COOPER'S HAWK
Accipiter cooperii

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Management Status: Federal: None
California: Species of Special Concern (CDFG, 1998)

General Distribution:

The Cooper's Hawk breeds throughout the contiguous 48 United States, southern Canada, and northern Mexico. Population data are limited for many areas, but numbers are probably low in the Canadian prairie provinces, the Great Plains states, and along the eastern gulf coast (AOU, 1983; Rosenfield and Bielefeldt, 1993). Bent (1961) reported casual sightings during the breeding season at several locations in northern Canada. In California the species is a widespread breeder but nowhere common.

Cooper's Hawks winter infrequently in all areas of the breeding range (some individuals may remain year-round on the breeding territory). Most individuals vacate the northern half of the species' range during winter, and Cooper's Hawks commonly occur in migration across the United States. They are present coast to coast throughout most of the southern United States and Mexico. In winter, Cooper's Hawks range regularly from the southern United States south to northern Central America, casually to Costa Rica, and are possibly present in Panama and Colombia (AOU, 1983; Rosenfield and Bielefeldt, 1993).

Distribution in the West Mojave Planning Area:

Known in the WMPA primarily as a winter visitor or migrant, the Cooper's Hawk is an uncommon permanent resident in southern California, with a small breeding population restricted to open montane forests, river and creekside bottomlands, and desert oases (Garrett and Dunn, 1981; Rosenberg et al., 1991).

Sight records for the region in the Natural Diversity Database date back to 1921, with sightings reported from Victorville, Walker Pass, and Palmdale. Within the WMPA, Cooper's Hawks occur regularly in Christmas Bird Count data from China Lake, Joshua Tree National Park, Lancaster, Mojave River Valley, and Morongo Valley. The Mojave Desert Raptor Watch (McDermott, F., 1995) tallies them during migration at Apple Valley. It would not be an unusual observation to see a cooper's hawk anywhere in the WMPA from September to March.

Breeding records indicate that Cooper's Hawks occasionally nest throughout southern California and the WMPA. The Natural Diversity Database lists one known nest near Lucerne Valley in 1988; it was in oak habitat on the San Bernardino National Forest, approximately 1 mile outside of the WMPA (S.J. Myers, pers. comm.). Cooper's Hawks consistently appear in Breeding Bird Survey records within the WMPA, and are known to nest at Morongo Valley (Breeding Bird Census records) and at Mojave Narrows Regional Park (S.J. Myers, pers. comm.). The fact that Cooper's Hawks are secretive near their nests, and that they are relatively unafraid of nesting near humans, makes it probable that there are nests in wilderness and urban/residential areas that are unrecorded.

Natural History:

The Cooper's Hawk is the middle-sized North American Accipiter, larger than the Sharp-shinned Hawk (Accipiter striatus) and smaller than the Northern Goshawk (Accipiter gentilis). Like these other members of its genus, it is a species adapted to woodlands, with relatively short, rounded wings and a long, somewhat rounded tail that allow a high degree of maneuverability in thick cover. The juvenile Cooper's Hawk is brown on the back with individual feathers edged in rufous, which gives them a slightly warm tone. From above, the tail shows a distinct white terminal band. The breast is pale buff with brownish-black longitudinal streaking onto the belly, but the flanks and undertail coverts are unmarked (Wheeler and Clark, 1995). The ventral streaking is heavier on the upper breast and thins towards the belly, giving the bird a shrouded look. An adult male is slate blue-gray on the back with a distinct dark cap contrasting with the rest of the head (Mueller et al., 1981). The adult female is like the male, but sometimes retains a slight brownish tone on the back and has a less distinct dark cap (Mueller et al., 1981). Adults of both sexes are heavily barred in rufous on a white background on the breast, belly, and flanks, but the undertail coverts are clear white (Wheeler and Clark, 1995). The species shows a large degree of sexual size dimorphism, with the female as much as one-third larger than the male, and there is pronounced variation in size between eastern and western individuals (Wattel, 1973; Mueller et al., 1981; Hoffman et al., 1990; Smith et al., 1990). The Cooper's Hawk has relatively narrow wings and a longer tail than the smaller Sharp-shinned Hawk, with the tail roughly one and one-half times the breadth of the wings. The wings are held with straighter edges than on the Sharp-shinned Hawk, making the Cooper's Hawk head more pronounced ahead of the leading edge of the wings when in flight. Therefore, the Cooper's Hawk appears as a "flying cross" overhead, with a longer, lankier silhouette than that of the stouter Sharp-shinned Hawk (Dunne et al., 1988).

Although it takes more birds than any other prey type, (70-80% of the diet), the Cooper's Hawk takes more mammals than the Sharp-shinned Hawk, (estimated at 12-17% of the diet; Meng, 1951; Jones, 1979). Avian prey (observed by Walton at 77 territories in southern California in the 1970s included towhees, titmice, meadowlarks, blackbirds, jays, crows, doves, English sparrows, white-crowned sparrows, song sparrows, killdeer, green heron, juncos, phoebes, hermit thrushes, California quail, kestrels, screen owls, Virginia rails, magpies, flickers, woodpeckers, grosbeaks, orioles, wrens, and swallows). Mammals are taken especially when broods of nestlings are fledging. These include squirrels, ground squirrels, cottontails, young hares, various larger rats, and other rodents, and occasionally insects and herpetofauna (Fisher, 1893; Bent, 1961; Wattel, 1973; Jones, 1979; Palmer, 1988; Rosenfield and Bielefeldt, 1993). The Cooper's Hawk hunts from a concealed perch and makes short, fast attacks, sometimes flying low to the ground and using brush for concealment until the brief, final strike. In addition to being an expert at this typical hunting method, the Cooper's Hawk will also hunt from greater height, taking aerial prey in a falcon-like stoop in open habitat (Mead, 1963; Clark, 1977).

The Cooper's Hawk infrequently breeds in immature plumage in the second calendar year, but more often at > 2 years of age (Rosenfield, 1982; Henny et al., 1985; Asay, 1987). Pairs generally return to the same territory year after year, but often will build a new nest in the vicinity of an existing one (Reynolds and Wight, 1978). They usually lay 3-6 eggs, often 5, at intervals of 2 to 3 days, typically in the morning (Meng, 1951). Laying ranges from early April to late May (Bent, 1961; Rosenfield and Bielefeldt, 1993). Breeders in immature plumage often lay several

days later and lay smaller clutches than older individuals (Meng, 1951; Henny et al., 1985). Incubation ranges from 30-36 days (Bent, 1961; Meng, 1951; Nice, 1954; Rosenfield and Bielefeldt, 1993), with onset coinciding with laying of the third or fourth egg (Meng, 1951). Hatching is synchronous to within two or three days (Reynolds and Wight, 1978). "Branching" behavior usually occurs by 26-29 days, and fledging at 31-34 days, depending on sex (Palmer, 1988; Rosenfield and Bielefeldt, 1993).

Habitat Requirements:

The Cooper's Hawk nests in deciduous, conifer, and mixed woodlands. In southern California it generally favors extensive riparian bottomlands (Garrett and Dunn, 1981). Although less strongly associated with conifers than the Sharp-shinned Hawk, there is a great deal of overlap in the two species' nesting habitat requirements. In California sharp-shinned hawk breeding range is limited by range of smallest passerine prey resource populations. Cooper's hawks have been found breeding at low densities virtually throughout the state, predominantly in oaks and pines. In California, as reported for Wisconsin, Cooper's Hawks tended to use older, taller, and less dense woodlots than Sharp-shinned Hawks (Rosenfield and Bielefeldt, 1993). In Oregon, nests were in stands of conifers that included older and taller trees, a deeper crown, and a more open understory than a typical single-story Sharp-shinned Hawk nest stand (Reynolds et al., 1982). Most nests in a California study were in groves of six or more deciduous trees, with two or more trees close enough together that the crowns formed one continuous canopy (Asay, 1987). The range of nest height in several studies was 20-60 feet (6.1-18.3 meters; Bent, 1961; Meng, 1951; Reynolds et al., 1982; Palmer, 1988; Rosenfield and Bielefeldt, 1993). Breeding territory sizes vary significantly from study to study (one pair per 1815-5683 acres; 734-2300 hectares), depending on the quality of the habitat and abundance of prey (Craighead and Craighead, 1956; Reynolds and Wight, 1978). Distance between nests is also highly variable, from 1.5 miles (2.4 km) in New York (Meng, 1951), 1.9 miles- 3.3 miles (3.1-5.4 km) in Oregon (Reynolds and Wight, 1978), and 0.4-1.6 miles (0.7-2.6 km) in California (Asay, 1987). Territories in California are seldom contiguous. The Cooper's Hawk seems much more tolerant of human activities near the nest and is seen more often nesting in urban areas than the Sharp-shinned Hawk (Palmer, 1988). Cooper's are now limited annual nesters in suburban Los Angeles and San Francisco Bay area communities.

During migration, Cooper's Hawks use a mixture of habitat types with vegetative cover, often hunting on the edges of wooded areas (Palmer, 1988). They frequently follow ridgelines to exploit updrafts and, particularly in the intermountain west, avoid open valley floors by staying in montane forests at higher elevations where both prey and roosts are more available (HawkWatch International unpublished data).

Winter habitat requirements are poorly quantified. Christmas Bird Count data, particularly from the WMPA and adjacent southern California, suggest that Cooper's Hawks use essentially the same habitats during winter and summer. Water and cover are probably the limiting factors for prey species in the WMPA and, therefore, may determine the distribution of hawks. Accordingly, riparian areas are probably important habitat on wintering grounds, providing foraging and roosting opportunities. However, being less dependent on birds as a principal prey item than the Sharp-shinned Hawk, Cooper's Hawks are less directly associated with riparian habitats in winter. Since many cooper's hawks are simply moving through the WMPA in winter, they may be observed briefly at any location.

Population Status:

Garrett and Dunn (1981) suggest a significant decline in breeding pairs throughout southern California due to the destruction of their principal nest habitat, extensive riparian areas. There is no evidence of a decline in migratory populations of Cooper's Hawks in the western U.S. (HawkWatch International unpublished data; Golden Gate Raptor Observatory data in McDermott, 1996; Battalio, 1996). In winter, Cooper's Hawks continue to be seen in the WMPA in small numbers, particularly during the Christmas Bird Counts. These sightings may be slightly biased by the site selection criteria of the CBC, which emphasize areas of high bird species diversity and density. As with many species, it is probable since no current significant threats to the population in California have been identified except gradual loss of habitat, that the population occurs at this time at or near carrying capacity in available nesting territories.

Threats Analysis:

Habitat destruction (logging in forested areas and development in southern California), pesticide contamination, and shooting are probably the primary identified mortality factors for Cooper's Hawks, range-wide. Logging is a far greater threat to a breeding population than to a wintering population; the reduction of nest trees and, thereby, appropriate territories would have a greater impact on the species. Logging is not at issue in the WMPA. Loss of habitat to development for human needs is a known threat to many bird species in southern California. More importantly, destruction of riparian habitat, including loss of nest trees from depletion of the water source, damage by livestock, and invasion of exotic species (e.g., saltcedar replacing willow and cottonwood in the Lower Colorado drainage; Rosenberg et al., 1991) may have significantly reduced the amount of breeding habitat for Cooper's Hawks (Garrett and Dunn, 1981). The abundance of prey where songbirds have adapted to these new vegetative communities probably still attracts wintering Cooper's Hawks to altered riparian areas. However, such habitats are not viable substitutes for "natural" habitat since they often occur in proximity to human activities and alterations with a concomitant increase in risk of collisions with windows, predation by domestic pets, accidental or deliberate poisoning, and other human persecution.

Pesticides and other agricultural chemicals may pose a significant hazard to individual Cooper's Hawks in parts of the WMPA. Several studies have examined bioaccumulation of toxic material in the accipiters (Snyder et al., 1973; Elliott and Martin, 1994; Wood et al., 1996), and sprays used for insect and weed control, golf course and lawn fertilizers, and other agricultural applications often persist in the food chain with potentially negative effects.

Shooting might be a problem in the WMPA, although sight records are scattered and scarce enough that opportunities to shoot birds may be relatively infrequent. Migrants in Mexico are at high risk for shooting (HWI unpublished data), and an undocumented, but potentially significant number may also be killed as "chicken hawks" in this country. Remsen (1978) listed taking individuals for falconry as a potential threat to the species; however, the falconry community has an annual harvest in California that rarely exceeds 15 individuals, all immature.

Biological Standards:

Management in forested habitat for breeding Cooper's Hawks should include promoting an older, taller, and more open forest ecosystem. Protected forest patches should be large enough to conceal several nests because the birds rebuild each year (Reynolds and Wight, 1978), have an open understory, and encompass a foraging area large enough to support sufficient prey. In southern California and the WMPA, restoration and protection of existing riparian areas would seem to be of critical importance. In winter, Cooper's Hawks are ubiquitous wherever suitable prey occur.

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