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ROAD COUNTS OF HAWKS IN KANSAS

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Rex O. Bare

This paper summarizes the numbers and kinds of hawks seen in a total of 35,872 miles of driving in Kansas. Three separate sets of records have been used. The largest is that of H. A. Stephens who kept counts of hawks seen during 18,961 miles of winter driving, covering almost all parts of Kansas in the years 1950 through 1961. A second set of data is from the annual Christmas Bird Count sponsored by the Kansas Ornithological Society (KOS) with results of each count published in the KOS Bulletin. We summarized these counts for the years 1950 through 1961 for comparison with the Stephens counts; the records used represented 13,630 miles of driving. The third set of records was gathered by Fitch and Bare in the course of 3,281 miles of April driving in eastern Kansas in 1961, 1962 and 1963 in a field study of nests of the Red-tailed Hawk.

In an attempt to recognize units more homogeneous in habitat than the entire state, Kansas was divided into four blocks from east to west as follows: no. 1 "Eastern", the three eastern tiers of counties west to and including Brown and Jackson on the north and Montgomery on the south; no. 2 "Flint Hills", (Butler, Chase, Chautauqua, Cowley, Elk, Geary, Greenwood, Lyon, Marion, Marshall, Morris, Nemaha, Pottawotomie, Riley, and Wabaunsee counties); no. 3 "Central", from the Flint Hills west to and including Phillips County on the north and Comanche County on the south; no. 4 "High Plains", the western one-third of the state, from Cheyenne and Norton counties on the north to Morton and Clark counties on the south. Stephens' records were well distributed through all four blocks.

The KOS records were from 32 stations reported with varying regularity over the years encompassed. Fourteen of these KOS stations were in the Eastern block, nine in the Flint Hills, nine in the Central, and only three in the High Plains with insufficient mileage from these latter to use them for comparison. Fitch's and Bare's records were mostly from the Eastern block with some from the Flint Hills. The Eastern block has many areas of deciduous forest, mostly in relatively small tracts alternating with pastureland and cultivated fields. The Flint Hills block is largely tall-grass pasture, rocky and hilly, with woodland occupying relatively small areas along streams or on protected hillsides and with relatively small percentages of cultivated land. The Central block is mostly flat cultivated land with few trees except in the vicinity of towns, farmsites, and along streams. The High Plains block is more arid, with large treeless areas. Wheat growing and grazing are the principal land uses.

Although the traditional attitude toward hawks as vermin is changing as a result of intensive conservation education in schools and through media such as television, many Kansans still retain the traditional antipathy toward raptors, or at least regard them as legitimate objects for target practice. Subject to pressure from growing human populations, and the effects of shooting and pesticides, hawks are undergoing fairly rapid changes in numbers and distribution. Some of those in Kansas are endangered species. Although the records included here are already somewhat outdated, we anticipate that they will have usefulness for comparison with similar data collected in the future, to reveal trends in numbers and distribution of the various species represented.

Table 1 compares the abundance of hawks in the four main divisions of Kansas, and compares the Stephens and KOS counts for each division, with numbers seen per thousand miles of driving as the unit of comparison. Only four species (Red-tailed Hawk, Marsh Hawk, Rough-legged Hawk and Sparrow Hawk) were consistently seen in numbers exceeding one per thousand miles.

Not all counts are strictly comparable. Obviously the largest kinds of hawks, and the two kinds of eagles, can be seen and identified at greater distances than the smallest kinds - - Sparrow Hawk and Pigeon Hawk. On the other hand, Sparrow Hawks tend to be tamer and to perch on roadside poles and wires where they are readily seen. The KOS counts in each instance were made within a 7½ mile radius in late December or early January, and represent the combined efforts of many individuals usually working in several different teams to count the birds on a limited area. In the KOS Censuses, interest focused on rare and unusual birds. A large hawk or eagle that moved about over several square miles during the day of counting might be tallied several times by different observers or might even be counted repeatedly by the same observer. In some instances individual birds were discovered before the day of the count, and were objects of intensive search during the count, in order that they could be included. Perhaps for these reasons, the KOS counts compared with the Stephens counts tend to have relatively high numbers of some uncommon species including the Cooper Hawk, Sharp-shinned Hawk, Harlan Hawk, and Bald Eagle. The counts for the commoner species show remarkably similar trends in the KOS and Stephens series.

In each species of hawk there were notable differences between the four divisions of the state. The highest counts obtained were those of the Red-tailed Hawk in the Eastern division, but this species became progressively scarcer farther west, and in the High Plains had only 11 per cent of its frequency in the Eastern division. The Rough-legged Hawk showed an opposite trend, with highest counts in the High Plains, decreasing to about 8 per cent in the Eastern division. The Prairie Falcon likewise increased from east to west. The Marsh Hawk was seen about half as often in the east as in the three more western divisions. The Ferruginous Hawk and Golden Eagle were moderately common in the High Plains but were of sporadic occurrence elsewhere. The Bald Eagle was seen chiefly in the High Plains and Central divisions. The Sharp-shinned Hawk, Cooper Hawk and Harlan Hawk were uncommon and erratic but occurred in all divisions. The Osprey, Goshawk, Peregrine Falcon and Pigeon Hawk were so rare that in each series of counts they were either absent or represented in densities of less than one per thousand miles of driving.

Comparison of January, February and March counts in different species and different areas revealed no consistent trends. However, the April counts made by Fitch and Bare, in eastern Kansas, indicated important changes from winter to spring in the hawk populations. Both species of eagles, the Rough-legged Hawk, Ferruginous Hawk, Harlan Hawk, Osprey, Peregrine Falcon, Goshawk and Pigeon Hawk were absent. Red-tailed Hawks and Sparrow Hawks were approximately half as numerous as they were in winter, and Marsh Hawks were approximately one-seventh as abundant. In these species evidently a high proportion of the winter population consists of individuals that have migrated from more northern areas.

In the study by Fitch and Bare a total of 172 active nests of the Red-tailed Hawk were found in 3,976 miles of driving, and 387 Red-tailed Hawks were seen. Few nests were seen nearer than .05 miles from the road or farther than .25 miles from it on either side; essentially the count was in two parallel strips with a combined width of .40 miles. We estimated one nest per 10.5 square miles, for an adult population density in the nesting season of .21 per square mile.

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Table 1.

Hawks of various species seen per thousand miles of driving in various parts of Kansas

	December - January - February						April	
	Eastern		Flint Hills		Central		High Plains	Eastern
	Stephens (3200 miles)	KOS (8253 miles)	Stephens (4851 miles)	KOS (2484 miles)	Stephens (6332 miles)	KOS (2893 miles)	Stephens (4578 miles)	Fitch and Bare (3281 miles)
Red-tailed Hawk	197.70	178.5	130.10	137.9	77.0	62.45	21.65	95.0
Marsh Hawk	68.50	75.00	145.25	152.0	105.90	133.70	145.10	10.0
Rough-legged Hawk	4.10	10.29	13.00	21.70	19.15	37.35	52.30	-----
Sparrow Hawk	54.0	59.40	31.99	71.20	53.10	79.90	21.65	28.0
Cooper Hawk	1.89	7.26	1.86	8.84	.95	5.55	-----	not recorded
Sharp-shinned Hawk	-----	3.02	.20	3.22	.32	2.35	.22	not recorded
Ferruginous Hawk	-----	.24	-----	.20	.48	3.21	14.66	-----
Harlan Hawk	-----	7.75	-----	3.22	.32	2.04	8.17	-----
Golden Eagle	-----	.36	1.27	1.21	6.71	4.43	19.00	-----
Bald Eagle	-----	.85	.82	-----	2.53	20.10	15.72	-----
Osprey	-----	-----	-----	.40	-----	-----	-----	-----
Goshawk	-----	.12	-----	.40	-----	.30	-----	-----
Peregrine Falcon	-----	.36	-----	.80	-----	1.18	-----	-----
Pigeon Hawk	-----	.24	-----	-----	-----	-----	-----	-----
Prairie Falcon	.63	.24	.82	2.41	1.90	4.97	5.70	-----

First attempted nesting of American Wigeon in Kansas:

I found an American Wigeon (*Mareca americana*) nest on 23 June 1973 on the Cheyenne Bottoms Waterfowl Management Area. The nest (apparently the first for Kansas) was located in Inland Salt Grass (*Distichlis stricta*) along a dike near the center of the old goose pen along the west end of pool 5. It contained three eggs; identification was made from body feathers used in the sparse nest lining and by egg size, shape and color.

Water levels were at a record high throughout the big marsh and only the interior dikes were above water. Three pairs of wigeons and many other species of ducks and waterbirds were using the flooded goose pen. Nests of Avocet, Killdeer, Wilson Phalarope, Mallard, Pintail and Blue-winged Teal were observed along these dikes during a two hour unsuccessful search for nesting Eared Grebes.

The wigeon nest was revisited by Edmund Martinez and myself on 30 June 1973. It appeared to have been abandoned for some time so the three eggs and nest material were salvaged and are now in my possession. MARVIN D. SCHWILLING, KANSAS FORESTRY FISH AND GAME COMMISSION, CHEYENNE BOTTOMS W. M. A., ROUTE 1, GREAT BEND, KANSAS 67530

NOTES AND NEWS

Newsletter No. 1 of the PEREGRINE FUND merits careful reading by all K. O. S. members. It describes the successful breeding of Peregrines (and other raptors) in captivity including 20 young from four pairs in 1973. Dr. Tom Cade, Program Director, feels that procedures for raising young are now solved and optimistically predicts "mass production" of Peregrines within three or four years. Preliminary experiments on the reintroduction of captive raised birds to the wild will begin next season and if his predictions are accurate, the Peregrine population in eastern North America could exceed the pre-DDT level by 1984. THE PEREGRINE FUND, LABORATORY OF ORNITHOLOGY, 159 SAPSUCKER WOOD ROAD, ITHACA, NEW YORK 14850.

The NORTH AMERICAN HAWK MIGRATION CONFERENCE will be held at Syracuse, New York from 19-21 April 1974. The group hopes to: exchange observations on hawk migration; to get standards for record-keeping; and to agree on ways of sharing and collating information on a continuing basis. DOROTHY W. CRUMB, 3983 GATES ROAD NORTH, JAMESVILLE, NEW YORK 13078.

Kansas Ornithological Society

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