Natural Resources Canada
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FRONTLINE
policy perspectives

FOREST SONGBIRD RESEARCH
GUIDING SUSTAINABLE FOREST MANAGEMENT

NOTE 4

GLFC SCIENCE INFLUENCING FOREST POLICY

A Blackburnian warbler in the hands of GLFC researchers.

THE CHALLENGE

The forests of Canada provide food, shelter, and breeding grounds to over 450 known species of birds; half of which rely on Canada's largest forest type, the boreal forest. Forest birds are an important social value, providing memorable experiences to countless birdwatchers and outdoor enthusiasts, and serving numerous ecological roles, including helping to control insect pests, pollinating plants and scattering seeds.

The distribution and abundance of forest birds in Canada is often determined by the availability of suitable breeding habitat. In a natural state, Canadian forests are periodically disturbed by fire, wind, disease and insect pests, so that both songbird habitat and communities change over time. Recent monitoring data however suggests that several of Canada's forest bird species are experiencing widespread population declines. Identifying the exact cause of these population declines can be challenging due to the migratory behavior of many Canadian bird species. Human activities such as forest management, oil and gas exploration and extraction, and agricultural development can lead to forest loss, fragmentation and alteration of breeding habitat, which can in turn significantly influence songbird numbers and diversity at local and regional scales.

The legislation, policies and procedures governing sustainable forest management in Canada are among the most comprehensive in the world, and require forest management plans to consider the long term provision of wildlife and forest bird habitat at various spatial scales. Some jurisdictions, including the province of Ontario, even use the presence of specific forest birds and their preferred habitat as a benchmark for the achievement of sustainable forest management. Regardless of these considerations, concerns over forest bird sustainability has inspired forest managers, environmental non-government organizations and concerned Canadian citizens to work together to ensure that the science guiding forest management and the provision of forest bird habitat remains current.

Canada

SCIENCE INFLUENCING POLICY

The Great Lakes Forestry Centre (GLFC) forest bird research programs strongly influence the development and review of forest management polices across Canada and have particular relevance to Ontario's forest sector. In Ontario, GLFC forest bird research programs are wide-spread, stretching across much of the province and its forest regions, including deciduous forest woodlots of southern Ontario, tolerant hardwood forests in north-central Ontario, and riparian habitats of boreal mixedwood forests in Northern Ontario. Data collected during these research programs is used to help determine the range of impacts that forest harvesting and silviculture techniques have on the sustainability of forest bird communities and their habitat. This enhanced knowledge provides researchers and resource managers with the ability to evaluate and improve the effectiveness of current forest management guidelines directing the provision of bird habitat during forest management planning.

To help promote sustainable forest management practices, GLFC researchers also expend considerable research efforts to better understand forest bird habitat requirements and patterns of use. In two recent studies, scientists examined forest bird communities in regenerating and mature boreal forests of Ontario to determine the uniqueness of forest bird communities to specific forest age classes and habitat types. Data from these research projects are improving our understanding of the species' and distribution of their required habitat and provides increased justification for the establishment of specific forest bird species as indicators of sustainable forest management.

GLFC scientists work closely with provincial regulators and have recently contributed to a collaborative review of the primary forest management planning tool used to prescribe wildlife habitat in Ontario during forest management planning. Ontario's Habitat Suitability Matrix is composed of a series of wildlife-habitat relationship models and is used to balance provincial forest management operations with the provision of preferred wildlife habitat in Ontario. Using recent monitoring data collected throughout Ontario, GLFC researchers analyzed the predictive performance of the matrix to forecast habitat supply for 22 forest bird species in Ontario. Their results, currently under consideration by the provincial government, suggest that reviewing the matrix parameters for several forest bird species could improve the predictive capabilities of the model and potentially result in improved habitat considerations and policies for the sustainable management of forest bird species in the province.

Mist nets are used by GLFC researchers to capture forest birds and identify their preferred habitat.

BENEFITS TO CANADIANS

Birds are an important component of Canada's biodiversity and serve as indicators of the sustainable management of the country's forests. In addition to the many ecosystem functions provided to Canadians by forest birds, the reliance of so many North American bird populations on Canadian forests for the provision of their necessary breeding habitat creates a strong social responsibility amongst Canadians to ensure that forest birds and their required habitat are managed in a responsible and sustainable manner. GLFC researchers are supporting the sustainable management of forest bird habitat through the development of new science and forest management planning tools, which will in turn help to ensure that Canadian forest ecosystems remain healthy, diverse and productive into the future.

GLFC researchers monitor forest bird populations and habitat use patterns by recording their songs using a CZM microphone system.

KEY POLICY CONSIDERATIONS

GLFC forest bird research helps to provide the necessary science to support the implementation of the federal Migratory Birds Convention Act, 1994 (MBCA). The MBCA provides for the protection and conservation of migratory birds and their nests, and states that migratory birds be managed in accordance with the principle of providing and protecting habitat necessary for their conservation.

Research on forest birds helps to fulfill Government of Canada commitments and goals made through the ratification of the Convention on Biological Diversity and the development of the Canadian Biodiversity Strategy 1995.

GLFC songbird research helps to fulfill Ontario's Biodiversity Strategy 2005, and is contributing directly to the review and revision of forest management policy in the province, including the development of the new Ontario Ministry of Natural of Resources Landscape Guide and Stand and Site Guide.

A Magnolia warbler captured in a mist net.

SUGGESTED READING

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A GLFC researcher collecting biological data from a captured forest bird.

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