

10 were adults and 7 immature. Eight (4 adults, 4 immatures) were observed frequently from early January to early or mid-March. Two other immatures were observed between 6 and 24 February 1983. Seven others (5 adult, 2 immatures) were seen on 1 or 2 observation days each, between 13 January and 12 March 1983.

Night Roosts — Three night roosts were tentatively 2.5-7.5 km north and northwest of the Shepaug Dam. All 3 were located in undeveloped mixed hardwood forest. The first 2 sites were located by direct observation of eagles leaving or returning in early morning and early evening, respectively. The third was located with a police scanner by tracking a radio-tagged eagle.

Breeding grounds — The 17 eagles wintering in the vicinity of the Shepaug Dam can be divided into 2 groups, 8 observed throughout the winter and 9 observed over a period of 1 to 18 d. It is reasonable to assume that the latter group is made up of transient birds. Three of these have been traced to breeding areas in Maine. Two immatures observed only during February were identified by leg bands as hatch year birds from Maine. A third immature, observed on 1 d in February, had both leg bands and a backpack transmitter which identified it as coming from a nest in the Cobscook Bay area of the Main coast. Two others (1 adult, 1 immature), seen on 1 or 2 d each, also had leg bands, but could not be further traced.

There is no direct evidence of an active nest in the area. However, 7 of the 8 eagles observed throughout the winter could be divided into 2 groups which virtually always moved as separate units. One group consisted of 2 adults and 1 immature and the other group consisted of 2 adults and 2 immatures. This suggests that there were 2 family groups. The senior author observed a single adult

on 3 separate occasions during the first week of June 1983, approximately 7 km north of the Shepaug Dam.

Feeding — Eagles arrived at the dam area 5-15 min before sunrise; they remained perched until the hydroelectric plant started operation at 0700 when they began feeding on fish killed or injured by the plant's turbines. Feeding continued for 1-3 h after which the birds perched or soared over the hills on the south side of the river. Feeding often resumed in early afternoon before the birds returned to their roosts.

Eagles were observed making dives to the river to catch fish on 232 occasions, 170 (73%) of which were successful. Adults were successful on 103 (75.7%) of 136 attempts while immatures were successful on 67 (69.8%) of 96 attempts (NS, X^2 Test). Fish caught included trout (*Salvelinus* spp.), bass (*Micropterus* spp.), catfish (*Ictalurus* spp.), and shiner (*Notropis* spp.).

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Nest Defense by Northern Harriers Against the Coyote in Southwestern Idaho

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Predation on Northern Harrier (*Circus cyaneus*) by Striped Skunk (*Mephitis mephitis*), Badger (*Taxidea taxus*), foxes (*Fulpes* sp.) and Mink (*Mustella vison*) has previously been reported. (Craighead and Craighead 1956; Hamerstrom 1969; Watson 1977). Although Murie (1940) reported that Coyotes (*Canis latrans*) prey on the Short-eared Owl (*Asio flammeus*), an ecological equivalent of the Northern Harrier, we are not aware of reports of Coyote predation on Northern Harriers. Herein we report several Northern Harrier — Coyote interactions observed during 1981 in the Snake River Birds of Prey Study Area in southwestern Idaho.

On 29 March at 1020, T.C. observed a pair of nesting harriers perched in a small tree (*Crataegus* sp.) near a spring bordering the Snake River. Riparian habitat surrounded the spring for a distance of 15 m with senescent

reed (*Phragmites communis*) and stinging nettle (*Urtica* sp.) the predominant vegetation. Beyond the spring, big sagebrush (*Artemisia tridentata*) and June grass (*Bromus tectorius*) covered the nearby canyon side. Shortly, the female harrier flew from the tree followed by the male, and both began emitting a call usually associated with agnostic displays. The male then started diving repeatedly at the edge of the riparian growth. By the male's changing position it was obvious that the object of his dive was moving toward the center of the riparian vegetation. As the hawk completed a dive, a Coyote rose on its hind legs above the vegetation and snapped its jaws at it. The Coyote again attempted to grab the harrier, and then stopped with his back visible. It appeared that it was moving its head near the ground as if eating. The female harrier circled and called overhead while the male con-

tinued to call and dive, although not as closely. After about 5 min, T.C. approached the spring and the coyote fled with the male harrier in close pursuit, diving with both feet swung forward attempting to grab the coyote. A single, pale-blue, harrier egg was found in the nest at the spot where the coyote had appeared to be eating. Both harriers circled and called over the human intruder but neither dived. A single adult male harrier was observed near the nest area on 24 April but on 2 subsequent visits no birds were seen. On 7 July the nest was visited again and only a few bits of egg shell were found; however, no harriers were present.

On 30 May at 1146 L.P. observed a male harrier escort a Golden Eagle (*Aquila chrysaetos*) from the harrier's territory. The harrier circled back toward its nest in a shallow undulating flight and began to vocalize and dive at something on the sagebrush slope above the nest site. As the male continued its vigorous dives, the object of the attack, a Coyote, appeared. A female harrier soon began circling over the area, occasionally making shallow dives at the Coyote. Shortly, a second male harrier flew into the area from a neighboring nesting territory to the east and joined the pair. The second male appeared to "sky dance" (Hamerstrom 1969) around the female at first but soon began to vocalize and dive at the Coyote also. The Coyote, followed by the defending hawks, gradually moved out of view toward the neighboring harrier territory. At 1155 a male harrier reappeared from the east and soared above the original harrier's territory.

Later that day at the same harrier territory, a male flew across the river from its nest area and dove several times at a Coyote that trotted eastward. After 1 to 2 min the harrier veered off, perched on a sagebrush briefly and then flew at an angle away from the Coyote and intercepted a second male harrier which was approaching the Coyote from the northeast. The first male briefly chased the invading hawk which attempted to dive at the Coyote. Soon, the first harrier flew back toward its territory and began to hunt. Within 5 min he captured a small prey item and delivered it to his mate at the nest across the river. When we visited the nest on 7 June, 1 egg and 2 nearly-hatched nestlings were found. Twenty-seven days later on a second visit the nest had been destroyed and only pin feathers of juveniles remained. The adjacent harrier nest to the east successfully fledged at least 3 young.

J.M. frequently saw Coyotes in the vicinity of harrier nests on the study area, and observed both male and female harriers, individually and jointly, diving at

Coyotes. More often the male was the lone defender. As in the previously described observations, J.M. also observed a Coyote leap into the air after a defending adult male and at times observed several harriers cross well defined territorial boundaries to pursue a Coyote. Newton (1979) reports such communal nest defense among Marsh Harriers (*Circus aeruginosus*). In one location J.M. found a Coyote den at one end of a large marsh which contained 7 harrier nests. Five of those 7 nests failed, and 3 showed evidence of Coyote predation.

Although eye-witness accounts of predation at raptor nests are not common, our observations indicate that Coyotes do prey on Northern Harrier nests, especially in desert areas, perhaps where sparse riparian habitat attracts both animals. Furthermore, our report suggests a danger of leading this predator to harrier grounds nests by investigator'scent trails (Fyfe and Olendorff 1976) as reported by Craighead and Craighead (1956) for a farm dog (*Canis familiaris*).

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NEWS AND REVIEWS

BEHAVIOR OF FLEDGLING PEREGRINES BY STEVE K. SHERROD; drawings by Karen Lynn Allaben-Confer. 1983. Fort Collins, Pioneer Impressions. xi + 202 pp., 59 figures, 23 tables. Price \$10.00. Available from the Peregrine Fund, Inc., Ithaca, New York.

Peregrine Falcons are renowned for their spectacular aerial feats. How they develop this unique behavior is unfolded as 4

broods of fledglings, 2 broods from Australia and 2 from Greenland, are followed from first flight to dispersal. The book's sequ-



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