

Loss of diversity in the community of small mammals of Doñana National Park (SW Spain): another effect of the local climate change?

L. Javier Palomo¹, Sacramento Moreno², M. Carmen Fernández¹ & Simone Santoro^{2,3}

1) Universidad de Málaga, Departamento de Biología Animal, 29071 Málaga, España

2) Estación Biológica de Doñana (CSIC), Departamento de Etología y Conservación de la Diversidad, C/ Américo Vespucio 26, 41092 Sevilla, España

3) Universidad Pablo de Olavide, Departamento de Biología Molecular e Ingeniería Bioquímica, Sevilla, España

Doñana National Park is an important wetland located in the southwest Spain forming part of the Mediterranean Basin, a "biodiversity hotspot" especially vulnerable to climate change. In this study, we investigate changes in diversity and abundance occurred between 1978 and 2016 in the community of small mammals of Doñana and their relationship with local climate changes. Capture-mark-recapture methods were carried out for a total of 16 years, unevenly distributed over four decades. Our findings show a consistent loss of diversity and abundance decline in the community of small mammals. *Eliomys quercinus* and *Rattus rattus* have almost disappeared from the area and *Apodemus sylvaticus* has sharply reduced its abundance parallel to the progressive increase of *Mus spretus*. Such a process is worrying for conservation as small mammals represent, after rabbits, the most important prey for carnivores and raptors in Doñana. The detected changes could be at least partially explained by the progressive increase in local temperature observed during the study period. In line with this, the species that have suffered a greater decline are those of Eurasian origin and northern distribution as is the case for *E. quercinus* and *R. rattus* while the current dominant species, *M. spretus*, proceeds from Africa and has a Mediterranean distribution. A non-exclusive alternative is that the extreme rarefaction of rabbits may have caused a trophic cascade effect enhancing predation by carnivores and raptors towards gradually smaller species.