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Notes on prey and reproductive biology of Harris' Hawk in southeastern New Mexico.—During the summer and early fall of 1973, I studied a small population of Harris' Hawks (*Parabuteo unicinctus*), about five miles northeast of Carlsbad, Eddy County. I gathered regurgitated pellets for the main food analysis and observed reproductive activity in five pairs or family groups on 23–24 May, 1–2 July, 30–31 July, 16–17 August, and 15–16 September, 1973. Pellet contents were identified with the aid of a dissecting microscope. Identification of mammalian skull remains was based on comparisons with specimens from the Museum of Southwestern Biology, University of New Mexico. Arthropods usually were identified by comparison with preserved specimens; centipedes (*Scolopendra* sp.) were identified from the mandibles. I also observed foraging activity of adults and food remains around nests and plucking areas.

Table 1 provides information on the prey of the hawk, as determined by methods given above. A significant finding was that invertebrates formed an important part of the diet, not just vertebrates as reported by Simmons (Birds of the Austin Region, University Press, Austin, Texas, 1925), Miller (Condor, 27:71–72, 1925), Bent (Life histories of North American birds of prey, Dover Publications, Inc., New York, 2:569–570, 1961), Hensley (Wilson Bull., 71:86–91, 1959), Le Sassiier and Williams (Wilson Bull., 71:386–387, 1959), and Ligon (New Mexico birds, University of New Mexico Press, Albuquerque, N.M. 1961); apparently the studies of these authors were not based on pellet analysis.

Grasshoppers (Orthoptera) and beetles (Coleoptera) represent the majority of the invertebrate prey items. Wood-ticks were found in four pellets and always in association with ants, which were found in twelve pellets. One pellet contained 51 ants. The ants were distributed throughout the pellet and were both whole and as broken pieces (i.e.

TABLE I
PREY OF HARRIS' HAWKS AS DETERMINED BY REMAINS IN 63 PELLETS

Prey items in pellets	Pellets positive	Percent positive	Minimum number of individuals
Vertebrates¹			
<i>Sigmodon hispidus</i>	6	9.5	10
<i>Neotoma micropus</i>	10	15.9	13
<i>Neotoma albigula</i>	3	4.7	4
<i>Sylvilagus auduboni</i>	13	20.6	14
<i>Peromyscus</i> sp.	2	3.2	2
<i>Spermophilus</i> sp.	1	1.6	1
Invertebrates			
Beetles (Coleoptera)	32	50.8	130
Ants (Hymenoptera:Formicidae)	12	19.0	95
Bees (Hymenoptera)	1	1.6	1
Wood-ticks (Acarina:Ixodidae)	4	6.3	34
Centipedes (<i>Scolopendra</i>)	6	9.5	8
Grasshoppers (Orthoptera)	17	27.0	32

¹All mammals, but also recorded as caught or as other remains were: *Phrynosoma cornutum* (Texas Horned Lizard)—1, *Geococcyx californianus* (Roadrunner)—3, and a quail sp. (Phasianidae)—1.

heads, abdomens, legs, etc.). It appears unlikely that this many ants would be picked up incidental to the eating of a prey item on the ground. Amadon and Brown (Eagles, hawks, and falcons of the world, McGraw-Hill Book Company, New York. 2:568-570, 1968) report that the Savannah Hawk (*Heterospizias meridionalis*), which they believe to be a close relative of *Parabuteo unicinctus*, eats ants and other insects. Centipedes (*Scolopendra* sp.) were found in six pellets from two different nests.

Cloudley-Thompson and Crawford (Exp. and Appl. Entomology, 13:187-193, 1970) report that scolopendramorph centipedes are primarily nocturnal. This, coupled with the remains of *Peromyscus*, suggests that these hawks are crepuscular foragers, a conclusion supported by my observations on 23 May. On that date a pair flew back and forth from the ground to a telephone pole between 20:00 and 21:00, until I could no longer observe them below the horizon with a pair of 10 × 50 binoculars.

Parmelee and Stevens (Condor, 66:443-445, 1964) observed copulation in this species taking place on the ground. I observed copulation in one pair five times, within a two and a half hour period, on 23 May and three times, during a two hour period, on 24 May. All eight copulations were above ground: two on a telephone pole, three on a fence post, and three on a mesquite (*Prosopis juliflora*) bush.

Elements of the pair-bond relationship were observed on 23 and 24 May. On the 23rd, between 08:00 and 09:00, the male of a pair fed the female small pieces of cottontail (*Sylvilagus auduboni*), as she sat on top of a telephone pole about 150 yards from the nest. The male crouched and fed the female two or three small pieces of meat at a time, after which he would crouch lower and scurry back and forth in front of her on the crossbar. On 24 May I saw the male catch a woodrat (*Neotoma micropus*), about

five minutes after the female had flown from her perch out of sight into lower mesquite brush, some fifty yards from the nest. The male carried the woodrat into the same area where the female had disappeared, and about fifteen minutes later he reappeared without the mammal.

Four nests were located, all in trees and at heights of about 25, 15, 10, and 6 feet above the ground. Cottonwood (*Populus deltoides*), mulberry (*Morus rubra*), and mesquite were used. Young fledged from two nests on or about 1 July. By using Bent's (op. cit. :143) incubation period of 28 days and a nestling period of 51 days (present study), I calculate that the eggs were laid about 12 April. Three other nests were at later stages than these two. On 1 July two nests with three eggs and one with two eggs were found. Both nests with three eggs had broken egg shells beneath them; thus the clutches may have been re-nestings. The young from these nests fledged young around 15 September. The two egg clutch failed to hatch. The only later clutch date on record, one on 25 August, was reported in Texas by Le Sasser and Williams (op. cit. :386).

On 16 August the bills of six young in two nests were covered with a white, salty (by taste) substance suggesting the presence of nasal salt glands.

I wish to thank B. E. Mattingly, Sam Crowe, and John Longmire for their assistance in the field and Dr. J. Ligon for critically reviewing the manuscript.—PETER H. PACHE, *Department of Biology, University of New Mexico, Albuquerque, New Mexico 87106. Accepted 15 November 1973.*

American Kestrel preys on least weasel.—On 11 January 1972, in south-central Ohio near the Ross-Pickaway county line, I observed a female American Kestrel (*Falco sparverius*) fly off a fencepost and drop a small mammal. I identified the latter as a female least weasel (*Mustela rixosa*). The skin of the weasel was torn off the head, and the neck was exposed and broken; otherwise the animal was intact. Captive and wild American Kestrels nearly always attack the head of a prey item first (Roest, *The Auk*, 74:1-19, 1957; pers. obs.). This suggests that the weasel was actually killed by the kestrel.

The least weasel is not included as a prey item of this species in a survey made by Heinzelman (*Wilson Bull.*, 76:323-330, 1964), and I could find no other records of its being taken by this kestrel.—G. SCOTT MILLS, *Department of Biological Sciences, University of Arizona, Tucson, Arizona. Accepted 8 November 1973.*

Feeding activities of Ospreys in Minnesota.—The breeding biology of Ospreys (*Pandion haliaetus*) has been studied extensively, but feeding activities are not well documented. Lambert's (*Canadian Field-Naturalist*, 57:87-88, 1943) study of fishing methods and success of Ospreys near Shelbourne, Nova Scotia, is one of the few published to date. My study presents information on fishing flights and methods, and food habits of Ospreys in north-central Minnesota in 1966 to 1971. The study area was in the Chippewa National Forest and included Itasca County, Minnesota. There are 1,217 lakes and 155 named streams totaling over 136,437 ha of water in the National Forest (Mathisen, *J. Wildl. Mgmt.*, 32:1-6, 1968), and much of the sparsely inhabited area is utilized only for logging and recreation.

The direction and destination of 41 fishing flights by male Ospreys from seven nests were recorded. Thirty-four flights from six of the nests to fishing sites were watched from blinds in trees along the flight paths in 1967. The other seven flights in 1971 from