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LANDSCAPE CONTEXT AND FRAGMENTATION EFFECTS ON FOREST BIRDS IN SOUTHERN ONTARIO

MADELINE J. W. AUSTEN[1,3], CHARLES M. FRANCIS[1,4], DAWN M. BURKE[2,5] AND MICHAEL S. W. BRADSTREET[1]
[1]*Bird Studies Canada, P.O. Box 160, Port Rowan, Ontario N0E 1M0, Canada*
[2]*Watershed Ecosystems, Trent University, Peterborough, Ontario K9J 7B8, Canada*
Manuscript received 31 July 2000; accepted 27 July 2001.
[3]Present address: Environment Canada, 867 Lakeshore Road, Burlington, Ontario L7R 4A6, Canada.
[4]Corresponding author. E-mail: cfrancis@bsc-eoc.org
[5]Present address: Ministry of Natural Resources, 659 Exeter Rd., London, Ontario N6C 4C3, Canada.

Abstract. We examined the effects of patch size, local forest cover, and regional forest cover on the numbers and species composition of forest birds detected during fixed-radius point counts in 287 forest patches in four replicate study areas in southern Ontario. Each study area consisted of two subareas differing in regional forest cover. The number of forest-interior species (as classified from the literature) detected per count, after controlling for forest patch size, tended to be higher in subareas with greater regional forest cover, but this effect was much stronger in some study areas than others. In contrast, numbers of edge species and interior-edge generalists were higher in subareas with lower regional forest cover. Within study areas, the number of forest-interior species increased and edge species decreased with both woodlot size and core area (amount of forest >100 m from an edge), but total species diversity at a point was relatively unaffected. Analyses of individual species generally corroborated the patterns, except that some so-called interior-edge generalists were more likely to be detected in large woodlots, while others were more likely in small woodlots. There was a tendency for the loss of forest-interior species with decreasing woodlot size to be greatest in subareas with low regional forest cover. In the context of highly fragmented landscapes such as southern Ontario, where many forest-dependent species have become rare, forest conservation should focus on protecting or restoring larger forest tracts in areas with substantial remaining regional forest cover.

Key words: *forest fragmentation, forest-interior birds, landscape ecology, regional forest cover*.

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