



How to implement NbS in Natura 2000 areas?

Evaluation of pilot experiences for
upscaling & mainstreaming approaches



This two-pager summarises the pilot experiences from MANABAS Coast in overcoming the barriers to upscaling and mainstreaming NbS in coastal regions. These barriers can exist in three systems: social, natural and governance. The results of the NbS pilots (WP2) have been reflected upon in How To group meetings. From this reflection, several key points of good practice emerge for other coastal managers/professionals to upscale or mainstream NbS. It also provides input for the regional or national upscaling and mainstreaming strategies of NbS, linked to our project partners' pilots areas.



Natura 2000 is a European-wide network of protected areas aimed at conserving biodiversity, based on the Habitats and Birds Directives. Its goal is to achieve a “favourable conservation status” for natural habitats and species of community interest. Planned projects are assessed for their impact on these habitats, with some exceptions allowed if public interest prevails and Natura 2000’s coherence is ensured.

The European Union’s Nature Restoration Law (NRL), passed in 2024, promotes nature-based solutions (NbS). They can align nature conservation with coastal flood and erosion risk management, but their implementation in Natura 2000 areas has both opportunities and limitations. Natura 2000 can drive NbS if they aim at conservation, restoration, and maintenance, and align with other EU policies, offering access to finance. However, effective NbS implementation requires a deep understanding of ecosystems, conservation status, and governance, along with impact monitoring. NbS often need more space than traditional coastal protection, so hard structures are still prioritized in some areas. Furthermore, the transposition of EU directives into national law creates additional challenges in approving nature-based coastal protection measures.

Main findings and lessons learned

Several questions arise regarding NbS implementation in Natura 2000 areas, such as how to incorporate NbS development in impact assessments and whether impacts should be assessed immediately after construction or over a project’s lifespan. There is also the challenge of dealing with static borders in dynamic coastal areas, as Natura 2000 sites often fail to adapt to changing habitat borders within reasonable periods of time. Furthermore, some authorities still consider traditional hard structures, over NbS when assessing coastal protection.

Climate change requires adaptation in monitoring schemes and maintenance strategies, with indicators to be tailored to each measure and location. Expanding the exchange of experiences is important for addressing these issues. For successful integration, it is crucial to involve ecologists throughout the project lifecycle, prioritize ecosystem-based approaches, and ensure effective monitoring for long-term planning and minimal environmental impact during maintenance.

Designing solutions that balance flood risk reduction and habitat development can lead to more innovative outcomes. Overcoming knowledge gaps about coastal ecosystem dynamics will be key to fully integrating NbS within Natura 2000, benefiting both biodiversity and coastal protection.

Experiences

To collect and evaluate experiences about NbS implementation in Natura 2000 areas the group collated project examples in the different MANABAS partner countries. To make the cases comparable, leading questions on impact assessment, stakeholder involvement, monitoring, maintenance, and the projects role to mainstreaming NbS in Natura 2000 areas were developed.

The project examples elaborated on are the Prins Hendrik Dyke (NL), Westerschelde (B/ NL), Hundested to Helsingør coast (DK), Enø flood protection (DK), Eiderdamm Nord (D), Leybucht (D), Contentin (F), Flood defence Falsterbonäset in Vellinge (SW).

Some of the examples show, that NbS isn’t always the best solution for local habitats. For instance, the Eiderdamm Nord. Here hard structures with a smaller extension than possible NbS were chosen to not impact and disturb the surrounding habitats.

A literature research on Natura 2000 as an enabler or a barrier for NbS implementation supplements the collection of examples. The Chapter summarises the different experiences of the MANABAS partners in dealing with Natura 2000 legislations and their contributions to the MANABAS goal on mainstreaming NbS in the North Sea region.

Checklist for coastal managers and professionals

The group developed a “Natura 2000 cycle of implementation” with all the necessary steps for a successful implementation based on the partner’s experiences. The following table shows the individual steps. In the larger document of the group, the partners marked their needs of knowledge, partnership, legislation or skill in the equivalent step.

Table 1: Checklist for practitioners

Steps	Description
1	Identify the problem and/or opportunity
2	Identify Natura 2000 management responsibilities
3	Involvement (all stakeholders, ecologists, nature conservation authorities (!) etc.)
4	Select NbS
5	Design implementation processes
6	Implement NbS
7	Engagement and communication
8	Monitoring and evaluation for new NbS
9	Transfer and upscale
10	Monitoring existing NbS on flora and fauna, climate change, recreation
11	Maintenance of existing NbS
12	Adaptation maintenance
13	AI for monitoring, adaptation of monitoring

Future directions

- List the questions that remain unanswered related to your how to question;
- How to adapt monitoring schemes on climate change?
 - How to deal with dynamics in landscapes in an EIA?
 - How to deal with static borders in a changing environment (e.g. coastal retreat)?
 - What is the time of impact assessment of a NbS – impact during construction or over the lifetime of the measure?
 - Nature Restoration law and the national habitat: how to align them?
 - What are national legal challenges and policy questions in the pilots beyond Natura 2000?



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