

Science for Environment Policy

Natura 2000 sites well connected across borders in Germany, Italy and Spain

Connectivity between protected areas is vital for safeguarding many animals and plants. New research has shown that Natura 2000 sites are well connected across provincial borders in Germany, Italy and Spain. This is the result of strong coordination from central governments combined with good regional cooperation, the study's authors conclude.

Connectivity between areas is a key quality of nature reserve networks, because many [species](#) need to migrate and dispersal between areas is important to prevent inbreeding. However, ensuring connectivity across administrative borders may be difficult as different organisations will be responsible for conservation practices on either side.

In this study, researchers examined connectivity of sites forming part of the EU's Natura 2000¹ network, designed to protect threatened species and habitats across Europe, across both internal and international borders. The study focused on four countries: Austria, Germany, Italy and Spain. All four countries have internal provinces with strong legislative powers, i.e. federal states in Austria and Germany, and autonomous regions in Italy and Spain.

The researchers examined spatial connectivity based on the locations of sites using a grid of 1 km squares. They calculated the proportion of each grid square that contained Natura 2000 sites on both sides of the border.

The results show that spatial connectivity was high in Germany, Italy and Spain: on average, over 75% of grid squares that contained Natura 2000 sites contained sites on both sides of the internal borders. The connectivity was greater across internal borders than across national borders. This is likely to be the result of the strong coordination role of the central governments and regional cooperation in these countries, the researchers say.

In Germany, for example, although federal states initially independently selected Natura 2000 sites, a national agency then carried out a further analysis to identify gaps and suggest improvements. A similar system exists in Italy where the Ministry for Environment assesses regional proposals for coherence. In Spain, a Commission for Natural Heritage and Biodiversity has been set up to ensure coordination between autonomous regions and central government.

In contrast, spatial connectivity was significantly lower in Austria and was equally poor across internal and national borders. The authors of the study speculate that this may be because regional authorities are solely responsible for designating Natura sites 2000 in Austria, with no coordination from central government or standardised guidelines. They also highlight the fact that the total area of Natura 2000 sites in Austria had remained the same since the start of Natura 2000 while it had significantly increased in the other countries studied.



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1. <http://www.natura.org/>