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Dennis R. Davenport  
and  
John L. Weaver  
Bridger-Teton National Forest  
Box 1888  
Jackson, Wyoming 83001

## Wintering Bald Eagles in Jackson Hole, Wyoming

### Abstract

During the extremely cold winter of 1978-79, distribution of approximately 29-32 bald eagles (*Haliaeetus leucocephalus*) coincided with distribution but not abundance of wintering ungulates (available carrion) in Jackson Hole, Wyoming. Subadults comprised 17-19 percent of the population.

### Introduction

Herein we report on the first systematic survey of Bald Eagles wintering in Jackson Hole, Wyoming, and comment on the role of ungulate carrion during an extremely rigorous winter.

### Methods

Aerial observations were made from a Cessna 180 on 19 January 1979 along major watercourses; ground observations from a vehicle were obtained on 10 days, 14-27 January, from roads adjacent to the same watercourses.

### Description of Study Area

Surveys were conducted along approximately 125 km of the Snake River, 25 km of the Gros Ventre River, and 25 km of the Hoback River, in Jackson Hole, northwest Wyoming (Fig. 1). Love and Reed\* (1968), Shaw (1975), Weaver (1977), and Kiefling (1978) have described the area. Dominant vegetation along the rivers includes narrowleaf cottonwood (*Populus angustifolia* James), blue spruce (*Picea pungens* Engelm.), Douglas-fir (*Pseudotsuga menziesii* (Mirb.) Franco), and various willows (*Salix* spp.).

The winter of 1978-1979 brought very cold temperatures to Jackson Hole for sustained periods. During early January, temperatures plummeted to  $-45^{\circ}\text{C}$  in some places. Low temperatures for January 1979 averaged  $10^{\circ}\text{C}$  below the average low temperature for that month ( $-16.3^{\circ}\text{C}$ , 1959-1978).

### Results and Discussion

During January 1979, approximately 29-32 Bald Eagles inhabited Jackson Hole. Aggregations of five to eight eagles were found in three locales: (1) National Elk Refuge (NER), (2) Snake River through South Park, and (3) Snake River from Astoria

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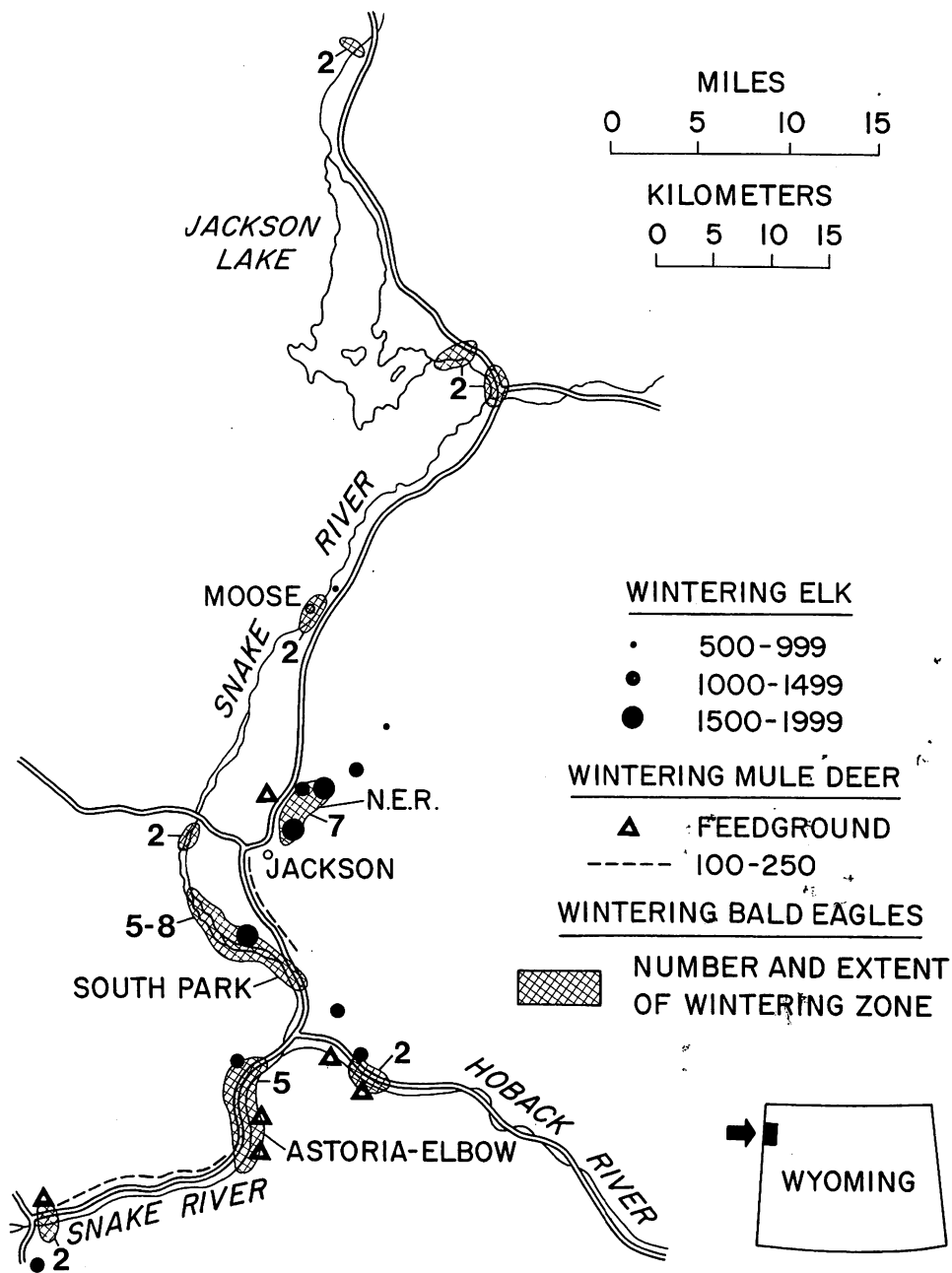


Figure 1. Location of study site.

to the Elbow (Fig. 1). Seven Bald Eagles were observed on the NER during this survey, whereas one to five birds have been reported there in the past five winters.

Five eagles were subadults (17-19 percent). For Yellowstone National Park, Swenson (1975) reported an average (1959-75) mid-winter Bald Eagle population of seven

(range 2-13). Subadults averaged 8 percent but were absent in nine of the 15 winters when eagles were classified (Swenson, 1975). The relatively low percentage of subadult Bald Eagles in northwestern Wyoming during winter may result from a tendency of subadults to winter farther south than adults (Southern, 1963, 1964; Sprunt and Ligas, 1966; Swenson, 1975).

Bald Eagles in Jackson Hole during this period were dispersed in clumps which coincided with the distribution of wintering elk (*Cervus elaphus*) and mule deer (*Odocoileus hemionus*), mainly at or near State and Federal feedgrounds (Fig. 1). Approximately 78 percent of 46 sightings and all groups greater than two eagles occurred within 3.2 km of these sources of ungulate carrion. In all eight instances where Bald Eagles were observed feeding, the food source was elk or mule deer carrion. Swenson (1975) reported that five of six Bald Eagle wintering areas in Yellowstone National Park were associated with wintering ungulates, with each also having some open water.

Data on amount of ungulate carrion available were limited to the NER and Astoria-Elbow areas. On the NER during December 1978-February 1979, 97 dead elk provided approximately 17,620 kg for carrion feeders, including seven Bald Eagles. During the same period between Astoria and Elbow, 44 ungulates—29 mule deer, 12 elk, and 3 moose (*Alces alces*)—succumbed and furnished approximately 4296 kg. Five Bald Eagles occupied this stretch of the Snake River.

Although several biological factors (i.e., Bald Eagle-coyote (*Canis latrans*) competition) could have influenced the lack of correlation between eagle numbers and amount of ungulate carrion, we reserve a full discussion until more data accrue.

#### Summary and Conclusions

In most winters, some of the waters amidst Bald Eagle wintering areas in Jackson Hole remain open and provide opportunities for eagles to supplement their diet with fish and/or waterfowl. The two pairs of Bald Eagles at Huckleberry Hot Springs (north of Jackson Lake) and below Jackson Lake Dam (Fig. 1) did winter near open water and away from ungulate herds. The cold winter of 1978-79, however, froze a greater portion (up to 95 percent) than usual, including some stretches not closed since 1949. Consequently, fewer of these supplemental food sources were available to Bald Eagles, whose restricted distribution reflected an even greater reliance upon ungulate carrion.

Our observations in Jackson Hole support those compiled by Spencer (1976) that Bald Eagles wintering in northern zones rely substantially upon carrion for food, especially during severe ice-up periods on lakes and rivers.

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#### Literature Cited

Kiefling, J. W. 1978. Studies on the Ecology of the Snake River Cutthroat Trout. Fisheries Technical Bull. No. 3. Wyoming Game and Fish Department, Cheyenne.

- Love, J. D., and J. C. Reed. 1968. Creation of the Teton Landscape. The geologic story of Grand Teton National Park. Grand Teton Nat. Hist. Assn.
- Shaw, R. J. 1975. Field Guide to Vascular Plants of Grand Teton National Park and Teton County. Utah State Univ. Press, Logan.
- Southern, W. E. 1963. Winter populations, behavior, and seasonal dispersal of Bald Eagles in northwestern Illinois. *Wilson Bull.* 75:42-55.
- . 1964. Additional observations on winter Bald Eagle populations: including remarks on biotelemetry techniques and immature plumages. *Wilson Bull.* 76:121-137.
- Spencer, D. A. (ed.). 1976. Wintering of the Migrant Bald Eagle in the Lower 48 States. Nat. Agric. Chem. Assoc. Publ. Washington, D.C.
- Sprunt, A., IV and F. J. Ligas. 1966. Audubon bald eagle studies 1960-1966. *Proc. Nat. Audubon Soc. Convention* 62:25-30.
- Swensen, J. E. 1975. Ecology of the Bald Eagle and Osprey in Yellowstone National Park. Montana State Univ., Bozeman. M.S. thesis.
- Weaver, J. L. 1977. Coyote-food Base Relationships in Jackson Hole, Wyoming. Utah State Univ., Logan. M.S. thesis.

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