



Case Study 2

Analysis of transboundary water ecosystems, Green and Blue Infrastructures in the Intercontinental Biosphere Reserve of the Mediterranean (IBRM): Andalusia (Spain) – Morocco



Protecting areas to protect biodiversity:

The IBRM is home to several remarkable protected sites, high biodiversity richness and an important cultural heritage. However, pressures from human activities in the area are threatening these distinct values. Our aim is to use diverse data plus stakeholder input to understand the social and ecological system and design a multifunctional network of areas – that allow conservation, exploitation and restoration – and identify ideal sites for restoring degraded freshwater, coastal and marine ecosystems.

Where and what are the challenges?

The case study encompasses the IBRM in Andalusia (Spain) – Morocco and its area of influence. The reserve spans over two continents, Europe and Africa, and the marine area of the Strait of Gibraltar, and includes river basins, coastal, and marine areas. Agriculture, livestock, fisheries, and tourism drive the local economy, all of which are highly dependent on terrestrial and aquatic resources. The aquatic ecosystems provide a vital range of provisioning goods (such as fish), regulation and maintenance services that sustain human well-being, as well as important cultural sites.

What was done?

In collaboration with regional and local governments of Andalusia (Spain) and Kingdom of Morocco, we applied the AQUACROSS Assessment Framework to identify the most effective and efficient network of multi-purpose protected areas (also known as Green and Blue Infrastructure). This included:

- Using satellite and local data to analyse regional activities, pressures, ecosystem condition, biodiversity, and key aquatic ecosystem services;
- Understanding stakeholder objectives (including economic objectives) for the IBRM to identify synergies, conflicts, and opportunities for improvement;
- Using models to identify the best location for protected and semi-protected areas, i.e where biodiversity is high or can be cheaply restored, whilst still allowing human activities (such as

fishing or recreations) in neighbouring or other areas;

- Co-creation: local stakeholders reviewed and contributed at two rounds of workshops held in Tarifa (Spain, northern section) and Tangier (Morocco, southern section)

Local recommendations:

We identified priority areas that allow conserving biodiversity, maintaining ecosystem services capacity, and restoring degraded ecosystems, while minimising costs. The results suggest that using ecosystem-based management restoration measures when designing Green and Blue Infrastructure may increase protected area coverage, while improving connections between protected areas.

General lessons learned for managing biodiversity:

Green and Blue Infrastructure combines in one single solution an ecosystem-based management outcome that balances conservation, restoration and exploitation objectives. The Green and Blue Infrastructure multi-zoning approach conserves ecosystems and biodiversity as well as human well-being, while minimising the potential conflicts between conservation and exploitation goals.

Local impact:

Local policymakers in Andalusia (REDIAM - Environmental Information Network of Andalusia, Regional Ministry of Environment and Spatial Planning of Andalusia), Spain and in Morocco (the Regional Observatory for Environment and Sustainable Development Tangier-Tetouan-Al Hoceima) highly valued the analytical cartography, the spatial data and the storytelling tool produced in AQUACROSS. Indeed, REDIAM report that they will deploy the methodology, “to estimate ecosystem condition of habitats and a network of multifunctional and interconnected areas (Green and Blue Infrastructure) not only in the case study area but in other areas in Andalusia”.

Learn more about Case Study 2 at ibrm.aquacross.eu or the AQUACROSS Information Platform

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