

Everglades' alligator numbers drop after dry years

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Alligators and the Everglades go hand-in-hand, and as water conditions change in the greater Everglades ecosystem, gators are one of the key species that could be affected.

A recent study conducted by researchers from the U.S. Geological Survey, U.S. Fish and Wildlife Service and the University of Florida found the number of American alligators observed in the Arthur R. Marshall Loxahatchee National Wildlife Refuge dropped following dry years, and then appeared to recover in later non-dry years. The decrease in alligators appeared proportional to the intensity of the dry event. The refuge is located west of Boynton Beach, within the greater Everglades ecosystem.

"Alligator behavior and habitat use is linked to hydrology, and when that hydrology changes, alligator behavior and habitat can change," said USGS research ecologist Hardin Waddle, lead author of the study. "They don't need it wet all the time, but if dry events increase in frequency and intensity, this could be problematic for alligator numbers in the greater Everglades ecosystem."

Ten years of spotlight night counts in marsh and canals were analyzed to better understand the effect of annual minimum [water](#) depth on annual population growth rate. Years were considered dry if they experienced a drop in water level to 6 inches above the marsh surface. At this water level, alligators have difficulty moving around.

Dry conditions can cause male alligators to use up more energy to locate mates, disrupt the ability of females to nest and could result in death due to over-competition for resources and even cannibalism in crowded areas, explained Waddle.

The Everglades is currently one of the world's largest wetland restoration efforts. The ecosystem, encompassing nearly 4 million acres from near Orlando to the Florida Bay, is threatened by a number of disturbances including changes in hydrology and land use. Much of the remaining areas, including Water Conservation Areas, are now influenced by [water management](#) for water supply and flood control. Restoring the natural hydrology to improve ecosystem function is one focus of the Comprehensive Everglades Restoration Plan.

Due to their sensitivity to hydrology, the CERP is using alligator populations to help determine ecosystem response and success of the restoration project. The study results have important implications for helping managers with restoration and water management planning.

"Long-term data sets like the one used in this study offer invaluable insight into what is happening in an ecosystem and provide us the knowledge to build flexibility into Everglades restoration and management," said U.S. Fish and Wildlife Service regional scientist and study co-author Laura Brandt. "Understanding both annual patterns and long-term trends helps us with water management decisions within the refuge and other natural areas throughout South Florida."

The study can be found [online](#).

Provided by United States Geological Survey

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