Biologist reels in data to predict snook production

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Ross Boucek retrieves underwater equipment used to detect spawning migrations of snook in the Shark River, Everglades National Park.

FIU researcher Ross Boucek wants to give more predictability to anglers hoping to catch a bounty of snook.

In Everglades National Park, snook are the most sought-after fish with nearly 40 percent of anglers in pursuit. However, the snook population is in decline. Changes in waterflow and rainfall may be partly to blame.

"Little is known about how these deviations influence the population of snook and other tropical species, including tarpon, bonefish and permit," said Boucek, a Ph.D. student in the Department of Biological Sciences. "To mitigate these declines and to develop appropriate conservation strategies, it is important that we identify the physical, climatic, biological and anthropogenic factors that drive the dynamics of these fisheres."

Boucek hopes by examining rainfall patterns and angler catch rates, he will be able to predict snook reproduction efforts two years out. The statistical approach could help key tourism agencies give some stability to Florida's multi-billion dollar recreational fishing industry. According to Boucek, if the right amount of rain will fall in a given year and produce a lot of snook, tourism agencies could advertise the good fishing years two years in advance, increasing angler tourism rates and expenditures. Similarly, if scientists can predict bad years before they happen, those who rely on snook fisheries, including fishing guides, can adjust their efforts to alternate fisheries.

"Results from this study should greatly improve our understanding of how the Comprehensive Everglades Restoration Plan, that is predicted to alter many factors of the hydrologic regime, will influence tropical, economically-important fishes in the Everglades," Boucek said.

The Comprehensive Everglades Restoration Plan provides a framework to restore, protect and preserve the water resources of central and southern Florida. The South Florida Water Management District and U.S. Army Corps of Engineers are undertaking various projects to help ensure the proper quantity, quality, timing, and distribution of waters to the Everglades and all of South Florida, specifically by capturing fresh water that now flows unused to the Atlantic Ocean and the Gulf of Mexico and redirect it to areas that need it most.

Boucek's six-year-long study is funded by the Everglades Foundation and will be completed by 2017.

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