

# In praise of rarity

**Gábor L. Lovei**<sup>1\*</sup>

<sup>1</sup> *Department of Agroecology, Aarhus University, Denmark & ELKH-DE Anthropocene Ecology Group, Debrecen, Hungary*

\*E-mail: gabor.lovei@agro.au.dk

**Keywords:** abundance, distribution, ecological function, value

Rarity is a common phenomenon: most species are not common but rare. First of all, we should exclude virtual rarity: we can falsely perceive some species as rare simply because we rarely encounter them. “Real” rarity is not a simple term. There are various types of rarity: a species can be rare because of low abundance (the “classical” rarity), or due to restricted, very small distribution area (distributional rarity), or can be present/active during a very limited period (temporary rarity). Rarity can also be temporary for a different reason: there are very few common species that are common over all of their distribution range, all the time: somewhere, sometimes virtually all species will be rare, or undergo a phase of “rarity”. The reasons for rarity are less well known. Big fierce animals are rare because of energy constraints, which is a consequence of the energy pyramid. Species living in extreme conditions are often also rare because of the narrow energy base such habitats can provide. Rarity, however, does not always equal non-importance; some big animals are not common but they have large and serious impact on the habitats where they live. Rare species contribute to ecological novelty in a disproportionate way, and they seem to be collaborating with each other. Another advantage of being rare is escaping the attention of natural enemies. Rare species also contribute to the stability of ecosystems.

Humans find rare organisms fascinating, and often value them very highly. About the reasons we can only speculate. The probable reason lies in our psychology: as Romans realised, “*varietas delectat*” – we find pleasure in variability – and we are bored by uniformity. Nature provides us with plenty of rare species, and encountering rare species make our lives entertaining, pleasurable, and in the end, special.