

Female cowbirds pay attention to cowbird nestling survival, study finds

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Researchers observed the results when female cowbirds, left, laid their eggs in the nests of prothonotary warblers, right. Credit: Chris Young (cowbird) and Michael Jeffords (warbler)

Brown-headed cowbirds have a reputation for being deadbeat parents:

They lay their eggs in other birds' nests and then disappear, the story goes, leaving the care and feeding of their offspring to an unwitting foster family. A new study suggests, however, that cowbird moms pay close attention to how well their offspring do, returning to lay their eggs in the most successful host nests, and avoiding those that have failed.

The new findings are reported in the *Proceedings of the Royal Society B*.

"Cowbirds may be paying attention not only to their own reproductive success, but to other [cowbirds](#)' as well," said University of Illinois Ph.D. student Matthew Louder, who led the study with Illinois Natural History Survey avian ecologist Jeff Hoover and INHS biological surveys coordinator Wendy Schelsky. "No one's ever suggested before that cowbirds or even other [brood parasites](#) pay attention to their own reproductive success." Louder is now a postdoctoral researcher with East Carolina University in North Carolina and Hunter College in New York.

Cowbirds are native to North America and are one of only a few bird species that engage in brood parasitism, the practice of tricking other species into raising one's young, the researchers said. Other brood parasites include the cuckoo, which targets [nests](#) with [eggs](#) that look very similar to its own. Some host species recognize foreign species' eggs and roll them out of the nest.

A previous [study](#) from Hoover and Scott Robinson, of the Florida Museum of Natural History, found that some female cowbirds notice when a host bird has ejected their eggs, and will ransack the "offender's" nest. Hoover calls this behavior "mafia-like retaliation." Some cuckoos also do this.



Cowbirds surreptitiously lay their eggs in other species' nests, leaving the care and feeding of their offspring to the unwitting hosts. The three larger eggs are cowbird eggs, laid in a prothonotary warbler's nest. Credit: Jeff Hoover

"There were a lot of implications of that earlier work, and one of them was that cowbird females aren't abandoning their eggs in another species' nest; they're paying attention, to a certain point," Hoover said. "And so we wondered how long they continued to pay attention."

In the new study, the cowbirds targeted prothonotary warblers nesting in experimental nest boxes that the researchers had modified to exclude predators. The researchers manipulated events in the nests to clarify

whether the cowbirds randomly selected hosts or if the previous performance of a nest - in terms of cowbird survival - became a factor in their nest selection. The researchers removed cowbird eggs from some of the warbler nests and left them in others. They tracked whether the cowbird nestlings - and the warblers - survived to fledging age.

"We try to discriminate between host success and cowbird success," Schelsky said. "The cowbirds might be selecting nests where young cowbirds succeed, but they might also prefer nests where the warblers are doing well, and not pay attention to cowbird survival."

The team found that the nests that successfully hosted cowbirds were much more likely to be parasitized again, while those that failed to fledge cowbirds were significantly less likely to be targeted by cowbird females the next time around.

"They're learning both from success and from failure," Hoover said.

"And warbler success isn't really relevant to the cowbirds," Schelsky said.

While they are unable to say whether the same females are targeting the same nests again and again, the researchers said it is likely that that is the case.

"Our results mean that somebody's paying attention, and it makes the most sense that the female that's laying the eggs would be [paying attention](#) to her own [reproductive success](#)," Louder said. "We think that other females are also paying [attention](#)."

More information: A generalist brood parasite modifies use of a host in response to reproductive success, Published 2 September 2015. [DOI: 10.1098/rspb.2015.1615](https://doi.org/10.1098/rspb.2015.1615)

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