

HABITAT CHARACTERISTICS OF COOPER'S HAWKS AND NORTHERN GOSHAWKS NESTING IN NEW MEXICO

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Abstract. Nest trees and nest sites of northern goshawks ($n=11$) and Cooper's hawks ($n=12$) in New Mexico were characterized. Nest tree parameters that differed between the two species were tree species, nest exposure and distance to permanent water. Cooper's hawks used a greater variety of tree species for nest trees and located their nests closer to a permanent water source than did the northern goshawk. Cooper's hawks exhibited a preference for northern and eastern nest exposures, while the northern goshawk exhibited no preference for nest exposure. Nest site characteristics varied widely. With the exception of the sapling size class, tree densities were similar at sites of both species. Basal area, average dbh and snag densities were not significantly different between the sites of the two species. Cooper's hawks showed a preference for sites with eastern aspects, and the northern goshawk showed no aspect preference. Slope gradient of nest sites for both species ranged from 5% to 60%. The results of this study are compared with similar studies in the western United States. Management recommendations are presented for southwestern nest sites of both species.

Reynolds et al. (1982) and Moore and Henny (1983) have shown that sympatric populations of accipiters in Oregon have specific nesting habitat requirements. These authors, as well as Newton (1972), Snyder and Snyder (1975) and Jones (1979) have suggested that breeding accipiter populations are impacted by various forest management practices due to their specific habitat requirements. Reynolds (1983) suggests that precommercial and commercial thinning decrease nesting habitat for sharp-shinned and Cooper's hawks, and harvesting of mature forests decreases northern goshawk nesting habitat.

As noted by Reynolds (1983), if managers are to minimize the impacts of timber management on nesting accipiters they must identify each species' nesting habitat. The ability of agencies to protect and manage accipiters in the Southwest is hampered by a lack of quantitative data on their southwestern habitat requirements. Reynolds (1983) gives specific guidelines for managing accipiter nesting habitat in western coniferous forests. His guidelines, however, are based on data on northwestern accipiters, and should be modified for southwestern accipiters to reflect potential differences in habitat selection patterns.

During 1984 and 1985 I conducted a study of the nesting habitats of the Cooper's hawk and northern goshawk in New Mexico. The sharp-shinned hawk is a rare nesting

species in New Mexico (Hubbard 1978), and was therefore not included. The purpose of this study was to identify the specific nesting habitats of these two species in New Mexico. This report summarizes my preliminary findings.

METHODS

During 1984 and 1985 the habitat of 11 active northern goshawk and 12 active Cooper's hawk nest sites was characterized. All Cooper's hawk nest sites were located in the Jemez Mountains, New Mexico and the adjacent Pajarito Plateau, a table-like extension of the eastern flank of the Jemez Mountains. The Jemez Mountains were formed by volcanic activity and are dissected by steep-walled canyons, some 200 m deep, formed by erosion of the volcanic tuff. Elevations range from 1,645 m to 3,200 m. This area has a continental mountain climate. The average annual precipitation is 45 cm; 75% of which occurs from May through October. Seven major community types are found in the Jemez Mountains: subalpine grassland, spruce-fir, mixed conifer, ponderosa pine, pinyon-juniper, juniper-grassland, and riparian. This area is described in detail in Potter et al. (1982) and U.S. For. Serv. (1986).

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