



Birds as Indicators of Change in the Forest

INTRODUCTION

More than 300 species of birds make their home in Canada's boreal forest. Approximately 3 billion birds nest in the north every year and 5 billion will migrate south in the fall. These birds play an important part in Canada's forests as they help to control insects, pollinate plants, and scatter seeds. Forestry operations can disrupt forest bird populations and communities and lead to an imbalance in forest ecosystems. Researchers at Great Lakes Forestry Centre use various methods to monitor the results of forestry activities on migratory birds.

WHY BIRDS ARE MONITORED

By identifying those habitat conditions and forestry methods that favour healthy and diverse songbird communities, an adequate supply of critical habitats and habitat features (e.g., snags) can be preserved and maintained in logged forests. Birds are also sensitive indicators of environmental change. Because birds are relatively easy to observe, their response to disturbances may help to suggest changes that may be occurring among other more secretive or less easily studied species and communities.

HOW BIRDS ARE MONITORED

Point counts are a common method of bird monitoring used by GLFC researchers during the peak breeding season. At a designated point in the research area, the researcher will count and identify all birds that are seen or heard during a 10 minute visit to the area. When a researcher hears or sees a territorial (singing) male, it is assumed that it represents a breeding pair. This method allows researchers to monitor breeding populations and estimate the abundance and diversity of species. This method is effective only during the breeding season, because birds do not typically sing at other times of the year.

Mist-netting is a research method that is used during spring and fall migration, as well as during the breeding season. A mist net is a fine black net which traps birds that fly into it. The netting is fine and loose and does not hurt the birds. Researchers capture birds caught in the net, identify their age, sex and condition, and then band them for identification. This method allows researchers to sample both breeding and non-breeding populations, estimate species abundance and diversity, productivity and survival rates.



Researchers who study forest birds collect information that helps to develop more environmentally sensitive forestry methods.

WHAT HAS BEEN LEARNED?

Forest harvesting causes changes in forest bird composition, diversity, and abundance. The magnitude of these effects is generally related to logging intensity. Changes can be either positive or negative and vary by species. Forest dependent birds such as the Brown Creeper and the Ovenbird are more sensitive to loss of old forest habitat than many other species. Early successional species, such as the Mourning Warbler and Chestnut-sided Warbler, prefer younger forests and may actually benefit from forest harvesting. As the forest grows and changes following harvesting, bird abundance and diversity will also change according to the living requirements of each bird species.



Mist-nets are an effective way of determining populations of both breeding and non-breeding birds.

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