geometry) as the distance between oaks to patch edge were calculated. The distance between each focal tree and the surrounding agricultural landscape (=landscape context) was also recorded, ranking from 0 to 2450m. Habitat quality was characterised by measuring the % dry matter content and C/N ratio of the sampled leaves. Mean abundance and richness of foliar oak galls and the percentage coverage of feeding traces were recorded for each studied tree. We show a clear effect of agricultural landscape on the oak gall community, distinct from edge effect, with higher foliar gall abundances in the proximity of the agricultural matrix. Habitat quality appears also as an important factor of the gall distribution in canopy. We discuss the relative importance of these spatial distribution factors and their links, as their potential implications for forest biodiversity management.

Symposium 6: Road ecology: improving connectivity

DETECTING VULNERABLE SPOTS FOR ECOLOGICAL CONNECTIVITY CAUSED BY MINOR ROAD NETWORK IN ALICANTE, SPAIN

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Applying land conservation planning allows to maintain and restore the ecological connections among natural remnants and protected areas in the territory. Roads increase the problem of habitat fragmentation, breaking large habitat areas into small, creating isolated habitat patches and decreasing connectivity in the territory. The aim of this work is the elaboration of ecological connectivity models for forest mammals in Alicante's province, using GIS. The method allows a connectivity diagnose of terrestrial landscape ecosystems, as well as the identification of vulnerable spots that have a critical importance for ecological connectivity. Application of connectivity models for the study of ecological processes and animal movements is an innovative tool of great utility. Connectivity models are based in the creation of a friction surface that indicates the relative cost of moving target species across the landscape. We identified the core areas of target species using potential distribution models and determined the main landscape factors that have more influence in the resistance to dispersion of forest mammals. With this information, we created a cost-distance surface and calculated the least-cost route between selected areas. Finally, we carried out an identification of landscape linkages and ecological corridors and its intersection with the minor road network.

Symposium 12: From abandoned farmland to self-sustaining forests: challenges and solutions

WHERE HAVE ALL THE FORESTS GONE, LONG TIME PASSING

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The paleopalinological diagrams produced in the past fifty years prove that the landscape of the Iberian Peninsula had a forest matrix during the major part of the Holocene. Forest cover regression is evident in NW Iberia pollen profiles since the IV mil. BC. Classical authors already indentify man's disturbance as the main driver of forest waning. A.X.P. Coutinho, a fundamental personage in the history of Portuguese botany and sylviculture, starts his degree thesis (1882) with the known F.R. Chateaubriand's quotation "Forests precede civilizations, and deserts follow them", affirming the thorny co-existence between forests and human land use. Historians generally relate forest cover decline with wood use and the expansion of arable land and animal

rearing. In Iberian Peninsula there is also a tendency to attribute a particular impact to the naval industry of the XV and XVI centuries. Based in a simple quantitative approach with data gathered in the first half of XX century, when an organic society (sensu E.A. Wrigley) prevailed in NE Portugal, I argue that nutrient mining in favor of arable soils nearby rural villages was the main driver of forest regression in the mountains of Northern Portugal.

Symposium 5: Landscape genetics

FOREST FRAGMENTATION AND WILDLIFE POPULATION CONNECTIVITY IN SOUTHERN PORTUGAL: A COMPARATIVE LANDSCAPE GENETICS APPROACH

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In the context of habitat fragmentation, it is increasingly recognized the importance of landscape genetics surveys of multiple species to assess how general versus taxon-specific are the influences of landscape features in the genetic structuring of populations, and infer the location and strength of corridors and barriers. A relevant application of research on genetic connectivity is the identification of corridors linking protected areas, since these are the most likely suitable habitat patches to persist into the future under environmental management policies. Here we present an ongoing comparative landscape genetics project studying four highly distinct forest-dwelling animal species in a area in southern Portugal containing three Natura 2000 sites of protected montado habitat, but undergoing significant habitat fragmentation elsewhere. Our goals are to investigate: 1) how habitat fragmentation and species' ecology combine to influence the population structure and connectivity of different species; 2) how can we use such data to preserve, restore or design ecological corridors of general importance for biodiversity conservation; 3) how well connected are the Natura 2000 study sites for the different species surveyed; and 4) the potential of comparative landscape genetics as an integrative approach in landscape ecology research and as a scientific tool in the management and conservation of communities and habitats.

Symposium 6: Road ecology: improving connectivity

INFLUENCE OF TRAFFIC NOISE ON VERTEBRATE CROSSING OF ROADS THROUGH UNDERPASSES

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Noise is a type of man-made disturbance that influences habitat use by vertebrates near roads and may reduce the effectiveness of the mitigation measures to alleviate population fragmentation. This study analyses the effects of noise on the use by vertebrates of 19 underpasses at a motorway. It employs generalized linear models to test the effect of three noise indicators, at the underpasses and in their vicinity, on the crossing frequency of eight animal species. The road noise indicators were obtained through modelling in accord with ISO 9613, such that the analyses employ data on time of day (diurnal/nocturnal) and height above the ground (10 or 40 cm) as appropriate for each species. The results show that the road crossings are subjected to high noise levels, averaging from 56.0±1.7 dB(A) within 200m of the road at night to 69.1±4.6 dB(A) around the