

Integration of Neotropical Migrant Bird Conservation into Other Resource Management Activities in the Midwest¹

Information Needs for Forest Songbirds: The Minnesota Approach

Lee A. Pfannmuller²

In the Upper Great Lakes region, integration of wildlife management concerns and forest management practices has focused principally on game species, a select number of rare species, and a few other special interest species (e.g., cavity nesters). Although they comprise from 60-70% of the forest vertebrates, forest birds have received little management attention. If efforts to integrate the diverse needs of forest birds with other forest management practices are to succeed, traditional, single-species approach to forest wildlife management will need to be reexamined. Effective conservation of the region's diverse forest bird resource will depend instead, upon a landscape approach to forest management.

In 1992, a unique landscape project focusing on forest bird conservation began in Minnesota. The project is part of a new integrated resource management initiative launched by the Department of Natural Resources that is dedicated to integrating resource management activities across disciplinary boundaries and land ownership boundaries. Supported by a broad coalition of public and private partners, Minnesota's Forest Bird Diversity Project is designed to maintain the forest's rich diversity of birds while accommodating sustained resource utilization. Nationwide concern about the plight of forest birds, coupled with a significant increase in timber harvest levels in the State's northern region, prompted the project's initiation. It officially began January 1, 1992, with an appropriation of \$300,000 from the State Environmental Trust Fund contingent on raising an

additional \$200,000 by January 1992. The match was successfully secured, providing full support for the project through June 1993. Preliminary approval to extend the project an additional two years beyond this date, with another \$500,000 appropriation, was obtained this past July.

There are three major components to the project. The first component is directed at collecting data on Minnesota's forest birds. At its core is the design and implementation of a monitoring program that will extensively augment Breeding Bird Survey routes in Minnesota's northern forest region and provide more detailed information about the regional distribution and abundance of forest birds. Sampling is done at nearly 1,200 off-road point counts located in three large study regions: the Superior National Forest, the Chippewa National Forest, and the St. Croix River Valley. Each point is sampled for 10 minutes, once during the breeding season. The project's second component utilizes Geographic Information System (GIS) techniques to correlate bird population data with regional forest cover and land use information and to develop predictive models that assess the impact of future forest change. Recent satellite imagery will provide the forest cover information. Finally, as the project's third component, the knowledge gathered in the field and through modelling exercises will be applied to development of educational and management tools that integrate diverse habitat needs of forest birds.

A project of this scope is predicated on successful partnerships and, indeed, they have been key throughout the design and implementation stages of Minnesota's initiative. The Forest Bird Diversity Project is directed by an interagency steering committee and is supported by a broad coalition of nearly 35 Federal and State resource agencies, academic institutions, private foundations, conservation organizations, and private individuals.

¹ Four case studies were presented to demonstrate how neotropical migrant bird conservation is being integrated into other resource management activities in the Midwest.

² Minnesota Department of Natural Resources, Box 25, DNR Building, 500 Lafayette Road, St. Paul, Minnesota 55155.

Integrated Resource Management for Grassland Birds In Wisconsin

Gerald Bartelt³

The Wisconsin Department of Natural Resources (WDNR) will spend \$12,000,000 over 10 years (1990-2000) restoring wildlife habitat in a 217,000-ha (838 square-mile) intensively farmed area in south-central Wisconsin to reverse the decline of grassland bird species, some of which are neotropical migrants. The management effort will focus on restoring 4,450 ha of wetlands and establishing 15,620 ha of grass cover on private lands. A Geographic Information System (GIS) database is being developed to assist wildlife managers in effectively siting habitat prescriptions and integrating efforts of local, State, and Federal conservation programs. Habitat guidelines for 14 species of grassland birds are being translated into computer models. The models will be used with the GIS data layers to identify where integrated management efforts will be most efficient. GIS data layers of land cover from Landsat Thematic Mapper satellite data and wetland inventories of WDNR and U. S. Soil Conservation Service will be used in wildlife modelling. A soils data layer will help locate hydric soils for wetland restoration and xeric soils for dry prairie management. Land ownership data from tax listing departments in four counties will aid in identifying which landowners to contact for participation in conservation programs. Data on land management and Federal easements (i.e., Conservation Reserve Program) provided by the U. S. Agricultural Stabilization and Conservation Service will assist in integrating grassland restoration efforts. The WDNR Natural Heritage Inventory, an extensive database on the locations of rare plants and animals, will be used to advance management for rare plants and animals. Historic land cover for

the area from the 1830's (presettlement vegetation) and the 1930's (still abundant grassland birds) will be compared to the desired land cover in the 1990's. Use of a GIS will allow the most efficient placement of grassland habitat within this area and will integrate the WDNR program with other local, State, and Federal conservation programs.

An integrated approach is being used by the WDNR, Wisconsin Department of Agriculture, University of Wisconsin, and private agriculturists to identify ways of adapting current or future agricultural practices to benefit grassland birds. An interagency group has been formed with expertise in agronomy, agricultural economics, sustainable agriculture, nonpoint pollution, wildlife management and research, private lands management, and farm management. The approach taken is to identify habitat requirements for each grassland bird species. A complementary database of habitat characteristics is being compiled for conventional and alternative agricultural practices. The two databases will then be integrated to identify potentially good habitats for each bird species and to point out limitations of cropping systems. From these results, modifications of existing cropping systems and development of new systems will be suggested. Modifications to existing cropping systems or development of new cropping systems will be tested for their agronomic, economic, and wildlife habitat effectiveness. Results will be communicated to the public through farm field days, extension publications, and WDNR Private Lands program. Research on the benefits of short-term rotational grazing to grassland bird productivity will begin in Spring, 1993.

Integration of Neotropical Migrant Birds Into Natural Resource Planning and Research in Missouri

Brad Jacobs⁴

Missouri is a diverse State located between the tallgrass prairie and the eastern deciduous forest. Its varied landscape includes extensive forest and spring-fed rivers in the Ozarks, native prairie grasslands, wetlands, baldcypress swamps, and extensive cropland and pastures. The Missouri Department of

Conservation, charged with conserving the forest, fish, and wildlife of the State, is developing a long-term, ecologically-based, regional planning process. An ecological classification system will provide a common language for agencies to communicate effectively. Based on the potential natural vegetation of Missouri, inventory efforts will focus restoration of natural ecosystems on the most suitable areas. The planning process will equally rely on a State recreation plan as well as provide for sustainable-use commodity production.

³ Wisconsin Department of Natural Resources, 1350 Fernside Drive, Monona, Wisconsin 53716.

⁴ Missouri Dept. of Conservation, P.O. Box 180, Jefferson City, Missouri 65102.

The Missouri Ozark Forest Ecosystem Project (MOFEP), a cooperative ecosystem research effort, studies the pre- and post-treatment conditions related to even- and uneven-age forest management. MOFEP and other large-scale projects will help formulate management guidelines for the future.

A Statewide communication network coordinates and facilitates cooperative biodiversity efforts in Missouri. Initially, a task force published an excellent book, "The Biodiversity of Missouri", to guide future discussions. A State biodiversity Coordinating Committee, made up of representatives of many agencies, will act as a forum for joint and parallel planning

efforts. Within the Department of Conservation, a task force has been set up to act as a contact point as well as to monitor the biodiversity management programs within the Department.

The Missouri Working Group on Neotropical Migrant Birds, associated with the Midwest Working Group on Neotropical Migrant Birds, is composed of two members each from the Department of Conservation, University of Missouri, U. S. Forest Service, and U. S. Fish and Wildlife Service. This working group will propose projects for neotropical migrants as well as serve as a resource to the Biodiversity Coordinating Committee.

Landscape Scale and Pattern - Implications for Management of Neotropical Migrant Birds and Forest Openings in the Hoosier National Forest, Indiana

Monica J. Schwalbach⁵

Questions of ecological representativeness, abundance, quantity, and quality are addressed in different ways at landscape, community, and population levels. Each level is tied together functionally; ecological processes are influenced by interactions within and between levels. In this presentation, I illustrate how knowledge of landscape patterns at several scales can help guide management decisions for community and species conservation on the ground.

Large areas of continuous forest are lacking in Indiana. Hoosier National Forest (NF) occurs in a portion of the State that has the largest remaining patches of forest in closest proximity. Still, from a landscape perspective, much of Hoosier NF is comprised of numerous small patches of forest rather than big blocks. The exception to this general pattern is the Pleasant Run Unit, where a relatively large, continuous forest area exists. This is of particular significance regionally as such large forest patches, and species associated with them, are extremely limited.

Comparisons of habitat and community structure across the landscape can provide meaningful insights for management. For example, the Pleasant Run Unit has larger patches of continuous forest than other units. Pleasant Run also has more interior forest (defined here as forest areas 300 m or more from a forest/non-forest edge). Forest birds appear to respond to these

large-scale differences in habitat geometry. Some species, like Red-eyed Vireos, are much more abundant in the Pleasant Run Unit than other areas of Hoosier NF.

Opportunity Area 4 (OA 4) occurs as a transition zone between a largely forested area to the north, and more open, agricultural lands to the south. Approximately 74% of the area is forested, 12% is shrubby or herbaceous open land, and 12% is cropland. One third of the forested area is considered to be interior forest. This interior forest contributes to the large, continuous patch of forest in Pleasant Run.

OA 4 occurs in an area of Hoosier NF that allows maximum flexibility in vegetative management. It also allows for development and maintenance of forest openings and early successional habitat. Considering the landscape context of OA 4 and management concerns for several conservative and rare forest bird species, we delineated a Continuous Forest Emphasis Area and an Openings Emphasis Area in the OA. Forest management in the Continuous Forest Emphasis Area will enhance the character of the large patch of continuous forest in the Pleasant Run Unit; openings management will be restricted. In the Openings Emphasis Area, management will focus on development of mosaics of openland habitat. Considerations of pattern and scale at landscape, community, and population levels will be integrated into openings management.

⁵ Wayne-Hoosier National Forest, 811 Constitution Avenue, Bedford, Indiana 47421.