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Mammalian Species Recovered from a Study of Barn Owl, Tyto alba, Pellets from Southwestern Arkansas

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become. Forty years ago Shepherd had been feeding hummingbirds from tiny glass medicine vials painted red with fingernail polish. Then he talked his father into mail-ordering from Massachusetts some hand-blown glass feeders that held about 12 cc. of sugar water each. Everybody who knew him then remembers this, because at the time, they knew no one else in Pine Bluff, Arkansas, who fed hummingbirds.

In January of this year Shepherd bought a plastic hummingbird feeder from a Little Rock florist. In mid-winter that one shop had in stock at least four models of hummingbird feeders of various designs and capacities. It is no longer unusual to see a hummingbird feeder in an Arkansas garden. There must be thousands of them! Significantly, every one of the hummingbirds seen in Arkansas during the winter months and every one identified as something other than a Ruby-throated Hummingbird was frequenting a feeder (AAS files). Not only are hummingbirds easier to see well (and thus to identify to species) when they drink repeatedly from a feeder placed near a window, but, more important for the bird, a well stocked feeder represents the only chance for a belated hummingbird to survive more than a day or two. A hard freeze kills the last nectar-producing flowers and, along with them, any flying insects and flower-dwelling arthropods that may have been supplementing the diet of nectar.

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MAMMALIAN SPECIES RECOVERED FROM A STUDY OF BARN OWL, *TYTO ALBA*, PELLETS FROM SOUTHWESTERN ARKANSAS

The barn owl, *Tyto alba,* has been historically a common raptor in Arkansas and one might expect a wealth of data available on the food habits of this owl. While studies have been conducted in other areas of the country (Banks, R. C., Auk 82:506, 1965; Jemison, E. S. and R. S. Chabreck, Wilson Bull. 74(1):95-96, 1962; and Parmalee, P. W., Auk 71:469-470, 1954), in Arkansas only one other study has been reported (Paige, K. N., C. T. McAllister, and C. R. Tumlison, Proc. Ark. Acad. Sci. 33:88-89, 1979).

A. C. Bent (1937), in his book *Life Histories of North American Birds Of Prey,* relates that the barn owl is a very beneficial predator in that it consumes large numbers of harmful rodents. He also indicates that its choice of prey is dependent upon those items available in its forage range.

Our study began in April 1987, when an owl roost was discovered in an abandoned cotton gin in Ozan, Hempstead County. The roost is located on the edge of a small community in an area composed mostly of farm land with scattered stands of hardwood trees.

Table 1. Frequency of occurrence (Percentage of occurrence) of prey items recovered from barn owl pellets.

Species	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Total
Microtus pinetorum	6(33.3)	37(54.4)	36(53.0)	6(19.4)	2(20.0)	1(11.1)	2(10.0)	2(9.1)	5(18.5)	16(32.0)	49(60.5)	162(40.1)
Sigmodon hispidus	8(44.4)	19(27.9)	16(23.5)	16(51.6)	5(50.0)	8(88.9)	15(75.0)	16(72.7)	17(63.0)	14(28.0)	11(13.6)	145(35.9)
Rattus rattus	–	5(7.4)	10(14.7)	5(16.1)	1(10.0)	–	1(5.0)	1(4.5)	1(3.7)	–	2(2.5)	26(6.4)
Oryzomys palustris	3(16.7)	1(1.5)	1(1.4)	4(12.9)	1(10.0)	–	–	2(9.1)	4(14.8)	4(8.0)	4(4.9)	24(5.9)
Reithrodontomys fulvescens	–	–	2(2.9)	–	–	–	–	1(4.5)	–	6(12.0)	8(9.9)	17(4.2)
Reithrodontomys humulis	1(5.6)	–	–	–	–	–	–	–	–	2(4.0)	1(1.2)	4(1.0)
Reithrodontomys sp.	–	–	–	–	–	–	–	–	–	2(4.0)	–	2(0.5)
Blarina carolinensis	–	4(5.9)	1(1.4)	–	–	–	–	–	–	1(2.0)	4(4.9)	10(2.8)
Cryptotis parva	–	1(1.5)	–	–	–	–	–	–	–	1(2.0)	2(2.5)	4(1.0)
Notiosorex crawfordi	–	–	1(1.4)	–	1(10.0)	–	–	–	–	–	–	2(0.5)
Ochrotomys nuttalli	–	–	–	–	–	–	–	–	–	2(4.0)	–	2(0.5)
Mus musculus	–	–	–	–	–	–	1(5.0)	–	–	–	–	1(0.2)
Unknowns	–	1(1.5)	1(1.4)	–	–	–	1(5.0)	–	–	2(4.0)	–	5(1.2)
Total	18	68	68	31	10	9	20	22	27	50	81	404

Initially, an area of concrete floor approximately 72 sq m was cleared of all soil, litter and remains. The process involved removing and transporting to the laboratory approximately 1500 lbs (680 kg) of material for a later study (not reported here). This bulk material constituted an initial qualitative sample of prey items. From this cleared area, during the first week of each month, quantitative samples were collected. All pellets and other remains deposited in the cleared area were collected and shipped to Arkansas State University. Once at ASU, the pellets were dried and carefully dissected and the contents identified using cranial and dental morphology. Specimens were then tagged, cataloged and permanently deposited in the Museum of Recent Mammals at ASU.

Eleven months of quantitative samples were available for this study. Analysis of these samples yielded 404 specimens comprising eleven species of mammals (9 additional specimens identified as avian were not considered in this report). The results are presented in Table 1.

Interestingly, for every month *Microtus pinetorum* and *Sigmodon hispidus* were the most numerous prey items taken. *M. pinetorum* was taken in greatest numbers during the months of June, July, February and March. The dominance of these two species in the pellets indicates (as do the *Reithrodontomys* taken) that the owl(s) at this site forage(s) extensively over the prairie-like fields north and east of the cotton gin. It appears that the owl(s) forage(s) little, if at all, within the town of Ozan.

Another interesting feature of the data is the marked increase in the number of specimens taken during June, July, February and March. The large number of items, as well as the greater diversity of prey items, taken during summer months is attributable to the fact that young were present in the roost increasing the need for food during this period. The increased number and diversity of prey taken during the month of March likely is attributable to greater activity of the prey in response to the improved weather of early spring. February's increase is likely attributable to the documented unseasonably warm weather this particular year which probably increased the noctural activity and therefore the availability of these prey species.

This study has resulted in the collection of eleven mammalian county records, one of which *(Notiosorex crawfordi)* represents a significant extension of the presently reported range. With the exception of the range extension, all of the species collected during this study have reported ranges which include this county; however, *Reithrodontomys fulvescens* is the only species encountered that does not represent a new documented species for Hempstead County. *Notiosorex crawfordi* was collected from the roost on two different occasions, indicating that this species is not simply a spurious report for Hempstead County. Previously the only known specimens of *Notiosorex crawfordi* were from extreme northwest Arkansas (Sealander, J. A., A Guide to Arkansas Mammals, p. 48, 1969). Our records place this species a considerable distance south and/or east of its previously acnowledged range.

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