

Science for Environment Policy

New tool to identify best management plans for Natura 2000 sites

A new decision-making aid to identify the best type of management plan for Natura 2000 sites has been developed by researchers. Using extensive data on different facets of biodiversity and human impacts, the researchers created two indices to show where conservation measures need to be integrated with socio-economic development. This study used sites in Italy as a case study but the method is widely applicable to all Natura 2000 sites, the researchers stress.

Integrating biodiversity protection with sustainable socio-economic development is a key challenge for policymakers. The [Habitats Directive](#)¹ identifies management plans as potentially valuable tools to support the establishment of the necessary conservation measures. For this study, researchers developed a system using multi-criteria analysis to integrate measures of biodiversity and human activity and to aid decision makers in identifying the best types of management plans for different [Natura 2000](#) sites. They then applied the system to a case study of 97 sites in the Italian region of Umbria.

Using the standard data collected for every Natura 2000 site, the researchers asked a group of scientists and decision makers to identify 12 unique biodiversity indicators to characterise the specific nature of each site. These included measures such as the percentage land cover of different habitat types, the conservation status of the habitat types and the numbers of species of birds, mammals and other types of wildlife.

Once the 12 biodiversity indicators were assigned a group of scientists were asked to rank them in order of importance. The indicator scores for each site were then weighted according to the rank they were given, and summed to produce a single biodiversity index score.

To assess human activities on the sites, the researchers again used standard Natura 2000 data which includes information on agriculture, forestry, fishing, mining, urbanisation and tourism, amongst other factors. An index for human activity was then produced using the percentage surface area of each activity multiplied by a score for intensity and one for the environmental influence of each activity.

The researchers were then able to put the sites into four groups. The first group, which made up 53% of the area studied, had higher than average biodiversity combined with higher than average human activity index scores. In other words, sites that are rich in biodiversity but also endure high impacts of human activities. The researchers identified this group as the highest priority for a management plan that implemented conservation measures but also allowed for sustainable socio-economic development.

The second group had high biodiversity but low human activity. Although less of a priority than the first group, integrated management plans may also be needed for these sites. The third group had low biodiversity and low human activity but the sites in the worst condition are the fourth group; those with low biodiversity and high human activity. In both the third and fourth groups conservation measures may be sufficient without a complex plan to integrate economic development, the researchers say.

The researchers conclude that using this system can aid the decision-making process by helping to identify which sites need complex management plans that integrate biodiversity and socio-economic development.



17 July 2014

Issue 381

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Source: Cortina, C. & Boggia, A. (2014). Development of policies for Natura 2000 sites: A multi-criteria approach to support decision makers. *Journal of Environmental Management*. 141: 138-145. DOI: 10.1016/j.jenvman.2014.02.039.

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To cite this article/service: "Science for Environment Policy": European Commission DG Environment News Alert Service, edited by SCU, The University of the West of England, Bristol.

1. http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm