

**SOME ECOLOGICAL ASPECTS OF *ASIO OTUS* (LINNAEUS, 1758)  
AND *ATHENE NOCTUA* (SCOPOLI, 1769) DURING THE COLD  
SEASON 2016-2017, FROM TINCA AREA (BIHOR COUNTY)**

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**Abstract.** In this work there are presented the researches about the winter census of *Asio otus* (Linnaeus, 1758) during the cold season 2016-2017 and the analysis of the pellets of this species and *Athene noctua* (Scopoli, 1769) in Tinca area.

**Keywords:** winter census, pellet, Tinca area.

**Rezumat.** Unele aspecte ecologice ale speciilor *Asio otus* (Linnaeus, 1758) și *Athene noctua* (Scopoli, 1769) din sezonul rece 2016-2017, din zona Tinca (județul Bihor). În această lucrare sunt prezentate cercetările privind recensământul de iarnă la specia *Asio otus* (Linnaeus, 1758) în timpul sezonului rece 2016-2017, precum și analiza ingluviilor acestei specii și ale speciei *Athene noctua* (Scopoli, 1769) în zona Tinca.

**Cuvinte cheie:** recensământ de iarnă, ingluvie, zona Tinca.

## INTRODUCTION

*Asio otus* (Linnaeus, 1758) and *Athene noctua* (Scopoli, 1769) are sedentary species at national level (Bruun et al., 1999). Data about the content of pellets at these species at national level were published by different authors (Petrescu, 1997, Sándor & Kiss, 2008).

Tinca area is located in the north-western part of Bihor County.

## MATERIALS AND METHODS

The winter census was conducted through direct observations of the birds. The pellets were collected by hand and analyzed, using different works (Bang et al., 1985, Popescu & Murariu, 2001).

## RESULTS AND DISCUSSIONS

### The monthly dynamics

During the end of autumn and the winter, the northern populations of *Asio otus* (Linnaeus, 1758) from Romania or Europe migrate to the south searching for food. They join in colonies, which include sometimes tens of specimens, generally during of some severe winters. To estimate the impact of these migrations and associations was conducted the winter census of this species during 2016-2017, in October 26 - April 13 (Tab. 1).

Table 1 - The winter census 2016 - 2017 at *Asio otus* in Tinca area (original).

Day	Month						
	October	November	December	January	February	March	April
1	0	4	15	27	49	8	1
2	0	2	10	27	45	7	1
3	0	2	17	28	45	6	1
4	0	2	24	28	46	5	1
5	0	1	16	27	35	5	1
6	0	1	17	30	33	3	1
7	0	2	20	33	36	6	1
8	0	6	17	33	37	5	1
9	0	6	20	36	39	3	1
10	0	8	21	36	37	4	0
11	0	10	21	37	30	4	1
12	0	10	25	40	26	5	0
13	0	10	21	44	23	4	1
14	0	10	21	42	27	3	0
15	0	9	17	43	22	2	0
16	0	16	21	38	21	2	0
17	0	15	25	33	18	3	0
18	0	14	27	38	17	3	0
19	0	15	26	37	28	3	0
20	0	17	24	35	30	3	0
21	0	17	26	36	19	1	0
22	0	16	26	38	19	1	0
23	0	15	25	37	18	1	0
24	0	15	26	38	15	0	0
25	0	14	26	39	14	1	0
26	9	15	24	41	14	1	0
27	1	9	25	42	13	1	0
28	1	12	25	45	7	1	0
29	1	12	26	47		1	0
30	1	11	27	49		1	0
31	1		28	50		1	
Mean	2.33	10.2	22.22	37.22	27.25	3.03	0.84

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The analysis of table indicates that the maximum number of specimens is at the end of January and the minimum number of specimens was recorded in October and in April. Numerical variations in winter colony at *Asio otus* (Linnaeus, 1758) are conditioned by several elements including: weather conditions, human presence, sun brightness.

We noticed that during the days with low temperatures, intense wind, ample precipitations, the number of specimens grows, thus the places get crowded.

On fine days (sunny weather or grown brightness, raised temperatures, absent precipitations, absent wind or with feeble intensity) the number of specimens is more reduced, these specimens migrating in other territories for hunting.

On the other hand, the number of specimens could changes too during of a day depending on human presence, temperature, brightness degree and some specimens chase till to afternoon.

### The food

During the analysed period, there were collected 200 pellets of *Asio otus* (Linnaeus, 1758) and 6 pellets of *Athene noctua* (Scopoli, 1769).

The food of these birds consists mainly of animal source and it varies depending on the season. Generally, it includes species rodents, little birds, insects, frogs, even snakes.

The keratinous and osseous remains are regurgitated in pellets with different sizes. The pellets of *Asio otus* (Linnaeus, 1758) have 4.3 - 4.6 cm long and 2.2 - 2.3 cm breadth. Having analyzed the pellets the following results were obtained (Tab. 2).

Table 2 - The food (pellets) of *Asio otus* (Linnaeus, 1758) from Tinca area, during October 2016 - April 2017 (original).

Species and/or superior unit	Number
<b>Mammals</b>	
<i>Micromys minutus</i> (Pallas, 1771) (skull)	6
<i>Mus musculus</i> Linnaeus, 1758 (skull)	6
<i>Arvicola terrestris</i> (Linnaeus, 1758) (skull)	41
<i>Apodemus sylvaticus</i> (Linnaeus, 1758) (skull)	86
<b>Birds</b>	
<i>Passer montanus</i> (Linnaeus, 1758) (wishbone and claws)	2
<b>Insects</b>	
Coleoptera (Carabidae)	59

Analyzing the table, we could conclude that 69.50% of *Asio otus* (Linnaeus, 1758) food from Tinca area consists of rodents, 1.00% - little birds and 29.50% - insects. Among the rodents, *Apodemus sylvaticus* (Linnaeus, 1758) prevails.

The pellets of *Athene noctua* (Scopoli, 1769) have 2.9 - 4.1 cm long and 0.9 - 1.5 cm breadth. The analysis of pellets at this species indicates the following results (Tab. 3).

Table 3 - The food (pellets) of *Athene noctua* (Scopoli, 1769) from Tinca area, during February - March 2017 (original).

Species and/or superior unit	Number
<b>Mammals</b>	
<i>Apodemus sylvaticus</i> (Linnaeus, 1758)	4
<i>Mus musculus</i> Linnaeus, 1758	1
<b>Birds</b>	
<i>Passer montanus</i> (Linnaeus, 1758) (rachis of two pens)	2
<b>Insects</b>	
Coleoptera (Carabidae) (elytrons)	2

The pellets (6) of *Athene noctua* (Scopoli, 1769) contains 83.33% of rodents, 16.66% little birds and 33.33% insects. Among the rodents, *Apodemus sylvaticus* (Linnaeus, 1758) prevails.

## CONCLUSIONS

In the cold season, 2016 - 2017 from Tinca area was conducted the winter census of *Asio otus* (Linnaeus, 1758). The maximum number of specimens was observed in January (50) and the minimum number in October and April.

The analysis of the pellets at *Asio otus* (Linnaeus, 1758) and *Athene noctua* (Scopoli, 1769) indicates the content of rodents (the majority), little birds and insect (coleopterans).

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