

National Ecological Network: the Vertebrates component

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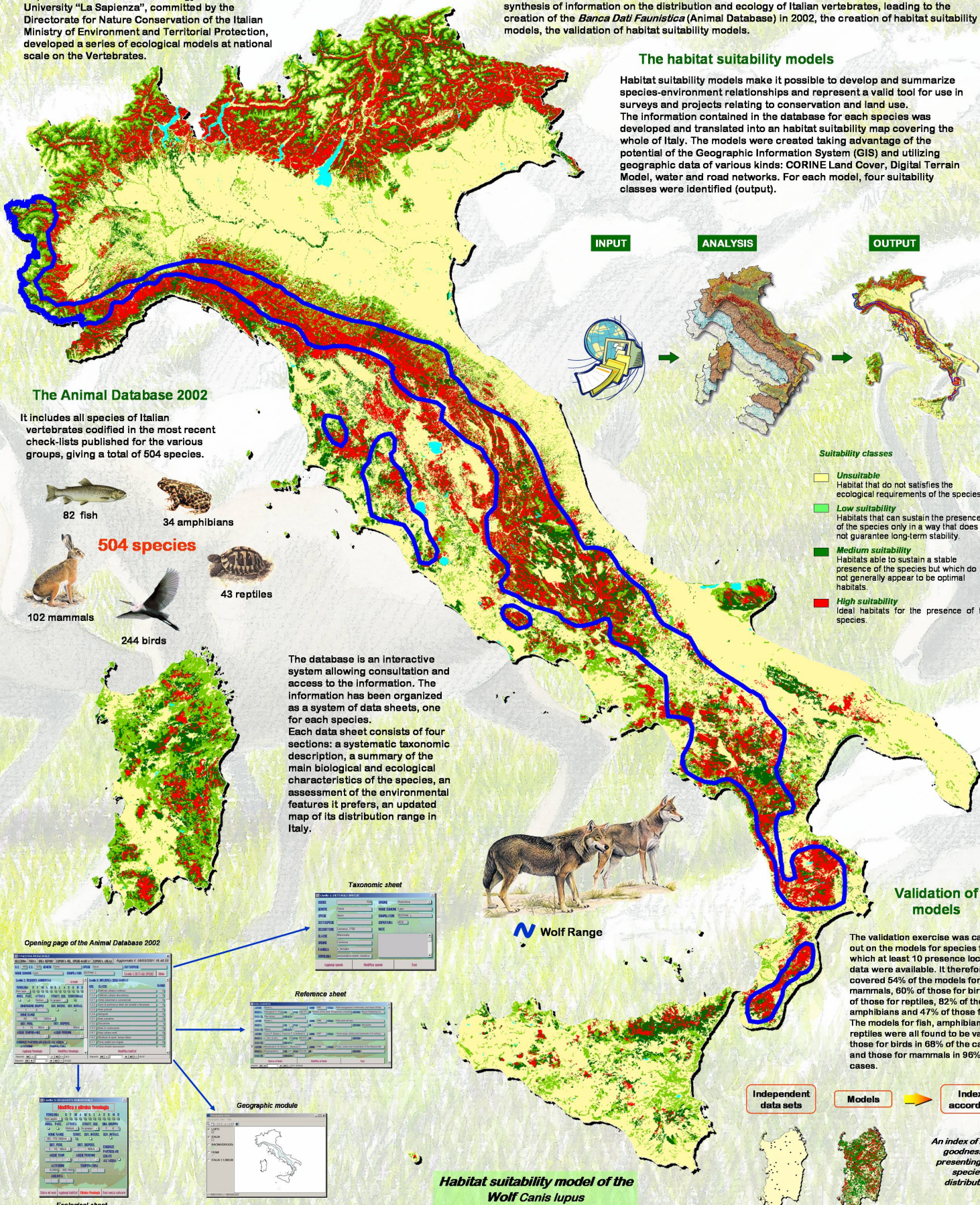
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Within the National Ecological Network Project, the Dept. of Animal and Human Biology of the Rome University “La Sapienza”, committed by the Directorate for Nature Conservation of the Italian Ministry of Environment and Territorial Protection, developed a series of ecological models at national scale on the Vertebrates.

Among other outputs, during the project implementation the following results were achieved : a synthesis of information on the distribution and ecology of Italian vertebrates, leading to the creation of the *Banca Dati Faunistica* (Animal Database) in 2002, the creation of habitat suitability models, the validation of habitat suitability models.

The habitat suitability models

Habitat suitability models make it possible to develop and summarize species-environment relationships and represent a valid tool for use in surveys and projects relating to conservation and land use. The information contained in the database for each species was developed and translated into an habitat suitability map covering the whole of Italy. The models were created taking advantage of the potential of the Geographic Information System (GIS) and utilizing geographic data of various kinds: CORINE Land Cover, Digital Terrain Model, water and road networks. For each model, four suitability classes were identified (output).



The Animal Database 2002

It includes all species of Italian vertebrates codified in the most recent check-lists published for the various groups, giving a total of 504 species.

- 82 fish
- 34 amphibians
- 504 species**
- 102 mammals
- 244 birds
- 43 reptiles

The database is an interactive system allowing consultation and access to the information. The information has been organized as a system of data sheets, one for each species. Each data sheet consists of four sections: a systematic taxonomic description, a summary of the main biological and ecological characteristics of the species, an assessment of the environmental features it prefers, an updated map of its distribution range in Italy.

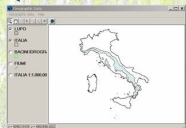
Taxonomic sheet



Reference sheet



Geographic module



Ecological sheet

Opening page of the Animal Database 2002



Wolf Range

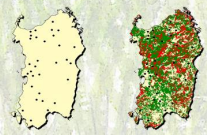
Validation of models

The validation exercise was carried out on the models for species for which at least 10 presence location data were available. It therefore covered 54% of the models for mammals, 60% of those for birds, 67% of those for reptiles, 82% of those for amphibians and 47% of those for fish. The models for fish, amphibians and reptiles were all found to be validated, those for birds in 68% of the cases and those for mammals in 96% of the cases.

Independent data sets

Models

Index of accordance



An index of model goodness in presenting true species distribution

Habitat suitability model of the Wolf *Canis lupus*