

in a tree occupied by another Merlin, with no interaction observed even when it flew and then returned to a perch 3 m from a male Merlin. The Merlin also stooped on a Northern Harrier (*Circus cyaneus*) and on another unidentified raptor.

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### BALD EAGLE DIES FROM ENTANGLEMENT IN FISH NET

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Discarded fishing line is a reported source of mortality to birds (Bartel, *N. Am. Bird Band.* 9:8, 1984) including raptors (Knight, Skriletz and Ryan, *Raptor Res.* 14:40, 1980; L. Young, Snake River Birds of Prey Research Project, pers. comm.). Fish nets also kill non-target wildlife including fish, marine mammals, reptiles and seabirds (Stone, NOAA Tech. Memo. NOAA-TM-NMFS-SWR-012, 1986). There is apparently no reference in the literature to raptor deaths from net entanglement.

On 20 April 1988, while collecting information on Bald Eagle (*Haliaeetus leucocephalus*) nest parameters near Lummi Bay in northwestern Washington, I came upon the badly decomposed carcass of a juvenile (approx. 9 wk old) eagle. The bird was evidently 1 of 2 observed in the nest in 1987. A closer investigation revealed that the eaglet was hanging by a 3 m × 0.5 m piece of 12 cm mesh monofilament fish net. The bird's head had passed through 2 of the gillnet meshes which were taut around the neck.

The nest was suspended in branches 3 m above the ground and held by nest sticks that were entangled in the net. Also entangled in the net was part of a steelhead (*Salmo gairdneri*) carcass and an unidentified bone. Evidence suggests that an adult eagle carried the entangled fish and net to the nest. Death to the eaglet resulted from strangulation and the 18 m fall from the nest.

This type of monofilament gillnet is commonly used by local steelhead fishermen. Gillnet fishing is increasing in the near-shore waters of Puget Sound and the Washington Coast (L. Clockin, Wash. Dept. of Fisheries, pers. comm.) where the majority of nesting and wintering eagles forage in the state. Although the population impacts from net

entanglement are unknown, this observation is significant because it documents that such nets can be a secondary source of mortality to Bald Eagles.

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### FOOD HABITS OF RED-TAILED HAWKS IN BOULDER COUNTY, COLORADO

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The Red-tailed Hawk (*Buteo jamaicensis*) is a common raptor in Colorado, yet nothing is known about its food habits there. The objective of this study was to qualitatively document nesting season food-habits of Red-tailed Hawks in Boulder County, Colorado. Boulder County is located on the eastern slope of the Front Range of the Rocky Mountains in north central Colorado. The county contains 5 major ecosystem types defined along an altitudinal gradient: Plains Grassland,  $\leq 1707$  m; Lower Montane Forest, 1829-2348 m; Upper Montane Forest, 2439-2744 m; Subalpine Forest, 2835-3354 m; and Alpine Tundra,  $\geq 3445$  m (Marr 1964).

Nests were located early in 1985 by visiting areas where Red-tailed Hawks and their nests were historically known to occur. After a nest fledged young or was abandoned, pellets and other prey remains (e.g., carcasses, body parts, etc.) found in its "white-wash" zone were collected during a 1 hr search. One nest tree was climbed and pellets and other remains were removed. Skulls and other identifiable body parts were identified whenever found. From nests having  $\leq 20$  pellets, all pellets were analyzed for mammalian and avian prey; 20 randomly selected pellets were analyzed from nests with  $> 20$  pellets. Five percent of the pellets that contained hair were re-analyzed to obtain a measure of precision (N consistently reidentified/N reidentified); 82% of the prey items in these were re-identified consistently. No attempts were made to identify scales or chitinous remains in this study despite their presence in pellets.

Ten nests were located (including 1 nest used in 1984

but not in 1985) in 3 ecosystem types (Plains Grassland, 6 nests; Lower Montane Forest, 2 nests; Upper Montane Forest, 1 nest) and 1 nest in the ecotone between Plains Grassland and Lower Montane Forest. Pellets and remains were collected beneath 7 nests and within 1 nest. Of 380 pellets collected from 8 of the nests (range 2-147), 112 (29%) were analyzed for content. Pellets from all habitats with nests were represented in the analysis.

Twenty-six mammalian and 6 avian species were identified, including 6 species that, to my knowledge, had previously not been reported to be consumed by Red-tailed Hawks (Table 1). Prey species were those expected to be found near respective nests based on known mammalian and avian distributions in Colorado (Armstrong 1972; Kingery and Graul 1978). Hawks from Plains Grassland consumed 17 different species (14 mammals, 3 birds), ecotone hawks, 7 species (4 mammals, 3 birds), Lower Montane Forest hawks, 12 species (11 mammals, 1 bird), and Upper Montane Forest hawks, 9 species (8 mammals, 1 bird). However, these discrepancies may be an artifact of the numbers of nests studied in each ecosystem. Preferences of individual hawks and availability and vulnerability of prey around a given nest influence what individual Red-tailed Hawks consume (Errington and Breckenridge 1938; Beebe 1974; Adamcik et al. 1979).

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