

## GENERAL NOTES

**Roadside raptor count in Colorado.**—Incidental to a current long-term study of the Prairie Falcon (*Falco mexicanus*), I have kept records of all raptors seen in a 70-mile-wide plains area extending south from Fort Collins to Colorado Springs, Colorado, immediately east of the Rocky Mountains. Raptors were counted from an automobile cruising county roads on grazing and wheat land. All observations were made before noon on days when the wind was light. A total of 12 counts was made in the periods from late September to February 1962–63 and 1963–64, involving 1,675 miles of travel during the count periods. The data in Table 1 summarize the relative frequencies of the species observed.

TABLE 1  
SUMMARY OF THE RELATIVE FREQUENCIES OF RAPTORS OBSERVED

Species	Total number observed	Miles traveled per individual
Rough-legged Hawk ( <i>Buteo lagopus</i> ) <sup>1</sup>	179	9
Marsh Hawk ( <i>Circus cyaneus</i> )	76	22
Prairie Falcon ( <i>Falco mexicanus</i> )	63	27
Sparrow Hawk ( <i>Falco sparverius</i> )	32	52
Golden Eagle ( <i>Aquila chrysaetos</i> )	32	52
Ferruginous Hawk ( <i>Buteo regalis</i> )	15	112
Bald Eagle ( <i>Haliaeetus leucocephalus</i> )	9	186
Pigeon Hawk ( <i>Falco columbarius</i> )	9	186
Red-tailed Hawk ( <i>Buteo jamaicensis</i> )	4	419

<sup>1</sup> September count trip omitted since the species is not present in the region in that month.

Three Swainson's Hawks (*Buteo swainsoni*), not included in these data, were seen only in the late September count. They averaged one individual per 16 miles traveled. Four buteonine individuals were not identified with respect to species.

The 63 Prairie Falcons included at least 43 females and 10 males, and at least 20 adults and 21 immatures. Sparrow Hawks, not abundant in winter, appeared to be predominantly males, although nearly half of the 32 individuals were not identified as to sex. Of 20 Golden Eagles identified with respect to age, 14 were adults, and the remainder immatures.

All but one of the 15 Ferruginous Hawks were seen on grazing land east of Colorado Springs and they are less numerous north of that city in winter. Two of nine Bald Eagles were immatures, the others were adults. Four of the nine Pigeon Hawks were clearly of the subspecies *F. c. richardsonii*. The others were seen only momentarily and could not be identified. It has been my experience that the majority of the Pigeon Hawks in this region are of this subspecies.

Allan and Sime (1943. *Wilson Bull.*, 55:29–39) made a similar but more comprehensive count in the Texas Panhandle, and interesting comparisons can be made with their data. In three winter months in 1939 and 1940 they recorded one Rough-legged Hawk per 84 miles traveled; I recorded that species about nine times more frequently. In one winter month they recorded a high of one Ferruginous Hawk per 17 miles traveled, about seven

times more often than I saw them in Colorado. Allan and Sime observed Red-tailed Hawks over five times more often than I did in a "typical" winter month (January 1939). However, their data on Marsh Hawks agree closely with mine; they saw one bird per 20 miles traveled. Prairie Falcons appear to be less numerous in Texas; they saw one bird per 92 miles traveled in October 1939, the high month for that species.

In July, August, and early September 1963, I drove 347 miles in four trips, counting hawks on the plains in the Colorado Springs area. Swainson's Hawks averaged one per 14 miles; Sparrow Hawks, one per 20 miles; Prairie Falcons, one per 58 miles; Red-tailed Hawks, one per 69 miles; and Marsh Hawks averaged one individual per 116 miles.—JAMES H. ENDERSON, *Department of Zoology, Colorado College, Colorado Springs, Colorado, 13 April 1964.*

**A summer movement of Broad-winged Hawks.**—On 26 June 1960 we were driving eastward across the north end of Washington Island, an approximately  $5 \times 5$  mile square mass of land some 3.2 miles off the northern tip of the Door County peninsula in north-eastern Wisconsin. At about 1000 hours we noticed six hawks soaring to the north of us. These were soon joined by more, and we determined that they were Broad-winged Hawks (*Buteo platypterus*). Minutes later we saw another flock of about 20 birds moving northward along the east shore of the island.

We then drove  $1\frac{1}{2}$  miles east to Jackson Harbor at the northeast corner of the island where we found a group of about 80 Broad-winged Hawks spiraling upward. There was a constant stream of new arrivals coming from the south along the eastern shore. The altitude of these arrivals was only 50 to 150 feet, but they soon soared to heights of about 1,500 to 2,000 feet. Periodically a large flock of Broad-winged Hawks accumulated over the Jackson Harbor area. Some of the highest individuals ceased circling and glided off linearly in a north-northeast direction toward St. Martin's Island some 5 miles distant. The remainder of the birds followed in turn until the flock was stretched out in a line perhaps  $\frac{1}{4}$  to  $\frac{1}{3}$  of a mile long. When the head of this line reached a point about  $\frac{1}{2}$  mile off the northern end of the island, circling began anew, but the birds did not seem to be able to gain altitude and soon a line formed leading back to the departure point.

This performance was repeated several times, but periodically segments of flocks broke away and glided off out of sight in a westerly direction. New birds were constantly arriving from the south and rising over our observation point to form or join the soaring flocks. Most of the time the circling flight and the nearly continuous additions and excursions from the flock prohibited an accurate estimate of the number of birds involved. Our highest momentary count was 160 birds, but we suspect that this count should have included about 40 more birds.

It was our impression that the hawks were flying counterclockwise around the island, pausing at the northeast corner to attempt a flight out over the water in the direction of St. Martin's Island. At 1215 hours we counted 76 hawks over Rock Island, a small ( $1\frac{1}{2}$  square mile) island about 0.3 mile northeast of Washington Island. This group subsequently crossed the water to Washington Island. During a drive through the interior of the island at about 1230 hours we saw eight to ten flocks of 5 to 20 birds each.

It is difficult to estimate the total number of hawks involved in this movement; however, we feel that there was a minimum of 300 and probably as many as 1,000 Broad-winged Hawks over Washington Island that day. In addition, we saw two Red-tailed Hawks (*Buteo jamaicensis*), one Turkey Vulture (*Cathartes aura*), and one Swainson's Hawk (*Buteo swainsoni*). The latter was observed carefully at a distance of about 100