Forest Biodiversity Research Project to Release Final Technical Report

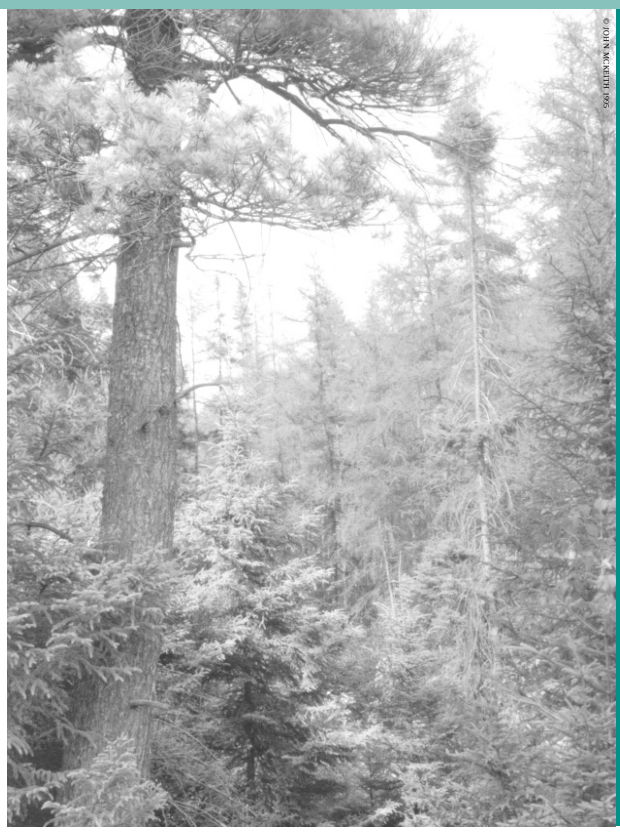
By Mitschka Hartley

AUDUBON NEW YORK will soon make available a technical report that includes a full analysis and summary of its three-year field investigation into forest management effects on selected wildlife. During the summers of 1999-2001, Audubon staff carried out intensive field studies examining communities of birds, amphibians, and carrion beetles in northern hardwood forests that had experienced a wide range of management practices. Surveys covered 83 different forested "stands" (i.e., areas of uniform forest structure managed similarly) encompassing over 2,000 acres in the Adirondack, Catskill, and Southern Tier regions. The stands surveyed represented a continuum of forest age and structure, from clearcuts to old-growth forests, including stands that were heavily, moderately, or lightly harvested. Most study sites were privately-owned forests.

The technical report demonstrates that there are discrete "suites" or assemblages of bird species that respond very differently to forest management. Some 20 bird species are much more abundant in clearcuts and heavily-disturbed forests, whereas 15 different species favor mature or relatively undisturbed (e.g., lightly harvested) forests. A third group of 15 species were "generalists" that were similarly abundant across a range of forests that differed in age, maturity, and *stocking* (i.e., the size and density of trees). Both the abundance and richness (number of species) of these early- and mature-forest assemblages were directly related to the level of stocking of live trees and the number of standing, dead trees, called *snags*. Early-forest birds were negatively related to these variables, whereas mature-forest birds were positively related to these variables. Likewise, individual bird species were found to strongly favor early-forest conditions such as recent clearcuts (e.g., Chestnut-sided Warblers) or old, mature forest habitats with many large trees (e.g., Black-throated Green Warblers). Some species had quite specific habitat requirements. For example, Blackburnian Warblers favored higher elevation forests that were well-stocked and had some coniferous trees; Black-throated Blue Warblers preferred mature forests with a well-developed shrub layer, and more understory trees.

Terrestrial amphibian species were more abundant in more mature forest habitats. Redback salamanders were more abundant in higher elevation forests that were well-stocked, and had fewer coniferous trees. Other terrestrial amphibians (considered as one group) were much less abundant than redbacks, but were also positively related to forest stocking, as well as the availability of water sources. All terrestrial amphibians were significantly more abundant in mature forests than in heavily-harvested stands. Carrion beetle species richness and total abundance were generally not related to forest harvesting, though some individual species favored more open (i.e., harvested) or more mature forest conditions.

The final technical report is being peer-reviewed by a panel of 12 scientists from academia, government, and industry, who will attest to its scientific rigor and the soundness of its conclusions. The information in the Technical Report will then form the foundation of education and outreach materials aimed at private landowners, foresters, and loggers, who are responsible for the more than 14 million acres of private forestland in New York State. Audubon New York has begun to develop such outreach materials, in cooperation with a large group of partners. Our ultimate goal is to better conserve forest wildlife by providing comprehensive information for foresters, loggers, and landowners, which demonstrates how different forestry practices affect different wildlife groups.



Did You Know?

By Jane E. S. Sokolow

FROGS have evolved to live in a remarkable range of climates. Though best suited to the tropics, they can live in deserts and at elevations as high as 15,000 feet.

FROGS come in many shapes and colors all over the world - except Antarctica and Iceland!

There are over 4000 species of FROGS in the world, though only 88 species in the United States and Canada.

A group of FROGS is called an army, and a group of toads is called a knot.

The NORTH AMERICAN WOOD FROG is one of the few creatures able to survive in a frozen state. When winter temperatures dip below freezing, the frog's heartbeat comes to a halt, and as much as 65 percent of the water in its body turns to ice. When spring arrives, the ice melts and the frog's heartbeat resumes.

The AUSTRALIAN WATER-HOLDING FROG can survive seven years in the desert without rain.

The largest FROG is probably the Goliath from West Africa, which is 300mm (12 inches!) in length. And the smallest FROG in the world is from Cuba and is only ½" long.

Jane E. S. Sokolow, a member of Audubon's Stewardship Committee, is a science-writing consultant. She currently works with the New York City Parks and Recreation Department and has worked with the American Museum of Natural History, Audubon New York and the National Audubon Society.