

Changing the Land

Study Units

[Iowa's Wildlife Habitats: People and Wildlife](#)

Supplemental Information

Habitat fragmentation occurs when large tracts of habitat are broken into smaller pieces by housing developments, roads, agriculture, and other factors, often referred to collectively as **land use**.

It increases the amount of edge in a habitat. Edge is beneficial to some animals (e.g., ring-necked pheasants, rabbits), but is detrimental to others. Land use information is tracked by the Natural Resources Conservation Service (NRCS) as part of the Soil and Water Resources Conservation Act. You can use an [interactive viewer to see reports about land use](#) or an [Iowa Land Use Report](#) based on National Resources Inventory. This inventory also shows change in land use over that last several decades. The change from pre-settlement time to now (from predominantly prairie to agriculture) meant wildlife species needing large areas of continuous habitat were most negatively affected. Other species are now much more numerous – raccoons, opossum, house mouse, and coyotes.

Currently, land use is shifting from agriculture to urban environments in several areas of the country. This affects wildlife too. Urban areas may be less suitable for some wildlife species, such as some migrant songbirds that are more susceptible to cowbird parasitism, feral cat predation, or collisions with windows and tower guide wires. All can impact survival of individual birds, and long-term population trends for these species.

In areas where land use changes are occurring rapidly, the impacts on some animal species can be devastating.

Teaching Suggestions

Before starting the activity, read *Flute's Journey* (see the **Additional Materials** section). This book describes a year in the life of a wood thrush. It will help students better understand all the habitat factors necessary for the survival of this species.

Students also can read the [Wood Thrush Fact Sheet](#) and analyze the graphs on the [Bird Species Sensitivity to Habitat Fragmentation](#) page for the number of acres needed to attract a wood thrush. For example, a 100-acre block of woodland has a 70 percent chance of containing a wood thrush, a 10-acre block has a 10 percent chance. Students should determine which other species would be lost as habitat is fragmented into smaller and smaller blocks. The wood thrush can be used as an “indicator species” to determine habitat quality.

The [Natural Resources Conservation Service \(NRCS\) National Resources Inventory](#) has maps showing land use comparisons over time. These maps do not show actual land cover, but give summary statistics on various aspects of land use. NRCS also has statistics on [Land Use and Land Cover Estimates for the United States](#). Another good source for maps is the [Iowa Geographic Image Map Server](#), an on-line source for geographic maps depicting a variety of land uses, etc.



Have students investigate what is happening to wood thrush migration and wintering habitat. Has it also been fragmented? Is this as critical a problem when the thrush is not trying to nest?

Organize an event for [International Migratory Bird Day \(IMBD\)](#). This annual event is held early in May as migratory birds return to the Midwest to nest.

Evaluation

See the activity

Student Materials

- Wood Thrush Fact Sheet
- Bird Species Sensitivity to Habitat Fragmentation

Teacher Aids

None

Additional Materials

- [U.S. Fish and Wildlife Service—Migratory Bird Data Center](#)
- [Iowa Geographic Image Map Server](#) – digital aerial photos, relief maps, topographic maps, and land cover maps from satellite imagery
- [American Bird Conservancy](#) – updates on conservation efforts for neotropical migratory birds; includes information on specific species, educational project ideas, materials on issues of concern
- [American Association of Geographers](#) – many resources to learn about geography and maps and how they are used to help us understand the world.
- [National Resources Inventory](#) maps, data, and summaries on land cover, land use, soil erosion, prime farmland soils, wetlands, habitat diversity, selected conservation practices, and other natural resource information
- [America's Private Land: A Geography of Hope](#) tells the story of America's private, nonurban land - contains facts and figures on the status of the nation's natural resources and a plan for stewardship in the 21st century. Download three pdf.
- Cherry, L. 1997. *Flute's Journey: The Life of a Wood Thrush*. A Gulliver Green Book Harcourt Brace and Company.
- George, J.C. 2001. *Frightful's Mountain*. Penguin Putnam Books for Young Readers.
- Iowa Ornithologists' Union. 1998. *Solve the Crime: Save the Song of Spring! Neotropical Migratory Birds and Their Midwestern Connections Middle School Activity Guide*. [This guide is out of print, but may be available through your local [county conservation board](#).]

