ETC/BD Technical paper 3/2021: Protected area management in the EU - Supporting the advancement of the Trans-European Nature Network

ANNEX II: Case studies

TABLE OF CONTENTS

Designation Procedures

AUSTRIA

Großes Walsertal Biosphere Reserve

The UNESCO Biosphere Reserve Großes Walsertal, founded in 2000, is located in a side valley in the south of Vorarlberg and covers an area of around 19,200 hectares. The area comprises six communities with a total of around 3,420 inhabitants. Around 180 farms operate within the biosphere reserve, of which approx. 42 % are organic farms.

The Valley Großes Walsertal in Vorarlberg/Austria with the villages "Sonntag" and "Fontaenella"; seen from the mountain "Hoher Fraßen". © gsigsi

In accordance with the guiding principle, the Biosphere Park sees itself as a source of impetus for sustainable development and supports the local population in many matters. The main concern is the preservation of an intact natural landscape as an essential basis for the further development of the valley into a sustainable living space. In the mission statement, principles and development goals on the subjects of agriculture and beekeeping, forestry, hunting and fishing, customs and culture, training and further education, "People in the community", people in need of care and assistance, health; Leisure, sport and tourism, trade, trade and services, energy and the environment, settlement development and public and private transport are explained.

Source: https://www.grosseswalsertal.at

Wienerwald Biosphere Reserve

The UNESCO Biosphere Reserve Wienerwald was founded in 2005. This standing protects the great variety of natural and cultural elements that make this region so unique and valuable. The Wienerwald BR covers an area of 105,645 ha and extends across 51 communities in Lower Austria and seven municipal districts in Vienna. Some 815,000 people live in this region. The uniqueness of this region is characterised by the diversity of nature, culture and sustainable management on the margins of the city of Vienna – the only biosphere reserve in Europe part of which is located in a megacity with millions of inhabitants. Apart from the city of Vienna and concomitant suburbanisation, the region is characterised by a few small towns with more than 20,000 inhabitants and numerous small villages. It should be noted that 60 % of communities have less than 5,000 inhabitants. Together with local partners and authorities, the states of Lower Austria and Vienna develop a model region for sustainability to address the challenges of the 21st century.

View on the Viennese Forest in the West of the city. © Wikimedia (CC BY-SA 3.0)

The Wienerwald is the largest contiguous deciduous beech woodland in Central Europe.

Source: https://www.bpww.at/en

UNESCO World Heritage site "Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe"

Primeval Beech Forests of the Carpathians and Other Regions of Europe: Kalkalpen © Sieghartsleitner Franz/NATIONALP

The UNESCO World Heritage site is a transboundary property, that stretches over 12 countries involving Albania, Austria, Belgium, Bulgaria, Croatia, Germany, Italy, Romania, Slovakia, Slovenia, Spain, and Ukraine. Founded in 2007 and extended both in 2011 and 2017, the property covers an area of 92,023 hectares with a buffer zone of 253,815 hectares.

The site comprises outstanding examples of the evolutionary and developmental processes of beech forests since the last glacial period.

The site is made up of a total of 82 component parts where the individual demarcations have been chosen so as to guarantee outstanding universal value, maximum integrity, and coherent, sufficiently sized forests. The selected boundaries reflect the ecological situation (location of primeval beech forest without human forest management), the spatial responsibility of the management organization in place (National Park, Strict Forest Reserve), local and regional stakeholders (landowners, neighbouring communities, responsible authorities and ministries) and legal constrains (status of strict protection has to be guaranteed). Existing primeval forest relics of the protected areas have been included. Additional protection and ecological exchange is ensured by wooded buffer zones. All selected buffer zones are located within the borders of the protected areas and are therefore managed by the same institutions as the component parts. This ensures sufficient long term protection for the component parts, as well as for their buffer zones.

Source: https://whc.unesco.org/en/list/1133

DENMARK

Wheat harvest in Denmark
© Wikimedia (CC BY-SA 2.0)

Land use lobby exerts pressure on protected area designation

In Denmark, agriculture and forestry occupy approximately 75 % of the land area. NGOs argue that lobbying and the threat of potential economic losses to these sectors play a central role in the decision-making process on the designation of terrestrial protected areas and their level of protection.

Logging operation
© mazsoka, Pixabay

Few high levels of protection on private forest land

Government officials point to a slight increase in strictly protected areas on private lands through the purchase of private nature trusts and private forests set aside as 'untouched forests' under a small government scheme. However, NGOs argue that only about 140 hectares of private forests are designated as pristine each year, and powerful sectors oppose the restrictions and/or demand high compensation when protection limits their commercial activities (government compensation is about EUR 20,000 per hectare). Consequently, initiatives to increase the level of protection on private lands are largely ignored.

Fishing Trawler © Ed Dunens (CC-BY-2.0.)

Patchy protection in small marine protected areas

Similarly, in the marine environment, NGOs argue that the generally small size of the MPAs hampers effective control and enforcement of fisheries restrictions. Furthermore, ecological integrity is not a parameter for the designation of marine sites, but only the protection status of the habitats within. The Danish government conducted side-scan and multibeam mapping of the seabed in Natura 2000 sites to determine the exact location of each habitat type. Danish Natura 2000 sites now protect habitat types listed in the annexes of the Habitats Directive, but only at their exact location while their immediate periphery remains unprotected from harmful activities. In the case of reefs, a buffer zone of only 240m was implemented around the actual reef structures while any form of fishing is still allowed in the rest of the area.

GERMANY

Elbe-Brandenburg River Landscape Biosphere Reserve

The Elbe at high water in the Elbe River Landscape Biosphere Reserve © Wikimedia (CC BY-SA 4.0)

The **Elbe River Landscape-Brandenburg Biosphere Reserve** is a biosphere reserve in the federal state of Brandenburg and part of the transnational UNESCO Elbe River Landscape Biosphere Reserve. It has a size of 533 km².

The River Elbe landscape is one of the last remaining near-natural fluvial topographies in Central Europe. Some 400 kilometres of the River extending across five German states along the Elbe River floodplain were designated a UNESCO Biosphere Reserve in 1998, from Torgau on the border of Saxony to south of Lauenburg.

The Brandenburg section extends over an area of 53,000 hectares from the mouth of the River Havel to Dömitz and boasts one of the most prized and beautiful landscapes on the River Elbe. Index species characteristic of the region include the white stork, Elbe beaver, sea eagle and fire-bellied toad. Biosphere Reserves are model regions for sustainable development. The main aim of the Elbe River Landscape Biosphere Reserve is to protect the centuries-old cultivated landscape with its characteristic animal and plant species with a view to encouraging sustainable use. The example of the UNESCO-Biosphere Reserve Elbe-Brandenburg River Land-scape also shows concrete fields of action concerning climate change in protected areas. It identifies sensible approaches to resolving existing conflicts of interest in the areas of nature conservation, climate change and flood protection.

Sources:

- http://www.natur-schau-spiel.com/en/natur/natural-landscapes/elbe-brandenburg-river-landscape-biosphere-reserve.html Nature-Based Flood Risk Management on Private Land (https://library.oapen.org/bitstream/handle/20.500.12657/22861/1007300.pdf?seque#page=171)

GREECE

Designating Gyaros Marine Protected Area

Gyaros island, Cyclades, Greece. © G. Stefanou/WWF Greece

Through the Life project LIFE12 NAT/GR/000688, WWF-Greece and partners launched an approach for establishing a protected area at the Natura 2000 site of Gyaros, and a former exile site, an uninhabited island in the Cyclades that hosts one of the most important breeding nuclei of the endangered Mediterranean monk seal (*Monachus monachus*) with an observed pupping rate of some ten births per year.

In the island the species has been observed with its 'original' behaviour occupying open beaches for resting and reproducing. Gyaros is estimated to have a Mediterranean monk seal population of approximately 70 individuals, excluding pups, which is approximately 12 % of the world population of the species. The approach for establishing the protected area is based on the principles of Ecosystem Based management, Marine Spatial Planning and Co-management. A key element of the Gyaros initiative has been the active and full involvement of key national and local stakeholders in the process of the MPA design. The Gyaros Consortium of Stakeholders was established together with policy makers, local government, scientists, conservationists and local users, including fishers. Its first task was to develop a common vision for the new MPA. Following open and transparent deliberations, in which all decisions were unanimously agreed, the Consortium also managed to formulate a comprehensive ecosystem-based management plan. In addition, an innovative surveillance and patrolling system that uses a wide-range marine radar, a high definition infrared camera, and a drone, has been set up and endorsed by the relevant ministers to protect the MPA from illegal activities.

In July 2019 the Greek Ministry of the Environment adopted the proposal for the area's zoning and conservation measures, as a first step of formally designating the Gyaros MPA.

Source: https://webgate.ec.europa.eu/life/publicWebsite/project/details/3888
https://d2ouvy59p0dg6k.cloudfront.net/downloads/towards_2020_scorecard_27_nov_low.pdf

SLOVAKIA

Poľana Biosphere Reserve

View of the mosaic structure of the Poľana Biosphere Reserve © Z. Izakovičová

The UNESCO Biosphere Reserve Poľana was founded in 1990. Its area reaches extents to 20 360 ha. The basic goal of BR Poľana is to promote the harmonious integration of people and nature through participatory dialogue, knowledge sharing, increasing employment as well as through improving the well-being of local residents and visitors. The management of the area is provided by the Coordination Board - the managing body of the biosphere reserve, which consists of representatives of various stakeholder groups. Poľana is the highest and best-preserved volcanic mountain range in Slovakia, which has a long-term volcanic activity since 15 mil. years. It is characterised by a common occurrence of both thermophilous and mountain plant species. Forest covers almost 85 % of the Poľana BR. There are about 1 220 species of higher plants in BR Poľana, of which 80 are protected, 390 fungi, 160 lichens, 130 bryophytes. The area of the Poľana biosphere reserve is one of the least urbanised protected areas in Slovakia. Mosaics of small-block strip ploughshares, alternating with meadows and pastures in the former fields, bridged by borders, sometimes create a historically rare structure of the agricultural landscape. Local farmers still use horses and traditional

agricultural tools for agricultural work. The unique character of the landscape is completed by traditional wooden houses, haystacks, potato cellars, wooden painted crosses and preserved traditions of folk art.

Source: https://whc.unesco.org/en/list/1133 and https://chkopolana.sopsr.sk

Additional best practices

	Short description
 French Guiana © Tylda (CC BY-SA 3.0)	**Regional analysis for the designation of the French marine protected areas** The French Marine Protected Areas Agency is a public administrative body mandated to establish a network of marine protected areas in French waters. This is done through regional strategic analyses carried out in the waters under the jurisdiction of the ultra-marine territorial units to locate areas of high importance and propose a strategy for the establishment of MPAs. French Guiana provides one example where there have been analyses on ecosystems and marine heritage, use and pressures on the marine environment as a basis for designation of marine protected areas. Link: http://www.guyane.developpement-durable.gouv.fr/IMG/pdf/ASR_Guyane_volet_2_enjeux.pdf
 Mont Aigoual within the Cévennes National Park © RobinL (CC BY-SA 2.5)	**Patrimonial diagnostics by the UMS PatriNat (MNHN/OFB) for the French territory** In support of the implementation of the new French national strategy for protected areas for 2030 published by the Ministry of Ecological Transition in January 2021, the UMS PatriNat has produced a new diagnosis of the protected area network with the aim of assessing the representativeness of the network in terms of its consistency with the distribution of heritage species and habitats. The aim is to provide a common basis for assessing biodiversity issues with regard to the coverage of the current network of protected areas. Link: https://inpn.mnhn.fr/actualites/lire/12541/diagnostic-patrimonial-du-reseau-d-aires-protegees-metropolitain-terrestre
 Loggerhead sea turtle (*Caretta caretta*) © Pixabay (CC BY-SA 3.0)	**Protecting marine ecosystems** The project is one of the largest European initiatives in regard to marine environment conservation and awareness. It was carried out between 2009 and 2014 with a budget of 15.4 million, and was co-financed, 50 %, by the European Commission. From its initial approach, INDEMARES addresses 4 main objectives 1. Complete the identification of the marine Natura 2000 network in Spain. 2. Promote the participation of all the stakeholders involved in the research, conservation and management of the sea and its resources, and involve sea users in the project. 3. Provide management and monitoring guidelines for the proposed sites. 4. Raise public awareness about the importance of conservation and the sustainable use of marine biodiversity. Thus, over six years, almost 130 oceanographic surveys were carried out and 10 relevant and previously identified areas were studied. Link: https://intemares.es/en/node/693

Connectivity

AUSTRIA

DANUBEPARKS

View of the free-flowing Danube section in the "Wachau" © David Paternoster

The DANUBEPARKS Association is the platform for coordinated and extensive collaboration among the various administrations of the Danube Protected Areas. Building on existing transnational cooperation and successful Danube-wide joint initiatives over the last years, the Danube Protected Areas have developed a strong and enriching partnership. The non-profit DANUBEPARKS Association was founded in 2014.

The Danube River Network of Protected Areas brings together national and nature parks, biosphere and nature reserves from nearly all the Danube countries, including Romania, Moldova, Bulgaria, Serbia, Croatia, Hungary, Slovakia, Austria, and Germany. The mission of the DANUBEPARKS Association is to preserve, develop and restore the Danube River, its main tributaries, and surrounding wetlands. As a cohesive ecosystem, it should be an inspiring lifeline for all the inhabitants of this European macroregion.

The DANUBEPARKS secretariat serves as a hub for coordination, communication and representation, advocating tirelessly for nature conservation along the Danube. The aim of transnational cooperation is to increase both the number and effectiveness of individual Danube Protected Area projects and programmes.

Source: https://www.danubeparks.org

GERMANY

Schorfheide-Chorin Biosphere Reserve

The UNESCO Biosphere Reserve Schorfheide-Chorin was established in the state of Brandenburg in 1990. It covers 1291 km² and is located in the districts of Uckermark, Barnim, Märkisch-Oderland and Oberhavel. The Plagefenn reserve is located in the biosphere reserve as a special nature conservation area. Since 2011, part of the reserve, the Grumsiner Forst, has been on the UNESCO World Natural Heritage List. Accortding to expert judgement, this biosphere reserve does a very good job of ensuring connectivity within its boundaries.

Moor in the Schorfheide-Chorin Biosphere Reserve © Wiki Commons (GFDL 1.2)

The Schorfheide-Chorin Biosphere Reserve is a cultural landscape rich in water bodies. The quiet, and still comparatively sparsely populated land is the habitat of many endangered animal and plant species that need undisturbed habitats. White-tailed, osprey and lesser spotted eagle, crane and black stork breed in the near-natural forests. Beavers and otters are widespread throughout the protected area. In addition to the Schorfheide with its pine forests and ancient hute oaks, the biosphere reserve is home to large unfragmented lowland beech forests. A good 10 percent of the reserve area is covered by partially renaturalised, partially original fens. Particularly important for balancing the interests of people and nature is the promotion of sustainable economic development in the area. Since 1998, the Schorfheide-Chorin biosphere reserve's certification mark has been awarded to businesses that work in accordance with the biosphere reserve's goals and are committed to regional and sustainable management.

Since 2017, the programme 'Partner Biosphere Reserve Schorfheide-Chorin' has also existed, which awards tourism businesses within the framework of the nationwide standards of the National Natural Landscapes.

Source: https://www.schorfheide-chorin-biosphaerenreservat.de

GREECE

The Regional Assessment of the Balkan Mediterranean Wetlands: spatial extent, connectivity, indication of priorities conservation and restoration

Saltpan Aigiou, Greece. © Photo Archive EKBY / Lambros Logothetis

The INTERREG project Balkan-Mediterranean WetMainAreas aims to assess BalkanMed wetland connectivity beyond the boundaries of protected areas and national borders, in order to improve knowledge on ecological connectivity and transnational ecosystems' integration in the BalkanMed territory; and to support policy and action plans by integrating scientific knowledge into guidance documents, available to everybody and thus improve the capacity of authorities, spatial planners, and developers to take informed decisions and to cooperate towards ecosystem integration and sustainability. Greek Biotope Wetland Centre led the work for assessing and mapping structural connectivity of areas favourable for biodiversity indicating priorities for conservation and restoration. Connectivity mapping layers for Greece, as well as for the other Balkan Med countries, namely Albania, Bulgaria, North Macedonia, Cyprus, are accessible via the project's geoportal (https://wetmainareas.com/). Connectivity results for Greece showed that approximately 20 % of the Greek continental territory represent connected areas favourable for biodiversity outside the Natura 2000 network (data under publication). These areas are intact natural areas that can be integrated, as Other effective area-based conservation measures (OECM). The connectivity assessment results have been disseminated in policy
makers, responsible authorities and researchers, via two Living Labs, one held in May 2020 and the second in May 2021. Their integration in management plans or designation processes have not been initiated yet.

Source: https://wetmainareas.com

Mapping of structural connectivity in Greece and beyond

Haliacmon (Aliakmonas) © Wikiwand (CC BY-SA 4.0)

While there is no centralised monitoring system in place for connectivity in Greece, one monitoring system is provided by the Greek Biotope Wetland Centre (EKBY). In the context of the WetMainAreas project of the Transnational Cooperation Program INTERREG Balkan-Mediterranean, EKBY has recently assessed and mapped the structural connectivity of areas favourable for biodiversity. Connectivity mapping layers for Greece as well as for the other Balkan Mediterranean countries, namely Albania, Bulgaria, North Macedonia and Cyprus are accessible via the project's geoportal. The connectivity assessment and mapping followed a landscape-level methodological approach using Earth Observation (EO) mapping products and EU/national geospatial datasets and applying a morphological spatial pattern analysis and GIS modelling techniques. The different protected area zoning (IUCN management categories which apply at nationally designated areas) are considered as a human/instrumental response to safeguard biodiversity and maintain natural ecosystems in good condition. The structural connectivity analysis resulted in landscape patterns of well-connected, protected or unprotected areas favourable for biodiversity.

Connectivity results for Greece showed that approximately 20 % of the Greek continental territory represents connected areas favourable for biodiversity outside the Natura 2000 network (data under publication). These areas are intact natural areas that could be integrated, as Other effective area-based conservation measures (OECMs).

More on the methodological approach can be found in the following articles:

- https://doi.org/10.3897/oneeco.4.e32704
- https://link.springer.com/chapter/10.1007%2F978-3-030-28191-5_27

NETHERLANDS

Defragmentation programme province of Gelderland

Ecoduct Wolfheze, Gelderland.
© Theo van der Sluis

In 2005, The Netherlands launched the multiannual Defragmentation Plan (MJPO), a national programme aimed at solving the fragmentation of protected nature areas in the Netherlands due to the construction of roads, waterways and railways. This programme has contributed to the Netherlands Nature Network. The NNN, adopted by the parliament in the 1990s, is a network of existing and to be restored nature areas, and its connection areas. MJPO took care of defragmenting nature by "installing structures such as ecoducts, ecoculverts, wildlife tunnels and banks along existing infrastructure that are easily passable for wildlife" (https://ontsnippering.nl/archief-mjpo). The MJPO ended in 2018. "The bulk of the total number of 178 problem areas has been resolved in recent years by installing a variety of wildlife crossings and structures" (https://ontsnippering.nl/archief-mjpo). In 2014, the responsibility for the National Nature Network was decentralized to the provinces and they took over the control of the realization of the MJPO (https://www.mjpo.nl/organisatie). The province of Gelderland always attributed much value to the Nature Network, since it is important for tourism, and the Province' economic position. The Province realised many wildlife crossings with the MJPO program on national and provincial highways and railways, for example 12 wildlife crossings on the Veluwe, one of the largest Natura 2000 sites in the Netherlands, which implies an investment of over 72 m Euro. In 2018 and 2019 the three last MJPO projects were realized. Research agency Triple E argues after an extensive study that investments in nature in the Veluwe are very profitable. Economic activities, such as recreational facilities, benefit from nature. Also, values of houses rises 10 % compared to houses in a non-green environment (De Stentor, 2020).

Source: https://www.mjpo.nl

De Stentor, 2020. Bijzonder! Dit gebeurt er bóven jouw hoofd als je over de Veluwe rijdt. News article, 5 Oct. 2020. https://www.destentor.nl/veluwe/bijzonder-dit-gebeurt-er-boven-jouw-hoofd-als-je-over-de-veluwe-rijdt

Dutch National Ecological Network (NEN) and Nature Network (NNN)

To improve nature conservation and ecological connectivity, the **Dutch National Ecological Network** was established in 1990. It features core areas (protected areas) and areas that function as corridors or stepping stones. Based on this plan, the highway authority has built green bridges to reconnect areas separated by highways as part of the multi-year Programme for Defragmentation (launched in 2005). At the end of the programme, it was concluded that most measures were realised, with 72 % of the bottlenecks being removed and 23 % being partially solved. Also, some provinces are using agri-environmental schemes to ensure that protected areas are buffered by less intensive land use and that connectivity is ensured between the sites. Since 2013, the network has been called 'Natuurnetwerk Nederland', the Dutch Nature Network (NNN) with the provincial governments as main implementing entities.

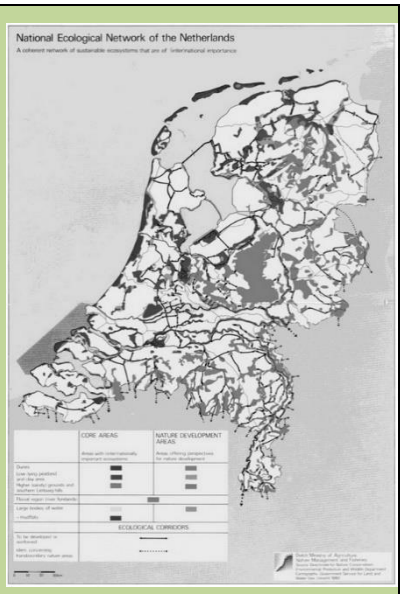


Image: Retrieved from article Turnhout (2009)

PORTUGAL

Lisbon Green Corridor © Municipality of Lisbon

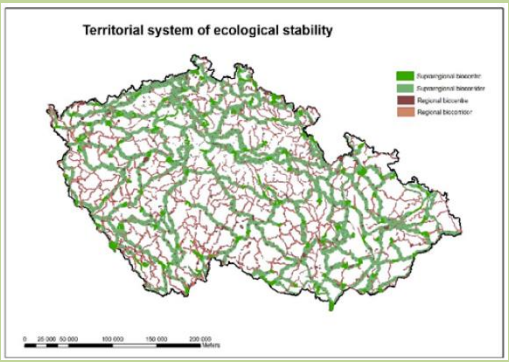
Green Infrastructure approaches in Portugal

In Portugal, Green Infrastructure (GI) is disseminated into national spatial planning through three legal instruments: National Ecological Reserve Act (REN), National Agriculture Infrastructure (RAN) and Water Public Domain (DHP). These legal instruments, together with the national protected areas and Natura 2000 areas, constitute the National Fundamental Network for Nature Conservation and Biodiversity. As one of the components of this network, the REN supports the integration of the connection between the core areas of nature conservation and biodiversity into the National Classified Areas. In the REN, various Green Infrastructure elements are planned, including protected areas, sustainable use areas and natural connectivity features. Portuguese GI has been applied focusing on the ecosystem functions and services, as an alternative to classic engineering solutions. Such GIs are well recognised and integrated into spatial planning tools.

Additionally, Portugal has recently finished the Prioritised Action Framework for the upcoming period of 2021-2027. In this context, connecting protected Natura 2000 sites with other natural and semi-natural areas is a priority of investment, mainly considering the relevance of green infrastructures to ensure re-establishing natural habitats and to keep the high level of conservation, also considering the social, economic and cultural needs.

SLOVENIA / CZECHIA

Ecological network of Czechia and Slovakia – Supraregional and regional biocenters and biocorridors



Territorial System of Ecological Stability in Czechia. Source: ANCLP CR

In the 1970s, a concept of an ecological network was formulated in former Czechoslovakia, called the **Territorial System of Ecological Stability (TSES)**. Since then, the concept forms part of the environmental legislation and has been widely applied in the planning practice in the Czech Republic and Slovakia. It was designed as a response to large-scale natural and semi-natural habitat fragmentation and loss. The main purpose of establishing the ecological networks approach was to preserve the spatial-ecological connectivity stability of the landscape. Starting in the late 70s, TSES was a pioneering ecological network at national, regional and local levels. It was one of the first comprehensive concepts of this kind (Miklos et al., 2019). It represents a hierarchical connectivity concept of ecological core areas (biocentres) and buffer zones of different importance connected by bio-corridors (Mackovčin, 2000). In Slovakia, the TSES framework consists of two basic parts: the design of the ecological network and a set of eco-stabilisation measures. The TSES is a concise method based on landscape ecological research which modified the ideas of ecological networks towards integrated management of optimum organisation and utilisation of the landscape as a whole.

SPAIN

IREKIBAI: improving connectivity and riparian habitats of the shared rivers of Navarra and Gipuzkoa

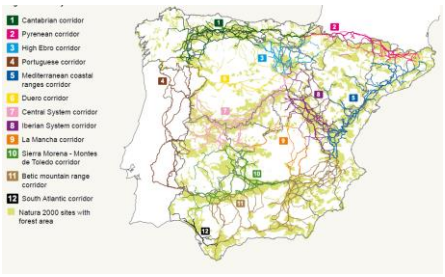
Area of action Source: Irekibai Project

The objective of this project has been to improve the conservation status of riparian habitats and species of community interest in the Natura 2000 sites located in the Bidasoa and Letzaran basins. Dams, weirs, pipes and various construction create barriers in our rivers that impede their natural functioning. As a consequence, ecosystems are altered and this has influenced sensitive species such as European mink, Pyrenean desman, Atlantic salmon, etc. whose distribution area has been reduced and/or fragmented; forcing them to reproduced among themselves which generates genetic isolation, and reduce likewise the ability to cope with other pressures and endangers, endangering its survival. To solve this situation, the public administration with responsibility in river management from Basque Country and Navarra have assumed as their main line of action to intervene in these obstacles.

Some restoration actions were carried out to reach the above objectives: removing damns and weirs and creating fish passes, eradicating IAS and restoring riparian habitat types. In addition, the management of these rivers have been improved.

Source: https://www.irekibai.eu

Additional best practices

	Short description
 Proposed wildlife highways in Spain. Source: WWF Spain	**Wildlife Highways (Spain)** The WWF Spain created a connectivity vision for mainland Spain with a proposal of ecological corridors connecting Natura 2000 sites. It considers the transnational corridors, that operate as connectors between sites located in the Spanish territory and span in sections of their demarcation over to the territory of border countries (Portugal, France and Andorra). This proposal has been generated based on a study conducted by Polytechnic University of Madrid at the request of WWF Spain. Report *Proposal by WWF Spain for a Strategic Network of Ecological Corridors connecting Natura 2000 sites*: https://mava-foundation.org/wp-content/uploads/2019/01/wildlife_highways_wwf_spain.pdf
 German Green Belt © Lubikl, Wikimedia (CC BY-SA 3.0)	**Sectoral plan for a state-wide biotope network (Germany)** Successful implementation examples: • Biosphere Reserve Schorfheide Chorin (separate case study) • Green belt • Middle Elbe Biosphere Reserve (separate case study) • Bavaria Nature Network Programme • National Parks in the Wadden Sea (separate case study) • High level of connectivity between Feldberg Lakes and Müritz NLP

Removed Vilholt dam © Nielsen and Sivebæk

Restoration of river connectivity in Vejle County (Denmark)

The municipality of Vejle in Denmark launched systematic effort to remove barriers in rivers and streams over several decades. As one major process, the Vilholt hydropower dam impeding the free flow of the river Gudenaa – one of the largest rivers in Jutland – was removed in 2008 after two decades of stakeholder discussions. Recent studies have found that the dam removal has led to a dramatic increase in the Brown trout (*S. trutta*) population, especially in young fish. This increase was not just found upstream of the former barrier, but also downstream of the barrier, despite little habitat changes in that area (Birnie-Gauvin et al., 2017).

LIFE INDEMARES © Fundación Biodiversidad

Establishing a marine Natura 2000 network in Spain

As one of the European countries with the highest marine biodiversity, Spain implemented the LIFE INDEMARES project to establish a coherent marine Natura 2000 network. Over a six-year period (2009-2014), the project has contributed through the designation of new protected areas and a proposal for increasing the ecological coherence that arises from the ongoing gaps in the Network. INDEMARES is perceived as a milestone in marine conservation in Spain. With additional funding to the new LIFE INTEMARES, the project still actively works on the conservation and restoration of marine biodiversity (https://intemares.es).

Dinaric-SE Alpine lynx (*Lynx lynx)* © Pixabay (CC BY-SA 3.0)

Transnational connection of fragmented Dinaric-SE Alpine lynx population

The LIFE project LIFE Lynx (LIFE16 NAT/SI/000634) seeks to rescue the remaining population of the Dinaric-SE Alpine lynx (*Lynx lynx*). The species went extinct at the end of the 19th century due to hunting, habitat fragmentation and a lack of prey species. It was successfully reintroduced in the 1970s by moving animals from a Carpathian source to Slovenia. Currently, the population is small, isolated, and extremely inbred. It urgently needs reinforcement by introducing additional, healthy animals from another population. The project collaborates across all EU countries sharing this population to develop and implement a systematic approach to ensure long-term viability of the population and connectivity throughout the landscape.

Source: Wageningen Environmental Research

Mapping of species condition based on connectivity in the Netherlands

In the Netherlands, a systematic assessment of species condition in relation to their possibility to move between habitats is undertaken by Wageningen University & Research (WUR) in cooperation with the Dutch Environmental Agency. The regions are responsible for updating the spatial maps that provide insight into the current progress in the development of the Nature Network (including corridors). The system uses a model to assess current connectivity and gaps.

Link: https://www.clo.nl/indicatoren/nl1523-ruimtelijke-samenhang-natuurgebieden?ond=20898

Transboundary sites

AUSTRIA

Geopark Karawanken

The Karawanken Geopark is a cross-border Geopark in Austria and Slovenia and was included in the UNESCO Global Geoparks Network in 2013. The park was established as part of the project 'The establishment of a cross-border geopark between the Petzen and Koschuta', which was implemented in OP SI-AT 2007-2013 and co-financed with European Union funds from the European Regional Development Fund. In legal terms, the Geopark acts as a cross-border working group (ARGE), the founders of which are municipalities and associated members. The administrative boundaries of the Geopark follow the boundaries of 14 communities in which around 53 000 people live. The Geopark has an area of 1 067 km^2 and is characterised by the rich geological diversity between the Alps and the Dinarides.

Mela Koschuta (Karawanken), municipality of Zell © Niki.L, Wikimedia (CC BY-SA 4.0)

The objectives are the preservation of natural resources, the economic valorisation of the Geopark, awareness-raising and cross-border cooperation and regional development. The Geopark is a prime example of cooperation between German and Slovene-speaking population groups in the border region.

Source: https://www.geopark-karawanken.at

TransParcNet

View of the east bank of the Neusiedlersee near Apetlon © David Paternoster

The TransParNet is the network of all certified EUROPARC Transboundary Parks. TransParcnet is an extension of the scope of the current EUROPARC transboundary work. The network should provide other Protected Areas striving to complete the Basic Standards with assistance; facilitate capacity building between European TBPA' in areas such as communication, the exchange of experience and best practice; coordinate thematic working groups which should enable the exchange of experience; organise staff exchanges and study visits; put on conferences, seminars and workshops; publish information on transboundary issues and projects; prepare directories and databases of transboundary Protected Areas and other relevant partners; promote the interests of TBPAs on a national and international level; raise funds for and coordinate joint projects between TBPA's.

As far as Austria is concerned, Podyjí-Thayatal Transboundary Parks (CZ/AU) as well as Neusiedler See-Seewinkel & Fertö-Hanság National Parks (AU/HU) are part of the network.

Source: https://www.europarc.org/nature/transboundary-cooperation/transparcnet

GERMANY

Wadden Sea UNESCO World Heritage

The Wadden Sea UNESCO World Heritage site is a unique cross-border ecosystem. This is one reason why it is protected by national parks in Germany, Denmark and the Netherlands. In Denmark, areas of the Wadden Sea were declared nature reserves in 1979, while the first areas in the Netherlands were placed under nature protection a year later. In Germany, there are three corresponding protected areas, namely the national parks 'Schleswig-Holstein Wadden Sea' (established in 1985), 'Lower Saxony Wadden Sea' (established in 1986) and 'Hamburg Wadden Sea' (established in 1990). In addition, the Dutch and German Wadden Sea were declared UNESCO World Heritage Sites in 2009 and the Danish Wadden Sea in 2014.

Wadden sea in Germany, Hallig Hooge and Pellworm
© Ralf Roletschek, Wikimedia (CC BY-SA 3.0)

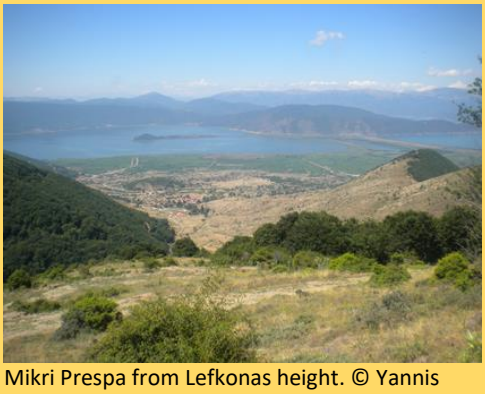
The so-called Trilateral Wadden Sea Cooperation (The Netherlands, Germany and Denmark) provides a comprehensive protection and management system with additional layers of protection at the federal and regional/state level, making this area an exceptional example of transboundary protection.

The Wadden Sea is an extremely large temperate coastal wetland system containing an extensive system of tidal flats and barriers. The national parks protect critical habitats for about 2 700 marine species in the intertidal and subtidal zones and at least 5 000 semi-terrestrial and terrestrial species, mostly the flora and fauna of salt marshes and dunes on the islands. Marine mammals present in the Wadden Sea include the harbour seal, grey seal, and harbour porpoise. Worth highlighting is its international importance as a breeding, staging, moulting and wintering area for birds. The availability of food and a low level of disturbance are essential factors that contribute to this ecological function. For 43 bird species, the Wadden Sea supports more than 1 % of the entire flyway population, which is the criterion used by the Ramsar Convention for identifying wetlands of international importance.

Sources: https://www.waddensea-worldheritage.org/trilateral-wadden-sea-cooperation
https://www.mdpi.com/2071-1050/13/14/8006/html

GREECE

Prespa Park transboundary initiative



Mikri Prespa from Lefkonas height. © Yannis Kazoglou

The Prespa Park is the first transboundary protected area in the Balkans. It was established in February 2000 with a joint Declaration by the Prime Ministers of Greece, Albania and North Macedonia. The area is composed of a single catchment basin, which to be effectively protected requires a joint management policy from the three states which share it. This collaboration has three broad aims: to safeguard the natural and cultural values of the Prespa basin with the participation of the local communities; to promote the economic and social welfare of the residents; and to strengthen peace, friendship and collaboration amongst the three nations.

A trilateral Prespa Park Coordination Committee (PPCC) was established, in order to better organise and promote projects for the protection and sustainable development of the area. The committee is a ten-member body, which includes representatives from central governments (Ministries of the Environment), local authorities and non-governmental organisations (NGOs) from the three countries which border the lakes, as well as a permanent observer from the Ramsar Convention on Wetlands and the Mediterranean Wetlands Initiative (MedWet).

The members of the Coordination Committee meet twice a year in Prespa, in each of the three countries in turn.

With the passing of the years, the views of the three sides on important issues have converged and have formed a consensus on questions such as water and ecosystems management that previously would have been difficult even to discuss. Many local bodies have collaborated (and continue collaborating) on transboundary programmes that further the aims of the Prespa Park, while international funding organisations provide substantial economic support.

On 2nd February 2010, World Wetlands Day and the 10th anniversary of the Park, the "International Agreement for the Protection and Sustainable Development of the Prespa Park Region" was signed by the Environment Ministers of the three countries and the EU. The Agreement was officially ratified by the Parliaments of all three countries by 2017. Under this agreement the three states are legally bound to establish permanent structures for collaboration in order to develop a joint strategy and implement measures both for the protection of the natural environment and the human activities in the region such as farming, fishing, tourism and infrastructure development. Likewise, this agreement places priority on issues of paramount importance such as water management. This includes the development of plans for integrated management of the transboundary water basin, as directed under the European Water Framework Directive, and the formation of a specialist working group to effectively move forward on this critical issue as soon as possible.

In parallel, the PrespaNet NGO was established in 2013 aiming to strengthen transboundary co-operation between NGOs, as well as with protected area management authorities, acknowledging the fundamental principle that such co-operation is essential for the success of conservation efforts, reflecting the integrity of the catchment basin, its eco-hydrological functions and management needs.

Source: https://www.spp.gr/index.php?option=com_content&view=article&id=10&Itemid=15&lang=en
https://www.spp.gr/images/PrespaNet-En.pdf

NETHERLANDS

Grenspark Kalmthoutse Heide

Kamlthoutse heide © Sarah Rousseau

Grenspark de Zoom Kalmthoutse Heide is located on the Dutch-Belgian border, between the cities Breda, Bergen op Zoom and Antwerp. The area was officially declared a Grenspark in 2001. The area covers 3750 hectares with both Flemish and Dutch public and private ownership. The largest part of the area is owned by individual landowners. The area consists of heathland, forests and fens and drifting sands. The dry and wet heath vegetation and fens with characteristic plant species are of international importance. Most of the Grenspark area is designated as a Natura 2000 site (Wingerden et al, 2005).

The Natura 2000 framework mainly focuses on the protection and development of specific, well-described conservation targets. The Grenspark organization has a broader range of goals that are also aimed at bringing together human and nature (Grenspark de Zoom-Kalmthoutse Heide, 2014, p. 12). In 2014, the Policy plan for management and design was renewed for the park for the period 2014-2029 and the Park was enlarged. The Policy Plan can be characterized as an agreement framework of the common stakeholders. The park mainly focuses on coordination of activities and achieving conservation goals that require land tenure and cross-border cooperation (Grenspark de Zoom-Kalmthoutse Heide, 2014, p. 12).

The Grenspark organization is based on shared goals and cooperation. A special commission, with representatives of Dutch and Flemish organizations, defines the strategy. A steering group organizes the daily management activities. A secretariat facilitates the cooperation and realization of the policy plan. Every year (often joint) projects are carried out to keep the park running, on nature restoration, recreation, monitoring, management, communication and connections with society.

Source: W. V. Wingerden, R. V. Dam, T. V. D. Sluis, P. Schmitz, H. Kuipers, W. Kuindersma. 2005. Natura2000 grensgebieden; ecologische kansen en grensoverschrijdende samenwerking in Natura2000 grensgebieden. Alterra report 1061 ; https://grensparkkalmthoutseheide.com/ ; Grenspark de Zoom – Kalmthoutse heide (2014) Beleidsplan Beheer en Inrichting 2014-2029. (https://grensparkkalmthoutseheide.com/wp-content/uploads/2020/05/BBI-Grenspark-2014-2029_0.pdf)

SLOVAKIA

UNESCO World Heritage site: Caves of Aggtelek Karst and Slovak Karst

Caves of Aggtelek Karst and Slovak Karst (Hungary, Slovakia) © Lubica Pincikova

The Caves of Aggtelek Karst and Slovak Kars is a typical karst system consisting of a set of 712 identified caves. they display an extremely rare combination of tropical and glacial climatic effects. They make it possible to study geological history over tens of millions of years. The interactions between geological karst processes occurring on the surface with those occurring beneath make this area a natural field laboratory. More than 99 % of the Caves of Aggtelek Karst and Slovak Karst is preserved in its original natural condition and is well protected. Most of the territory is part of national parks - Aggtelek National Park and Slovak Karst National Park. The cave system is extremely sensitive to changes in the environment, so maintaining the integrity of active geological and hydrological processes (karst formation and development or development of stalagmites and stalactites) requires integrated management of the entire river basin. The main protection and management requirement is to ensure strict control over surface activities that may negative affect the quality and quantity of water infiltrating the karst. Aggtelek Karst is administered by the Aggtelek National Park Directorate and the Slovak Karst is managed by the Slovak Karst National Park Directorate (surface) and Slovak Caves Administration (caves). These administrative bodies carry out joint projects including research, protection and monitoring.

Source: https://whc.unesco.org/en/list/1133

ConnectGREEN INTERREG project

Danube-Carpathian region © ILE

Through the ConnectGREEN project, partners from different countries (Romania, Serbia, Hungary, Czech Republic, Slovakia) and various fields of activity (spatial planning, research, government, biodiversity conservation) joined forces to increase the capacity of ecological corridors identification and management. Planned infrastructure developments threaten to cut through the movement corridors of large carnivores and increase the fragmentation of their habitats in the Danube-Carpathian region, which is one of Europe´s last remaining strongholds for large carnivore species: Gray wolf, Eurasian lynx and Brown bear, protected under EU law. The design of technical infrastructure often does not take green infrastructure and biota migration corridors into account. Very few spatial planners have the necessary knowledge and experience to introduce environmental requirements into planning documents and ensure the elimination of conflicts between socioeconomic development and nature conservation. These problems require a coherent transnational approach as the large carnivores frequently move across state borders in search of food, mates or other resources.

Source: http://www.interreg-danube.eu/approved-projects/connectgreen

The East Carpathians Biosphere Reserve

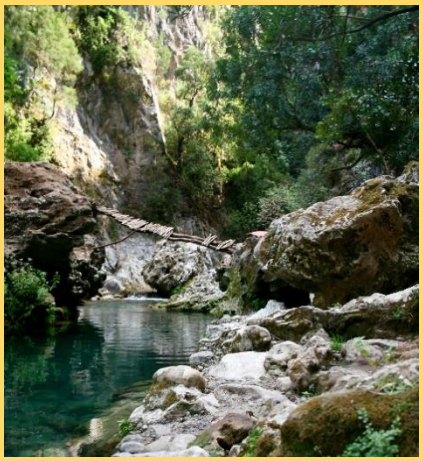
Map of the East Carpathian Biosphere Reserve © Wikimedia (CC BY-SA 3.0)

The Eastern Carpathians International Biosphere Reserve (MBR VK) is the first tripartite biosphere reserve in the world and the second largest biosphere reserve in Europe. It covers an area of 208,076 ha (of which the Polish part occupies 52.3 %, the Slovak part 19.6 % and the Ukrainian part 28.16 %) and includes 6 large protected areas. The MBR VK was announced in 1992-93 when it was signed by two countries: Slovakia and Poland. In October 1998, the Slovak- Polish part was joined by the territory of neighboring Ukraine. It represents a unique wealth of world importance - there are the largest European complexes of original beech forests and East Carpathian mountain meadows - polonín. Four distinct vegetation types are found within the biosphere reserve: beech forest (Fagetum sylvaticae), beech-fir forest (Fageto-Abietum), dwarf-shrublands with green alder (*Alnetum viridis*) and a belt of treeless 'poloniny'. The mixed Carpathian Forest provides suitable conditions for large mammals such as the European brown bear (*Ursus arctos arctos*) and the European bison (*Bison bonasus*). Over 100 species of birds live in the area including the Black stork (*Ciconia nigra*) and the Golden eagle (*Aquila chrysaetos*). The reserve also contains several sites appearing on the UNESCO World Heritage List including the Wooden Tserkvas and the Primeval Beech Forests of the Carpathians. The majority of the population works in forestry and agriculture, which focuses on cattle raising, sheep breeding and small-scale organic farming using traditional land-use patterns. On the Polish side, tourism is also developing intensively, based on the presentation of old regional traditions, which are attractive for tourists.

Source: https://whc.unesco.org/en/list/1133

SPAIN

Intercontinental Transboundary Biosphere Reserve of the Mediterranean: The reserve that unit continents



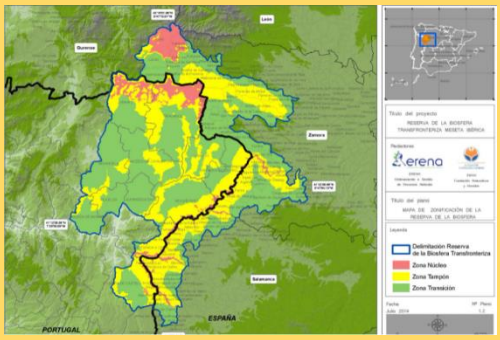
Talassemtane National Park, Morocco © Walter Rodriguez, Wikimedia (CC BY-SA 3.0)

With this reserve, a link is established between neighbouring countries with a common past and culture. The Intercontinental Biosphere Reserve of the Mediterranean is the first of its type to be designated by the Man and the Biosphere Programme. It combines the Tingitane Peninsula in Morocco and the southern Iberian Peninsula of Andalusia. Both countries are located in a biogeographic region of deciduous forests and evergreen sclerophyllous scrub within the Mediterranean bioclimatic zone. The maritime area of the biosphere reserve is dominated by the Strait of Gibraltar, which links the two peninsulas. The reserve also encompasses natural and human communication routes between Africa and Europe.

The Moroccan section is located in the region of Djbala on the Tingitane Peninsula, adjacent to the Strait of Gibraltar. It is bordered by the Gharb plain and the hills of Hafs to the west, the Rif Central to the east, the Mediterranean coastline to the north, and the western Prerif to the south.

The Spanish section of the biosphere reserve is located in the south of Andalusia. Numerous natural parks, such as the Parque natural de Grazalema ant the National Park of Sierra de las Nieves. It contributes to the conservation and protection of unique flora and fauna species, such as the Spanish fir (exclusive distribution of this fir in the planet).

Source: http://www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/biosphere-reserves/transboundary-biosphere-reserves/spain-morocco/intercontinental-br-of-the-mediterranean/



Map of Meseta Ibérica
Source: Red española de reservas de la Biosfera

Meseta Iberica Biosphere Reserve

Biosphere Reserves are places where innovative practices of joint management of natural values and human activities are demonstrated. In 2015, UNESCO approved the first cross-border Biosphere reserve managed by a European Group of Territorial Cooperation (EGTC). The 'Meseta Ibérica' (Iberian Plateau) is established at the North-Western border between Spain and Portugal, co-financed by the Cross-border Cooperation Programme Spain-Portugal (POCTEP). The EGTC is based in Bragança, Portugal, and its members are the associations of municipalities of Terra Fria Transmontana, Terra Quente Transmontana and Douro Superior, in addition to the provincial councils of Salamanca and Zamora, and the city of Zamora.

The area contains many flagship species, some of which have been the subject of conservation projects, such as the Black stork (*Ciconia nigra*), Egyptian vulture (*Neophron pernocpterus*), Bonelli's eagle (*Aquila fasciata*), Eurasian eagle-owl (*Bubo bubo*), European otter (*Lutra lutra*), and Iberian wolf (*Canis lupus signatus*). The area includes built heritage dating back to Roman times and the Middle Ages. The remains of forts, castles and walled enclosures in localities bear witness to frequent wars between Spanish and Portuguese kingdoms during the Middle Ages. This area also boasts a unique cultural heritage manifested in the architecture, customs, traditions and folklore.

Sources: https://portal.cor.europa.eu/egtc/news/Pages/meseta-iberica.aspx
https://www.biosfera-mesetaiberica.com

Additional best practices

Short description

Mont Perdu massif © Patrick Rouzet, Wikimedia (CC BY-SA 3.0)

Cross-border connectivity between National Parks (Spain, France)

The Prineos - Monte Perdido World Heritage Site was formed by the territories of the French National Park and the Spanish National Park of Ordesa and Monte Perdido. It is centered around the peak of Mount Perdu, a calcareous massif that rises to 3,352 m. The site, with a total area of 30,639 ha, includes two of Europe's largest and deepest canyons on the Spanish side and three major cirque walls on the more abrupt northern slopes with France, classic presentations of these geological landforms.

Link: https://whc.unesco.org/en/list/773

Parque Natural do Tejo Internacional

Transborder cooperation between Portugal and Spain

Three transboundary biosphere reserves are shared between Portugal and Spain:

- Gerês-Xurés, which includes the Baixa Limia-Serra do Xurés Natural Park, in Galicia-Spain, and the Peneda-Gerês National Park, in Portugal
- The Iberian Plateau (Meseta Ibérica), which encompasses a very large area along the border of the Duero River shared with Castilla y León-Spain, and the northeast of Portugal, see separate case study
- the Tajo-Tejo Internacional, whose main axis is the course of the Tagus River in Extremadura, Spain, and the homonymous region of Portugal

© Sara Jaques, Wikimedia (CC BY-SA 3.0)	In addition to the conservation of nature, the reserves try to unite traditions and customs that the borders distance. Links: https://en.unesco.org/biosphere/eu-na/geres-xures https://en.unesco.org/biosphere/eu-na/tejo-tajo

Management Effectiveness

GREECE

Fostering coordination and enhancing management effectiveness of marine protected areas (MPAs) in Mediterranean countries

Pole-borne culture of mussels in Kavoura bay.
© Source: Lia Papadranga / Thermaikos Gulf Protected Areas Management Authority

Through the INTERREG project TUNE UP, twelve partners from seven countries (Greece, Spain, France, Italy, Albania, Slovenia and Montenegro) are brought together to maintain biodiversity and natural ecosystems through strengthening the management and networking of protected areas and by capitalising on a multi-stakeholder/multi-level governance tool based on River/Wetland Contracts experience, tested by the INTERREG MED WETNET project - the 'MPA Contract tool'.

The project intends to achieve 1) stronger, coordinated and proactive involvement of key stakeholders in MPAs management, 2) improved effectiveness of MPAs management by integrating multi-level governance tools into national and regional policy instruments and 3) more intensive transnational cooperation and networking between Mediterranean MPAs. This will be done through working on MPA pilot areas at the local level, launching participatory processes and signing a local contract among stakeholders, which will include an attached Action Plan. The Action Plan will be developed according to the objectives that emerge during the process, establishing the priority actions for management, restoration and preservation of the MPA's environmental, social and economic aspects: These plans also outline the roles and the methods for implementing the strategy, as well as the procedures to monitor its actual implementation.

The project will ensure higher coordination among stakeholders and decision-makers, limiting arising conflicts between conservation and economic issues and will enhance the goal of biodiversity protection.

Source: https://tune-up.interreg-med.eu

SLOVAKIA

Sustainable management of protected areas

Bratislava Regional Protection Association (BROZ) is a non-governmental organization in the field of protection and restoration of rare habitats. It was founded in 1997. It focuses on the restoration of wetlands, river branches, floodplain forests, meadows and pastures. They also strive to support traditional, nature-friendly forms of farming, such as cattle grazing, cane mowing or pruning of willows. The successful activities of the association include:

- Turning water to the landscape, through the restoration of wetlands and the restoration of river branches. So far, they have managed to turn over several river branches of the Danube and thus support the re-creation of several Danube islands, revitalize rare meadows in the Little Carpathians and Devínská Kobyla and salt marshes in southern Slovakia, restore part of the floodplain forests in Dunajské Luhy.
- Regrazing of animals (especially sheep and goats) in several protected areas within the Danube region, within Bratislava (Devínska Kobyla, Podunajské Biskupice) and also in the Little Carpathians. It is an ecological form of meadow management. Due to the resumption of grazing in these localities, the areas do not have to be mowed.
- Restoration of rare drought-loving herbaceous communities, which are currently endangered by invasive trees and invasive species. The restoration of these habitats is carried out mainly through sustainable management in cooperation with local farmers. In 22 localities in Slovakia, from the Little

Carpathians to Zemplín, and 7 localities in Moravia, the project improves not only the state of these rare habitats, but also the state of populations of European important plant species.

Their activities are implemented mainly in the form of Life projects, where they cooperate with several state nature protection organisation.

Source: https://www.broz.sk

SPAIN

INTEMARES: Designation and management of marine Natura 2000 sites

Participatory INTEMARES workshop © INTEMARES

The LIFE INTEMARES integrated project aimed to designate new Natura 2000 sites and laid the foundations to effectively manage the marine Natura 2000 Network and complete the work and progress promoted within the framework of the LIFE + INDEMARES project.

Social participation is one of the pillars of LIFE INTEMARES. It is the key to moving towards a **new management model for protected marine areas**, achieving an effectively managed marine Natura 2000 network with the active participation of all sectors involved and with research as the basis for decision-making.

From 2018 to 2020, different participatory workshops were carried out by this marine region. As a starting point, before conducting the participatory workshops, a baseline analysis was carried out to clarify the legislation and regulations governing the marine environment in Spain. To complete the diagnosis, case studies, interviews and online consultations were conducted with key stakeholders. Subsequently, five participatory consultation workshops were held to develop a shared vision and contribute to the definition of proposals to improve governance in the Natura 2000 marine network. Some examples are the consultations and participatory workshops held to analyse the level of coherence and adequacy of the Natura 2000 network and to develop a common vision with the aim of completing and ensuring the representativeness of the habitats and species of the Natura 2000 marine network. In order to achieve effective management, the active involvement of managers, users and stakeholders in the preparation and updating of management plans for Natura 2000 sites or in the development of the first MPA Master Plan in Spain will be considered. Moreover, the implementation of a governance strategy and pilot projects to improve marine governance in the coming years is foreseen.

Source: https://intemares.es/procesos-participativos/elaboracion-estrategia-gobernanza
Image: https://intemares.es/sites/default/files/gobernanza_6.jpg

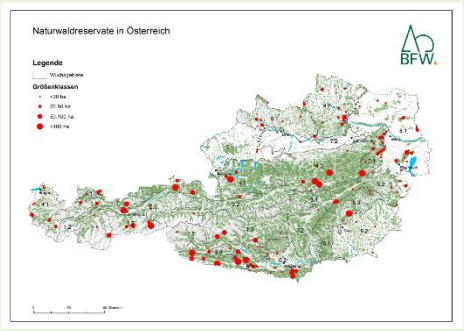
	Short description
 Baie de Seine occidentale, http://reseau-manchemerdunord.n2000.fr/les-sites/baie-de-seine-occidentale-zpszsc	**Occidental Seine Bay (France)** The Natura 2000 site of the Occidental Seine Bay is managed by the French Biodiversity Office and the Normandy fisheries committee, which have set up and are implementing a fishing agreement. Links: https://inpn.mnhn.fr/site/natura2000/FR2502020 http://reseau-manchemerdunord.n2000.fr/les-sites/baie-de-seine-occidentale-zpszsc
 Kluane National Park, Kaskawulsh Glacier, © Keith Williams, Flickr (CC BY-NC-ND 2.0)	**Parks Canada (Canada)** Parks Canada has successfully implemented an approach of assessing the effectiveness of their protected area estate covering both innovative approaches to measuring conservation outcomes and inputs and processes. In addition, Parks Canada is developing a long-term plan for the effective management. Link: https://www.pc.gc.ca/en/nature/science
 Maroño reservoir and the Sálvada mountain in Alava © Wikimedia (CC BY-SA 4.0)	**Basque Country (Spain)** There is a good coordination in the Basque country with the regional water agency for aquatic Natura 2000 sites, good integration of monitoring of aquatic ecosystems.

Other effective area-based conservation measures (OECMs)

AUSTRIA

Natural Forest Reserves

Natural forest reserves are forest areas that are intended for the natural development of the forest ecosystem and in which any removal of wood, other forest use or anthropogenic influence is omitted, but hunting is permitted. They are a contribution to the preservation of the natural development of biological diversity.



Overview map of Austria's natural forest reserves © BFW. http://www.naturwaldreservate.at/images/reservate/NWRKartegro.png

There are currently 191 natural forest reserves with a forest area of 8 587 ha. The size of many natural forest reserves is 5 to 20 ha, larger reserves are currently only sparsely represented. The selection of the reserves is primarily based on the occurrence of the potential natural forest communities. They should represent the composition of tree species, stand structure, vegetation and especially the natural development of these or achieve these in the foreseeable future.

The principles of the program are contractual nature conservation on a voluntary basis, long-term design, exit options under certain conditions, annual remuneration as compensation for forest use and the involvement of the owners in the care and control of the areas.

The program pursues the following objectives: establishment of a representative network of natural forest reserves taking into account all forest communities, research into natural forest development without management, preservation of the biodiversity typical for the forest community concerned, elaboration of recommendations for the designation and maintenance of new reserves and establishment of a network of standardised sample areas.

Source: http://www.naturwaldreservate.at/index.php/de

SLOVAKIA

EnvⓘDat database

EnvⓘDat database: support for the provision of cross-cutting and comprehensive environmental assessment (environment) at the national level for the lay and professional public and public officials. Making specific database data available is a tool for providing timely, targeted and relevant information on the environment, which are used in the creation of environmental reports and indicators. The data are structured as time series of environmental indicators and environmental-related indicators for the Slovak Republic, or their international comparisons. The database currently contains about 277 indicators and is organized into 14 thematic areas (air, water, soil and agriculture, rocks, biota and SPAs, transport, energy, industry, forestry, tourism, waste, material flows, environmental economics and others). They are updated annually, usually in the fourth quarter of the year, when data for the previous year are already known. EnviDat was made available to the public in the Enviroportal environment in 2018, and was updated and modernized in 2020. All data are provided free of charge.

Source: https://www.enviroportal.sk/envidat

Additional best practices

	Short description
 Marais de Chautagne Savoie © Wikimedia (CC BY-SA 3.0)	**Marais de Chautagne Savoie (France)** Marais de Chautagne Savoie presents a drained wetland area, which is mainly owned by the local community and currently under restoration. This wetland area is part of an integrated agro-tourism development and restoration project for the Chautagne plain, led by the Community of Municipalities of Chautagne (CCCh), which consists of three components: • open wetlands, managed by the CEN Savoie and the Municipality of Chindrieux, • wetlands in state-owned forests, managed by the National Forest Office, • agro-tourism development, led by the CCCh. This restoration work is supported and funded by the European Union (European Regional Development Fund) and the Rhone-Mediterranean-Corsica Water Agency. **Links**: https://www.cen-savoie.org/programmes-actions/programmes-europeens/renaturation-du-marais-de-chautagne https://censavoie.wixsite.com/marais-chautagne
 Côte de Meuse, France © TitTornade, Wikimedia (CC BY-SA 3.0)	**Meuse grassfields in Lorrain (France)** This community-owned area has been successful (for about 40 years) in banning any motocross training grounds, windmills, etc. using contractual approaches as well as connectivity measures.
 Øresund at Helsingborg © Pixabay (CC BY-SA 3.0)	**Øresund (Denmark)** The Danish Øresund has been trawl free since 1932 as a shipping safety measure. This has led to intact habitats and many fish. *(Please note, the site is not officially recognised as OECM by the Swedish Environmental Protection Agency).*
 La Sierra del Rincón © Noberto Ortiz, Flickr (CC0 1.0)	**Biosphere reserves (Spain)** The Spanish biosphere reserves work towards the objectives of the Man and Biosphere Programme (MAB) of UNESCO in a wide variety of areas. The MAB programme is strongly developed in Spain thanks to the support of administrations, which see biosphere reserves as a powerful tool for spatial planning. In addition, the biosphere reserve designation category enjoys a high level of acceptance among the population, as it allows the promotion of sustainable development in the areas through participatory management, the maintenance of traditional uses and the rational use of

Urdaibai Biosphere Reserve © Roberto Martínez, Flickr (CC BY-NC-ND 2.0)

natural resources. All this is combined with natural areas of high biodiversity value and landscapes of great beauty and tourist value. The demand for such areas from the provinces is growing unceasingly. Examples include:

- Biosphere Reserve of Las Mariñas Coruñesas e Terras do Mandeo (Galicia)
- Menorca Biosphere Reserve (Balearic Islands)
- Sierra del Rincón Biosphere Reserve (Community of Madrid)
- La Palma Biosphere Reserve (Canary Islands)
- Lanzarote Biosphere Reserve (Canary Islands)
- Los Ancares Leoneses Biosphere Reserve (Catilla y León)
- Luna Biosphere Reserve (Catilla and León)
- Urdaibai Biosphere Reserve
- Ordesa-Viñamala Biosphere Reserve (Aragon)

EU Biodiversity Strategy for 2030

GERMANY

Creation of wilderness areas in Germany

Thuringian Slate Mountains - Franconian Forest, Germany © StefanX112 (CC BY-SA 3.0)

Military training area 'Jüterbog' in Brandenburg, Germany © Assenmacher (CC BY-SA 4.0)

The (expired) German National Strategy on Biological Diversity aimed to establish wilderness areas on 2 % of the German terrestrial territory by 2020. However, by 2019 the coverage measured only 0.6 % of the total land area (Brackhane et al., 2019).

In response to that, a 20 million Euro funding programme named "Promotion of Wilderness Development in Germany" (Wilderness Fund), was launched in 2019 by the Federal Environment Ministry. It supports targeted measures to increase wilderness areas in Germany applying, for example, to forests, post-mining landscapes, former military training areas, areas along watercourses or seashores, in peatlands and in the high mountains. Areas have to be large, (largely) unfragmented, use-free areas in which a course of natural processes uninfluenced by humans is permanently guaranteed. For instance, two new wilderness projects in the federal states Brandenburg (picture top left) and Thuringia (picture bottom left) have been added via this fund in 2020. The area of protected wilderness areas in Germany thus grew by almost 400 hectares.

A recent study by Brackhane et al. (2019) shows that operationalizing the wilderness concept in densely populated countries like Germany is possible. The research results reveal a potential for forest wilderness areas to cover 10.3 % of the German terrestrial territory for candidate sites.

SWEDEN

Swedish national strategy for the conservation of lakes and rivers with high natural and cultural values

Lake Mälaren © Acp (CC BY-SA 3.0)

This strategy for the protection of the natural and cultural environment of water bodies has been prepared by the Swedish Maritime and Water Management Agency, the Swedish Environmental Protection Agency, the National Heritage Board and the Swedish Forest Agency. The aim is to increase the number of lakes and watercourses with high natural and cultural value nationwide that are to be protected and preserved. Over the next ten yearsn (2021-2030), the work to protect Sweden's most beautiful water landscape will be accelerated and knowledge about the natural and cultural values of lakes and watercourses will be improved and made accessible. The strategy builds on previous work to formally protect the valuable water-related natural and cultural environment. Clear and measurable objectives, supported by

actions, provide direction for the implementation of the work. The Strategy's objectives raise the level of ambition in the protection of high value nature and culture necessary for national and international targets and commitments. The Strategy identifies international and national targets that affect the protection of aquatic habitats and describes how the protection of these habitats has been advanced in recent years. The section on the implementation of the strategy describes the methods used to identify areas of high natural and cultural value, the definitions of protection and conservation, the time-bound targets and actions, and how the work will be taken forward.

Source: http://www.insjofiskare.se/memberfiles/Nationell%20Strategi.pdf

SPAIN

Spanish National Strategy for Green Infrastructure and Ecological Connectivity and Restoration

Patch of green infrastructure © Pixabay (CC BY-SA 3.0)

The concept of Green Infrastructure is incorporated into the Spanish legal system in Law 33/2015, of 21 September, which amends Law 42/2007, of 13 December, on Natural Heritage and Biodiversity. This Law establishes that the Ministry for Ecological Transition and the Demographic Challenge, with the collaboration of the Autonomous Communities and other Ministries involved, will draw up, within a maximum period of three years, a National Strategy for Green Infrastructure and Ecological Connectivity and Restoration, which "will aim to set guidelines for the identification and conservation of the elements of the territory that make up the green infrastructure of the Spanish territory, terrestrial and marine, and so that the territorial and sectoral planning carried out by the public administrations allows and ensures the ecological connectivity and functionality of ecosystems, the mitigation and adaptation to the effects of climate change, the defragmentation of strategic areas for connectivity and the restoration of degraded ecosystems". It also establishes that the Autonomous Communities, based on the guidelines of the National Strategy, will develop their own strategies within a subsequent maximum period of three years, which will include, at least, the objectives contained in the National Strategy.

For all these reasons, the Ministry first of all commissioned the Spanish National Research Council to draw up the scientific and technical bases for the future State Strategy for Green Infrastructure. In addition, it has established a Green Infrastructure Working Group in the Committee for Protected Natural Spaces of the State Commission for Natural Heritage and Biodiversity, with the participation of the Autonomous Communities and the Spanish Federation of Municipalities and Provinces, to draw up the State Strategy and coordinate the development of the Autonomous Community Green Infrastructure Strategies. The National Strategy for Green Infrastructure and Ecological Connectivity and Restoration was drawn up within this Working Group, with the participation of the different ministries involved. It was reported to the Council of Ministers in October 2020 and approved by Ministerial Order published in the Official State Gazette on 13 July 2021.

Source: https://www.miteco.gob.es/es/biodiversidad/temas/ecosistemas-y-conectividad/infraestructura-verde/Infr_verde.aspx

EU LEVEL

National Biodiversity Strategies in the EU Member States

As 2020 has come to a close, which was the target year for EU level and national biodiversity strategies, there are a number of efforts to present updated strategies and action plans. However, these are still in preparation in many countries (e.g. Austria, Germany). An important point here is also whether there is an action plan for implementing the national strategies.

In Slovakia, for example, such an action plan for the implementation of measures arising from the National Biodiversity Strategy for 2020 has been in place with frequent monitoring and reporting. The Action Plan contains a total of 167 tasks contributing to the 6 objectives or 33 actions of the above-mentioned national strategy. The first report evaluating the implementation of the tasks of the Action Plan was prepared by the end of 2016. A follow-up interim report were submitted in 2018 and a final report in the first half of 2021.

Link: https://www.enviroportal.sk/environmentalne-temy/zlozky-zp/rastlinstvo-a-zivocisstvo/dokumenty/akcny-plan-pre-implementaciu-opatreni-vyplyvajucich-z-aktualizovanej-narodnej-strategie-ochrany-biodiverzity-do-roku-2020

In Austria, for example, the updated national biodiversity strategy will not have an action plan, according to reponses from the survey.

In Spain, there is currently an ongoing public consultation for the drafting of the State Strategic Plan for Natural Heritage and Biodiversity to 2030. There is no information on whether it will have an action plan or not, accompanying the final plan.

Link: https://www.miteco.gob.es/es/biodiversidad/participacion-publica/CPP_PlanEstrategicoPNB.aspx

One country that has an updated national biodiversity strategy in place is Czechia with its National Biodiversity Strategy of the Czech Republic 2016-2025. However, as it was drafted some five years ago, it still relies on the otdated EU Biodiversity Strategy to 2020 and the Strategic Plan of the Convention on Biological Diversity (CBD) to 2020.

Link: https://chm.cbd.int/database/record?documentID=208905

Additional best practices

	Short description
 Kalkalpen National Park in Austria © Tigerente (CC BY-SA 4.0)	In the **Austrian Limestone Alps (Kalkalpen) National Park**, , the forest is given an "initial spark" within the framework of forest management to be able to develop again as a natural forest. This independent development is called the conversion process. The initial spark can look very different depending on the area and situation: where there are too many spruces, they are thinned heavily to give other (natural) species the opportunity to regain a foothold.
 Lüneburger Heide Nature Park in Germany © Willow (CC-BY 2.5)	In Germany, the **Lüneburg Heath (Lüneburger Heide) Nature Park** is the first nationally designated area in the category of "nature park". The core area of the nature park is the nature reserve "Lüneburger Heide", which gives it its name and is designated as a "Special Protection Area" under the Birds Directive and as a "Special Area of Conservation" under the Habitats Directive thus being part of Natura 2000. It is also recognised as being of "international importance and European interest with regard to the protection of the natural heritage and the conservation of their aesthetic, cultural and/or recreational value" by the Council of Europe. As part of the management approach, sheep are used as "landscape keepers" who enable the persistence of the heath ecosystem by grazing the vegetation, thereby benefiting biodiversity adapted to this ecosystem. However, at the same time, it also prevents the area from slowly converting back to a forest, as it has already occurred on over a third of the entire Nature Park area. This example shows how different conservation objectives and protection levels can be used within a wider framework of management options for an area.

Other best practice examples

GREECE

Restoration and maintenance of wet grasslands in Prespa National Park

Buffalo in flooded wet grasslands. © Yannis Kazoglou

In Prespa National Park, Greece, the restoration and maintenance of wet grasslands on the littoral zone of Lake Mikri Prespa is a priority for the National Park and the transboundary Prespa Park, and was the main reason for the establishment, in 1991, of the locally based Society for the Protection of Prespa (SPP). SPP in an NGO created with the participation of 7 Greek and 3 foreign environmental organisations and the very important support of Dr Luc Hoffmann and various institutions. The project started in 1997 with an experiment on the western shore of the lake, during which water buffalo grazing and summer cutting were tested as methods to prevent reedbed (*Phragmites australis*) encroachment at the expense of wet grassland plant species. In 2001, the first management plan (also the first of its kind in Greece) was produced, and in 2002-2007, a very successful LIFE-Nature project was implemented (LIFE2002NAT/GR/8494, awarded as "Best of the Best"), with which 70 ha of wet grasslands were restored, a water management structure (sluice gate to control the flow of water from Lake Mikri Prespa to Lake Megali Prespa and ensure that both the ecological and human needs are satisfied) was built, and precious wetland bird species including the Dalmatian Pelican and the Pygmy Cormorant provided critical evidence for the effective management. Through the efforts of the SPP, the Prespa Park Management Body and local stockbreeders the recurrent management actions (cattle grazing, summer cutting, water level management and monitoring) were continued, while a Committee for the Management of the Wetlands was created and operates until now consulting the Park Management Body. Similar actions are ongoing with the support of another LIFE project ("Prespa Waterbirds", LIFE15 NAT/GR/000936).

Source: https://webgate.ec.europa.eu/life/publicWebsite/project/details/1869

Rat eradication for the conservation of priority island nesting birds in Greece

Eleonora's falcon. © Source (P. Petrou / HOS-BirdLife Greece)

For over a decade, rat eradications have been one of the main and most effective management measures employed for the conservation of priority island nesting bird species in Greece, thus creating benefits for a significant proportion of their national populations. Up until 2017 rat eradications have been carried out on 42 uninhabited islets throughout the Aegean Sea with total surface area 1,075ha. The size of islets ranged between 0.1ha to 298ha. Rats were removed from 20, 18, 10, 8, 6 and 1 colonies of the Eleonora's Falcon, Mediterranean Shag, Audouin's Gull, Yelkouan Shearwater, Scopoli's Shearwater and European Storm-petrel, respectively, which host approximately 10 %, 17 %, 55 %, 20 %, 19 % and 7 % of the national populations of the aforementioned species, respectively. The method applied involved use of Brodifacoum-based baits in bait stations providing minimal exposure to non-target species and minimal bait release to the natural environment, monitoring of bait consumption and of potential impact on non-target species and post-eradication monitoring. Following the rat eradications, breeding performance of the affected bird species has improved i.e. the breeding success and/or the number of breeding pairs have increased, the quality of breeding habitats e.g. vegetation coverage has recovered, while on 2 islets new Audouin's Gull colonies were established. An additional network of permanent bait stations established at the largest European Storm-petrel colony in Greece ensures that 100 % of the known national species population is secured from rats. There are several Eleonora's Falcon colonies, located on inhabited islands where rat

eradications are not considered to be feasible using the available methods. Apart from the birds, other fauna groups e.g. lizards and the vegetation of uninhabited islets also benefited from the rat eradications.
Rat eradication operations have been implemented in the framework of 6 LIFE Nature projects: FALCO ELEONORAE (LIFE03 NAT/GR/000091), TILOS (LIFE04 NAT/GR/000101), ConShagAudMIBAGR (LIFE07 NAT/GR/000285) SKYROSBIODIVERSITY (LIFE 09 NAT/GR/000323), ANDROSSPA (LIFE10 NAT/GR/000637) and LIFE ElClimA (LIFE13 NAT/GR/000909

Source:
https://www.researchgate.net/publication/337393032_A_review_of_12_years_of_rat_eradication_operations_for_the_conservation_of_priority_island_nesting_birds_in_Greece

SWEDEN

Restoration of eelgrass beds on the Swedish west coast

Eelgrass (*Zostera marina*) © Duarte Gonçalves Frade (CC BY-SA 3.0)

More than 60 % of the eelgrass (*Zostera marina*) has vanished from the Swedish northwest coast since the 1980s as a result of nutrient pollution and overfishing. Although measures have significantly improved water quality in recent years, no natural recovery of eelgrass has occurred. Instead, the losses of eelgrass continue as a result of e.g. coastal exploitation. Restoration of eelgrass constitutes a potential tool to recreate historic habitats and to mitigate eelgrass meadows that are destroyed during exploitation.

A handbook prepared by the Swedish Agency for Marine and Water Management provides detailed technical guidelines for eelgrass restoration in Scandinavian waters and includes all important steps in the restoration process, from site selection and permit processes to harvest and planting of eelgrass and monitoring and evaluation of results. The described methods are based on extensive studies carried out along the northwest coast of Sweden, from 2010 to 2015, and are mainly applicable to the Skagerrak – Kattegat area including the Sound. Some of the methods may also be appropriate for the southern part of the Baltic Sea, but complementary studies will be needed before they can be recommended for this area as well.

Source: https://www.havochvatten.se/en/our-organization/publications/swam-publications/2021-03-16-handbook-for-restoration-of-eelgrass-in-sweden.html