

EFFECTS OF TWO-AGE MANAGEMENT AND CLEARCUTTING ON SONGBIRD DENSITY
AND REPRODUCTIVE SUCCESS

Jeffrey V. Nichols and Petra Bohall Wood¹

Abstract: We examined density and reproductive success of passerine species on 7 uncut forest stands and on 12 stands harvested 10-14 years ago on the Monongahela National Forest of West Virginia (6 clearcut stands and 6 stands harvested using 2-age management). In 2-age management, stands resemble a shelterwood cut with 10-30 overstory trees/acre left uncut. Uncut periphery areas adjacent to treatments were used to examine edge effects. All stands and periphery areas were censused 5 times, May-July 1993 and 1994, with the variable-circular plot technique and were thoroughly searched for nests. Two-age treatment stands had higher densities (650 birds/40 ha) than all other treatment and periphery stands ($F = 19.08$, $P = 0.0001$). Clearcut treatment stands averaged 522 birds/40 ha, no-harvest (341 birds/40 ha). Uncut periphery stands of two-age and clearcut treatments did not differ significantly from no-harvest stands. Intensive nest searching of all plots and periphery areas yielded complete nest histories of 90 nests representing 23 species. Nest success, calculated using the Mayfield method, was as follows: two-age treatment stands 49.8%, two-age periphery 61.2%, clearcut treatment 53.9%, clearcut periphery 48.2%, and no-harvest stands 59.6%.

¹West Virginia Cooperative Fish and Wildlife Research Unit, West Virginia University, P.O. Box 6125, Morgantown, WV 26506-6125.