

Project Bay Bones investigates bonefish decline

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Bill Gorton (left) poses with his first bonefish and Captain Early Gentry (right) in Islamorada, Fla. in 1958. Credit: Florida International University

Bonefish catches are on the decline, and researchers in the Southeast Environmental Research Center at Florida International University are trying to get to the bottom of this concerning trend.

In the past three decades, angler catches of bonefish have steadily decreased in Florida Bay and the upper Florida Keys. Little is known about bonefish populations in South Florida, mostly because it is a catch-and-release recreational fishery and the fish are not commercially harvested. Yet their decline is of concern to ecologists and fishing guides alike because bonefish act as indicators of ecosystem health.

To better understand the observed decline, the research team, led by principal investigator and FIU professor of environmental studies Jennifer Rehage, is analyzing ecological data from the past 35 years on water quality, climate, seagrass cover, and abundance and distribution of prey, as well as angler catches and effort. The three-year project is funded by Bonefish & Tarpon Trust, an organization dedicated to conserving and enhancing global bonefish, tarpon and permit fisheries and their environments through stewardship, research, education and advocacy.

"Even if the declines in catches are due to bonefish moving into new territories and not to a decline in their population numbers, the declines are likely indicative of habitat degradation," Rehage said. "If there is a conservation threat, we hope to distill knowledge that will help inform their conservation. You can't mobilize conservation without science."

The researchers are also integrating a citizen science survey that will allow them to tap into angler and fishing guide knowledge since bonefish data is not available. Known as [Project Bay Bones](#), the survey will allow the researchers to obtain real-time data on the quality of their fishing experience, including where they fish, how has their bonefishing experience changed over time, and what do they think is driving these

changes. By finding themes in the survey responses, the researchers can then refer back to the ecological data to better pinpoint what environmental factors, if any, are driving these declines.

"The anglers and guides who are out there everyday know this species better than most people," said Emily Kroloff, an environmental sciences master's student working on the project. "They care about this resource and want to help conserve it, it's the angler culture, but they don't have an outlet. By integrating them into our science, it gives us a great resource of information and gives them that outlet. It's a great way to bridge science and people and, hopefully, make a difference."

The [online survey](#) was launched in August during the heart of bonefish season and has already secured responses from more than 470 citizen scientists, including Bill Gorton. The retired Air Force jet fighter grew up in South Florida fishing for speckled perch, redfish and snook. Gorton, a member of the Bonefish & Tarpon Trust, came across the project in a newsletter distributed by the organization. Not only did Gorton complete the survey, but he also sent the researchers a photo of his first bonefish catch in 1958.

"I thought it would be of interest to the researchers to have documentation on what it was like to fish for bonefish back in the day. I wasn't really looking for any personal recognition, but if I can contribute to this serious science in some minor way, that's something I want to do," Gorton said. "The survey asks pressing questions. I hope this project adds to the library of information available on bonefish. The more we learn about these animals, the more we can hopefully practice good conservation of a splendid species for the state of Florida."

Bonefishing is a popular sport in South Florida and the Bahamas, with each fish accounting for \$3,500 in annual tourism revenue. With an average 20-year life span, bonefish are economically lucrative fish for

the region.

Project Bay Bones is being done in collaboration with researchers from Everglades National Park, U.S. Geological Survey, and the Florida Fish & Wildlife Conservation Commission.

Provided by Florida International University

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