

Composition of the diet of owls as a source of information on the structure of local mammal communities in Poland

edited by Grzegorz LESIŃSKI



Phot. Zofia Ruprecht

This issue is dedicated to the memory of **Dr Andrzej Lech Ruprecht (1935–2010)** – outstanding Polish specialist in cranial morphology, a teacher of many zoologists studying mammal faunas by using analyses of owl pellets



Barn owl *Tyto alba* (Phot. Maurycy Ignaczak)



Editorial for the special issue:

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Studies on small mammals require using various and sometimes quite laborious methods. Special traps are used in case of terrestrial species, which increases the cost of such studies. Tree-dwelling rodents of the family Gliridae, especially those of nocturnal activity, need other methods. Searching for their sites one has to survey potential roosts like nesting boxes for birds or boxes constructed specifically for rodents. Recently, camera traps have been used for this aim. Still other, quite diverse methods are needed in studies on Chiroptera. These methods require a great deal of work and time when surveying potential summer and winter roosts, catching in bat nets or recording and analysing emitted ultrasounds.

The analysis of owls' pellets is one of the simpler, relatively cheap and fast methods that allow for estimating species composition and sometimes also the proportions between the numbers of some species (Haisler et al. 2016). For several common species of these birds, small mammals are the basic components of diet. Owls are generalists and do not specialize in single prey species. They catch small mammals present in their hunting grounds, sometimes in proportions resembling those in mammalian communities. Species composition of prey depends largely on the type of habitats where predators are hunting.

Analyses of the owls' pellets provided basic data on the distribution of many species of small mammals in Poland. The first more comprehensive atlas summary (Pucek & Raczyński 1983) based mainly on this method. From among small mammals, only bats have been intensively studied in many regions of the country in recent decades. A few studies on small terrestrial mammals were undertaken with the use of standard „trap” methods. Tree-dwelling rodents were also rarely studied. Analyses of the owls' prey have been the main source of information on local communities of Soricomorpha and Rodentia in recent years. However, the data on small mammals in many regions of the country are still missing or are very outdated. Increasing man-made transformations of many ecosystems together with climate change may result in rapid changes in communities of these mammals (expansion or shrinking of ranges, changes in population densities, extinction of severely fragmented populations etc.). Therefore, information on the present distribution of small mammals in various regions of the country is urgently needed.

This special issue contains papers analysing the diet of common owl species, mainly of the barn owl *Tyto alba* and the tawny owl *Strix aluco*. The studies provided data on local mammal fauna in NW Poland (Pomerania), NE Poland (Masurian Region, northern Podlasie, northern Masovia), central Poland (Warsaw and its surroundings, southern Masovia) and SW Poland (Opole Region). Results of

studies presented here supplement and update our knowledge on regional differences in small mammal communities and reveal many new localities of rare and faunistically valuable species.

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