



PURDUE UNIVERSITY

Small Woodlots: Important Rest Stops for Migratory Songbirds

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Chestnut-sided Warbler

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It's Time to Head North

Every spring millions of songbirds pass through northern Indiana on their way to their breeding grounds. After spending the winter in the Caribbean and/or Central and South America, they return to the United States and Canada to establish breeding territories in the less crowded forests of North America where the flush of insects in the spring provides ample food for raising young.

Some species, such as Baltimore Orioles, Indigo Buntings, and Scarlet Tanagers, may remain in our area to breed; others, such as the Blackburnian Warbler and Northern Waterthrush, continue north in the spring to the boreal forests of the Upper Lake States and Canada. In the fall the birds and any young they have successfully raised will repeat their journey to the tropics, where insect food is available all winter.

Migratory Stopover Sites

Migratory birds typically make their thousand-mile trips in segments, over the course of up to two months. How far they fly each day depends upon the weather — clear skies and favorable winds — and the amount of fat they carry in their bodies to use as fuel. Periodically they must stop to rest, feed, or wait for acceptable weather to continue their flight. If they have to make a long flight without stopping, such as to cross one of the Great Lakes or the Gulf of Mexico, they can arrive at the other side of this “barrier” exhausted and famished. They may stay in one spot, known as a “migratory stopover site,” for several hours or days until they are able to fly the next leg of their migration. Migratory stopover sites must provide enough food, water, and shelter for birds to replenish their energy while avoiding potential predators such as hawks, raccoons, and cats.

Loss of Forest Habitat

Over the last several decades several species of migratory songbirds have experienced dramatic population declines in some parts of their ranges.



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Example of a small habitat patch surrounded by open field

Loss of forest habitat in their breeding and wintering areas has been suspected as one cause of these declines, but it has recently been recognized that stopover habitat is vitally important to migratory birds. Birds must be able to survive their migration and arrive at their breeding grounds in good physical condition in order to successfully raise healthy broods. A network of potential stopover sites along birds' migration routes is essential for survival of individual birds, and the welfare of the whole population.

Northern Indiana is one of the most heavily altered landscapes in the Midwest; most of the original forest and prairie has been converted to row-crop agriculture or urban/industrial development, and the upper Wabash River basin now contains less than 10 percent forest. For example, in Tippecanoe and surrounding counties, the remaining forests are restricted to the areas along the Wabash River and its tributaries ("riparian forest"),

urban parks and gardens, and small woodlots or nature preserves scattered among the agricultural fields. Migrating birds crossing this agricultural landscape must find suitable forest fragments that have adequate resources to serve as good stopover sites.

The Value of Small Habitat Patches

Many people have heard the conventional wisdom that "bigger is better" when it comes to wildlife habitat. Large forest patches support more individuals and more species of plants and animals than small patches, and are particularly important for animals that need to establish breeding territories. Small woodlots isolated from other forest patches are often regarded as poor habitat for breeding birds, because they have limited space for territories, are often overrun by non-native plants, and typically host many nest predators that favor forest edge habitat. Migratory birds, however, only remain in a stopover site for a short period of

time and are able to use habitat patches that would be unsuitable for breeding birds.

The Nature Conservancy has recognized the value of small habitat patches for migrants, calling them “fire escapes” and “convenience stores” where birds may stop briefly to rest or feed, as opposed to the “full service hotels” with more abundant resources provided by large forests.

Small woodlots may host relatively few species of birds during the breeding season, and yet be heavily used during migration. A study conducted in 12 small woodlots in Tippecanoe and surrounding counties during spring migration in May and fall migration in September documented the presence of 76 species of migratory songbirds, including 34 species of warblers, 8 species of flycatchers, 6 species of vireos, and 5 species of thrushes.

A number of these species were of conservation concern because of their small or rapidly declining populations; these included the endangered Kirtland’s Warbler, Blue-winged Warbler, Golden-winged Warbler, Bay-breasted Warbler, and Cerulean Warbler. Vernal pools in the woodlots — pools created from spring rains, which dry up in the summer — also hosted Wood Duck, Sora, and Solitary Sandpiper. Songbirds used these small woodlots regardless of distance to other forest patches or amount of nearby forest. Previous research has shown that migrating birds prefer to forage along forest edges, which have high fruit and insect abundance, and small woodlots have a high proportion of this type of habitat.

In the Midwest, potential stopover habitat for migratory birds is already limited, and pressure on the remaining woodlands is likely to increase with elevated demand for corn and other types of biofuels, and as urban sprawl expands. Landowners can help migratory songbirds complete their journey across the agricultural fields of Indiana by preserving existing woodlots and hedgerows on their properties. No patch is too small to be a “fire escape” for a hungry or exhausted bird! Birds prefer forests that have a shrubby understory, especially when this understory includes fruiting shrubs that provide food as well as shelter. Even the exotic shrubs Amur honeysuckle and multiflora rose provide structure and protection for birds, although they crowd



Indigo Bunting

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out native forest plants, and their fruits are not as nutritious for birds as native fruits.

To enhance habitat for migratory birds, landowners might consider gradually removing invasive exotic shrubs and ground covers and replacing them with preferable native plants such as dogwood, spicebush, and viburnums. Large poison ivy and Virginia creeper vines also provide fruit for fall migrants. Minimizing insecticide use along the woodlot edges will help ensure that birds have insects and larvae on which to feed. Water, in the form of ponds and vernal pools, is another important resource.

Conservation Assistance

Landowners can obtain assistance in conserving their properties by enrolling their forests in the Indiana Classified Forest and Wildlands Program, which places an assessed value of \$1.00 per acre on enrolled property for tax purposes, or through arranging conservation easements with local land trusts or other environmental organizations. The Purdue University Agriculture Extension Office (<http://www.agriculture.purdue.edu/fnr/wildlife/contacts/index.html>) can provide advice for woodland owners interested in conserving or managing woodlots on their properties.

Selected References

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Acknowledgements

The research in northwest Indiana cited in this article was supported by grants from the Amos W. Butler Audubon Society and the Indiana Academy of Sciences. This publication was reviewed by Professor Harmon P. Weeks, Purdue University Department of Forestry and Natural Resources, and Dr. John Castrale, Indiana Department of Natural Resources.