



New holistic method for assessing Natura 2000 landscapes

High quality landscape assessments of areas protected under the Natura 2000 network are critical for effective long-term management plans. In a recent study, scientists have presented a integrated assessment of a Natura 2000 site in Sicily, Italy, which not only considers preservation of environmental features, as required by Natura 2000, but also human features, such as places of historical interest or industrial activity.

Natura 2000 is an EU-wide network of Areas for Special Protection (SPA) and Special Areas for Conservation (SAC) designed to protect the species and habitats most threatened by human activity. Together, 5000 SPAs and 22,000 SACs cover more than 18% of the terrestrial area of Europe. An accurate assessment of the physical as well as the environmental characteristics of the landscape allows authorities to devise the most appropriate management plan for how the site will be used in the future and how biodiversity will be protected. Although Natura 2000 guidelines state the need to characterise the landscape in management plans, the EU allows Member States to decide independently on the most appropriate way to do so. For example, in addition to landscape features beneficial to biodiversity, the guidelines of Sicily's Natura 2000 management plans place great importance on socio-economic, cultural and architectural issues. Identifying human features of a landscape could also help Natura 2000 managers understand the direct or indirect impacts of these features on the environment, such as the effects of farming, industry or tourism. For instance, greenhouses in this region have covered natural areas previously available to wildlife.

The new study is the first time a method specifically designed to assess landscape characteristics has been used to construct a Natura 2000 management plan that fully meets the ecological requirements. The researchers carried out a landscape assessment of a Natura 2000 region in Southern Sicily, Italy, based on European Council for the Village and Small Town (ECOVAST)¹ criteria. This method attaches equal importance to the preservation of human elements not covered by Natura 2000, such as cultural or archaeological pieces of interest.

The researchers carried out a preliminary assessment of historical land use, urban expansion and archaeological features based on detailed aerial photographs and maps. They then conducted a series of visual surveys in the field over a four-month period (January to April 2008). The case study area was divided up into 15 'landscape units'. Each one was assigned a rating from 'low' to 'dominating', based on the occurrence of each of the following: rocks, climate, soil, landforms, land cover (i.e. vegetation, flora and fauna), agriculture and forestry, houses and settlements, other human-made features, such as industrial buildings and features of historic interest (i.e. castles or ruins).

The researchers also evaluated the 'critical status' of each landscape unit, i.e. the extent of biodiversity loss and the main features in need of conservation. The scientists found that intensive cultivation of fertile plains and heavy urbanisation along the coastline had depleted groundwater and caused coastal erosion, water pollution, drying of wetlands and loss of biodiversity across the case study area. Ancient Greek and Roman ruins dotted the landscape, alongside archaeological remains dating back to the Middle Ages, highlighting the great historical significance of the region.

The scientists drew up a detailed management plan based on the individual landscape unit assessments and through consultation with environmental, economic, social and agricultural specialists. Proposed actions included the creation of new habitat (i.e. wetlands and hedgerows), restoration of habitat to encourage re-introduction of species, and local education programmes to promote sustainable agriculture and tourism. These were introduced in varying degrees in each landscape unit, according to the individual assessments.

The method is a robust, easy to implement tool for drafting management plans under Natura 2000, say the researchers, which fulfils the ecological requirements of the Habitats and Birds Directives, the legal cornerstones of Natura 2000. The method could offer some consistency in the methods used for landscape assessment across Europe, further strengthening the Natura network.

1. See: www.ecovast.org

Source: Russo, P., Carullo, L., Riguccio, L. and Tomaselli, G. (2011). Identification of landscapes for drafting Natura 2000 network Management Plans: A case study in Sicily. *Landscape and Urban Planning*. 101:228-243.

Contact: patrusso@unict.it **Theme(s):** Biodiversity, Land use