

Comparison of Forest Bird Populations in Algonquin Park: the 1950s versus the 1990s

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The focus of this paper is to examine changes in populations of bird species from the early 1950s compared to the mid 1990s in contiguous, old-growth forest habitats. This paper also examines plant-bird community dynamics to determine if long-term changes in bird populations have altered the community organization. The data collected in this study represent one of only a few long-term studies of bird population dynamics in large, continuous, old-growth forest habitats in North America. These types of data provide crucial evidence for scientists attempting to document changes in neo-tropical migratory bird populations.

My research compared patterns of change in the 1952-53 and 1995-96 breeding bird communities in large expanses of contiguous, old growth forest habitats. I repeated seven breeding bird censuses in Algonquin Provincial Park, Ontario that were originally conducted by N.D. Martin in 1952-53. Vegetation surveys were also repeated in each of the breeding bird plots. The analysis of the differences between breeding bird and tree communities examined the four principal forest habitats for Algonquin Park: 1) maple-beech (*Acer-Fagus grandifolia*); 2) birch-aspen (*Betula-Populus*); 3) eastern hemlock (*Tsuga canadensis*); and 4) black spruce (*Picea mariana*). Analyses demonstrated that there were no major changes in tree species composition or structure in any of the four forest habitats. Additionally there were no statistically significant changes in the populations of 22 neo-tropical migrant, 12 short-distance migrant, or 7 resident species of breeding birds in old-growth forests of Algonquin Park.

My research provided no evidence that circumstances away from the breeding grounds, such as tropical deforestation, have had any effect on the bird populations of Algonquin Park. Population declines were not observed in the three groups of bird species (Neo-tropical migrant, short-distance migrant, and resident). Additionally, results demonstrated that the relationship between the bird community and the structure and composition of the forest were uniform in 1952-53 and 1995-96. These combined results provide strong evidence that the factors limiting bird abundance were not related to wintering grounds.