

# WINTER FOOD OF THE LONG-EARED OWL IN CENTRAL PENNSYLVANIA

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The Long-eared Owl (*Asio otus*) is uncommon in central Pennsylvania but may often be found during winter months when individuals and small groups roost in dense conifer woods. I monitored Long-eared Owl winter roost site selection from 1959-1966 and 1970-1978 (Smith, 1981) near Elizabethtown in Lancaster County. Herein I report winter food habits during the months from November through April.

Langenbach (1938), Pearson and Pearson (1947) and Latham (1950) reported Long-eared Owl food in various Pennsylvania localities based on analysis of pellet collections or stomach contents. Marti (1976) reviewed and summarized prey selection in this owl species.

## METHODS

Whole pellets, pellet fragments and prey remains were collected from beneath Long-eared Owl roost sites monthly from November-April and stored in separate packages. Pellet analysis followed standard methods described by Marti (1976). Whole, undistorted pellets were selected for measurement and air dried. Each was weighed and maximum length and width dimensions taken. Pellets and pellet fragments were broken apart and remains sorted and identified. Prey was identified from skulls and dentaries of mammals and skulls, feathers and other skeletal material of birds. Mammals were counted on the basis of number of skulls or paired mandibles and birds by number of skulls or synsacrum.

## RESULTS

Average monthly dimensions of whole pellets collected from November-April are presented in Table 1. The number of pellets selected for measurements ranged from 56 in March to 185 in January. Average number of prey per pellet was low from November through February and almost doubled in March and April. Equally interesting is the range of prey per pellet which was from 1-2 or 1-3 from November through February but 1-6 in both March and April.

Monthly averages of length, width and weight followed similar patterns with November-February pellets generally smaller in both average and range and later pellets increasing in size. April pellets decreased in average width and weight, but the range of all three pellet dimensions is greatest during this month.

Monthly food habits of Long-eared Owls in central Pennsylvania are summarized in Table 2. Long-eared Owl food from November-April included 10 species of mammals and 5 identified species of birds. Meadow mice

TABLE 1  
 DIMENSIONS OF LONG-EARED OWL PELLETS COLLECTED FROM NOVEMBER-APRIL IN CENTRAL PENNSYLVANIA

MONTH	N	PREY PER PELLET			LENGTH*			WIDTH			WEIGHT		
		Mean	SD	Range	Mean	SD	Range	Mean	SD	Range	Mean	SD	Range
November	121	1.3	0.6	1-3	42.4	9.8	30-71	29.7	3.5	21-38	4.4	1.8	1.9-9.3
December	159	1.3	0.4	1-3	45.5	9.6	20-60	28.1	4.7	18-35	4.7	1.6	2.1-10.1
January	185	1.1	0.2	1-2	46.7	9.1	32-81	30.4	4.0	22-41	5.7	1.8	1.9-10.4
February	95	1.0	0.2	1-2	43.7	8.5	31-67	27.8	4.1	21-38	4.9	1.9	1.8-9.1
March	56	2.5	0.5	1-6	48.1	9.6	33-70	32.1	3.9	27-40	5.9	1.4	3.1-8.5
April	86	2.3	0.7	1-6	49.8	10.4	30-85	27.9	5.1	16-42	5.4	2.0	2.0-14.1

\*Length and width in mm; weight in g.

TABLE 2  
FOOD HABITS OF LONG-EARED OWLS IN CENTRAL PENNSYLVANIA FROM NOVEMBER-APRIL

PREY SPECIES*	NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		APRIL		TOTALS	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<b>MAMMALS</b>														
<i>Microtus pennsylvanicus</i>	154	67.0	229	76.5	301	78.0	115	82.7	179	74.9	267	81.4	1245	76.7
<i>Blarina brevicauda</i>	47	20.0	34	11.4	49	12.7	11	8.0	30	12.6	19	5.8	190	11.7
<i>Peromyscus maniculatus</i>	14	6.1	14	4.7	18	4.7	3	2.2	2	0.8	14	4.3	65	4.0
<i>Mus musculus</i>	5	2.2	11	3.7	15	3.9	6	4.3	11	4.6	5	1.5	53	3.2
<i>Rattus norvegicus</i>	3	1.3	—	—	2	0.5	2	1.4	1	0.4	10	3.0	18	1.1
<i>Synaptomys cooperi</i>	1	0.4	—	—	—	—	—	—	3	1.3	1	0.3	5	0.3
<i>Condylura cristata</i>	—	—	1	0.3	—	—	—	—	1	0.4	—	—	2	0.1
<i>Tamias striatus</i>	—	—	—	—	—	—	—	—	1	0.4	—	—	1	0.1
<i>Clethrionomys gapperi</i>	—	—	1	0.3	—	—	—	—	5	2.1	—	—	6	0.4
<i>Sylvilagus</i> sp.	2	0.9	—	—	—	—	—	—	4	1.7	—	—	6	0.4
<b>BIRDS</b>														
<i>Otus asio</i>	—	—	—	—	—	—	—	—	—	—	1	0.3	1	0.1
<i>Passer domesticus</i>	—	—	2	0.7	—	—	1	0.7	1	0.4	—	—	4	0.2
<i>Sturnis vulgaris</i>	—	—	—	—	1	0.3	—	—	1	0.4	7	2.1	9	0.6
<i>Turdus migratoris</i>	—	—	—	—	—	—	—	—	—	—	1	0.3	1	0.1
<i>Cyanocitta cristata</i>	2	0.9	—	—	—	—	—	—	—	—	—	—	2	0.1
<i>Unid. fringillid</i>	3	1.3	7	2.3	—	—	1	0.7	—	—	3	0.9	14	0.9
<b>TOTALS</b>	231	100.1	299	99.9	386	100.1	139	100.0	239	100.0	328	99.9	1622	100.0

\*Based on remains from whole pellets and pellet fragments.

*Microtus pennsylvanicus*) was the most common food item each month and comprised 76.7% of a total of 1,622 prey individuals. Next in importance were Short-tailed Shrews (*Blarina brevicauda*) which comprised 11.7% of the total food but varied in importance each month from 20.0% in November to a low of 5.8% in April. Three other small mammals which accounted for greater than 1 percent of total prey included Deer Mice (*Peromyscus maniculatus*) which ranged from 6.1% in November to 0.8% in April; House Mice (*Mus musculus*) from 1.5% in April to 4.3% in January; and Norway Rats (*Rattus norvegicus*) taken most commonly in April with 3.0%. Bird species were taken comparatively infrequently, all averaging less than 1.0% of the total prey individuals. Of bird species taken, Starlings (*Sturnis vulgaris*) were most common and comprised 0.6% of the total prey followed by House Sparrows (*Passer domesticus*) at 0.2%.

Although these results increase information on food habits of the Long-eared Owl, they do not differ greatly from previous food habits study of this species in Pennsylvania and elsewhere. Langenbach (1938) found 32 items in 24 stomachs, of which mice and rats comprised 65.5%, shrews and moles 12.5% and birds 3.1%. Pearson and Pearson (1947) reported that mice comprised 96.1% of 128 animals while in a summary report Latham (1950) noted that Meadow Mice and Short-tailed Shrews accounted for the largest contribution of prey individuals tabulated in several published reports from Pennsylvania localities.

#### LITERATURE CITED

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