



BIOFRAG research topic: Modeling biodiversity and species distribution in relation to climate change in southern Spain

Background:

The aim of the Andalusia Biodiversity Project is to model the distribution of plants (threatened plants and habitats), animals (terrestrial vertebrates), and ecological processes (productivity and biomass quality) in Andalusia in a land-use and climatic change scenario.

Study area:

Andalusia province, southern Spain



Research questions:

Relation species occurrence/densities and environmental variables:

- Which environmental variables are determining the presence or absence of (certain) herpetological species?
- Is it possible to predict the viability of certain populations in relation to environmental and/or climate changes?
- Is it possible to suggest reasonable conservation measures to conserve vulnerable and/or endemic species?

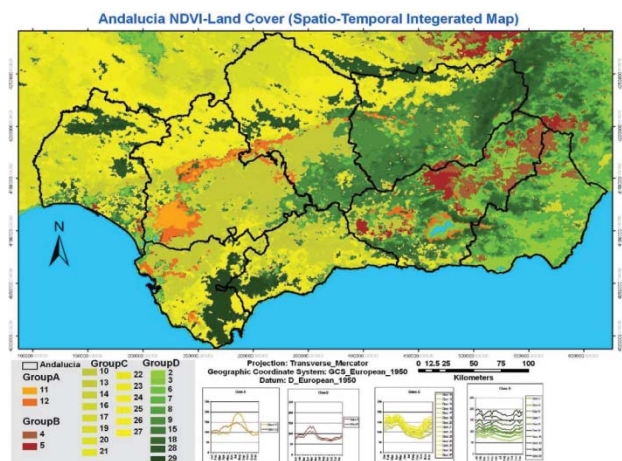
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Data:

Regarding amphibians and reptiles in Andalusia, the important species are those endemic (*Alytes dickhilleni*, *Salamandra salamandra longirostris*, *Algyroides marchi*), with a substantial part of their distribution in Andalusia (*Pelodytes ibericus*, *Discoglossus jeanneae*, *Triturus pygmaeus*, *Testudo graeca*, *Chamaeleo chamaeleon*, *Hemidactylus turcicus*, *Macroprotodon cucullatus*) or vulnerable (*Vipera latastei*). An extensive set of GPS-observation data on Andalusian amphibians is present, and the 10x10km species presence-absence data of whole Spain of all the amphibians and reptiles.



Methods:

The study area of the Andalusian project includes all Andalusia and also the Sierra de las Nieves Natural Park. In Spain there is experience with spatial modelling including downscaling, but not with small-scale models to be up-scaled later. Therefore, using Remote Sensing data to build biodiversity models at Andalusian scale, and to build models in Sierra de las Nieves, probably related to productivity, to be up-scaled to Andalusia, ITC and Spain might work together in these topics.



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