

**SYSTEMATIC ANALYSIS OF MAMMALS FROM THE VLĂDILA FOREST
PROTECTED ARIA ROSCI0183**

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ABSTRACT

This work carries out a systematic grouping of Mammalia Class creatures living in the Vlădila Forest Protected Area, according to the characteristics of the area and the reality in the field. Both through the research in the field and the study of the management plan, 36 species of mammals were identified on the site - of which 21 species of conservation importance, all of them stand out as small mammals.

Thus, a number of 6 orders, 12 families and 25 genera were identified.

INTRODUCTION

The forest is a unit of the biosphere with flora characterized by the presence of arborescent species whose composition is the expression of bioclimatic and edaphic conditions and within which a specific fauna develops. (Iancu 1999)

The Forestry Code states that "lands covered with forest vegetation with an area larger than 0.25 hectares are considered forests and are included in the national forest fund."

According to Enescu (2002), the forest is a "complex and vital component of Earth's ecosystems and through a variety of ecological processes ensures the stability of hydrographic basins, the protection of water and air quality, preservation of a diversity of gene pools and habitats for fauna and flora".

In the scientific approach, the definition given to the forest has changed over time in relation to the assigned functions, but also to the degree of knowledge and its specificity. (Nechiforel 2014)

The tree is the characteristic and fundamental element of the forest, it defines the very notion of forest. Grown in isolation forms a rich crown, loses height, technological qualities are reduced and regeneration is carried out with difficulty.

In the massif it achieves a characteristic form of a forest port, possessing superior qualities.

Forest conservation is essential not only because of its scientific importance or biodiversity, but also to find out who we are, where we come from and how to live in harmony with the nature.

The basic concept is the forest ecosystem, which is also the object of forest management. (Vlad et al. 2020)

It was admitted, as a fundamental premise, that the forest ecosystem cover in our country has a discontinuous character, that it is made up of qualitatively distinct ecosystems, which can be classified into typological units of different ranks. (Doniță et al. 1990)

Deforestation, which has become a global phenomenon, is one of the most important factors causing the catastrophic decrease in biodiversity of the entire biosphere. (Klesius 2002)

The consequences of deforestation are incalculable, causing the extinction of more than 50% of plant and animal species, hence a catastrophic decrease in biodiversity. (Botnariuc 2010)

Recent studies attest to the importance of mammals in terms of mental and physical recovery of humans in nature, by simple contact with them or by practice of sports, among which hunting holds an important place.

Some large mammals remained unknown until the beginning of this century because they live in places difficult for humans to reach; others, smaller, have only been described nowadays as new species.

However, observing wild mammals in nature requires a serious investment of time and an immeasurable patience, which only very few enthusiasts are capable of.

The difficulty of observing mammals stems from the fact that most of them stay hidden during the day, being active only at night. (Cuziuc et al. 2008)

At international level, a series of conventions aim to preserve biodiversity, with relevance for the protection of mammal species, namely: the Convention on the conservation of European wildlife and natural habitats (Berne Convention), adopted in Bern on 19th of September 1979, Convention on the conservation of migratory species of wild animals (CMS), adopted in Bonn on 23rd of June 1979, Convention on Biological Diversity (CBD), signed in Rio de Janeiro on 5th of June 1992, and to which Romania is part.

Due to its geographical location, relief and interaction with abiotic factors varying in time and space, Romania is characterized by a great diversity of wild flora and fauna species and natural habitats.

From the point of view of specific richness, 102 species of wild mammals can be found in Romania, out of the 182 species present in the level of European Union.

Romania, by joining international and regional conventions and agreements on protection of nature, as well as by joining the EU, assumed the obligation to establish and apply conservation measures at the national level to ensure the maintenance or restoration of populations of wild species and natural habitats.

Thus, the protection of wild mammal species, and in particular terrestrial ones, is regulated by normative acts by which Romania has ratified or acceded to international conventions, normative acts by which Romania has transposed/implemented EU legislation in the field of nature protection, national legislation in the field of environmental protection or from other fields. (Ionescu et al. 2013)

MATERIAL AND METHODS

The protected area Vlădila Forest is located in the southern part of Olt County.

The protected area belongs to the continental geographical region, Silvesteppe ecoregion of the Romanian Plain in Olt County.

It is within the radius of localities: Vlădila - 16%, Redea below 1%. The surface of the protected area is 407 ha, of which 95% is public property - Olt Forestry Directorate and 5% is private property.

Geologically, the territory of the Vlădila Forest Protected Area belongs to sedimentary formations of tertiary-neozoic origin.

Geographically, the territory of the Vlădila Forest Protected Area is located in the Caracal Plain and in the Leu-Rotunda Plain of the Romanați Plain. All of these are included in the Oltenia Plain in the great geomorphological unit of the Romanian Plain.

From a hydrological point of view, the site is crossed centrally by the Vlădila stream on which a series of accumulations were formed in the Ungurean Valley as a result of hydrotechnical works.

Phreatic waters are stored in quaternary deposits. The aquifers are made of gravel and sand, whose thickness varies between 3 and 30 meters. The piezometric level is placed at variable depths - 0.5 m - 7 m. The supply of the aquifer horizons is carried out on their entire surface from precipitation and from the Vlădila stream.

The climate is one of forest-steppe, dry due to the non-uniformity of precipitation in the growing season and high temperatures. The average annual temperature is 11.5 °C, and the average annual precipitation is approx. 525 mm. The winds are characterized by the predominance of western components.

The total amount of precipitation at the annual runoff and evapotranspiration caused by high temperatures, indicate an insufficient amount of water.

Therefore, the soils encountered within the unit belong to the class cernisols (73%) and protisols (27%), with cambic faeozem predominating (73%).

Before initiating the series of field trips, the specialized literature was studied, "Planul de Management al Ariei Protejate Pădurea Vlădila", "Amenajamentul U.P. I vlădila Ocolul Silvic Caracal Direcția Silvică Olt, 1980", "Amenajamentul U.P. I Vlădila Ocolul Silvic Caracal Direcția Silvică Olt, 2020" and "Catalogului habitatelor, speciilor și siturilor Natura 2000 în România".

For the identification and systematic grouping of mammal species in order to achieve the structure of mammal diversity "Zoological Atlas", Bogoescu et al., 1983 was used. In order to carry out the study, a series of 3 visits to the Caracal Forest District and a series of 21 field visits were carried out, totaling approximately 126 hours of field research.

RESULTS AND DISCUSSIONS

Both through research in the field and the study of the management plan, 36 mammal species were identified in the site – of which 21 species of conservative importance, all of which stand out to be small mammals.

For the quantitative assessment of mammalian species (Figure 1) the following criteria were established: VR – very rare, R – rare, RC – relatively common, C – common, L – localized, localized population, P – present, AC – accidental.

Most mammals are noted to be rare, with 10 species representing a percentage of 33%, followed by those recorded as present and relatively common.

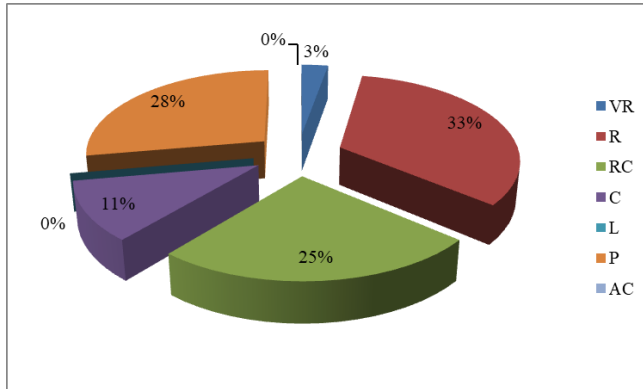


Figure 1. Quantitative assessments of mammalian species

Following the systematic distribution by order of mammalian species (Figure 2), 6 orders were identified, the order *Chiroptera* being the most numerous, comprising 10 species of bats (28%), followed by *Rodentia* and *Carnivora*, with 9 (25%) respectively 8 (22%) mammals. At the opposite pole, the order *Lagomorpha* has only one representative.

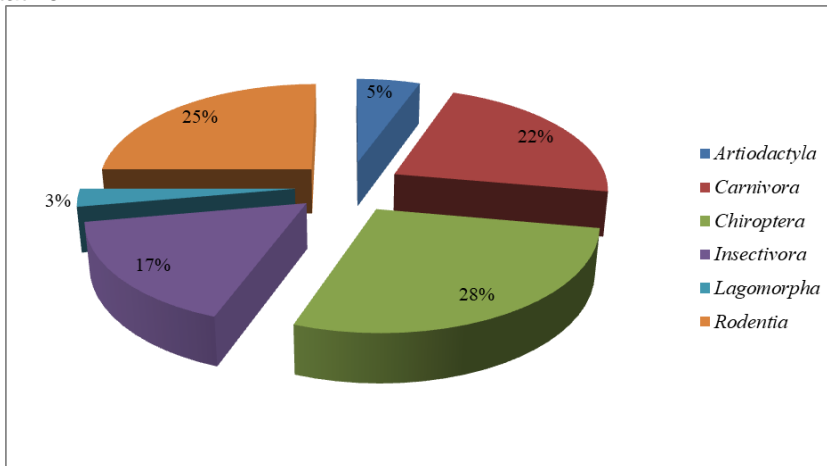


Figure 2. Systematic distribution by order of mammalian species

Looking at the systematic distribution of mammal species by family (Figure 3) it can be seen that out of 12 families, the first three in terms of number of representatives are: *Vespertilionidae* with 9 species (25%), *Muridae* with 7 species (19%), *Mustelidae* with 5 species (14%), and 6 families have only one representative.

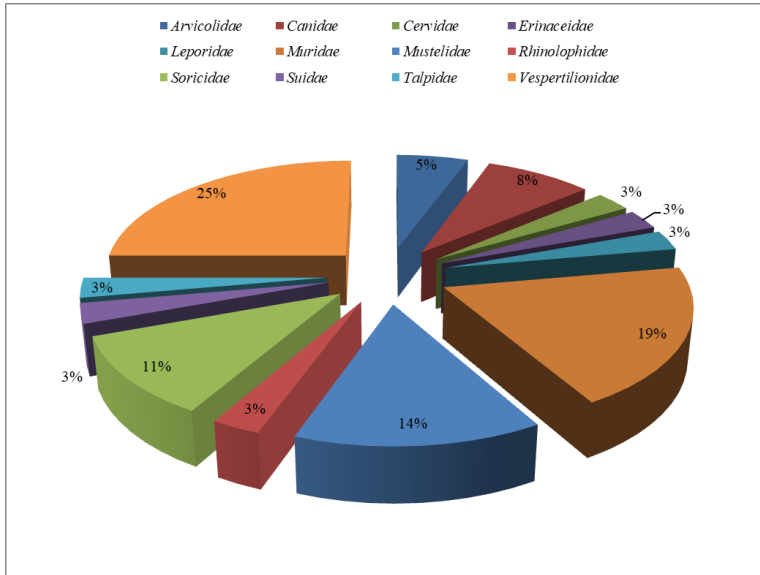


Figure 3. Systematic distribution by families of mammalian species

In the context of the systematic distribution by genera of mammal species (Figure 4), a number of 25 genera are noted, of which the most numerous are *Apodemus* and *Martes* with 3 representatives each, equivalent to 8%. There are 16 genera with a single representative.

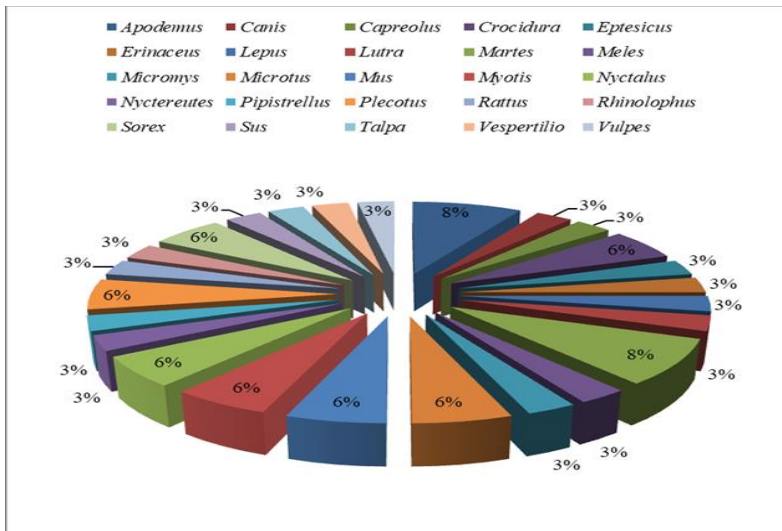


Figure 4. Systematic distribution by genera of mammalian species

CONCLUSIONS

As we can see, most mammals are rare and in terms of their size, the small ones stand out. The largest family is *Vespertilionidae*, which includes bats, which constitute a group of small, warm-blooded, winged creatures.

The characteristics of the living things found are in accordance with the specifics of the studied area, being a Central-European plain area, with the particularities of the microregion to which it is a part.

In the *Canidae* family there is a constant presence of the *Canis aureus* species, its main natural opponent *Canis lupus* being extinct in the area, a fact that may favor the growth and population development of this species, as there is no such opponent. So far, no material damage caused by this species has been recorded in the region, as in the case in other areas of Romania.

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