New technology allows researchers to safely use small birds to determine ecosystem's health

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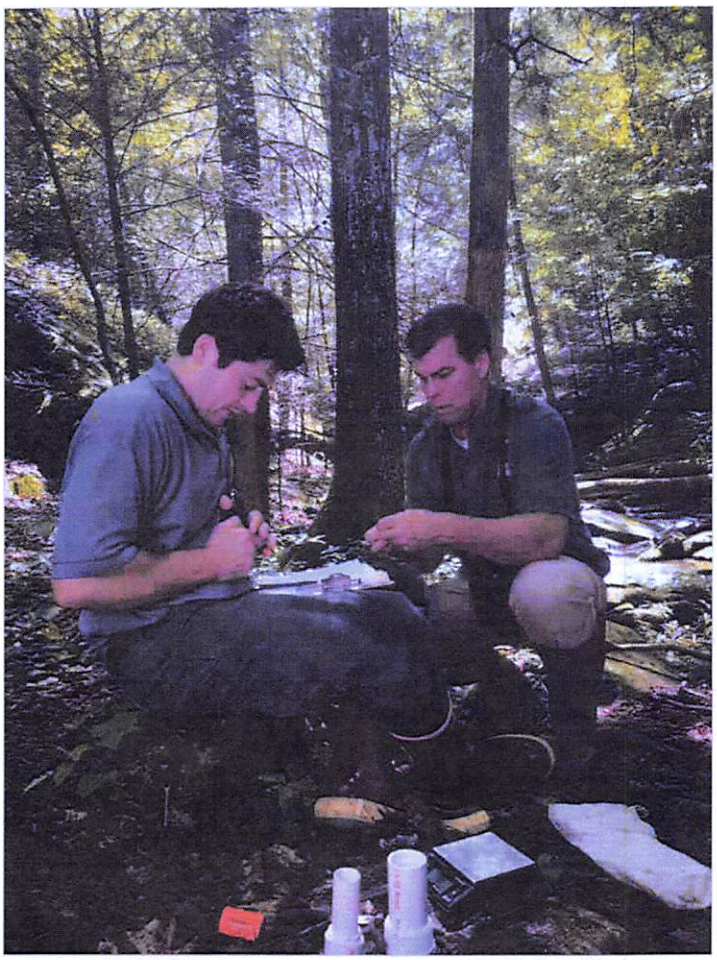

Eliot Berz, left, and Rick Huffines with Tennessee...
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State-of-the-art technology being used by Tennessee River Gorge Trust could give researchers much-needed data to study migratory patterns and determine the health of certain ecosystems.

A nearly year-long study by the trust found a small species of bird called the Louisiana Waterthrush can safely carry geolocators, providing insight to their habits, travel and and the health of an area.

"When you're trying to manage lands and open spaces for the public, knowing the overall health of that system is what you're focused on," Tennessee River Gorge Trust Executive Director Rick Huffines said. "Well, the birds are the indicator species of the health of the forest, so if the birds are telling me something is wrong, I can make informed decisions on what I need to do to manage that property."

The Louisiana Waterthrush in particular was chosen for more than its small size. The bird gives a look at the health of water systems.

"The Louisiana Waterthrush is an excellent indicator species of water quality health because it feeds on macroinvertebrates [small organisms that live underwater] that are sensitive to water quality changes," avian and research Technician Eliot Berz said. "If Louisiana Waterthrush are present in a stream, that suggests it is relatively clean."

Previously, small birds could be tracked with bands. Those could tell researchers if certain birds returned to an area, but did not provide extensive data. The digital trackers, which are smaller than a fingernail and weigh 0.5 grams, are placed on the birds before the migration from Tennessee to Central America, and recovered upon the birds' return.

The study was primarily funded by the Benwood Foundation and allowed the Tennessee River Gorge Trust to research whether the birds can safely carry the tracker.

"What we want readers to understand is we truly care that we don't do harm to these birds," Huffines said.

That premise was the primary point of the initial study. A group of birds was marked with leg bands and geolocators while another group was marked with just the bands. The banded-only group gave the researchers a reference point to determine if the birds carrying locators could do so safely. Huffines and Berz believe the study proved just that.

Five of the 16 birds returned, which is the number the group hoped for. They looked for things such as the birds' weights, if there was any irritation and how many returned, to determine the health of the birds. They consider the experiment a success and will use it to potentially mark approximately 40 birds for future study.

The group worked with the University of Toledo to put together a paper and sent it to researchers to show tracking can be safely done. The follow-up study will be done on a larger scale and will be more data-driven.

"Now that we've demonstrated that it works we can use that to go to the bird banding lab to get permission and go to funding agencies and groups to tell them we now want to answer the big questions," said researcher Henry Streby at the University of Toledo, who co-authored the paper. "This is the watershed study for this species to say this can be done now."

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