

The Italian Vertebrates: irreplaceability analysis

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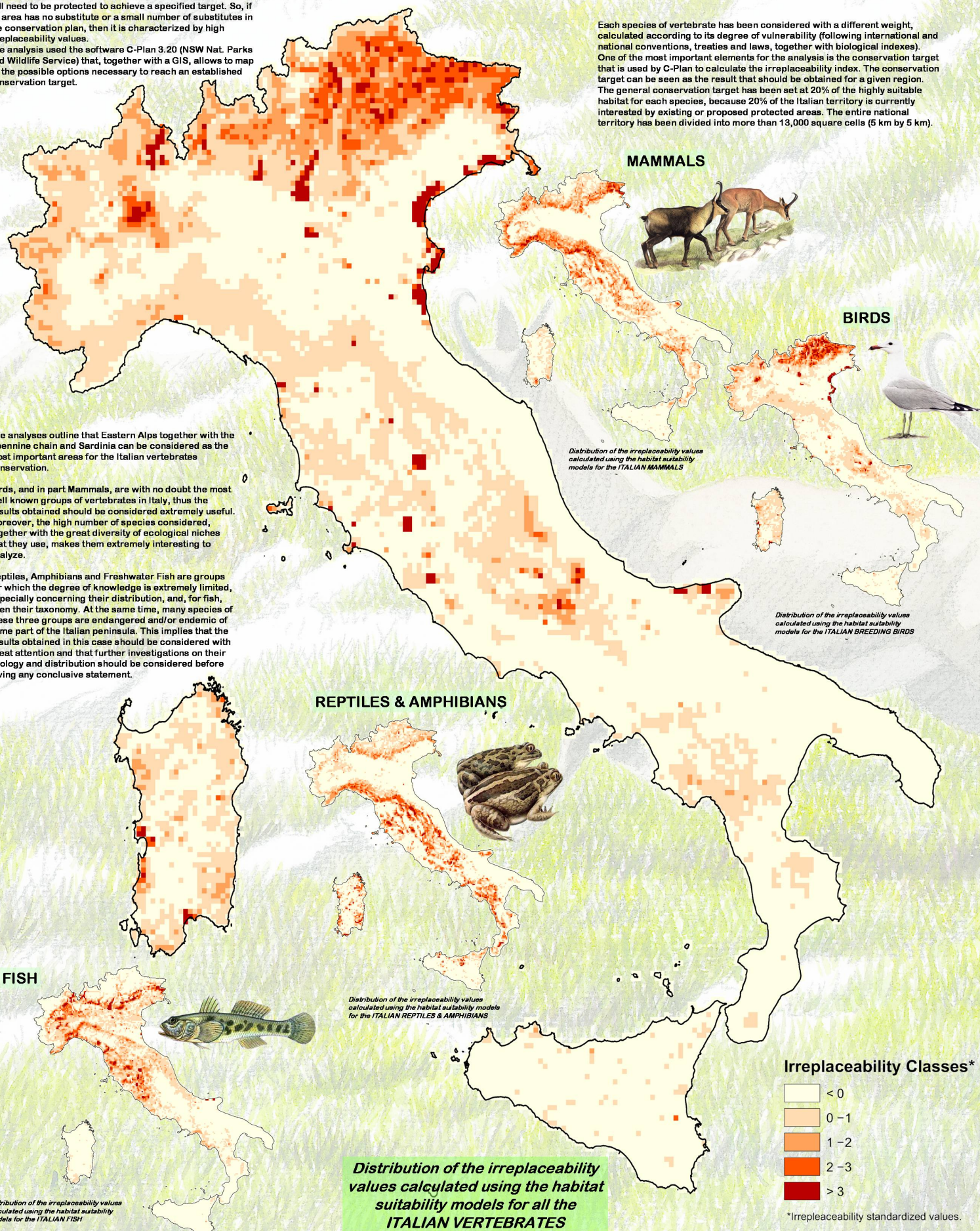
Irreplaceability is defined as the likelihood that a given site will need to be protected to achieve a specified target. So, if an area has no substitute or a small number of substitutes in the conservation plan, then it is characterized by high irreplaceability values.
 The analysis used the software C-Plan 3.20 (NSW Nat. Parks and Wildlife Service) that, together with a GIS, allows to map all the possible options necessary to reach an established conservation target.

Each species of vertebrate has been considered with a different weight, calculated according to its degree of vulnerability (following international and national conventions, treaties and laws, together with biological indexes). One of the most important elements for the analysis is the conservation target that is used by C-Plan to calculate the irreplaceability index. The conservation target can be seen as the result that should be obtained for a given region. The general conservation target has been set at 20% of the highly suitable habitat for each species, because 20% of the Italian territory is currently interested by existing or proposed protected areas. The entire national territory has been divided into more than 13,000 square cells (5 km by 5 km).

The analyses outline that Eastern Alps together with the Apennine chain and Sardinia can be considered as the most important areas for the Italian vertebrates conservation.

Birds, and in part Mammals, are with no doubt the most well known groups of vertebrates in Italy, thus the results obtained should be considered extremely useful. Moreover, the high number of species considered, together with the great diversity of ecological niches that they use, makes them extremely interesting to analyze.

Reptiles, Amphibians and Freshwater Fish are groups for which the degree of knowledge is extremely limited, especially concerning their distribution, and, for fish, even their taxonomy. At the same time, many species of these three groups are endangered and/or endemic of some part of the Italian peninsula. This implies that the results obtained in this case should be considered with great attention and that further investigations on their ecology and distribution should be considered before giving any conclusive statement.



MAMMALS



BIRDS



REPTILES & AMPHIBIANS



FISH



Irreplaceability Classes*

- < 0
- 0 – 1
- 1 – 2
- 2 – 3
- > 3

Distribution of the irreplaceability values calculated using the habitat suitability models for all the ITALIAN VERTEBRATES

Distribution of the irreplaceability values calculated using the habitat suitability models for the ITALIAN FISH

*Irreplaceability standardized values.