

Chapter 2

**FACTORS AFFECTING SMALL AND MIDDLE-SIZED
CARNIVORE OCCURRENCE AND ABUNDANCE IN
MEDITERRANEAN AGRICULTURAL LANDSCAPES:
CASE STUDIES IN SOUTHERN PORTUGAL**

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ABSTRACT

Carnivores have a key role in ecosystems and their populations are declining at an increasing rate. Habitat loss and degradation through agricultural practices are among the most serious menaces affecting carnivore survival. Agricultural landscapes are dominant in Western Europe and in several places worldwide are changing quickly into more intensive practices. Therefore, it is important to understand how small carnivore occurrence and abundance is affected by these changes in order to find ways to manage agricultural and grazing systems in a sustainable way, allowing both biodiversity and production to co-exist. We present three case studies in Natura 2000 areas, mainly covered by private agricultural land (livestock, cereal crops, oak, pine and eucalyptus plantations) in southern Portugal. In areas of dominant traditional agro-silvo-pastoral systems (montado) small and middle-sized carnivores tend to occur in a mosaic of montado and shrubs. We found that the occurrence of one of the forest species was positively related with the density of trees and shrubs, soil organic matter content, and Shannon's index of vegetation vertical diversity. The presence of livestock and extension of game-estate areas also seem to influence carnivore occurrence. In areas of extensive cereal crops, the presence of shrubs and age of forest plantations play an important positive role for the carnivore community. Mainly our results suggest that maintaining a sustainable mosaic embracing montado, shrubland and open land areas, may allow higher