

FEATURE ARTICLES

THE EFFECTS OF POSTFIRE SALVAGE LOGGING ON CAVITY-NESTING BIRDS

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Abstract. We investigated the effects of postfire salvage logging on cavity-nesting birds by comparing nest densities and patterns of nest reuse over a three-year period in seven logged and eight unlogged patches of mixed-conifer forest in the Blackfoot-Clearwater Wildlife Management Area, Montana. We found 563 active nests of 18 cavity-nesting birds; all species were found nesting in the uncut burned forest plots, but only eight nested in the salvage-logged plots. All except one species nested at a higher density in the unlogged areas, and half of the species were significantly more abundant in the unlogged plots. Every timber-drilling and timber-gleaning species was less abundant in the salvage-logged plots, including two of the most fire-dependent species in the northern Rocky Mountains—American Three-toed (*Picooides dorsalis*) and Black-backed (*P. arcticus*) Woodpeckers. Lower abundances in salvage-logged plots occurred despite the fact that there were still more potential nest snags per hectare than the minimum recommended number needed to support maximum densities of primary cavity-nesters, which suggests that reduced woodpecker densities are more related to a reduction in food (wood-boring beetle larvae) than to nest-site availability. Because cavities were present in only four of 244 randomly selected trees, and because frequency of cavity reuse by secondary cavity-nesters was higher in salvage-logged than in unlogged plots, nest-site limitation may be a more important constraint for secondary cavity-nesters in salvage-logged areas. These results suggest that typical salvage logging operations are incompatible with the maintenance of endemic levels of most cavity-nesting bird populations, especially populations of primary cavity-nesting species.

Key words: Black-backed Woodpecker, cavity-nesting birds, fire, healthy forests, salvage logging.