

The Outside Story



How Do Cowbirds Learn To Be Cowbirds?

By: Carolyn Lorié

Unlike the majority of birds, brown-headed cowbirds (*Molothrus ater*) do not start life surrounded by their own kind. The females do not build nests, but instead add their eggs to the clutches of other birds—usually one per nest, but sometimes several. Host birds generally do not recognize the dumped egg and will tend to it and the hatchling as one of their own. This means that all baby cowbirds spend the first weeks of their lives in the company of warblers or cardinals or any one of the many species whose nests are parasitized.

So why don't they end up singing like cardinals? Or eating like warblers? Why doesn't the forest become their home if that is where they were hatched and fledged? In other words, how does a cowbird learn to be a cowbird?

That's the question behind a study by avian ecologist Jeff Hoover, from the University of Illinois. He and fellow researchers Matthew Louder and Wendy Schelsky tracked juvenile cowbirds that were being raised by prothonotary warblers. What they discovered was that, at about 20 to 30 days old, cowbird fledglings started to leave the warblers' territory at dusk. The young cowbirds would travel a distance, sometimes more than a mile, and spend the night roosting alone. They would return the following morning to be fed by their foster parents.

"This may go on for some nights until finally the cowbird fledgling does not return and presumably has found other cowbird adults, outside of the forest, to spend time with," explained Hoover.

For reasons that aren't clear, these nocturnal departures seem to prevent the young cowbirds from imprinting on their host parents and consequently adopting their behaviors. "It is likely that imprinting for young cowbirds happens later than it does for other songbirds," said Hoover.

By avoiding imprinting, a warbler-raised cowbird can avoid developing into an insect-eating, forest-dwelling bird. But how does it learn to be a cowbird?

That brings us back to the mother cowbird that dumps her eggs and disappears. It turns out she may not disappear completely. Most female cowbirds will have a range in which they lay their eggs, explained Hoover, and some have been observed monitoring their young within their range.

"Once the eggs hatch," said Hoover, "the begging cowbird offspring in the nest is

obvious both visually and vocally, and a female cowbird could know that there is a cowbird chick, presumably hers, being fed by the host, without having to be at the nest to see it. She would be able to hear it from some distance away.”

In response to hearing the begging cries of the baby cowbird, the female responds, not by feeding it, but by calling to it. “This may help the cowbird fledglings to eventually find other adult cowbirds that are vocalizing, as they fly from feeding areas to roosting areas at dusk each day,” Hoover explained.

The behavior of sticking around after laying eggs and monitoring their progress is most likely a recent development for cowbirds. “The theory is that cowbirds were at one time more nomadic and would generally move about the Great Plains with the roaming herds of bison,” said Hoover. The bison (and other herbivores before them) stirred up insects, which the cowbirds ate. It’s not clear, however, if the birds were able to follow the herds, because they dumped their eggs or they dumped their eggs, because they needed to follow the herds. “It is somewhat of a chicken-and-egg argument,” said Hoover.

Adaptations made in the last few hundred years are not completely understood, but the arrival of settlers seems to have played a role. “The European settlement of the continent and the associated land conversion is thought to have allowed cowbirds to greatly expand their historic geographic range, so that there are now a lot of cowbirds continent-wide rather than their being concentrated in the Great Plains region,” said Hoover. As the cowbirds’ range expanded, so did the

number of species whose nests were parasitized. Having sedentary livestock and cleared land also meant less time spent wandering and possibly more time following up on dumped eggs.

How cowbirds learned to be cowbirds when they were roaming across the Great Plains remains unknown. “We tend to speculate about most things associated with brown-headed cowbirds until maybe 100 years ago or so when there started being some information about their geographic range, and then some time after that, was when their behavior started to be studied,” said Hoover. “We are still peeling back the layers of the onion that the seemingly-sophisticated behavior of cowbirds represents.”

Carolyn Lorié lives with her rescue dog and very large cat in Thetford, Vermont. The illustration for this column was drawn by Adelaide Tyrol. The Outside Story is assigned and edited by Northern Woodlands magazine, northernwoodlands.org, and sponsored by the Wellborn Ecology Fund of New Hampshire Charitable Foundation: wellborn@nhcf.org

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PO Box 471, Corinth, Vermont 05039
Tel. 802.439.6292 Fax 802.439.6296
www.northernwoodlands.org

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