

Migrating songbirds learn survival tips on the fly

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Worm-eating warblers breed in North America, but winter in Central America. While migrating, they frequently inspect "mobs" of local winged residents, Queen's University biologists discovered. Credit: Joseph Nocera

Migrating songbirds take their survival cues from local winged residents when flying through unfamiliar territory, a new Queen's University-led study shows. It's a case of "When in Rome, do as the Romans do," says biologist Joseph Nocera, who conducted the research while working as an NSERC Postdoctoral Fellow at Queen's under the supervision of Biology professor Laurene Ratcliffe.

Avoiding predators can substantially increase a bird's chances of survival during migration, notes Dr. Nocera. But to do that, it first has to

recognize who its predators are. "We believe some prey use social cues from other animals to gain information about potential predators," he says.

Findings from the study are published on-line in the current issue of the journal *Behavioral Ecology and Sociobiology*.

The research team tested whether migratory songbirds observe the anti-predator behaviour of local birds, which are familiar with local predators. One common form of this self-protecting behaviour is "mobbing": The birds approach a potential predator, rapidly changing position around its location and performing restless wing and tail movements while emitting loud, broad-frequency calls. These calls are easily recognizable and act as signals of threat.

Because migrating birds rarely participate in mobs, the researchers speculate that they may gain information about predator location, identity and degree of threat through listening to mob calls of other species residing in the area. To test this theory, they broadcast playbacks of alarm calls that were familiar (black-capped chickadee, common in North America) and foreign (blue-gray tanager, common in Central America) to birds migrating between Canada and Belize.

The Belizean resident birds responded only to the tanager calls, but migrant birds responded to both the tanagers and the chickadees.

These results present the first evidence that migrating birds pay attention to the anti-predator behaviour of local birds during migration, says Dr. Ratcliffe. "We suspect that the behaviour will be found to be a low-cost learning opportunity for migrants."

The next step for the researchers will be to compare sensitivity of migrating birds

to unfamiliar mob-calls during their overwintering and migratory phases, and to assess the amount of information the respondents have learned by using predator decoys.

Source: Queen's University

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