

# Quantifying potential impact of feral hog predation on coastal American alligator nests

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Texas A&M AgriLife researchers are investigating the potential impacts of feral hog predation on coastal American alligator nests, as well as how the reptiles utilize their habitat. Credit: Courtney Sacco/Texas A&M AgriLife

Researchers with the Texas A&M College of Agriculture and Life

Sciences Department of Rangeland, Wildlife and Fisheries Management are keeping a watchful eye on American alligator nests to shed light on the potential impacts of feral hog predation and to understand how these reptiles use habitat across an ever-changing Texas landscape.

While American [alligator](#) populations in the U.S. are healthy overall, some fare better than others regionally. Researchers are working to answer the many questions that can help guide management actions and ensure healthy populations into the future, said John Tomeček, Ph.D., associate professor in the Department of Rangeland, Wildlife and Fisheries Management.

## **Up close and personal data collection**

To help answer some of these questions, Tomeček's graduate student, Alyssa Freeman, has been collecting copious amounts of data.

Freeman, who is pursuing a master's degree in rangeland, wildlife and [fisheries management](#), spent the last two summers equipping active alligator nests with game cameras at the Texas Parks and Wildlife Department's 25,852-acre J.D. Murphree Wildlife Management Area, WMA, documenting instances of nest predation and the species responsible.

In addition to nest monitoring, Freeman and biologists attached GPS transmitters to breeding-size male and female alligators to monitor their movement and habitat usage.

"Aside from longer-term changes in climate and habitat, human modification of coastal marshes and wetlands can change the dynamics of alligator nest selection sites, potentially exposing nests to increased rates of predation," Freeman said.

The GPS transmitters send location readings every hour of the day to Freeman's computer, allowing her to remotely monitor and map the animals' fine-scale movements.

This data will provide Freeman and Tomeček with key insights into habitat use and nesting site selection.

"From nest predation to habitat use and selection, this project is looking at a wide array of factors that will enable us to better manage alligators now and into the future," Tomeček said.

## **Initial findings indicate feral hog impact**

During her two summers of data collection, Freeman monitored 28 active alligator nests throughout the WMA. Her initial assessment indicated that roughly half were predated by feral hogs.

"Although alligators evolved alongside native nest predators, such as raccoons, this additional pressure from a non-native species is an added threat to an already low nest survival rate," Freeman said.

Freeman said a [2012 survey](#) of licensed alligator farmers from Louisiana found that over half of the farmers reported losing alligator nests to feral hogs the previous year. Roughly 590 nests were damaged or destroyed on 36 separate properties across the state.

Even if the feral hogs don't eat the eggs, the [nest](#) disturbance and exposure to warmer ambient temperatures can alter the sexual composition of the remaining clutch.

"Alligators experience temperature-dependent sex determination, meaning the incubation temperature directly affects whether the animal will hatch as a male or female," Tomeček said.

While eggs incubated at roughly 86 degrees and below result in female hatchlings, eggs exposed to warmer temperatures result in males.

Tomeček said this is a serious concern for conservationists considering the ripple effects it could have on reproduction and healthy alligator populations in the future.

## **Alligators—a conservation success story**

While the Southeastern U.S. now supports robust populations of the American alligator, these prehistoric reptiles came perilously close to joining the ranks of the hundreds of [wildlife species](#) that have gone extinct since the turn of the 20th century.

Unregulated hunting, driven largely by a demand for exotic, luxury products, led to a precipitous decline in alligator populations across their native range. This, coupled with habitat loss, brought the species to the brink of extinction by the mid-1960s. American alligators first received federal protection under the Endangered Species Preservation Act of 1966, a predecessor to the Endangered Species Act of 1973.

Tomeček said state and federal partnerships, as well as restocking contributions from alligator farms, enabled the population to recover over roughly two decades.

Currently, alligator population estimates range from 400,000 to 500,000 in Texas, with the majority located in the southern and eastern portions of the state.

Freeman said alligators are currently listed as a species of least conservation concern by the International Union for Conservation of Nature. But proactive research like this is important as scientists continue to better understand and monitor the species as it faces

urbanization, changing sea and salinity levels in coastal wetlands, invasive species pressure and more.

"We assume alligators are fine because we recovered them from historic overharvest, but they may be facing different challenges now that are harder to see," Tomeček said. "Alyssa is working to untangle some key questions. We have to figure out how we can better manage these animals to ensure healthy populations into the future."

## **Living alongside alligators**

While American alligators are apex predators and should never be approached, both Tomeček and Freeman said they typically try to avoid human interactions and are much less aggressive than their evolutionary relative—the saltwater crocodile.

Although documented alligator attacks in Texas are extremely rare, [situational awareness](#) and proper precautions when recreating in and around alligator habitat are important.

"If you know alligators frequent a certain area, do not swim there," Freeman said. "Additionally, do not allow your dog or small children to go near the water because they resemble common prey animals for alligators."

Additional precautions include:

- Acknowledge and obey signage warning of the presence of alligators.
- If fishing, avoid disposing of harvest scraps in the water or along the bank, as this can attract alligators.
- Never feed alligators. This can result in food conditioning, where wild animals begin to associate humans with food. In some cases,

this can lead to aggression and danger for both humans and the animal.

More Texans may see alligators as communities expand along habitats such as bayous or community reservoirs, but Tomeček said a sighting doesn't necessarily equate to a safety issue.

"It is important for folks to understand that just because they see an alligator out and about, it doesn't mean that it's a threat to anyone," Tomeček said. "Before calling authorities, people should ask themselves if the animal is truly causing a safety issue. They're valuable to our ecosystem and are an iconic part of the Southeastern U.S. They're something to be proud of."

Provided by Texas A&M University

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