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Winter Distribution of Bald Eagles Along a Segment of the Boise River, Idaho

Abstract

Bald Eagles (*Haliaeetus leucocephalus*) were observed from mid-December 1982 through mid-March 1983 to determine their winter density and distribution along the Boise River extending 14 km upstream from Boise, Ada County, Idaho. A minimum of 10 individual eagles were observed a total of 148 times. Early in the winter, eagles were rather evenly distributed along the 14 km stretch of river. Thereafter, 60 percent of the sightings were within the first kilometer of river below Lucky Peak reservoir.

Introduction

The Boise River, upstream from Boise, Ada County, Idaho, provides the requirements of open water, suitable habitat, and adequate prey for Bald Eagles wintering in the western United States (Steenhof *et al.* 1980), and is annually used by eagles for 3 or more months each winter (Jensen 1981). Ownership of the land adjacent to the stretch of river from Boise to Lucky Peak Dam (Figure 1) is a mosaic of private, industrial, and state interests. The development of the bottomland within the floodplain is under the supervision of the U.S. Army Corps of Engineers. Currently there is only limited human activity in this area. Nearly 75 percent of the land adjacent to the river is either undisturbed or is pastureland. However, several plans for development of sites along this segment of the river have been proposed. Proposals range in scope from high density housing tracts to parks with little or no anticipated habitat changes. This mixture of land ownership and planning for development, coupled with the endangered species status of the Bald Eagle (USDI 1978), and Jensen's (1981) unpublished data on wintering eagles, prompted this study. Our objectives were to quantify the temporal and spatial density changes of the wintering eagle population, and to identify specific habitat use areas and possible roost sites.

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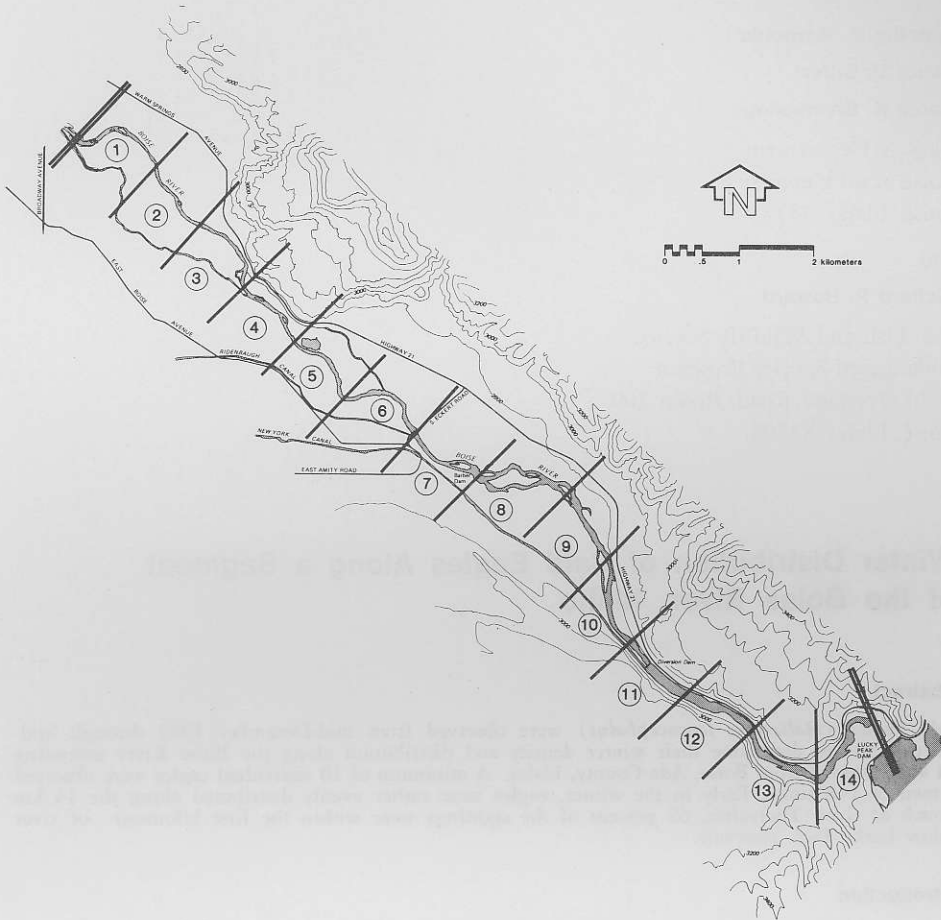


Figure 1. Location of the 1982-83 wintering Bald Eagle study area along the Boise River, Ada County, Idaho.

Study Area

The study area extended 14 km upstream from Walnut Street in Boise to Lucky Peak Dam (Figure 1). The lower 7 km of the river, from Walnut Street to Barber Dam, is relatively shallow and fast flowing, bordered by native riparian habitat interspersed with pastureland and residential, corporate, and municipal developments. Extending approximately 3.5 km upstream from Barber Dam to Diversion Dam the river is braided, slow flowing, and known locally as Barber Pool. Several islands in this area, and the adjacent river banks, support stands of mature cottonwoods (*Populus* sp.). Immediately above Diversion Dam the river valley abruptly narrows to a 45 m deep canyon which extends upstream to Lucky Peak Dam. With the exception of the discharge basin immediately below the dam, this upper 3.5 km reach of the river is mostly slack water.

Materials and Methods

Surveys for Bald Eagles were conducted every third day from 13 December 1982 through 19 March 1983. Morning and afternoon surveys, starting at dawn and three hours prior

to dark, respectively, were conducted on alternate sampling days. Three types of surveys were conducted because no single method provided complete coverage of the study area:

1) a vehicle survey route along Highway 21 (Figure 1) which paralleled the study area; 2) stationary observations from north of the river between km 3 and 4 (Figure 1), and from the bluffs south of the river overlooking Diversion Dam in km 11; 3) float trips by canoe.

Each survey lasted 2-3 hours. Observations from the bluffs above Diversion Dam were conducted every fourth sampling day. Canoe trips were taken at 3-4 week intervals. Data recorded for each eagle sighted included the location, habitat, time, activity (perching, feeding, soaring or flying), and the age (adult or immature).

Results

During the 31 surveys (21 by vehicle, seven stationary observations, and three canoe floats) a total of 148 sightings of Bald Eagles was recorded. The maximum number of eagles observed simultaneously, hence the minimum known to use the study area, was 10. This occurred on 29 January and 18 February. Four of the birds observed on 29 January were identified as adults, and 6 as immature. Of the 148 total sightings, fifty-one (34 percent) were of adult birds, 62 (42 percent) were of immatures, and 35 (24 percent) were of unknown age.

Temporal and spatial use of the river environs by eagles was not uniform (Table 1). Eagles were observed along the lower 3 km of the study area only during the first two weeks of the study, and then only in very limited numbers. Eagles seemed to prefer the Barber Pool area (specifically river segment 8 and 9; Figure 1) during late December and early January. Thereafter, the majority of the eagle sightings occurred directly below Luck Peak Dam in river segment 14 where no eagles were recorded during the first month of the study. The sightings in the Barber Pool area were equally divided between perching and flying birds. Immediately below Lucky Peak Dam, over 90 percent of the eagles observed were airborne, either soaring over the cliffs or circling low over the water. The maximum number of eagle observations occurred during late January and early February. By mid-March a minimum of four Bald Eagles were observed between Diversion and Lucky Peak Dams.

Jensen (1981) reported that Bald Eagles used the islands in Barber Pool as night

TABLE 1. Number of observations of Bald Eagles along each 1 km segment of the Boise River, Idaho, study area, during the 1982-1983 winter.

Dates	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Two Week Totals
11-25 Dec.	0	1	1	1	2	1	0	2	3	4	2	2	1	0	20
11-25 Dec.	0	1	1	1	2	2	0	2	3	4	2	2	1	0	20
26 Dec.-8 Jan.	0	0	0	0	0	1	2	10	5	1	0	1	1	0	21
9-22 Jan.	0	0	0	1	1	0	2	4	3	1	5	0	2	10	29
23 Jan.-5 Feb.	0	0	0	2	1	0	0	2	3	0	1	1	1	22	33
6-9 Feb.	0	0	0	0	1	1	0	3	1	0	0	1	1	20	28
20 Feb.-5 Mar.	0	0	0	1	0	0	1	0	0	0	0	0	1	9	12
6-19 Mar.	0	0	0	0	0	0	0	0	0	0	1	1	0	3	5
Total per segment	0	1	1	5	5	3	5	21	15	6	9	6	7	64	Grand Total 148

roost sites during winter. From the onset of this study until 14 January we regularly recorded eagles perched in the cottonwood trees overlooking the river at Barber Pool during the day, as well as at both sunrise and sunset. Sunset and sunrise observations imply that eagles roosted at Barber Pool. After mid-January, when the maximum eagle activity shifted to the upper reaches of the study area, eagles were consistently observed soaring over the foothills on the north side of the river late each afternoon. Rather than moving downriver toward Barber Pool to roost, these birds would fly in a northerly direction. Although we did not determine the specific night roost area, the birds appeared to roost in the coniferous forests near Schoonover Gulch or the Robie Creek drainage 10-12 km due north of Luck Peak Dam.

Discussion and Conclusions

The population of Bald Eagles wintering along the Boise River is unusual because of its proximity to a metropolitan area. The minimum of 10 eagles we observed is similar to the maximum of 12 reported by Jensen (1981) overwintering in the same area two years prior to this study. Although this 14 km segment of the Boise River appears to support 10 or more Bald Eagles during the winter, it is not known exactly how many eagles consistently use the area. The Lucky Peak Reservoir, directly upstream from our study area, and Arrowrock Reservoir above that, both support wintering populations of Bald Eagles. A regular exchange of birds between these areas is quite possible.

Until late January, Barber Pool apparently provided a good area for hunting and day perching, and quite possibly served as a night roost. After mid-winter eagles were observed more frequently in the upper stretch of the study area, and began using a night roost 10-12 km distant from and the river. This trend continued until the end of the study when eagles were leaving their wintering habitat.

The reason for the apparent change in night roosts is unknown, but daily movements of this sort are not particularly novel for eagles. Bald Eagles wintering near the American Falls Reservoir in southeastern Idaho make daily moves in excess of 15 km to and from a roost in the Bannock Mountain Range (C. H. Trost, Biology Dept., Idaho State University, personal communication). Similar movements were reported by Swisher (1964) for a population of eagles in northern Utah.

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