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HARVEST-RELATED EDGE EFFECTS ON PREY AVAILABILITY AND FORAGING OF HOODED WARBLERS IN A BOTTOMLAND HARDWOOD FOREST

JOHN C. KILGO[1]
U. S. Forest Service Southern Research Station, P. O. Box 700, New Ellenton, SC 29809
Manuscript received 22 July 2004; accepted 20 April 2005.
[1]E-mail: jkilgo@fs.fed.us

Abstract. The effects of harvest-created canopy gaps in bottomland hardwood forests on arthropod abundance and, hence, the foraging ecology of birds is poorly understood. I predicted that arthropod abundance would be high near edges of group-selection harvest gaps and lower in the surrounding forest, and that male Hooded Warblers (*Wilsonia citrina*) foraging near gaps would find more prey per unit time than those foraging in the surrounding forest. In fact, arthropod abundance was greater >100 m from a gap edge than at 0–30 m or 30–100 m from an edge, due to their abundance on switchcane (*Arundinaria gigantea*); arthropods did not differ in abundance among distances from gaps on oaks (*Quercus* spp.) or red maple (*Acer rubrum*). Similarly, Hooded Warbler foraging attack rates were not higher near gap edges: when foraging for fledglings, attack rate did not differ among distances from gaps, but when foraging for themselves, attack rates actually were lower 0–30 m from gap edges than 30–100 m or >100 m from a gap edge. Foraging attack rate was positively associated with arthropod abundance. Hooded Warblers apparently encountered fewer prey and presumably foraged less efficiently where arthropods were least abundant, i.e., near gaps. That attack rates among birds foraging for fledglings were not affected by distance from gap (and hence arthropod abundance) suggests that prey availability may not be limiting at any location across the forest, despite the depressing effects of gaps on arthropod abundance.

Key words: *arthropod, bottomland hardwoods, canopy gap, foraging, Hooded Warbler, timber harvest,* Wilsonia citrina.