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Literature Cited

- Bent, A.C. 1937. Life histories of North American birds of prey. Part I. U.S. Natl. Mus. Bull. 167. Dover Publ., New York. 409 pp.
- Broley, C.L. 1950. The plight of the Florida Bald Eagle. *Audubon* 52:42-9.
- Fraser, J.D. 1981. The breeding biology and status of the Bald Eagle on the Chippewa National Forest. Unpubl. Ph.D. Diss., Univ. of Minnesota, St. Paul. 236 pp.
- Heglund, P.J., and B. Reiswig. 1980. 1980 Raptor survey, the breeding Bald Eagle population, Amchitka Island, Alaska. Unpubl. rep., U.S.D.I. Fish and Wildl. Serv., Aleutian Islands National Wildlife Refuge. 19 pp.
- Herrick, F.H. 1934. The American eagle: a study in natural and civil history. Appleton.
- Sherrod, S.K., C.M. White, and F.S.I. Williamson. 1976. Biology of the Bald Eagle on Amchitka Island, Alaska. *Living Bird* 15:143-182.
- Southern, W.F. 1967. Further comments on subadult Bald Eagle plumages. *Jack Pine Warbler* 45:70-80.
- Sprunt, A., IV, W.B. Robertson, Jr., S. Postupalsky, R.J. Hensel, C.F. Knoder, and F.J. Ligas. 1973. Comparative productivity of six Bald Eagle populations. *Trans. N. Amer. Wildl. Conf.* 38:96-106.

ABSTRACTS OF THESES AND DISSERTATIONS

ARTIFICIAL PERCH USE BY RAPTORS ON RECLAIMED SURFACE MINES IN WEST VIRGINIA

Raptor use of 24 artificial perches on 4 reclaimed surface mines in West Virginia was studied from May to October, 1980. Each perch had crosspieces at heights of 3 and 6 m. Perch use was documented by direct observations and use of 24 automatic event recorders. More than 99% of total use by raptors was made by American Kestrels (*Falco sparverius*.) Red-tailed Hawks (*Buteo jamaicensis*) and, as indicated by the event recorders, possibly Great Horned Owls (*Bubo virginianus*) made relatively small use of the perches. The 6-m crosspieces were used substantially more than the lower heights and this choice was independent of topography. Relationships among perch use, prey abundance, and vegetational structure were evaluated and, based on these variables, models were generated to predict perch use by the 3 raptor species. Vegetational structure appeared to be important in determining perch use by all 3 species but use by kestrels may be determined more by insect prey.

Forren, John D. 1981. Artificial perch use by raptors on reclaimed surface mines in West Virginia. M.S. Thesis, West Virginia University, Morgantown. 199 pp.

KESTREL USE OF NEST BOXES ON RECLAIMED SURFACE MINES IN WEST VIRGINIA AND PENNSYLVANIA

Kestrel (*Falco sparverius*) use of mines with boxes (treatment) and without boxes (control) was studied in a 4-county area in northern West Virginia and southern Pennsylvania during March to August of 1980 and 1981. Kestrels did not nest on nor was any breeding activity observed at 6 control mines during either year of the study. In contrast, Kestrels accepted 14 of

60 (23%) boxes on 10 of 18 (56%) treatment mines in 1980, and accepted 33 of 91 (36%) boxes on 19 of 24 (79%) treatment mines in 1981. During the 2-year study, 122 young fledged from these boxes. Of 14 boxes accepted by Kestrels in 1980, 13 (93%) were reoccupied in 1981. Nesting chronology, clutch sizes, and productivity were comparable to published studies of kestrels on unmined areas.

A search of the mines and adjacent woods borders revealed that natural cavities were absent on 20 of 30 (67%) sites. Kestrels nested in 1 natural cavity, on a treatment mine, and nested in boxes on 14 mines that lacked natural cavities.

To examine the relationship among box use, mine, and site characteristics, the following information was recorded: individual box use by Kestrels, site characteristics for individual nest boxes, vegetation characteristics for each mine, and insect and rodent abundance. Stepwise discriminant analysis of 10 nest box location variables revealed that a single variable, the distance of a box to a woods border was the most important for classifying box use by Kestrels during each year of the study. Group means of this variable were significantly higher for used boxes than unused boxes, indicating that used boxes were farther from a woods border. Only 10 of 65 (15%) available woods border boxes were used during the study period while 47% of all boxes erected 50 m or more from a woods border were used. Effective management of kestrels involves erecting boxes on isolated trees that are at least 50 m from a woods border.

Mines where boxes were used were characterized by a significantly lower percent of bare ground and a deeper litter depth than unused mines. Unreclaimed or marginally reclaimed mines with excessive bare ground may be unsuitable Kestrel habitat even if boxes are provided. Recommendations for managing Kestrels on reclaimed surface mines are provided.

Noteworthy behavioral observations were made during the study period. Vigorous defense of a nest box containing 3 downy eyasses by 4 fully-feathered Kestrels was observed during July at 1 mine. Ground-perching on barren spoil areas was noted during both years of the study. In 1981, this habit was observed on 11 mines, and involved as many as 14 individuals on a single mine. Nearly all ground-perching was observed during July of both years.

Examination of prey remains found in boxes used by Kestrels revealed 4 species of birds not previously recorded as prey items. Incubation by male Kestrels was observed at 6 boxes. With 1 exception, males were found incubating after 1800 hr.

Wilmers, Thomas J. 1982. Kestrel use of nest boxes on reclaimed surface mines in West Virginia and Pennsylvania. M.S. Thesis, West Virginia University, Morgantown. 182 pp.

ANNOUNCEMENTS

SECOND SYMPOSIUM ON AFRICAN PREDATORY BIRDS

The Natal Bird Club, a branch of the Southern African Ornithological Society, will be holding a symposium on African Predatory Birds from 22-26 August 1983. The first symposium on this topic was held in Pretoria in August 1977.

Four sessions are planned: The role of captive breeding in conservation; The effects of pesticides, particularly in the 3rd World; The energetics of large predators, and; The biology of rare and poorly known species.