
Ferruginous Hawk postfledging activities

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Introduction

The Ferruginous Hawk (*Buteo regalis*) is a common breeding summer resident in our central Utah study area (Woffinden and Murphy 1977a and 1977b). Band returns indicate that this species follows a southerly direction during migration (Salt 1939 and Thurow et al. 1980); however, only a few details are available concerning postfledging movements, departure dates, migratory routes and wintering grounds. This is also true of other regularly banded species and thus an area where banders could make an important contribution.

We fitted 2 nestlings with radio transmitters during the summer of 1980 in an attempt to learn more about Ferruginous Hawk postfledging activity. The results of that study follow.

Study Area and Methods

Our study area is located in central Utah (40°00'N, 111°55'-112°35'W) and includes portions of Utah, Cedar and Rush Valleys. The habitat is typical Great Basin cold desert dominated by big sagebrush (*Artemisia tridentata*) and Utah junipers (*Juniperus osteosperma*) (see Murphy et al. 1969 for additional information).

During the summer of 1980, we located 2 Ferruginous Hawk nests which contained 2 and 3 nestlings, respectively, and on 30 June fitted one nestling from each nest with a 25-g transmitter (Telemetry Systems Inc., Mequon, WI, LT-1100-2TM-HC-M). We secured the transmitters to the back of each bird by passing 2 strips of elastic tape across the breast, anterior and posterior to the wings, and tied the strips to 4 wire loops that were imbedded in the transmitter package. All of the nestlings were also banded with U.S. Fish and Wildlife Service aluminum bands.

We recorded the location of the radio-equipped birds at least once on 13 different days during the 4-week postfledging period. In addition, frequent observational periods up to 6 hours in duration were combined with the aforementioned visits.

Results and Discussion

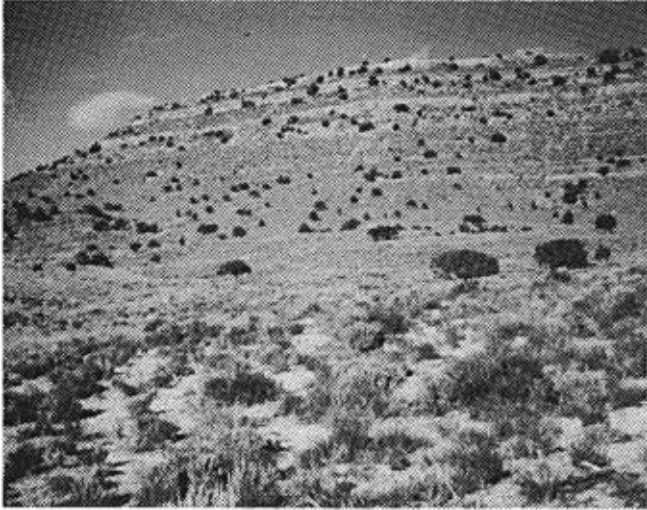
The marked bird from the more northern of the 2 nests fledged between 1-10 July, while the nestling from the

south nest fledged between 10-14 July 1980. Ferruginous Hawks typically fledge during the last week of June or the first week of July in our study area (Weston 1969, Smith and Murphy 1973, Thurow et al. 1982). The young from two other study area nests fledged on or near 19 June 1980. We were unable to determine why the two Rush Valley nests were approximately 20 days later than others in the study area. Blair and Schitoskey (1982) also reported that Ferruginous Hawks generally fledge during late June or early July in their South Dakota study area; however, fledging was noted as late as 12 July on one occasion.

After fledging, the young hawks continued to center their activity around the nest. Movements of the northern and southern fledglings away from the nest during the 3-week observation period averaged 159 and 844m, with 1300 and 2800m representing maximum recorded displacements. The observed mean weekly movements from the nest were 188, 2000, and 744m for the northern bird and 88, 88, and 781m for the southern. Both marked fledglings were sighted within a few meters of the nest shortly before they departed the study area. In contrast, Lokemoen and Duebbert (1976) noted that in their study area most family groups left the nest site soon after the young fledged. Blair and Schitoskey (1982) observed a consistent weekly increase in the amount of area used by fledglings, but nest site affinity was variable.

During the postfledging period young hawks must develop their aerial skills to the point that they can successfully reach their wintering grounds. We observed the northern fledgling flying with its parents and sibling nearly 2400 m south of the nest 10-20 days after fledging. The adults were highly attentive during this flight. On 2 other occasions we saw the northern fledglings in flight near the nest tree. During these flights, they actively pursued each other and repeatedly chased a Prairie Falcon (*Falco mexicanus*) and a Common Raven (*Corvus corax*) that had entered the area. Although we never observed the southern trio in flight, we frequently saw them perched together during the first 2 weeks following fledging.

The amount of time the siblings spent together declined steadily, and we never observed them together after the second week of the postfledging period. In fact, we rarely observed any of the untelemetered young hawks



Northern nest site. Nest is in isolated tree in left-central foreground.



Three nestlings from southern nest.



Nestling with radio package in place.

or the adults from the northern nest during the week prior to the departure of the marked fledglings. Both of the marked fledglings roosted alone in the valley several hundred meters from their nests on at least one occasion shortly before departing from the study area.

The northern bird left the study area between 2200 of 31 July and 0730 of 1 August 1980, 20-30 days after fledging. The southern fledgling departed the area between 1-4 August 1980, 25-29 days after leaving the nest. We systematically searched the study area on 1 August only a few hours after our last radio contact with the northern fledgling. Although we readily located the southern bird, we were unsuccessful in making visual or radio contact with the northern fledgling. On 5, 7, and 11 August 1980 we searched more than 150 km² of the study area but were unable to detect a radio signal from either marked bird. During the postfledging period, we had routinely received transmitter signals up to a distance of 3 km. Thus, the fledglings must have travelled a considerable distance immediately upon their departure.

Thurow et al. (1980) suggested that Ferruginous Hawk fledglings leave their study area in southern Idaho when food becomes scarce and drift on northeasterly prevailing winds into mountain valleys that contain an abundance of prey. A southerly direction is taken when migration resumes sometime later. We were unable to determine whether or not the fledglings from our study area followed a similar pattern.

On 11 August we saw two adult Ferruginous Hawks near the southern nest. One of them started to call and circled briefly as we approached the nest, a behavior consistent with that of the adult female of the territory. Subsequently both birds flew behind a hill and we were unable to locate them again. We believe that they were the adults from the southern nest. Thus we assume that at least the marked southern fledgling left the study area independently of the adults. Fledglings may also migrate before adults in South Dakota (Blair and Schitosky 1982).

The two marked fledglings have not been encountered since their 1980 departure. There is a critical need to study further the postfledging/migration portion of the

Ferruginous Hawks's annual cycle. We hope to continue our investigation of this interesting aspect of raptor biology in the future.

Acknowledgements

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