

A large proportion of *Micromys minutus* in winter diet of the Long-eared Owl *Asio otus*

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Abstract: A large proportion of *Micromys minutus* in winter diet of the Long-eared Owl *Asio otus* is discussed.

Keywords: Long-eared Owl, *Asio otus*, *Micromys minutus*

Introduction

The Long-eared Owl *Asio otus* is fairly common all over Silesia, both in farmlands and in some urbanized habitats (Dyrz et al. 1991). For example about 20-30 breeding pairs occur in the city of Wrocław (Rachel et al. 2002). In winter, it usually congregates in flocks, roosting in coniferous trees, usually in some well-timbered towns and cities. Since at least 1985, one such flock is known to roost in coniferous trees in one of numerous cemeteries in Wrocław. In 2008/2009 winter, some pellets were collected from this site to investigate winter diet of this species and small mammal community within its hunting area.

Material and methods

Pellets were collected from Holy Family Cemetery in Sepolno, Wrocław. In total 154 entire pellets and some material from decomposed pellets were collected in December 2008 and January 2009. About 5-7 Long-eared Owls roosted there in *Thuja* sp. The cemetery is well-timbered with coniferous and broad-leaved trees and shrubs. On the eastern side, the cemetery borders with large water canal, with mowed grassland, shrubs and trees along its banks. From other sides the cemetery borders to a densely built-up settlement.

Pellets were analysed using universally accepted methods (cf. Kopij 1992). Prey items were identified using the key by Pucek (1984). The following skeleton parts were taken for identification: skulls, jaws, teeth and long bones. The number of prey items was assumed as the maximal number of one of the following parts: skull, left or right jaw. The approximate biomass of each prey species was estimated based on the average individual biomass as given by Pucek (1983).

Results and discussion

A total of 244 prey items belonging to 11 species were identified. The diet was composed entirely of small mammals represented by rodents and insectivores (Table 1). While rodents were represented by 10 species, the insectivores by only one species *Sorex araneus* (0.4%). Among rodents, Arvicolidae (numerically 82.0%, by biomass 85.3%) were much more important than Muridae (numerically 17.6%, by biomass 14.6%). *Microtus arvalis* was by far the most common species both in terms of the number of prey items (75.4%) and biomass (75.7%). Small quantity of *Microtus oeconomus* and *Microtus agrestis* were also identified in the pellets. Unexpectedly, relatively large numerical proportion of *Micromys minutus* were found in the diet. In fact, it was the second most common prey species in the diet. However, the

proportion was much lower in terms of biomass. *Apodemus agrarius* was the third prey species in the order of importance as source of food and comprised both numerically and in terms of biomass 5.3% of the diet. Unexpectedly, no *Mus musculus* were extracted from the pellets. In urbanized habitats it is expected to be a common rodent species (Pucek et al. 1983).

This study supports previous findings that small mammals constitute the main food of Long-eared Owl diet in Silesia. *Microtus arvalis* has been identified as the most important prey species in those studies (Kramer 1932; Kopij 1998; Pawłowska-Indyk et al. 1998; Cichocki, Gabrys 2008; Cichocki et al. 2008). However, to date *Micromys minutus* was regarded as occasional prey of the Long-eared Owl. In some habitats, for example in the valleys of large rivers and along some water canals, with extensive grasslands, it may however constitute a significant proportion in the diet. Probably it is more prone to owl predation during winter where the vegetation cover is not so dense and the species needs to forage also during the night.

The lack of *Mus musculus* and some passerine birds such as *Passer domesticus* and *Passer montanus* in the winter diet of the Long-eared Owl suggests that the Long-eared Owl avoids built up areas as hunting grounds, preferring more natural and open areas.

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Table 1: Winter diet of the Long-eared Owl in Wrocław.

Prey taxa	Prey items		Approximate prey biomass	
	N	%	Grams	%
Soricidae	(1)	(0.4)	(8)	(0.1)
<i>Sorex araneus</i>	1	0.4	8	0.1
Arvicolidae	(200)	(82.0)	(5177)	(85.3)
<i>Microtus arvalis</i>	184	75.4	4600	75.7
<i>Microtus oeconomus</i>	7	2.9	350	5.8
<i>Microtus agrestis</i>	6	2.5	150	2.5
<i>Microtus subterraneus</i>	1	0.4	17	0.3
<i>Myodes glareolus</i>	2	0.8	60	1.0
Muridae	(43)	(17.5)	(892)	(14.6)
<i>Mus musculus</i>	3	1.2	75	1.2
<i>Micromys minutus</i>	23	9.4	92	1.5
<i>Arvicola terrestris</i>	3	1.2	360	5.9
<i>Apodemus agrarius</i>	13	5.3	325	5.3
<i>Apodemus flavicollis</i>	1	0.4	40	0.7
Total	244	100	6077	100

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