Even small patches of urban woods are valuable for migrating birds

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The attached antenna emerges from the back feathers of a Swainson's thrush. Credit: Photo by Ken Chamberlain, Ohio State University

Even tiny patches of woods in urban areas seem to provide adequate food and protection for some species of migrating birds as they fly between wintering and breeding grounds, new research has found.

The results are important because, with the expansion of cities worldwide, migrating landbirds increasingly must pass through vast urban areas which offer very little of the forest habitats on which many species rely.

"The good news is that the birds in our study seemed to be finding enough food in even the smaller urban habitats to refuel and continue their journey," said Stephen Matthews, co-author of the study and a post-

doctoral researcher in the School of Environment and Natural Resources at Ohio State University.

Matthews conducted the study with Paul Rodewald, an assistant professor of environment and natural resources at Ohio State.

The researchers published two related studies: one will appear in an upcoming issue of the journal *Landscape Ecology* and the other appeared in a recent issue of *The Condor*.

Both studies involved a secretive relative of the American Robin called Swainson's Thrush (*Catharus ustulatus*). Swainson's Thrushes winters mainly in Central and South America, and travel through the eastern United States to their breeding grounds in the boreal forests of Canada.

The researchers captured up to 91 Swainson's Thrushes at a woodlot on the Ohio State campus while they were migrating through Columbus in May or early June, 2004 to 2007. They then fitted them with tiny radio transmitters and released them at one of seven wooded sites in the Columbus area. (The radio transmitters were glued to back feathers and naturally fell off within a few weeks.)

The sites had forest sizes that ranged from less than one hectare (1.7 acres) to about 38 hectares (93.9 acres) in size.

Using the radio transmitters, the researchers tracked how long the thrushes would stay in the woodlots where they were placed. If they left soon after release, that would suggest that the sites did not provide the food and habitat that they required.

Results showed that at the five largest release sites, all the birds stayed until they left to continue to their migration north. At the two smallest sites (0.7 and 4.5 hectares), 28 percent of the birds moved to other sites

in the Columbus region.

"The fact that a majority of the birds stayed at even our smallest sites suggests that the Swainson's Thrushes were somewhat flexible in habitat needs and were able to meet their stopover requirements within urban forest patches," Rodewald said.

The study revealed that the birds stayed at each site from one to 12 days, with the average being about four days. There was no difference in how long the thrushes stayed across the seven sites.

"If our study sites differed strongly in habitat quality, we should have seen differences in how long the birds stayed," Matthews said. "The fact that the stopover duration was similar suggests that all the sites were meeting the needs of the thrushes as they prepared for the next leg of migration."

The study did find that the later the calendar date, the shorter the thrushes stayed at the sites. That may be because the later-arriving birds would be in more of a rush to reach their breeding grounds, Matthews said.

Weather was also a factor: birds tended to leave the sites when winds were light, following a drop in barometric pressure.

Birds also tended to stay longer if they had lower body mass, suggesting they needed to bulk up more to continue their journey.

While nearly all sizes of woods appeared adequate for the thrushes, they still seemed to prefer larger forested areas, the study revealed.

In one of the studies, the researchers found that in the larger urban woodlots, the thrushes would stay farther in the interior and not get as

close to the forest edge. The birds also moved less during a three-day period in the smaller sites, indicating they were more restricted in the area where they could forage for food.

The researchers cautioned that this study was done with just one species, so it is impossible to say whether the results will apply to other species. But the Swainson's Thrush is one of the more forest-sensitive species, so the fact that it could make do with even small, fragmented woodlots is encouraging.

"These findings suggest that remnant forests within urban areas have conservation value for Swainson's Thrushes and, potentially, other migrant landbirds," Rodewald said.

"Obviously, larger forest patches are better, but even smaller ones are worth saving."

Provided by The Ohio State University