

Italian Vertebrates & Protected Areas: irreplaceability analysis

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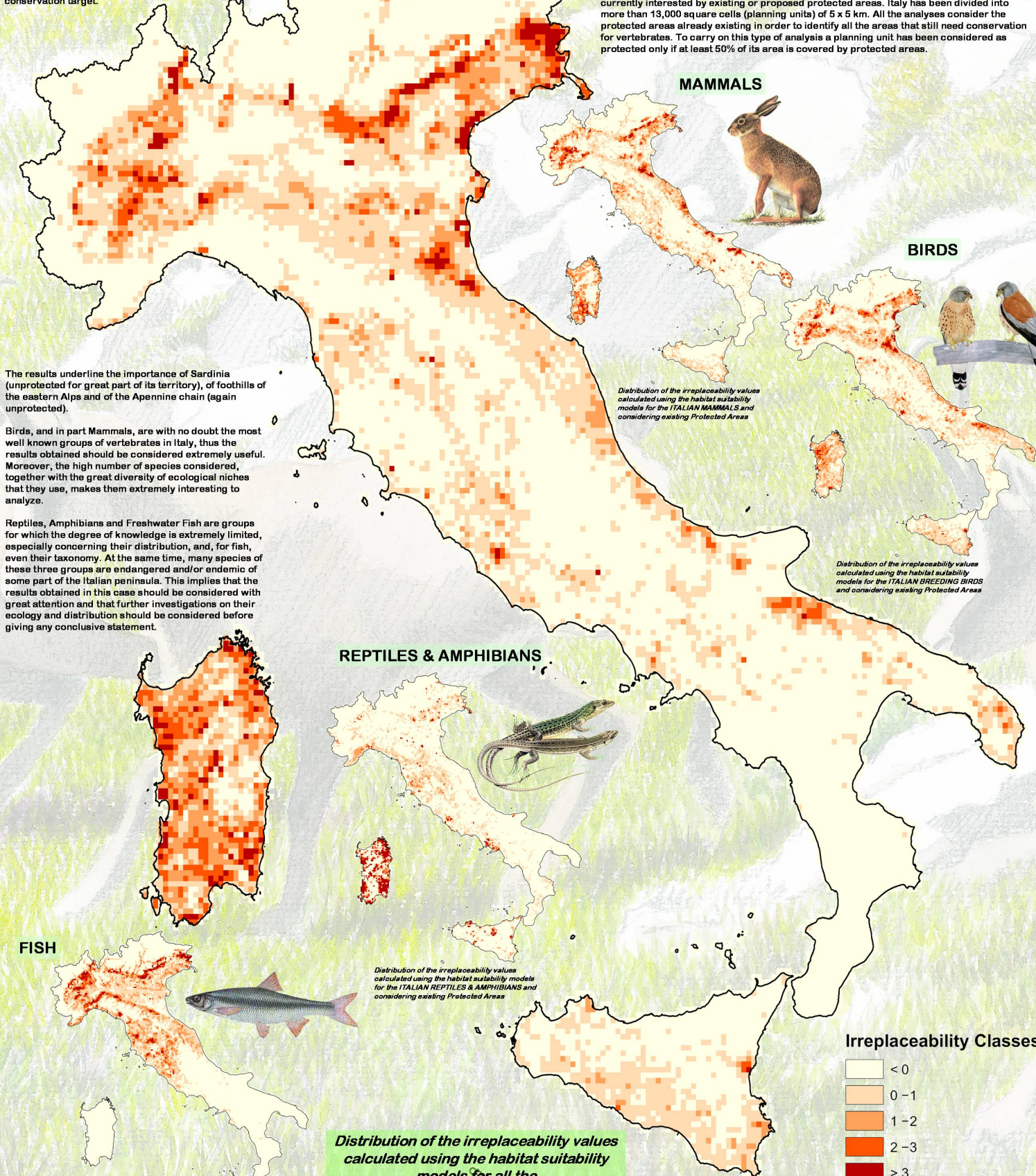
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Irreplaceability is defined as the likelihood that a given site will need to be protected to achieve a specified target. So, if an area has no substitute or a small number of substitutes in the conservation plan, then it is characterized by high irreplaceability 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, 20% being the Italian territory currently interested by existing or proposed protected areas. Italy has been divided into more than 13,000 square cells (planning units) of 5 x 5 km. All the analyses consider the protected areas already existing in order to identify all the areas that still need conservation for vertebrates. To carry on this type of analysis a planning unit has been considered as protected only if at least 50% of its area is covered by protected areas.



The results underline the importance of Sardinia (unprotected for great part of its territory), of foothills of the eastern Alps and of the Apennine chain (again unprotected).

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



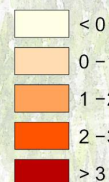
REPTILES & AMPHIBIANS



FISH



Irreplaceability Classes*



*Irreplaceability standardized values.

Distribution of the irreplaceability values calculated using the habitat suitability models for all the ITALIAN VERTEBRATES and considering existing Protected Areas

Distribution of the irreplaceability values calculated using the habitat suitability models for the ITALIAN FISH and considering existing Protected Areas

Distribution of the irreplaceability values calculated using the habitat suitability models for the ITALIAN MAMMALS and considering existing Protected Areas

Distribution of the irreplaceability values calculated using the habitat suitability models for the ITALIAN BREEDING BIRDS and considering existing Protected Areas

Distribution of the irreplaceability values calculated using the habitat suitability models for the ITALIAN REPTILES & AMPHIBIANS and considering existing Protected Areas