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BALD EAGLE USE OF KANSAS RIVER RIPARIAN HABITAT IN NORTHEASTERN KANSAS

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North American Bald Eagle (*Haliaeetus leucocephalus*) populations have declined severely during the last three decades, resulting in classification of both subspecies as endangered (Snow 1973). Protection of habitats used during winter by Bald Eagles thus is critical for maintaining and possibly increasing present populations (Snow 1973). The purpose of this study is to document utilization by Bald Eagles of riparian habitat along the Kansas River during the 19th century, and to present data on numbers and distribution of eagles wintering along the Kansas River near Lawrence, Kansas, and at nearby Perry Lake reservoir (Fig. 1) during the winters of 1974-1975 through 1978-1979. We also present specific proposals for protection of this habitat.

DESCRIPTION OF AREA

The dominant trees in the riparian forest are cottonwoods (*Populus deltoides*), sycamores (*Platanus occidentalis*), and willows (*Salix* spp.). Elm (*Ulmus* spp.), boxelder (*Acer negundo*), maple (*Acer saccharinum*), hackberry (*Celtis occidentalis*), and several species of vines produce considerable shade in the understory. Tamarisk (*Tamarix gallica*), along with willows and young cottonwoods, protects erosional surfaces, and in late successional stages forms almost impenetrable forests. The flood plain beyond the fringe forests originally was either forested or in successional stages of ponds and marshes, but it has been reclaimed for agricultural purposes.

The river generally traverses the valley in a series of meanders, but the area primarily used by eagles is unusual in that the river is relatively straight or only slightly curved. As river bank erosion is proportional to the degree of angular-bending, the river geometry in this area is in favor of the least change in the river course. Although the river channel is relatively straight, variations in depth and velocity are noticeable during the low water period of late summer and autumn. Approximately 80% or more of the channel is in sand when Bald Eagles are in the area; most of the eagles use trees associated with meanders on the north side of the river.

The river freezes in a definite pattern, with water on the north side the last to remain open because of increased velocity at the concave part of the channel meander and favorable sun exposure. Water at the mouth of the Delaware River (Fig. 1) rarely freezes and is usually maintained open by waterfowl and beaver (*Castor canadensis*).

The climate is of the humid continental type. Mean annual precipitation is around 34 inches, most of which falls during the growing season. Snow cover ranges from negligible to 12-20 inches on the ground throughout the winter. Mean daily temperature is 27 C during the summer. Winters are generally cold; temperatures average around 0 C and can remain below -10 C for several days.

19th CENTURY USE OF KANSAS RIVER BY BALD EAGLES

Historical records indicate that wintering Bald Eagles roosted along the Kansas River near the present-day town of Lecompton (Fig. 1) in the 1850's. Lecompton's

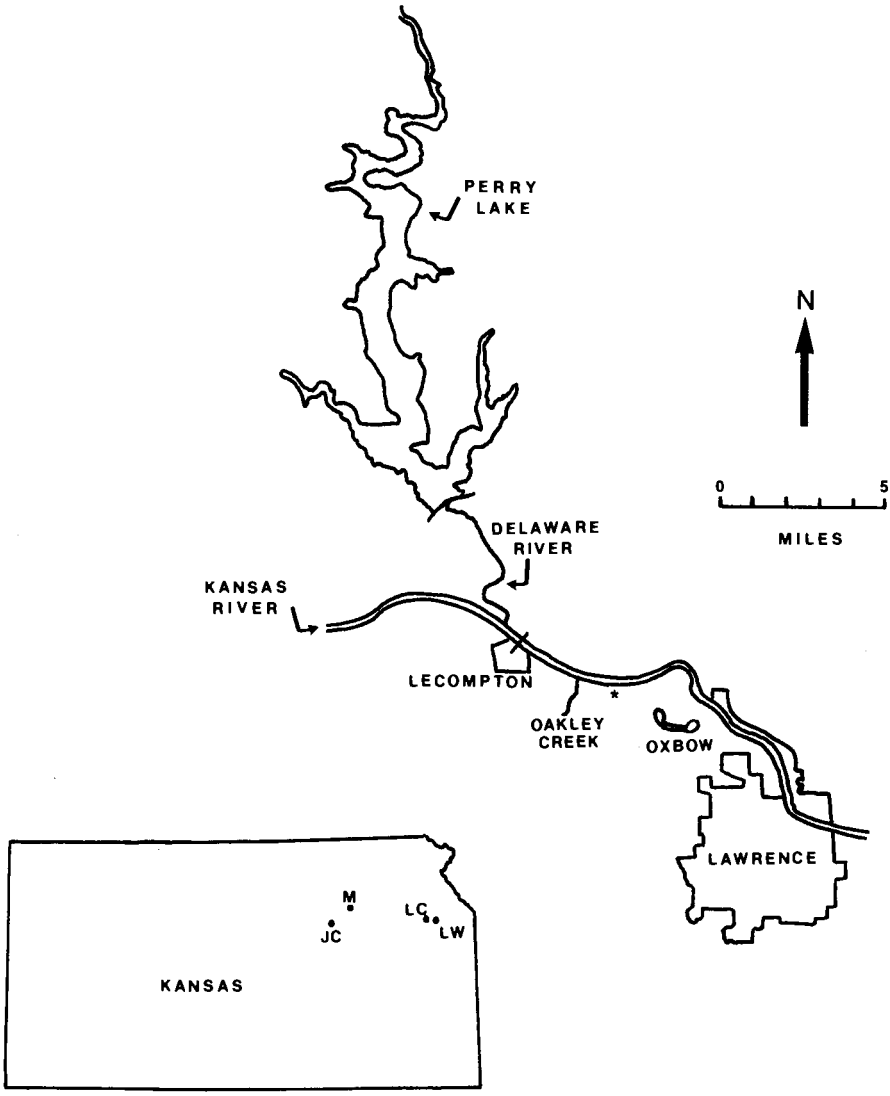

Figure 1. The Kansas River, Perry Lake, and associated communities of Lecompton and Lawrence in northeastern Kansas. * indicates where railroad crossing occurs on census route. Oxbow refers to portion of Kansas River isolated by natural processes but still retaining water. Smaller map of Kansas shows locations of Junction City (JC), Lawrence (LW), Lecompton (LC), and Manhattan (M).

original name of Bald Eagle probably dates from the fall of 1854; local legends state that two men, D. Rodrique and A. G. Boone, exploring the Kansas River valley, decided to call the area Bald Eagle because a Bald Eagle had just left its nest in a large nearby sycamore (Mrs. F. Walter, Lecompton, personal communication). Other local records indicate that Bald Eagles nested in the area in the 1850's: "many bald eagles rested on several immense sycamore trees, some on the south and some on the north, and here they made their homes and raised their

young until Lecompton took on city airs and some wanton creature shot them" (Sherar 1934). Lecompton Cemetery was plotted in 1854 and "was first known as the Bald Eagle Cemetery commemorating the time when Colonel Boone stood upon the hill and shot and instantly killed an eagle" (Sherar 1934).

Prior to the establishment of the town of Bald Eagle, traders occasionally passed through the area, and the Shawnee Indian Reservation (including the area of present-day Lecompton) was established in 1825. Emigrants travelling west followed both sides of the Kansas River in 1849-50, and a ferry was running across the river near Lecompton by 1850. The village of Douglas was erected two miles east of Lecompton and a sawmill was put in operation on the south side of the river in 1853, and the first cabin in Lecompton was built in 1854.

While this period presumably had some influence on Bald Eagles in the area, it probably was negligible compared with conditions between 1855 and 1859. The town of Bald Eagle was renamed Lecompton and became the first capital of Kansas, experiencing a population increase of 5,000 people. Additional disturbance included steam boat navigation of the river past Lecompton from 1854 until 1865. Bald Eagles probably were extirpated during this period or shortly thereafter.

CENSUS METHODS

Counts of wintering Bald Eagles were conducted during the winters of 1975 through 1979 along a 10.2 mile (16.4 km) census route paralleling the Kansas River, from 2 miles west of Lecompton to a point approximately 8 miles east of the town, and occasionally along a road circling Perry Lake reservoir (Fig. 1). We define winter as beginning in December of one year and terminating in late March of the next year. Each winter is designated by the latter year; for example, winter of 1978 began in December 1977 and ended in late March 1978.

Eagles with primarily white head and tail were considered adult, and all other eagles were considered immature. The percentage of immature eagles present during a census was calculated for censuses with more than three eagles observed. During the winters of 1975, 1976, 1978, and 1979, locations of eagles observed on the Kansas River were plotted on U.S. Geological Survey Topographic maps. To analyze the distribution of eagles along the Kansas River, the census route was arbitrarily divided into thirty-four 0.3-mile sections. The number of eagles occurring in each section was calculated for 1975, 1976, 1978, 1979, and for the four years combined.

Fewer censuses were conducted during the winters of 1975, 1976, and 1977 than during the winters of 1978 and 1979, and most of these were conducted along only a portion of the total census route (Table 1); data for these years are useful indicators of presence or absence of eagles, but not of specific trends in population numbers. Thirteen of 16 censuses conducted during the 1978 winter, and 21 of 26 during the 1979 winter were complete; data from these years are amenable to analysis of population trends.

RESULTS

Population Numbers and Trends

During the winters of 1975 through 1977, the peak number of eagles along the Kansas River ranged from 10 to 13 (Table 1); the partial nature of most censuses conducted during these years prevents determination of the exact timing of any mid-winter peak in numbers.

The number of eagles along the Kansas River during the 1978 winter increased dramatically in mid- to late January, more than doubling to a total of 37 birds during a 5-day period (Table 1). The population remained at a high level until the first week of February, after which it slowly declined; the last eagle was observed on 30 March.

Bald Eagles were present in low numbers along the river during the early part of the 1979 winter (Table 1). The number of eagles increased sharply to a winter peak of 23 (20 along the river route) on 10 January, but then generally remained around 10 eagles for the next five to six weeks; the last eagle was observed on 29 March.

Bald Eagles also were observed at Perry Lake on 19 censuses during the 1975 to

Table 1. Numbers of adult and immature Bald Eagles observed along the Kansas River census route and at Lake Perry during winters of 1975 through 1979.

Date and Census Status [1]	Kansas River Adults	Kansas River Immatures	Perry Lake Adults	Perry Lake Immatures	Total	% Of Immatures [2]
1975 Winter						
Jan. 12 - p			1	2	3	
Jan. 18 - p			1	2	3	
Jan. 19 - c	7	4	0	1	12	33
Jan. 23 - p	0	2			2	
Jan. 26 - p			0	3	3	
Jan. 27 - p	2	0			2	
Jan. 29 - p	1	0			1	
Feb. 2 - p	2	4			6	67
Feb. 9 - p	1	1	1	0	3	
Feb. 16 - p	1	1	0	1	3	
Feb. 23 - c	5	8	2	1	16	56
Mar. 2 - p			4	4	8	50
Mar. 3 - p	2	1			3	
Mar. 13 - c	5	0	4	4	13	31
Mar. 16 - p	0	0			0	
1976 Winter						
Jan. 25 - c	3	2			5	40
Feb. 1 - c	2	8			10	80
Feb. 8 - p	3	2			5	40
Feb. 15 - c	4	2			6	33
Feb. 22 - p	0	1	1	5	7	86
1977 Winter						
Jan. 12 - p	1	1	1	1	4	50
Jan. 29 - p	3	1			4	25
Feb. 5 - p	5	6			11	55
Feb. 6 - p	4	6			10	60
Feb. 12 - p	3	4			7	57
Feb. 13 - p	5	2			7	29
Mar. 6 - c	?[3]	?[3]			8	
Mar. 13 - p	0	0			0	
1978 Winter						
Jan. 1 - p	6	4			10	40
Jan. 17 - c	9	7			16	44
Jan. 21 - c	21	16			37	43
Jan. 29 - c	28	9			37	24
Jan. 31 - c	21	6			27	22
Feb. 5 - c	26	7			33	21
Feb. 11 - c	12	5			17	29
Feb. 18 - c	11	5			16	31
Feb. 23 - c	7	6			13	46
Feb. 25 - c	11	4			15	27
Mar. 4 - c	7	2			9	22
Mar. 11 - c	7	1			8	13
Mar. 15 - c	4	1			5	20
Mar. 18 - c	2	1			3	
Mar. 21 - p	1	1			2	
Mar. 30 - c	1	0			1	

1979 Winter						
Dec. 2 - c	0	0			0	
Dec. 6 - c	2	0			2	
Dec. 12 - c	1	0			1	
Dec. 16 - c	3	3			6	50
Dec. 22 - c	1	1			2	
Dec. 29 - c	3	0			3	
Jan. 10 - c	12[4]	8[4]	1	2	23	43
Jan. 19 - c	6	4	1	0	11	36
Jan. 20 - c	5	2			7	29
Jan. 29 - c	8	0			8	0
Feb. 7 - p	5	2			7	29
Feb. 11 - p	7	1	1	0	9	11
Feb. 12 - c	7	1	3	0	11	9
Feb. 13 - c	10	7			17	41
Feb. 17 - c	8	3			11	27
Feb. 21 - c	8	4			12	33
Feb. 22 - p	4	4			8	50
Feb. 23 - c	4	3	0	0	7	43
Mar. 2 - c	3	1			4	25
Mar. 4 - c	1	0			1	
Mar. 8 - c	3	0			3	
Mar. 13 - c	3	0			3	
Mar. 19 - c	2	0	9	4	15	27
Mar. 23 - p			1	0	1	
Mar. 24 - p			1	2	3	
Mar. 29 - c	0	1	3	7	11	73

1 Census status designated by c for complete census along Kansas River route or by p for partial census along Kansas River route.
2 Calculated only for censuses where total number is greater than 3.
3 Bald Eagles were counted but not aged; count is included in total.
4 Based upon two independent censuses; highest number of adults is taken from one census, highest number of immatures from other census; remaining observations not included in table.

1979 winters (Table 1). Six or more eagles were observed on five of these occasions (once in late February, the other four times in March).

Age Composition of Population

The percentage of immature Bald Eagles, in censuses where the total number of eagles observed was greater than three, was highly variable from census to census during the 1975, 1976, and 1977 winters (Table 1). When all sightings are considered, the proportion of immatures both along the Kansas River and at Perry Lake was 50.0% in 1975 (n = 78, where n is the total number of eagle sightings in an area during that winter), 60.6% in 1976 (n = 33), and 48.8% in 1977 (n = 43); differences in the numbers of immature eagles relative to adults during these years are not significantly different. When only sightings along the Kansas River are considered, the proportion of immatures was 44.7% in 1975 (n = 47), 55.6% in 1976 (n = 27), and 48.8% in 1977 (n = 43); differences in these numbers also are not significant.

Only 30.1% of all eagles observed during the 1978 winter (n = 249) and 32.3% of those observed during the 1979 winter (n = 186) were immature. Numbers of immature eagles relative to numbers of adults were not significantly different during these two winters, but they were significantly lower than during previous years along the Kansas River (Chi-square = 14.23, 1 df, $P < 0.001$). The proportion of immatures ranged from 13% to 46% during the 1978 winter and from 0% to 73% during the 1979 winter and did not seem to follow any consistent pattern (Table 1).

The initial population peak in 1978 resulted from an increase in both adult and immature Bald Eagles (Table 1). Sixteen immature eagles were observed on 21 January, but only 9 were observed during the next census, and the number of immature eagles subsequently declined steadily. The peak in eagle numbers thus was maintained by an increase in adult numbers, and the subsequent decline in total eagle numbers resulted primarily from a gradual decline in adult numbers. The population peak in 1979 also resulted from an increase in both adult and immature eagles (Table 1); numbers of both adult and immature eagles fluctuated mildly after the peak was observed.

Distribution of Bald Eagles Along the Kansas River Census Route

The locations of 481 eagles were mapped according to the 0.3-mile section of the river in which the eagles were observed (Fig. 2). Of these sightings, 152 (31.7%)

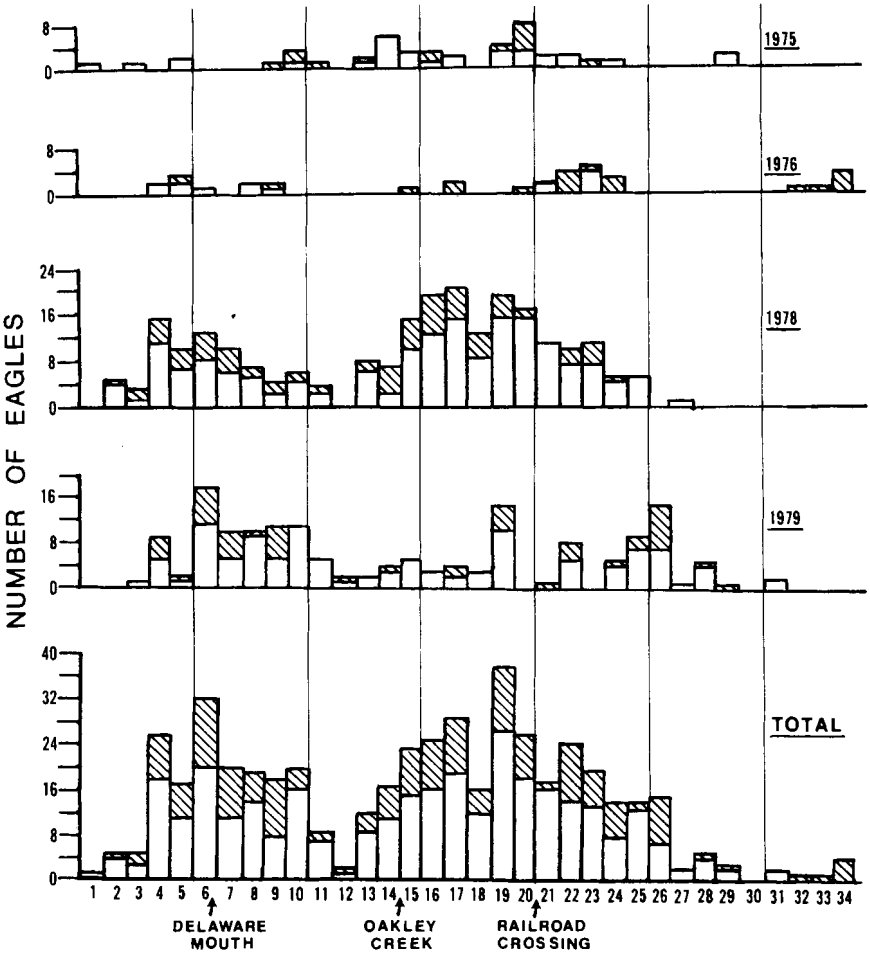

Figure 2. Distribution of immature and adult Bald Eagles along the Kansas River census route. The river is divided into 34 0.3-mile sections; section 1 is at the westernmost end and section 34 at the easternmost end of the census route. Prominent landmarks are indicated on the horizontal axis. Clear portion of bar = adult eagles; diagonal lines = immature eagles.

occurred in sections 4 through 10 (a linear distance of 2.1 miles); the percent of sightings in these sections ranged from 13.3% in 1975 (n = 45) to 43.9% in 1979 (n = 164). Three-fifths of all sightings during these years (60.2%, n = 481) occurred in sections 13 through 26 (a linear distance of 4.2 miles); the percent ranged from 46.3% in 1979 (n = 164) to 75.6% in 1975 (n = 45). Since 83.4% of all mapped sightings occurred in 1978 and 1979, the peaks in these two areas of the river could reflect sampling bias.

During the 1977 winter, 49 eagles were observed along the Kansas River, but their exact locations were not mapped. Of these, two were observed near the mouth of Oakley Creek, 34 were near the mouth of the Delaware River, and locations of the remainder were not described. When these 36 additional sightings are included, 36.0% of all eagle observations occurred in sections 4 through 10 and 56.4% occurred in sections 13 through 26. Thus, 6.2 miles of the 10.2 mile census route accounted for 92.4% of all mapped eagle sightings (n = 517).

Most eagles were first observed perched in trees (n = 456); of these, 89.9% were perched in trees on the north side of the river.

DISCUSSION

Population Trends

Bald Eagles appear to arrive along the Kansas River sometime in December and depart in mid- to late March (Tables 1 and 2). Peak numbers occur during mid-winter, but the timing and extent of the peak varies from year to year. The

Table 2. Number of Bald Eagles observed during National Audubon Society Christmas Bird Counts in Junction City, Lawrence, and Manhattan areas, Kansas.[1]

Date	Junction City	Lawrence	Manhattan
Dec. 1978	18	9	21
Dec. 1977	20	7	36
Dec. 1976	1	1	23
Dec. 1975	1	3	45
Dec. 1974	1	2	26
Dec. 1973	nc[2]	1	17
Dec. 1972	1	0	26
Dec. 1971	0	0	3
Dec. 1970	nc	3	4
Dec. 1969	0	nc	1
Dec. 1968	0	nc	2
Dec. 1967	0	nc	1
Dec. 1966	0	nc	2
Dec. 1965	0	nc	0
Dec. 1964	0	nc	0

1 Data are from Volumes 3 through 24 of Audubon Field Notes (1949-1970) and from Volumes 25 through 32 of American Birds (1971-1978), both published by the National Audubon Society, and from Zimmerman (1979).

2 nc - no count conducted that year.

largest number of eagles seen along the Kansas River census route prior to 1978 was 13, whereas 37 eagles were observed twice during the 1978 winter and 20 eagles were observed during the 1979 winter. The population of Bald Eagles wintering along the river during the 1978 winter thus was substantially larger than during the previous three winters, and the 1979 winter population also was somewhat larger. These results could reflect sampling bias, as complete systematic censuses were conducted more frequently during the 1978 and 1979 winters; however, other indirect evidence argues against this. First, local birdwatchers familiar with the study area noticed the increased numbers. Second, twice as many Bald Eagles were seen during the December 1977 and December 1978 National Audubon Society

Christmas Bird Counts at Lawrence, which included the study area, than during any previous year (Table 2).

Perry Lake is used at least occasionally by Bald Eagles (Table 1). Observations at Perry Lake of 8 eagles on 2 March and 13 March 1975, 13 eagles on 19 March 1979 and 10 eagles on 29 March 1979 coincide with declines in the number of eagles observed along the Kansas River. These increases in numbers of Bald Eagles at Perry Lake could represent initial northward migratory movements from the Kansas River and from areas outside the census route.

We believe that reservoirs and riparian habitat along the Kansas River are attracting increasing numbers of wintering Bald Eagles to the river and its tributaries. Tuttle and Milford Reservoirs are located on Kansas River tributaries near Manhattan and Junction City, respectively (Fig. 1), and were filled to normal pool level by mid-1963 and mid-1967, respectively (U.S. Corps of Engineers, personal communication). High numbers of Bald Eagles were observed on the last six Manhattan Christmas Counts and the last two Junction City Christmas Counts (Table 2); the reservoirs, which are included in the respective Christmas Count areas, thus attracted large numbers of eagles within 10 years of being filled. Perry Lake reservoir was filled by 1968 and attracted large numbers within 7 years (Table 2). Finally, Clinton Reservoir (4 miles west of Lawrence) was impounded in late 1977 and will be filled by spring of 1981; it attracted Bald Eagles within 2 years of impoundment (at least 12 Bald Eagles were seen at Clinton during January, 1980; personal observation). The lag time between filling of a reservoir and attraction of eagles to it thus has decreased; once eagles were attracted to the two older reservoirs, they probably were more likely to quickly locate nearby riparian habitat and newly-created reservoirs.

Current Conditions Along Census Route Favoring Bald Eagles

The riparian forests fringing the river have tall trees that are used by Bald Eagles for roosting at night, resting during the day, and vantage points to locate and procure prey in the river below. Within the study area, certain sections are utilized more frequently by the eagles than are other sections. The sections around the mouth of the Delaware River and from Oakley Creek east for about four miles all have relatively large trees standing adjacent to the river bank, and are utilized extensively by the eagles (Fig. 2).

The fields north of the strip of riparian forests are cultivated and harvested during the summer, and thus are not in conflict with eagles in winter. Homes and farm buildings of owners of these fields are located at the north end of their property, and access to the fields is by inconspicuous service roads which are not open to the public. Farming activities thus do not have an adverse impact upon the eagles, and in fact probably benefit eagles by partially restricting human activity along the north bank.

Current Conditions Along Census Route Unfavorable For Bald Eagles

Bald Eagle use of riparian habitat along the Kansas River census route probably is adversely affected by several human activities. On the north side of the river, pilots of small planes sometimes use a flight course only two or three hundred feet from the river and sometimes fly within 5 to 10 feet of the ground, resulting in displacement of the eagles. The county road south of the river has moderate car traffic during the winter, and the riparian habitat on that side of the river is accessible from the road. Various recreational activities, such as fishing, hunting, hiking, and motorbiking, displace eagles, especially on the south side, and fur trappers sometimes keep eagles away from roosting areas for several hours at a time. A new cabin and access road recently were built on the river bank directly across from the mouth of the Delaware River, an area heavily used by wintering eagles; new homes also have been built south of the river on a hillside where eagles occasionally are observed perching in trees. Finally, increased use of a sand pit east of the mouth of Oakley Creek could develop into a commercial enterprise, and some timber from the riparian forests has been harvested for lumber.

Stalmaster and Newman (1978) noted that human activities such as boating and fishing greatly altered normal activity patterns of Bald Eagles wintering in northwest Washington; eagles engaged in feeding were especially sensitive to human activity and often did not return to the area until several hours after they had been disturbed. In our study, most eagles first observed perched in trees were on the north side of the river, even though large trees do occur on the south side. The tendency to perch on the north side of the river suggests a relationship between human activity and specific habitat utilization by the eagles; however, we cannot say with certainty that human activity is forcing the eagles to abandon the south side. Exposure, winds, and more favorable fishing waters may be more important factors influencing eagle distribution.

Management

There is urgent need in Kansas for preserving an example of the riparian habitat bordering the larger rivers. Because of its unique status as a wintering area for Bald Eagles and because the riparian habitat is well-developed, we believe the segment of the Kansas River, from two miles upstream of the Delaware River mouth to a point eight miles downstream from the mouth, would be suitable for such a natural area. Such an area would provide adequate habitat for the flora and fauna associated with riparian habitat, and would protect winter habitat of Bald Eagles. Ideally, the entire segment of the Kansas River and its riparian habitat should be set aside as a natural area, including buffer areas on both sides of the river extending beyond the riparian habitat. Human activity in such an area would be minimized, and the entire riparian community would be allowed to develop naturally.

Even if such an extensive area cannot be preserved as a natural area, we strongly believe that the riparian habitat utilized by wintering Bald Eagles should be protected. Based upon flight responses of eagles to human activity, Stalmaster and Newman (1978) recommended that zones approximately 75 to 100 meters wide were needed to minimize disturbance and indicated that boundaries of 250 meters in relatively open areas, such as riverbanks, would provide protection for 99% of the population they studied. They also stated that strips of vegetation not only provided perching and roosting sites, but also reduced visual contact between eagles and humans and thereby reduced disturbance.

Based upon our census data and the above considerations of past and present disturbance factors, we recommend that the following minimal steps be implemented to protect Bald Eagle and riparian habitat:

1) Establish legal protection of the area, especially the six miles of habitat in which most eagles have been observed; potential mechanisms for providing protection include the critical habitat program of the United States Fish and Wildlife Service, purchase of key areas by private conservation organizations, negotiations with landowners to further restrict access to the area, designation of the river as a National Recreational River (as suggested by the U.S. Heritage Conservation and Recreation Service), etc.
2) prohibit hunting and trapping from mid-December until mid-March.
3) complete restrict access along the north bank of the river.
4) prohibit cutting of trees in riparian habitat along the river.
5) construct observation blinds along the south side of the river, to allow observation of eagles while still protecting habitat and minimizing disturbance.
6) extend protection throughout the year to encourage any possible nesting attempts by Bald Eagles.
7) establish a natural area at Perry Lake (and probably at nearby Clinton Reservoir), since eagles utilize specific areas at Perry Lake at least in late winter; this also would provide alternate roosting areas when eagles are disturbed along the Kansas River.
8) continue monitoring Bald Eagle populations to assess effects of disturbance and protection.

ACKNOWLEDGMENTS

We thank T. L. Talmon and M. J. Eger, of the Kansas Applied Remote Sensing Program at the Space Technology Center, University of Kansas, for providing information on land-use patterns along the Kansas River. R. F. Johnston and J. L. Zimmerman provided several helpful suggestions.

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Groove-billed Ani in Douglas County, Kansas.—On 2 December 1979 we were notified of a strange black bird on the farm of Boytt Impson, 3 miles east and 1¼ miles north of Vinland, Douglas County, Kansas. Mr. Impson was familiar with the majority of the birds visiting his feeder and realized that this large black bird with short, thick bill was not a Common Grackle (*Quiscalus quiscula*). The bird had first been noticed on the weekend of 24 November and had been very regular in its daily appearances on the lawn near the house. It was quite tame and allowed close approach. A visit to Mr. Impson's farm on 2 December confirmed the identity of the bird as a Groove-billed Ani (*Crotophaga sulcirostris*).

Figure 1. Close up of the head of the Groove-billed Ani observed near Vinland, Kansas. Note the distinctive grooves on bill. (Photograph from a color slide by C. L. Cink)

During the next week a number of visits were made to observe the ani and over 22 other birders from Baldwin City and Lawrence were able to see the bird at close range (within 3-4 feet) and photograph it. The grooves on the bill were easily seen (Fig. 1). The bird seldom flew but clumsily hopped about through the grass catching grasshoppers. Similar feeding behavior and diet were noted in a Groove-billed Ani at Topeka in December 1973 (Rice, O. 1974. Kansas Ornithol. Soc. Bull. 25:17-18).

On 8 December Mr. Impson reported that he had found the bird in a cattle chute in a weakened condition with injured legs, and he was able to capture it easily. The ani was taken to Baldwin City in an attempt to nurse it back to health. Its left foot was doubled back and paralyzed and its right leg was badly infected, possibly from a recent injury or an older one. The only sign of molt was a single retrix still enclosed in its sheath and grown out to nearly full length. Although it ate mealworms readily the ani was apparently already to weak to survive for it died sometime that night. The ani (which proved to be a male) was prepared as a study skin and is now in the vertebrate collection of the biology department at Baker University.

This is apparently the first record of the Groove-billed Ani for Douglas County. There are, however, other specimen records for Crawford, Lyon, and Marshall Counties (Tordoff, H. 1956. Checklist of the birds of Kansas, Univ. Kansas Mus. Nat. Hist. 8:325) and Labette County (Ely, C. A. 1969. Kansas Ornithol. Soc. Bull. 20:27). The frequency of recent sight records indicates how sporadic the incursions of this vagrant into Kansas have really been. Two sightings were made in 1973, one at Topeka in Shawnee County (op. cit.) and the other in Stafford County (Martinez, E. 1974. Kansas Ornithol. Soc. Bull. 25:8). Four sightings were made in 1977 in Cowley, Ellis, Saline and Sedgwick Counties (1978. Amer. Birds 32:225). Katherine Wade reported the species in Fulton, Missouri about the same time as ours in 1979 (pers. comm., and 1979 Bluebird 46:17), perhaps indicating another widespread northward movement of anis this past year. Several of the past sight records have been of anis observed in late fall and early December before the onset of severe winter weather. *Katherine Kelley and Amelia Betts, 911 Dearborn, and Roger L. Boyd and Calvin L. Cink, Biology Department, Baker University, Baldwin City, Kansas 66006.*

Black-bellied Whistling Duck at Quivera National Wildlife Refuge.—On 6 July 1980 Roger and Jan Boyd observed a single Black-bellied Whistling Duck (*Dendrocygna autumnalis*) at the Big Salt Marsh at the north end of Quivera N.W.F., in Stafford County, Kansas. The bird was standing with three Mallards (*Anas platyrhynchos*) in dense grass near a water channel out in a field. The bird was visible from the breast up. Its head was about three inches higher than the mallards. The neck was rusty, it had a large light gray cheeck patch extending down the neck, and the top of the head was darker. The bill was bright orange. The bird was not photographed, but was observed for ten minutes before all four ducks got into the water and disappeared behind the grass. The bird could not be relocated that afternoon.

On 8 July 1980 Ed, Jean, and Margaret Schulenberg located a single Black-bellied Whistling Duck at the Big Salt Marsh. We are assuming that this was the same bird. After observing the bird for a period of time, Ed was able to photograph it as it flew up with a flock of mallards. The photograph shows the characteristic black and white wing pattern.

Johnston (1965. A Directory to the Bird-life of Kansas, Univ. Kans., Mus. Nat. Hist., Misc. Publ., 23:12) does not list the species for Kansas. Marvin D. Schwilling, however, observed a single bird at Marais des Cygnes W.M.A., Linn County, Kansas on 20 September 1956 (pers. comm.). The bird was carefully observed in good light for sometime. No photograph was obtained. *Roger L. Boyd, Biol. Dept., Baker Univ., Baldwin City, KS 66006, Ed and Jean Schulenberg, RR 1, Admire, KS 66830, and Margaret Schulenberg, Div. of Biol., Emporia St. Univ., Emporia, KS 66801.*

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