news.

The Florida's manatee population has grown so much in the last decade that the graceful creatures may soon find themselves reclassified by wildlife management officials from endangered to merely threatened.

But while a research team from the University of Florida and the U.S. Geological Survey found that the manatee's numbers have grown, they say the study's results suggest that their outlook remains risky.

[Manatees](#) are peculiar looking mammals, weighing as much as 3,500 pounds and with a lifespan of about 60 years. They are slow moving and breathe air but can stay submerged underwater several minutes at a time. They are important to the state's tourism industry and to the state's residents, who made the manatee the official state [marine mammal](#).

The researchers studied [genetic samples](#) from 362 manatees obtained through necropsies or using a biopsy tool similar to a cattle ear-notcher on free-swimming wild manatees and found that the mammals' [genetic diversity](#) is not sufficient for them to quickly adapt to an ever-changing, often-threatening environment, said Kimberly Pause Tucker, the study's lead author.

Besides the [environmental threats](#), low diversity could signal the potential for future [inbreeding](#) problems, such as those that have caused

problems in the Florida panther population.

"I think it's bad news, but it's not the worst news," said Tucker, a former UF doctoral student and now assistant professor and director of STEM initiatives at Stevenson University in Stevenson, Md. "The bad news is the low diversity that we're seeing. But fortunately, we're not seeing any [deleterious effects](#) from it ... yet."

Tucker was co-advised on her doctoral work by Madan Oli, a UF population ecology professor and Institute of Food and Agricultural Sciences faculty member. A paper detailing the study's findings was published Monday by the *Journal of Mammalogy*.

In January 2000, a Florida Fish and Wildlife Conservation Commission two-day aerial survey counted 1,646 manatees gathered in their favored warm-water sites, including springs and near power plants. In 2011, a similar count tallied 4,834 manatees.

Based on such trends, wildlife management officials recommended changing the status from endangered to threatened in the most recent review, said Margaret Hunter, the study's co-lead author and a USGS manatee expert who studies the creatures from Florida to Puerto Rico and Belize.

Manatees can travel rather long distances and the researchers did find some evidence of mating between East Coast and West Coast manatees, Hunter said, just not enough to create the kind of diversity a population needs to be able to withstand challenges such as cold-stress related illnesses, red tide or an oil spill.

An example, she said, was the extremely cold winter of late 2009 to early 2010, which led to about 350 manatee deaths. Events such as that reduce population diversity even more, she said.

"The low [diversity](#) is a concern," she said. "The big picture here is incorporating the Florida data into a range wide study, and using it to protect the species."

Provided by University of Florida

Citation: Though manatee population has grown, low diversity still a risk (2012, December 19)  
retrieved 2 May 2024 from  
<https://phys.org/news/2012-12-manatee-population-grown-diversity.html>

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