

A Comparison of Eating Habits of Long-eared Owl (*Asio otus*) and Barn Owl (*Tyto alba*)

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1 The purpose of the investigation

There are 136 species of owls in the world, 10 of which can be found in Croatia. Owls are predominantly nocturnal birds with exceptionally well-developed vision and hearing, which makes them almost infallible hunters. Owls live on a diversified diet of small mammals and birds, or more rarely of insects and amphibians. If they catch a small prey, they swallow it whole. The indigestible parts of the prey are regurgitated after several hours in the form of pellets (solid, cylindrical formations containing bones, scales, feathers, beaks and fur). By dissecting and analysing the pellets, we can interpret the diet of owls. The objective of the research has been to compare the diets of the long-eared owl (*Asio otus*, L. 1758) and the barn owl (*Tyto alba*, Scopoli 1769) in the Vrbovec area at the same time of year and by using the same quantity of material.

2 Method of the investigation

The data on the respective diets of the long-eared owl and barn owl have been obtained by analysing the content of their respective pellets. The pellets regurgitated by the barn owl are larger and dark grey, while the pellets of long-eared owl are smaller and of the light grey colour. From September to December 2009, we collected and dissected 65 pellets of the barn owl and the same number of pellets of the long-eared owl. The pellets were dissected by using the dry method (they were pulled apart with histology needles and tweezers). Next, the skull and mandible bones with teeth were separated. Following the instructions from the identification key for small mammals, we classified the family, genus, and species of the mammals whose bones were found. Finally, the results were compared with the results obtained for the same species in the same area 22 and 23 years ago respectively.

3 Results

The results of comparison of the diets of the long-eared owl and the barn owl in the Vrbovec area are presented in the table (Table 1). Small mammals dominate the diet of both owls. They make 100 per cent of the diet of the barn owl and 97.44 per cent of the diet of the long-eared owl. Birds are not of great importance in the diet of these two owl species. There have been 12 mammal species isolated from the pellets of the long-eared owl, and 19 mammal species isolated from the pellets of barn owl.

Table 1. Results of the pellet analysis of the barn owl and long-eared owl

<i>Familia /Species</i>	<i>T. alba</i>		<i>A. otus</i>	
	No.	%	No.	%
<i>Microtidae</i>				
<i>Microtus subterraneus</i>	1	0,36	-	-
<i>Microtus arvalis</i>	78	28,1	89	57,05
<i>Microtus agrestis</i>	3	1,08	1	0,65
<i>Pitymys subterraneus</i>	5	1,81	4	2,56
<i>Clethrionomys glareolus</i>	1	0,36	4	2,56
<i>Arvicola terrestris</i>	1	0,36	2	1,28
<i>Microtus sp</i>	3	1,08	2	1,28
<i>In total</i>	92	33,2	102	65,38
<i>Soricidae</i>				
<i>Sorex araneus</i>	31	11,1	-	-
<i>Sorex minutus</i>	10	3,61	-	-
<i>Neomys anomalus</i>	9	3,24	-	-
<i>Neomys fodiens</i>	3	1,08	-	-
<i>Crocidura leucodon</i>	9	3,24	-	-
<i>Crocidura suaveolens</i>	41	14,8	-	-
<i>Sorex sp</i>	4	1,45	-	-
<i>In total</i>	107	38,6	-	-
<i>Muridae</i>				
<i>Apodemus sylvaticus</i>	9	3,24	22	14,10
<i>Apodemus flavicollis</i>	6	2,17	2	1,28
<i>Apodemus agrarius</i>	30	10,8	6	3,85
<i>Mus musculus</i>	4	1,45	2	1,28
<i>Micromys minutus</i>	13	4,69	2	1,28
<i>Rattus rattus</i>	2	0,72	2	1,28
<i>Apodemus sp.</i>	12	4,33	12	7,69
<i>In total</i>	76	27,4	48	30,77
<i>Muscardinus</i>	2	0,72	2	1,28
<i>Aves</i>	-	-	4	2,56
<i>In total</i>	277	100	156	100

4 Conclusion

The authors have reached the following conclusions: small mammals dominate the diet of both owls. The barn owl prefers shrews (*soricidae*), while the long-eared owl predominantly eats voles (*microtidae*). The diet of both owls is dominated by the common vole (*Microtus arvalis*) and has not changed significantly in the past twenty years.