Editorial

Mammal Status: Diversity, Abundance and Dynamics: An Editorial

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Mammals are far from being the most diverse group of vertebrates, with only 6400 extant species, but they do play an important role in ecosystems by providing essential services. Mammals regulate populations of other animals, disperse seeds, pollinate plants, and act as indicators of the general health of an ecosystem. Multiple problems face this group, including loss of habitats, climate change, roadkills, poaching, and illegal trade, all of which result in decreases in numbers and abundance, as well as the rapid spread of invasive species that threaten local populations and human–mammal conflicts. To help the survival of mammals in the agricultural landscapes, support mechanisms that enhance land capacity were developed. However, the success of restoring threatened mammal populations, e.g., large carnivores, may be controversial, as some stakeholders still maintain hostility. Under climate change, even the distribution of mammals requires updating.

The aim of the Editorial is to introduce the Special Issue, “Mammal Status: Diversity, Abundance and Dynamics”, which includes six papers from Europe [1–6], three of these representing Baltic countries [4–6], two papers from Asia [7,8] and one from South America [9]. Four papers deal with carnivores (the snow leopard, gray wolf, Eurasian lynx, and Eurasian otter), two with ungulates (moose and Andean tapir), two with small mammals (including the endangered European ground squirrel), and one with the wide mammal complex, including many small and medium carnivores in Indonesia.

In the Baltic countries, it was shown that populations of two big game species exhibited changes not corresponding to sustainable management. The change of the moose (Alces alces) population in Lithuania has not been controlled by hunting since 2006, and the reason given was that the country does not have a long-term strategy of management. The decline in the number of moose was related to legal and administrative issues in the country. For the sustainable management approach, it was recommended that there be an increase in the hunting bag, ensuring that owners adopt long-term planning of their hunting plot units [6]. The growth of the wolf (Canis lupus) population in Latvia exceeded the previously predicted carrying capacity. It was concluded that this was due to significant hunting pressure, and wolf management in Latvia may have contributed to the population growth by affecting demographic processes [4].

Agreeing that climate and land-use changes are among the main threats to biological diversity, several papers analyzed the influence of these factors on threatened species. Predictive models of the distribution of Andean tapir (Tapirus pinchaque) reveal land use being the main threat for this species and the importance of the protected areas as a conservation tool [9]. Another threatened species, the snow leopard (Panthera uncia), in the alpine ecosystems of Central Asia, is mainly threatened by intensive climate change. As the model predicted the shift of the distribution center of the species (northwestward and upward in elevation), conservation measures should be focused rather on the protection of the current habitat, not to the creation of movement corridors [8].

Agricultural land-use changes and urbanization have resulted in a severe decline in the European ground squirrel (Spermophilus citellus) population across its range, particularly in the south. In Greece, a significant decrease in distribution and colony numbers has
occurred in recent decades, resulting in the isolated groups and low numbers in the remaining colonies, confined within small, isolated anthropogenic habitats. Conservation actions are proposed for the maintenance and protection of existing and potential habitats for populations of the species [3].

Two other papers in the book relate to carnivore species no longer significantly endangered, at least on the European scale [1,5]. In Italy, an analysis of the Eurasian otter (*Lutra lutra*) living at the northernmost limit of its range, suggested that the current population is larger than the minimum viable population size [1]. Analysis of the long-term trends of the distribution and numbers of Eurasian lynx (*Lynx lynx*) in Lithuania, which employed the use of citizen scientists within its method, indicated a population increase, and the need to reconsider the species’ conservation status [5].

Finally, two papers analysed mammal species complexes in very different habitats, Mediterranean post-fire succession in northeastern Spain [2] and in coffee-growing agroforestry plots in West Java, Indonesia [7]. The cumulative effects of land abandonment and recovery after wildfires, resulting in vegetation structural complexity, were found to have negative effects on Mediterranean small mammal communities. In the region, forest fires are a driving force for rapid small mammal community change. Fires create shrubland habitats, which are favourable to small mammal communities and stop vegetation recovery. As small mammals are a keystone group defining the sustainability of Mediterranean forests, the result of these events might enhance the prognosis of future mammal trends under current global changes [2].

The importance of maintaining complexity and connectivity in agroforestry systems and ensuring the long-term sustainability and conservation of endemic species was shown in Indonesia. Published results proved that complex agroforestry systems could host biodiversity levels similar to adjacent forests and can offer important ecosystem services for wildlife. However, important species, such as the Javan leopard (*Panthera pardus melas*), Sunda porcupine (*Hystrix javanica*), and the grizzled langur (*Presbytis comata*), were absent in the agroforests, suggesting that the replacement of the forest by the agroforestry matrix is still detrimental to a number of species [7].

In conclusion, the book “Mammal Status: Diversity, Abundance and Dynamics” covers a variety of issues in mammal ecology, population management, and protection, based on examples from geographically and ecologically different areas. Overall, this book presents knowledge and practical recommendations, as well as prognoses for several mammal species under different scenarios. Therefore, I sincerely hope that it will be useful to a wide range of readers, including theriologists, conservationists, environmentalists, population managers, and decision-makers from various countries.

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