

Study finds crocodiles are cleverer than previously thought

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A mugger crocodile balances twigs on its nose to tempt birds collecting small branches to build nests with, at Madras Crocodile Bank, Tamil Nadu in India. Credit: Vladimir Dinets

Turns out the crocodile can be a shrewd hunter himself. A University of Tennessee, Knoxville, researcher has found that some crocodiles use lures to hunt their prey.

Vladimir Dinets, a research assistant professor in the Department of Psychology, is the first to observe two crocodylian species—muggers and American alligators—using twigs and sticks to lure birds, particularly during nest-building time.

The research is published in the current edition of *Ethology, Ecology and Evolution*. Dinets' research is the first report of tool use by any reptiles, and also the first known case of predators timing the use of lures to a seasonal behavior of the prey—nest-building.

Dinets first observed the behavior in 2007 when he spotted [crocodiles](#) lying in shallow water along the edge of a pond in India with small sticks or twigs positioned across their snouts. The behavior potentially fooled nest-building birds wading in the

water for sticks into thinking the sticks were floating on the water. The crocodiles remained still for hours and if a bird neared the stick, they would lunge.

To see if the stick-displaying was a form of clever predation, Dinets and his colleagues performed systematic observations of the reptiles for one year at four sites in Louisiana, including two rookery and two nonrookery sites. A rookery is a bird breeding ground. The researchers observed a significant increase in alligators displaying sticks on their snouts from March to May, the time birds were building nests. Specifically, the reptiles in rookeries had sticks on their snouts during and after the nest-building season. At non-rookery sites, the reptiles used lures during the nest-building season.

"This study changes the way crocodiles have historically been viewed," said Dinets. "They are typically seen as lethargic, stupid and boring but now they are known to exhibit flexible multimodal signaling, advanced parental care and highly coordinated group hunting tactics."

The observations could mean the behavior is more widespread within the reptilian group and could also shed light on how crocodiles' extinct relatives—dinosaurs—behaved.

"Our research provides a surprising insight into previously unrecognized complexity of extinct reptile [behavior](#)," said Dinets. "These discoveries are interesting not just because they show how easy it is to underestimate the intelligence of even relatively familiar animals, but also because crocodylians are a sister taxon of dinosaurs and flying reptiles."

Dinets collaborated with J.C and J.D. Brueggen from the St. Augustine Alligator Farm Zoological Park in St. Augustine, Fla. More of his crocodile research can be found in his book "Dragon Songs."

Provided by University of Tennessee at Knoxville

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