

DSU Researchers Achieve New Findings in Veery Migration Studies

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The advent of a new tracking technology has enable a DSU assistant professor of natural resources to make his mark in ornithology research.



A Veery songbird with an attached geolocator on its back, which will track its migration patterns.

Dr. Christopher Heckscher, with the assistance of junior year Natural Resources major Syrena M. Taylor, has taken advantage of the development of new lightweight tracking technology that has allowed them to determine the previously unknown migration patterns for a forest songbird, the Veery (*Catharus fuscescens*).

Because songbirds are so small, conventional tracking devices used on larger birds are too heavy for species such as the Veery – which is 16-18 centimeters in length and weighs about 30 grams. For that reason, very little was previously known about the annual migration habits of the Veery and other similarly sized birds.

A few years ago, Dr. Heckscher became aware of a new lightweight “geolocator” that had been used successfully by York University ornithologist Dr. Bridget Stutchbury in her research in tracking the migration of the Wood Thrush (*Hylocichia mustelina*), a medium-sized North American passerine bird.

Dr. Stutchbury’s success opened up a new area of ornithological research focusing on migration, and Dr. Heckscher did not hesitate in seizing this research opportunity.

With the knowledge that some Veeries came annually to nest at the White Clay Creek State Park north of Newark, Del., in June 2009, Dr. Heckscher and Ms. Taylor proceeded to capture 24 of the species. They then attached a lightweight geolocator to each Veery and freed them. By August, those birds had departed Delaware to begin their migration south.

“The trick is you have to catch the bird a year later in order to download data from the tracking device,” Dr.

Heckscher said. “These Veeries made it easier because the same individuals return to White Clay Creek Park every year to nest.”

The following spring, the researchers set up netting in an attempt to capture some of the Veeries on which they had attached the tracking device the previous year. Dr. Heckscher said they imitated the Veery mating song, which attracted some macho male Veeries to come and investigate what bird was encroaching on their love territory.

Four male Veeries that had returned with the tracking device were lured into the net. Capturing female Veeries with the geolocator attached – which are not attracted by Veery song – was more of a challenge. However, the research duo managed to capture one female with the device, giving them a total research group of five Veeries.

It took several months to analyze the latitude and longitude data from the geolocators on those five birds. Meanwhile in spring 2010, the DSU researchers captured another group of birds and attached the tracking device.

By October 2010, Dr. Heckscher and Ms. Taylor’s data analysis had determined that all five Veeries had traveled to separate areas south of the Amazon River region in Central Brazil, South America, by the late fall. In addition, the tracking data revealed that the Veeries also made second migration stops during the mid-winter January-February months in other parts of Brazil (two birds went to sites north of the Amazon and three when south to sites south of the huge river system).

“Our most spectacular discovery was that our Veeries undertook three migrations rather than just two in spring and fall,” Heckscher said. “This is the first time a North American songbird has been found to have three different migratory periods.”

“Songbirds risk a lot each time they undertake migration, which can be very dangerous due to unexpected weather events, vehicle or building collisions, or predators,” Ms. Taylor added, “To think these birds have an extra migration is really remarkable.”

Representing the first time that this particular species’ migration patterns and wintering locations had been tracked, Dr. Heckscher and Ms. Taylor poured their findings in a peer-reviewed paper that they published in the 2011 edition of *The Auk* by The American Ornithologists’ Union. The work by Ms. Taylor was funded by the Center for Integrated Biological and Environmental Research, Department of Agriculture and Natural Resources. The Delaware Division of Parks and Recreation cooperated by providing the team’s study site.

Dr. Heckscher has continued the research with a second group of Veeries. In June of this year, he and some other students were able to capture seven males and three females on which they had attached units in the previous spring. That tracking data is currently being analyzed.

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