

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

two lakes to the seventh nest were monitored as the Osprey carried dead bluegills (*Lepomis macrochirus*) affixed with 4 to 10 g radio transmitters and left floating on the water (Dunstan, in press). Favored feeding perches were also located by monitoring such fish carried by Ospreys, and prey remains were collected from below these and nest sites. Whole or nearly whole remains were measured, weighed, and identified to determine species composition.

*Fishing flights.*—The average distance covered in all 41 fishing flights between active nests and fishing sites was 2.6 km. Flights from the six nests to lakes where fish were caught averaged 2.1 km. No correlation was noted between wind direction and velocity and distance or direction of fishing flight. Ospreys from five nests fished on two lakes and only one Osprey fished on one lake. Two males from two nests located 1.2 km apart fished on the same large lake, but in different parts of it. Ospreys rarely fished on the same lake at the same time, except at lakes of 5 ha or larger and never at the same location.

The fish marked with radio transmitters were carried to one nest from an average distance of 5.3 km. Five of the seven fish were taken from close to an active Bald Eagle (*Haliaeetus leucocephalus*) nest, and the Osprey's fishing range overlapped that of a pair of eagles (Dunstan, in press).

*Harassment at fishing sites.*—Ospreys chased Bald Eagles that perched near favored Osprey fishing perches and frequently stooped on Great Blue Herons (*Ardea herodias*) that walked the shore. Herons and eagles in flight were rarely harassed.

*Fishing methods.*—Ospreys watched for fish during flight and when perched. Soaring flights were made at heights of 30 to 200 m. Ospreys fished especially in this manner at larger lakes and those lacking sharp onshore dropoffs and trees along the shoreline, often visiting several in one flight. Birds stooped on half-folded wings to pick up live fish or with wings extended to pick up dead fish. H. R. Hanson (pers. comm.) twice watched soaring Ospreys swoop down and pick up floating, dead yellow perch (*Perca flavescens*) that had been left by fishermen.

Ospreys used a flapping flight primarily in the early morning and late evening (on windy or calm days) when they flew along shorelines searching for dead or dying fish washed ashore or entangled in offshore vegetation. Dead fish were picked up in swooping flight even on the shore. Centrarchid species were often selected while small cyprinids, large suckers (*Catostomus* spp.), and northern pike (*Esox lucius*) were not. Twice Ospreys picked up dead northern pike that weighed more than 1 kg, only to drop them within 10 m.

Ospreys also fished by flying low over calm surfaces with the legs extended and feet dragging in the water, in a manner similar to the cooling behavior described by Abbott (The home-life of the Osprey. Witherby and Co., London, 1911). The feet were dragged intermittently for 30 to 60 m, disturbing the surface of the water and causing fish to move or jump. Fish disturbed in this way were then seized with one or both feet. Fish in shallow water over dense beds of coontail (*Ceratophyllum* sp.) usually tended to jump along the surface instead of swimming down into the weed mass. Ospreys flew back and forth over large weed beds for periods up to 30 minutes.

At lakes with steep onshore dropoffs Ospreys watched for fish from perches; they also made short flights along the emergent vegetation, dragging their feet for 2 to 10 m before returning to the original or nearby perch. After these flights they watched the area that had been dragged for fish that came to the surface. These were caught with a stoop. Crappies (*Pomoxis annularis*, *P. nigromaculatus*), bluegill, pumpkinseed (*Lepo-*

TABLE 1

THE NUMBER, PERCENT, AVERAGE LENGTH, AND WEIGHT OF 216 PREY REMAINS COLLECTED FROM BELOW FOUR FAVORED FEEDING PERCHES AND SIX ACTIVE NESTS

Common name	Number	Percent	Length (cm) <sup>1</sup>	Weight (g) <sup>2</sup>
Bluegill	76	35.2	12.8	51
White crappie	7	3.2	18.3	77
Black crappie	67	31.0	17.2	82
Yellow perch	28	12.9	15.3	37
Largemouth bass	22	10.2	21.9	144
Pumpkinseed	9	4.2	13.2	54
Northern redhorse	4	1.8	27.0	612
Northern pike	3	1.4	42.8	624

<sup>1</sup> total length tail compressed.

<sup>2</sup> weights varied due to stage of desiccation, decomposition, and missing tissue.

*mis gibbosus*), and largemouth bass (*Micropterus salmoides*) were attracted and captured in this way. These surface disturbances may have attracted the fish by their resemblance to floundering prey (fishermen sometimes deliberately stir the surface to attract the same fish).

The frequency of use of various fishing methods was influenced by weather and by the type of lake fished. Ospreys used the foot dragging method only over calm water. Because I could not maintain observation of individual birds for extended periods of time and over the extensive areas visited by them I was unable to gather good data on frequency of use of each method.

*Prey species.*—I found no prey other than fish. Fish taken as prey (and also most common in fishermen's catches, gill nets, and seine hauls) were: bluegill, white crappie, black crappie, yellow perch, largemouth bass, pumpkinseed, northern redhorse (*Moxostoma aureolum*), and northern pike. Centrarchid species (crappies, bluegill, largemouth bass, pumpkinseed) composed 83.9 percent (181) of the prey found in or below four feeding perches and six nests (Table 1). Ospreys seldom took northern pike except during spawning or when found after winter- or summerkill. The average lengths and weights of prey remains are given in Table 1.

I gratefully acknowledge the constructive criticism given me by F. and F. N. Hamerstrom, Jr., J. E. Mathisen, G. A. Hall, and J. P. Hubbard during the writing of the manuscript. B. E. Harrell provided guidance during the study. Portions of this study were funded by a Chapman Memorial Fund Grant through the American Museum of Natural History, and the biology department of the University of South Dakota.—THOMAS C. DUNSTAN, *Department of Biological Science, Western Illinois University, Macomb, Illinois 61455. Accepted 25 September 1973.*

**Clapper Rail in Tamaulipas, Mexico.**—On 17 December 1938, George B. Saunders collected an adult male Clapper Rail (*Rallus longirostris*) in a brackish marsh, 10 miles south of the mouth of the Rio Grande, in Tamaulipas, Mexico. This specimen, now no. 532700 in the National Museum of Natural History, has recently been identified by me