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Marine Natura 2000 areas and Maritime Spatial Planning

Cross-border case study



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ABSTRACT

Title: Marine Natura 2000 areas and Maritime Spatial Planning

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Abstract:

This report examines and summarizes the role of the Natura 2000 nature protection framework in Maritime Spatial Planning (MSP). The report reviews the Natura 2000 framework from two perspectives: 1) Summarizing the Natura 2000 process at a general level for planning authorities: why, who, how and when select, implement, manage and assess the Natura 2000 sites and how the process interacts legally with MSP? 2) Examining in practice, what precondition do the Natura 2000 sites set for the planning of the marine environment. The report aims at making the Natura 2000 process more transparent and predictable for those involved in MSP. It concludes by listing the key messages related to the Natura 2000 framework for actors involved in MSP. While a large part of the summary and main conclusions applies broadly to all European Union states, particular attention is given to the interaction of the Natura 2000 network and the MSP processes in Estonia and in Finland. This report was finalized in spring 2019 when the MSP processes both in Estonia and Finland were ongoing. The national MSP's were expected to be in force by the beginning of year 2021.

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1. BACKGROUND

1.1 Natura 2000 in Maritime Spatial Planning (MSP)

Maritime Spatial Planning (MSP) aims at dealing with the competing interests for marine space in a sustainable way, in order to preserve key nature values. Achieving sustainable development requires practical tools for selecting, protecting and evaluating the status of priority species and natural habitats. Natura 2000 is a European Union-wide network of nature protection sites. The network aims at protecting the breeding and resting sites of threatened and rare species, and at conserving rare and characteristic natural habitat types. The network covers a notable part of the marine territory of the European Union (6 % in 2019). For example, the Natura 2000 network covers 20 % of the Gulf of Finland and Archipelago Sea in Estonia and Finland. **As a consequence, the Natura 2000 network offers MSP an existing framework for efficiently protecting important nature values.**

The establishment of the Natura 2000 sites is based on two directives of the European Union: the Birds Directive (2009/147/EC) and the Habitats Directive (92/43/EEC). The main aim of the directives and of the Natura 2000 network is to protect rare species and natural habitats, without excluding all human activities inside the Natura 2000 sites. Instead, the directives allow sustainable human use in the designated areas. Human activities are not allowed to jeopardize the favourable conservation status of the Natura 2000 sites, and activities that improve the status are encouraged. The established site network, the interpretation of the favourable conservation status and the environmental impact assessment of human activities vary slightly between the member states which influences the interaction between the Natura 2000 framework and spatial planning.

Since all 23 coastal member states of the European Union are required to establish maritime spatial plans, it is important to examine how the Natura 2000 framework is and could be handled in the national MSP processes. MSP is a relatively new instrument and still being initialized in many member states and therefore its connections to other frameworks such as the Natura 2000 are not yet thoroughly known. Approaches to accounting for the Natura 2000 in MSP may range from visualising the Natura 2000 sites on map as part of the background material, to explicitly analysing the influence of planning options on the favourable conservation status of the sites, and to designating new sites as part of the MSP process. Moreover, the character of the maritime spatial plan varies between member states from a legally binding regional plan (higher spatial resolution, zoning for marine activities) to a merely strategic document (lower spatial resolution, no zoning, more descriptive, not legally binding). Consequently, the Natura 2000 network sets some minimum requirements for the MSP processes but will be incorporated differently into the national MSP processes in different member states.

1.2 Aims of this report

This report examines the **role of the Natura 2000 framework in MSP**. It aims at facilitating the recognition of areas with high natural values in MSP, which is a relatively new planning instrument. The report reviews the Natura 2000 framework from two perspectives: **1) Summarizing the Natura 2000 process at a general level for planning authorities:** why, who, how and when select, implement, manage and assess the Natura 2000 sites and how the process interacts legally with MSP? The report aims at making the Natura process more transparent and predictable for those involved in MSP. **2) Examining in practice, what precondition do the Natura 2000 sites set for the planning of the**

marine environment. Since the practices differ between member states, this knowledge is important when doing MSP together with stakeholders at the national level and, in particular, across administrative borders.

The report was prepared as part of [Plan4Blue](#), an Interreg [Central Baltic](#) project (2016–2019). The project aimed at bringing together the key blue growth and MSP actors from Estonia and Finland to identify pathways to the sustainable use of the sea areas and resources. **The report is mainly targeted for planners in Estonia and Finland.** However, majority of the report applies to the member states of the European Union in general. In Estonia and Finland, there is a notable network of marine and coastal Natura 2000 sites, but there are distinct differences in the practices of applying MSP. Thus, the area is well-suited for illustrating the connections between Natura 2000 and MSP.

2. THE NATURA 2000 PROCESS

2.1 Natura 2000 in general

[Natura 2000](#) is the world's largest coordinated network of protected areas. It is based on the legislation of the European Union and applies to the territories of the member countries. The Natura 2000 sites cover the **main breeding and resting sites for the rare and threatened species and rare natural habitat types** (Figure 1). These protected species and habitats are listed under two directives: The Birds Directive and the Habitats Directive.

[The Birds Directive](#) was adopted in 1979 and amended in 2009. Under the Birds Directive, member states designate Special Protection Areas (SPA) following scientific criteria, set by the member state. SPAs are designated for protecting over 500 wild bird species (and sub-species) listed in the annexes of the Birds Directive, with special attention to 194 particularly threatened species (Figure 1). The member state is responsible for choosing the criteria for identifying *the most suitable territories* for resting and nesting of threatened species and wild birds in general. The SPA sites selected and designated by the member state will automatically become part of the Natura 2000 network. The member state reports the status and species of the SPA to the European Commission who evaluates if the designated sites are sufficient for protecting the wild bird species.

[The Habitats Directive](#), adopted in 1992, protects over 1000 animal and plant species and 200 natural habitat types that are considered rare. Under the Habitats Directive, each member state identifies and proposes possible Sites of Community Importance (SCIs) based on criteria set in the directive. These are areas with rare species and natural habitat types listed in the directive's annexes. In the annexes there are 'Reference lists' indicating which habitats and species are in certain Biogeographical regions. The European Commission analyses the site proposals with assistance from the European Environmental Agency. When the sites under the Habitats Directive are approved and adopted by the European Commission, the member state must designate the sites as Special Areas of Conservation (SAC) within six years (Figure 1).

The Birds Directive and Habitats Directive encourage (but do not require) the member state to prepare **management plans for the Natura 2000 sites**. These management plans can be prepared specifically for each site or integrated into other development plans. Management plans are mainly first done for sites where human pressure is high. Human activities are not allowed to significantly disturb the protected habitats or species living in the designated areas. Based on the directives, **all Natura 2000**

sites and all conservation objectives are equally important. The member state decides on the management and restrictions for human use in the Natura 2000 sites in practice. The directives determine that if a planned activity within or near a Natura 2000 site is suspected to have a significant harmful impact on the conservation objectives and the favourable conservation status, an Appropriate Assessment (Natura 2000 Impact Assessment) is required (Articles 6(3) and 6(4) of the Habitats Directive).

The Natura 2000 network includes terrestrial, coastal and marine sites. The marine environment is considered important in the Habitats and Birds Directives. These two directives together with the [Marine Strategy Framework Directive](#) are the environmental cornerstones of the [Integrated Maritime Policy](#) of the European Union (Figure 1). The Habitats Directive lists **nine marine natural habitat types and 16 marine species** that require the establishment of a marine SAC site (Figure 1). For example, there are **seven marine habitat types in the northern Baltic Sea** region: 1110 Sandbanks that are slightly covered by sea water all the time, 1130 Estuaries, 1140 Mudflats and sandflats not covered by seawater at low tide, 1150 Coastal lagoons, 1160 Large shallow inlets and bays, 1170 Reefs, and 1650 Baltic narrow inlets. Moreover, the protection of fish species is mainly based on designating important spawning areas as part of SAC sites. The Birds Directive lists **60 bird species whose protection requires protection of marine area** (Figure 1).

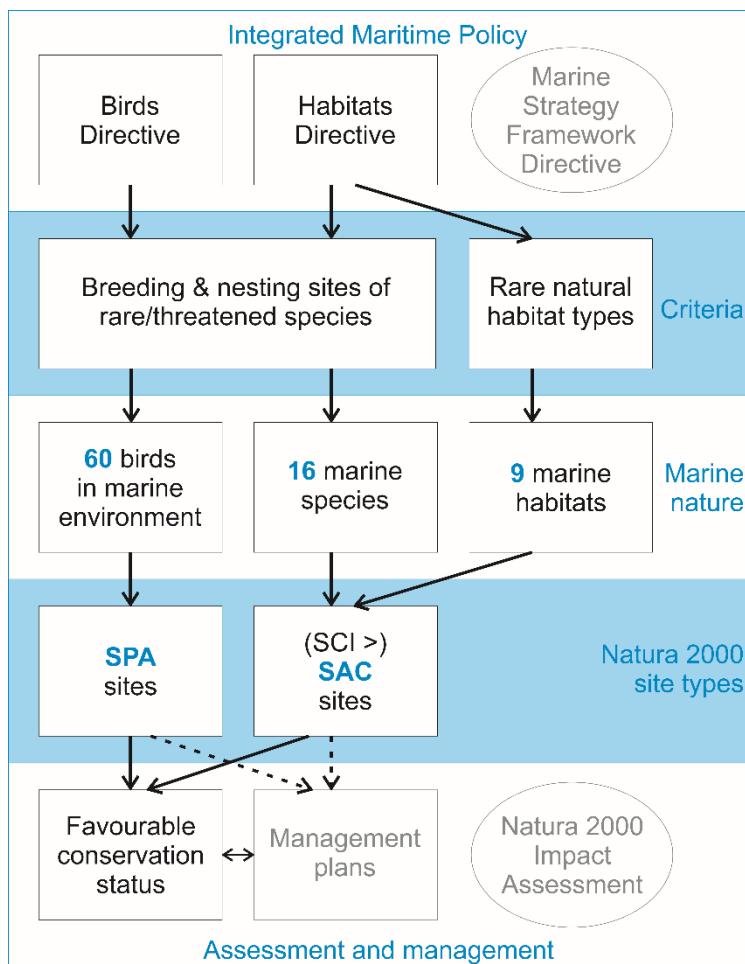


Figure 1. The general structure of the Natura 2000 framework under European Birds, Habitats and Marine Strategy Framework Directives.

Related references:

https://bd.eionet.europa.eu/activities/Natura_2000/index_html

http://ec.europa.eu/environment/nature/natura2000/sites/index_en.htm

http://ec.europa.eu/environment/nature/natura2000/marine/index_en.htm

2.2 Other nature protection frameworks in marine areas

In the territory of the European Union, the Natura 2000 is **not the only framework for protecting the marine environment**. Two global nature protection frameworks apply in the area: the [UNESCO Biosphere Reserves](#) and the [Ramsar Site](#) network (based on Ramsar Convention). Furthermore, regional nature protection frameworks apply to parts of the European Union. For example, a network of coastal and marine Baltic Sea protected areas ([HELCOM MPAs](#)) exists in the Baltic Sea (compare to [OSPAR](#) in the North Sea, [Barcelona Convention](#) in the Mediterranean Sea and [Bucharest Convention](#) in the Black Sea). In addition, the member states have national nature protection networks whose character varies greatly between countries. For example, the Estonian national network coincides fully with the Natura 2000 network, while in Finland the national and Natura 2000 networks overlap only partly (Figure 2). An example of the nature protection networks in Estonia and Finland in the Gulf of Finland is shown in Figure 2.

Although the general aim of all the marine nature protection frameworks is to protect the marine environment, their specific conservation objectives (such as protected habitat types and species), geographical area, responsibilities, management and assessment differ. The most important aspects of the frameworks are compared in Table 1. Compared to Natura 2000, the UNESCO Biosphere Reserves cover distinctly larger areas (see Figure 2 for an example from the Gulf of Finland). In contrast, the Ramsar Sites are smaller (in Estonia, the sites are defined as point locations; Figure 2). In the Baltic Sea, many of the Natura 2000 sites are designated as HELCOM MPAs. Some smaller Natura 2000 sites are covered by one larger HELCOM MPA. However, while the non-member Russia is excluded from the Natura 2000 network, the HELCOM MPA network covers also the marine territory of Russia (Figure 2).

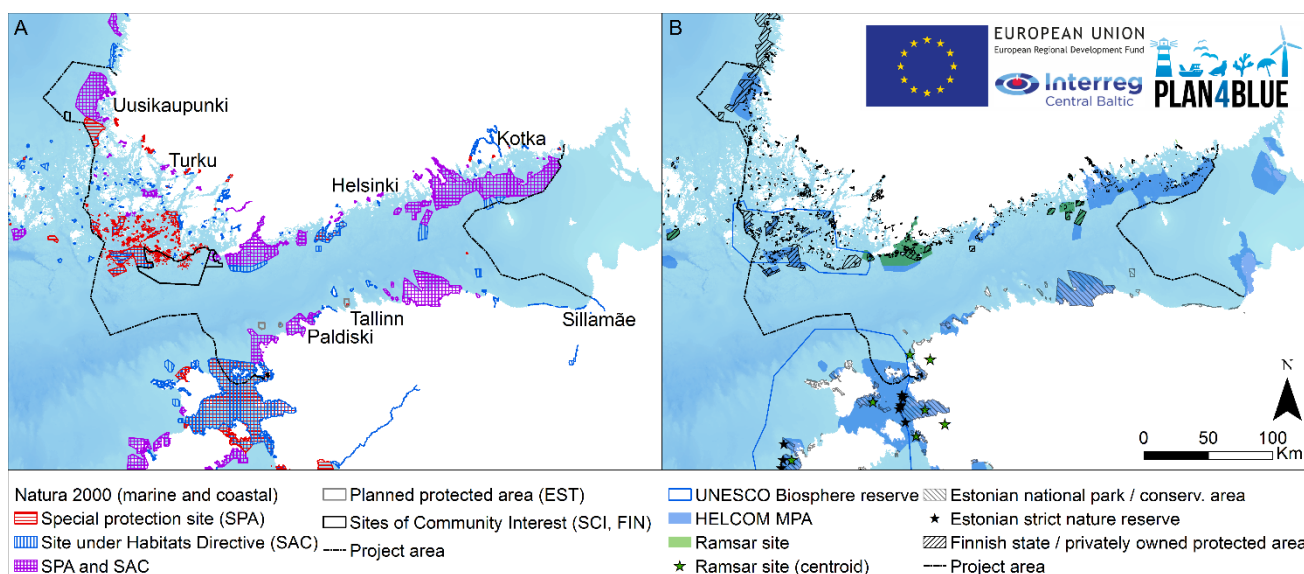


Figure 2. (A) Marine and coastal Natura 2000 sites in the project area and (B) UNESCO Biosphere reserves, HELCOM MPAs, Ramsar sites and national protected areas. The Natura 2000 network covers 20 % (c. 6400 km² including the new site proposals) of the marine project area (Data: European Environment Agency 2017, HELCOM 2018, Ramsar 2018, Estonian Environment Agency 2018 and Finnish Environment Institute 2018).

The **UNESCO Biosphere Reserves** are protected based on the [UNESCO Man and the Biosphere Programme \(MAB\)](#), created in 1971. The main aims of the programme are to facilitate sustainable use and conservation of biodiversity and to improve the relationship between people and their environment. Ecosystem approach to nature protection is applied by maintaining a global network of over 400 Biosphere Reserves. Similar to Natura 2000, the reserves can be terrestrial, coastal or marine ecosystems, or a combination of those. Each site has to perform three functions to be nominated and designated: a conservation function (preserve landscapes, ecosystems, species, and genetic variation), a development function (foster sustainable economic and human development) and a logistic function (support demonstration projects, environmental education and training, and research and monitoring related to local, national, and global issues of conservation and sustainable development). The Biosphere Reserves are typically large areas and consist of three management zones, with restrictions increasing inwards (see Figure 2 for a Baltic Sea example). The Biosphere Reserves are internationally recognized but nominated by the national governments and remain under the national jurisdiction.

The **Ramsar Sites** are protected under an intergovernmental treaty, the Convention on Wetlands, also known as the [Ramsar Convention](#). The Convention was adopted in 1971 and came into force in 1975. Its main aim is to establish a global framework for the wise use and conservation of wetlands through local and national actions and international cooperation. The Convention defines wetlands broadly, including for example swamps and marshes, estuaries, deltas, tidal flats, coral reefs and mangroves. For example, in the Gulf of Finland and the Archipelago Sea, the Ramsar Sites overlap with Natura 2000 sites (Figure 2). In Finland for example, all 49 Ramsar Sites are also SPA sites. The [Finnish Ramsar Sites](#) include shallow coastal areas, e.g. gulfs and island groups, but also terrestrial wetlands (important swamps and lakes for birds).

Related references:

http://www.ym.fi/fi-FI/Luonto/Luonnon_monimuotoisuus/Luonnonsuojelualueet/Ramsaralueet
Kosteikot pohjoismaissa ja Ramsar-sopimus – suojelusta, hoidosta ja käytöstä, 2004

The **HELCOM MPA** framework was established in 1994 by the Baltic Sea countries and is based on countries' agreement. It aims at forming a coherent network of protected areas, by complementing other nature protection instruments like Natura 2000 and the Ramsar Site network. The Natura 2000 and HELCOM MPA networks differ in that the Natura 2000 sites may also include inland areas, while the HELCOM MPAs include only marine and coastal areas. In addition, the Natura network protects nature values that are considered threatened at the scale of the European Union, whereas HELCOM MPAs protect natural habitats and species that are important in the Baltic Sea. While the HELCOM MPA network also includes areas in Russian waters, the Natura 2000 sites are limited to areas under the jurisdiction of the European Union (Figure 1).

Related references:

<http://www.helcom.fi/Lists/Publications/BSEP148.pdf>

Important Bird and Biodiversity Areas (IBAs) are based on internationally agreed set of criteria for the conservation of bird populations that can be applied in nature protection worldwide. IBA was developed by BirdLife International. IBAs are identified in terrestrial, freshwater and marine environments.

In Estonia almost all of the areas designated as Important Bird Areas (IBAs) are also covered by Natura 2000 SPAs. The SPAs were designated in course of an Estonian-Dutch joint project (SPAs in Estonia), with the EOS (Birdlife Estonia) as an Estonian partner to the project. When evaluating sufficiency of

Estonian SPA network, the Commission compared it to the IBAs and asked questions if there were differences in borders and area.

Related reference:

<https://www.birdlife.org/worldwide/programme-additional-info/important-bird-and-biodiversity-areas-ibas>

Country profile – Estonia. Support for the organisation of bilateral dialogues with Estonia. In the context of Action 5 of the Action Plan for Nature, People and the Economy

Table 1. International nature protection instruments applying to the marine environment and their main characteristics.

	Designation process	Aim	Main characteristics	Role in nature protection	Geographic extent
Natura 2000	EU member states propose SPA and SCI sites. European Commission approves SCI proposals as SAC	To avoid habitat and species loss in EU, to improve the status of environment	A network that needs to be handled as a network. However, each site is unique: conservation objectives vary	Comes from EU directives and put into force in member countries	European Union Terrestrial – coastal – marine
UNESCO Biosphere Reserves	State proposes and UNESCO approves	To facilitate sustainable use and conservation of biodiversity and to improve the relationship between people and their environment	Each site needs to fulfil three different conditions: a conservation function, a development function and a logistic function	Internationally recognized areas	Global Terrestrial – coastal – marine
Ramsar Sites	State designates based on common criteria formulated in the Ramsar Convention	To protect and use wetlands wisely and guarantee favourable management and protection level for wetland birds and for their nesting	Increase commitment in protection of wetlands, as they are among the most diverse and productive ecosystems	Secure wise use of wetlands, as they are important for many birds and are also important from water management perspective	Global Wetlands (terrestrial – coastal – marine)
HELCOM MPAs	Baltic Sea states compose HELCOM MPAs	To protect habitats and species that are important in the Baltic Sea	Aim to establish an ecologically coherent and effectively managed network of protected areas	Aim to protect Baltic Sea specific species and habitats. Comes from HELCOM	Baltic Sea Coastal – marine
Important Bird and Biodiversity Areas (IBA)	BirdLife identify, protect and manage the IBA network.	To protect and draw attention to important bird and biodiversity areas.	IBAs are mainly important bird areas but also important for other forms of biodiversity.	Draws attention to important areas which may be missed by other nature protection instruments.	Global Terrestrial – coastal – marine

2.3 Research on marine Natura 2000

The marine environment and the marine Natura 2000 sites are studied in several ongoing and completed projects. The information produced by individual projects is valuable in MSP, since MSP generally relies on existing data. This chapter shortly describes a selection of those projects in Estonia and Finland.

Estonia

In Estonia, projects have produced inventories of nature values in the marine areas. These include two projects funded by the Financial Mechanism of the European Economic Area, ESTMAR and NEMA, and two EU LIFE programme projects. All of these projects have involved Estonian Marine Institute of the University of Tartu as a project partner.

The project **Implementation of Natura 2000 in Estonian Marine Areas: site selection, designation and protection measures – ESTMAR** (2007–2011) was implemented by the Estonian Marine Institute of the University of Tartu and partners with the financial support of the Norwegian Financial Mechanism and Estonian Environmental Investment Centre. The goal of the project was to contribute to the implementation of Natura 2000 in Estonian marine areas.

The project activities included:

- 1) Investigations for potential new Natura 2000 sites in offshore areas of Estonia: Inventories of sea-birds, -fish, marine mammals and benthic habitats were carried out at selected offshore shoals.
- 2) Developing management plans for six existing Natura 2000 sites in the coastal sea based on existing data. More information on the project website: www.estmar.purk.ee.

The project **Inventory and development of monitoring programme for nature values in Estonian marine areas – NEMA** (2014–2016), was carried out by the Estonian Marine Institute of the University of Tartu together with partners (Estonian University of Life Sciences, NGO Pro Mare and NGO Baltic Environmental Forum from Estonia and GRID-Arendal from Norway). The general aim of the project was to contribute to the achievement of favourable conservation status of marine nature values in Estonian territorial waters and EEZ. More information on the project website: <http://nema.bef.ee/et/#materjalid-raportid>.

The LIFE project **Marine Protected Areas in the Eastern Baltic Sea** (2005–2009) produced inventories of benthic habitats, water birds, marine mammals and fish in the territorial waters of Estonia, Latvia and Lithuania. The project also analysed potential threats to the marine protected areas (bycatch of birds and seals, impacts of dumping of dredged material or other mechanical activities in marine Natura 2000 sites, disturbance impact from various economic activities on water birds and seals, pollution assessment) and developed management plans for selected marine protected areas. More information on the project website: <http://lifempa.balticseaportal.net/>.

The LIFE project **Innovative approaches for marine biodiversity monitoring and assessment of conservation status of nature values in the Baltic Sea – MARMONI** (2010–2015) developed new marine biodiversity indicators and assessment methods. In addition, it carried out marine nature inventories in Estonia, Latvia, Finland and Sweden. More information on the project website: <http://marmoni.balticseaportal.net/wp/>.

Finland

In Finland, several ongoing projects examine the marine nature. These include for example Tila2, SmartSea, Kvarken Flada and [SEAmBOTH](#). In addition, the long-span **Finnish Inventory Programme for the Underwater Marine Environment, VELMU**, collects data on the underwater marine biotopes, communities and species. More information on the VELMU website: <https://www.ymparisto.fi/en-US/VELMU>.

The project **Tila2** (2018–2020) by Metsähallitus Parks and Wildlife Finland searches for high biodiversity areas and compares them to the existing network of protected areas. In addition, it examines the

impacts of the nature protection status on particular areas and produces inventories of species and habitats in the protected areas.

The project **SmartSea** is focused on the Gulf of Bothnia. Sustainable use of marine resources is one of the core issues of the project. Marine Natura 2000 sites will also be taken into account in the projects work. More information on the project website: <http://smartsea.fmi.fi/what-is-smartsea-project/>.

The project **Kvarken Flada** (2016–2019) is a Finnish-Swedish cooperation project, focusing on flads and gloflads. Both of these landscapes are prioritized Natura 2000 habitat types and characteristic of the Kvarken area of the Gulf of Bothnia. The main aim is to gain understanding and knowledge of these habitats and of which areas are important in order to maintain different species and ecosystem services. More information on the project website: <http://kvarkenflada.org/in-english/about-the-project>.

The project **SEAmBOTH** (2017–2020) is a Finnish-Swedish cooperation project in the Bothnian Bay. One of the main aims of the project is to maintain and improve the status of ecosystems, biodiversity and ecosystem services in the project area. At the more detailed level, the project aims at harmonizing the habitat type definitions in Finland and Sweden. More information on the project website: <https://seamboth.com/about/>.

2.4 European examples of accounting for Natura 2000 in national MSP

While the MSP processes have only recently been initialized in many member states of the European Union, [a few countries](#) have already established national or sub-national plans for their marine territories. This section reviews existing maritime spatial plans and how the Natura 2000 network has been taken into account in four MSP processes: in Germany, in the Netherlands, in Belgium and in Poland.

Countries have adopted very different approaches to analysing and attempting to solve issues in reconciling nature protection and human sea uses in MSP. For example, the Netherlands and Poland have established concrete area-based management plans for the marine Natura 2000 sites. Some other countries have formulated general guidelines on how the Natura 2000 sites should influence other sea uses, but acceptability of each use is considered case-by-case. Member states prepare either national or multiple sub-national plans, which also influences the handling of the Natura 2000 network in MSP.

Germany: Strategic Environment Assessment of MSP for the German exclusive economic zone in the Baltic Sea

The [German MSP](#) process has so far produced two sub-national plans for the Exclusive Economic Zone (EEZ, i.e. not including the territorial sea), one for the German Baltic Sea and the other for the German North Sea. The [MSP for the German EEZ in the Baltic Sea](#) came into effect in 2009 as a **legally binding** statutory ordinance. The plan area includes [six Natura 2000 sites](#).

The spatial plan determines regulations for single uses and functions of sea space in the EEZ: shipping, exploitation of raw materials, pipelines and submarine cables, marine scientific research, energy production (especially wind energy), fisheries and mariculture, and protection of the marine environment. In addition, the spatial plan determines areas for single uses and functions.

During the establishment of the spatial plan, [Strategic Environmental Assessment](#) (SEA) was conducted in accordance with SEA Directive and the German Spatial Planning Law. In the selection of areas for specific uses, the **Natura 2000 sites and national protect areas have been avoided to a certain extent**. In particular, **the spatial plan does not allow offshore wind energy in the Natura 2000 sites**. In cases where other activities are planned in the protected areas, environmental impact assessments have been conducted according to the German Nature Conservation Law. In addition, results of pre-existing impact assessments have been taken into account. This procedure aims at avoiding notable adverse influence on the environment.

Related references:

<https://www.msp-platform.eu/practices/strategic-environment-assessment-german-eez-baltic-sea>
http://www.partiseapate.eu/wp-content/uploads/2014/02/Germany-country-fiche_20140214.pdf

The Netherlands: Policy Document on the North Sea of the Netherlands

The [Policy Document on the North Sea 2016–2021](#) is an appendix to the Dutch National Water Plan and constitutes the Netherlands' MSP. In contrast to the previous example from Germany, the plan covers both the territorial waters and the EEZ of the Netherlands.

The plan aims to employ an area-based approach to protecting ecologically vulnerable areas and threatened species, for example inside the existing Natura 2000 sites. The fundamental principle is not to ban all human activities in the protected areas, but rather to regulate or suppress those uses that endanger environmental values. During the MSP process, some marine and coastal areas were **designated as new Natura 2000 sites and management plans were prepared** for them and existing sites. The management plans **regulate activities in the Natura 2000 sites** by determining conditions for exemption, permit conditions and mitigating measures, such as codes of conduct and the temporary closure of areas. The temporary and permanent closure of areas is designed to give birds and seals sufficient peace and quiet in such places as foraging areas and breeding and nesting grounds. These areas also serve to protect the seabed and the species dwelling there.

It is stated in the policy document, that in accordance with the Dutch [Nature Conservancy Act](#), new activities with potentially significant adverse effects are generally not permitted in or near ecologically valuable areas (in practice: the Natura 2000 sites). However, they may be allowed by the authority when no realistic alternatives are available and there are pressing reasons of overriding public interest for allowing the activity to go ahead. If the activity is allowed in the protected area, the initiator of the project will have to minimize the adverse effects or compensate for them.

Related references:

<https://www.msp-platform.eu/countries/netherlands>
<https://www.government.nl/documents/policy-notes/2015/12/15/policy-document-on-the-north-sea-2016-2021>

Belgium: A marine spatial plan for the Belgian part of the North Sea 2014

Belgium approved the [Maritime Spatial Plan for the Belgian part of the North Sea](#) in 2014 (replacing one of the pioneering maritime spatial plans dating back to 2003). Similar to the Dutch case, the plan includes the Belgian territorial waters and its EEZ.

The Belgian part of the North Sea is one of the most intensively used seas in the world which causes high pressure to the environment. To protect nature, there are restrictions in the most valuable spots of the North Sea for activities such as fishing and sand exploitation. The spatial plan aims at **minimizing the human impact on the marine environment, while maintaining existing activities**.

In the North Sea, the plan adds no new sites but intends to **improve the coordination of human activities in existing Natura 2000 sites**. For example, in the SAC site 'The Flemish Banks' (a sand-bank area), four sensitive subzones were designated and given special restrictions. In addition, fishing and mineral extraction are strongly regulated inside the SAC site. In the three Belgian SPA sites, the existing restrictions are maintained, such as a ban on certain constructions and industrial and commercial activities.

In addition, areas have been designated for **future activities that are expected to have a positive influence on the marine environment**, and no negative impact. Areas designated for offshore wind energy are one good example, since shipping and fishing are prohibited around the windmills and the cemented feet of the windmills will provide feeding grounds for species like cod and bib. Crab and shrimp individuals and whiting populations have appeared to grow bigger in a wind farm compared to other parts of our North Sea.

Related references:

<http://msp.ioc-unesco.org/world-applications/europe/belgium/>

https://www.health.belgium.be/sites/default/files/uploads/fields/fpshealth_theme_file/19094275/Summary%20Marine%20Spatial%20Plan.pdf

https://www.health.belgium.be/sites/default/files/uploads/fields/fpshealth_theme_file/19103366/Brochure%20Something%20is%20moving%20at%20sea%20ed.2015.pdf

Poland: MSP of the West Part of the Gulf of Gdańsk

Poland has prepared pilot MSPs and several plans are being prepared (situation in spring 2019). One of the pilot plans covers the West Part of the Gulf of Gdańsk. The preparatory phase of the MSP process identified the key sea areas and assigned *basic and allowed functions* to them. It also identified key spatial conflicts and examined existing regulations regarding the use of the sea areas, e.g. those related to nature protection, fishery or defence. One of the key issues tested in the pilot process was the integration of Natura 2000 sites into the spatial maritime plan. At the time the plan was established, the marine Natura 2000 sites of the area did not yet have management plans.

The inclusion of ecologically valuable areas into the plan was done in three steps. First, an inventory of the ecological values was carried out. Secondly, the types of human activities that may potentially threaten the ecological values were assessed. Thirdly, this information was transformed into concrete regulations and solutions in the spatial plan. The ecological inventory covered:

- protected species and species requiring protection
- protected habitats and the habitats important for the protected species
- existing nature protection network in the plan area.

Human pressure was identified as the most significant threat to species and habitats in the plan area. The strongest human impact on valuable areas resulted from (each being concentrated on specific parts of the plan area):

- tourism
- excessive speeds of motor-driven vessels
- poaching, dredging and the use of nets and the influence of fishing harbours

- protection of seashore
- outlets of main drains close to the shallows
- military activities within the shallows.

The plan is regarded as an instrument to reconcile various interests related to the use of the sea space. Since the plan area is heterogeneous in terms of nature values and human pressures, it was divided into subareas to properly reflect their unique characteristics. The starting point for assigning sea uses for each subarea was the spatial inventory data of nature values. The zoning of sea uses was planned taking the habitat connectivity into account, avoiding e.g. the loss of migration routes due to shipping lanes crossing environmentally valuable areas. In addition, detailed requirements for sea uses were determined separately for each subarea.

Related references:

<https://www.msp-platform.eu/countries/poland>

<https://www.msp-platform.eu/practices/know-how-msp-natura-2000-areas>

2.5 Natura 2000 network in Estonia and Finland

The Natura 2000 network covers a notable part of the marine areas in Estonia and Finland. For example, 20 % or ca. 6400 km² of the marine Plan4Blue project area in the Gulf of Finland and Archipelago Sea are designated as Natura 2000 sites (including the new site proposals; Figure 3).

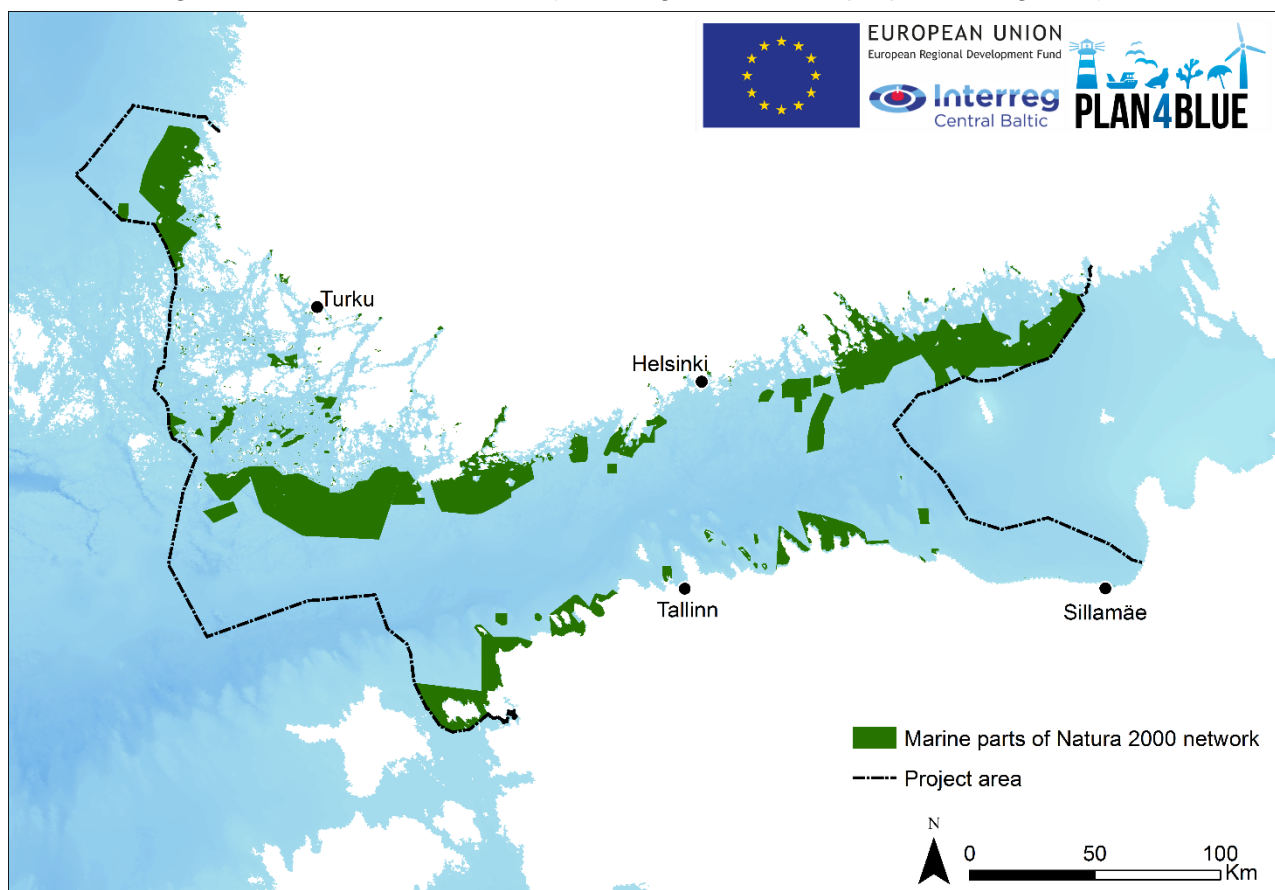


Figure 3. Marine parts of the Natura 2000 network within the Plan4Blue project area, in parts of the Gulf of Finland and the Archipelago Sea. Natura 2000 sites cover 20 % of the marine project area.

Estonia

The Estonian Natura 2000 network consists of 66 SPAs with a total area of approximately 12 682 km² and 541 SACs with a total area of 11 689 km² (situation at the end of 2017). As the SPAs and SACs largely overlap, the total area of Estonian Natura 2000 network is 14 859,30 km² (which is 634,30 km² bigger than the initially designated network in 2004). The biggest changes took place in 2010, 2015 and 2017.

The Natura 2000 network covers 27 % (6 787,74 km²) of Estonian marine area (including inland sea and territorial waters) and an additional 829 km² of the biggest lakes, Peipsi and Võrtsjärv. Terrestrial sites form 48.7 % (7 242,52 km²) of Estonian Natura 2000 network and cover 16.7 % of Estonian land territory. In Estonia, 60 habitat types and 99 species listed in the Annexes of the Habitats Directive occur. Natura 2000 sites have been designated for 60 habitat types and 53 species listed in the Annexes of the Habitats Directive and for 129 bird species (migratory species and species listed in Annex I of the Birds Directive).

Related references:

<https://infoleht.keskkonnainfo.ee/default.aspx?id=1678265564&state=7;-949990180;est:eelisand;;>
<https://www.envir.ee/et/natura-2000>

Finland

In Finland, 69 habitat types listed in the Annexes of the Habitats Directive are found, and 22 of them are primarily protected. One quarter of all Natura 2000 network is water areas, including both freshwater and marine areas. The national nature protection network is generally older than the Natura 2000 network, and therefore many of the pre-existing national nature conservation areas have been later designated as Natura 2000 sites. In some cases, one Natura 2000 site may overlap with several national protected areas. However, only c. 85 % of the Finnish Natura 2000 sites are part of the national nature protection network. In other words, in contrast to Estonia, not all Natura 2000 sites are nature conservation sites in Finland.

In December 2018 Finland proposed several expansions to the existing marine Natura 2000 sites in the western Gulf of Finland and the Archipelago Sea. After these new sites have been included in the SAC and SPA network, the marine Natura 2000 network in Finland will cover approximately 7725 km², or 9,5 % of the Finnish marine area of 81 500 km² (including the EEZ).

Related references:

http://www.ym.fi/fi-FI/Luonto/Luonnon_monimuotoisuus/Luontotyyppien_suojelu
http://www.ymparisto.fi/fi-FI/Luonto/Suojelualueet/Natura_2000_alueet
Natura-alueiden yleissuunnitelma 2016 (2017). Varsinais-Suomen ELY-keskus.
https://www.ymparisto.fi/fi-FI/Luonto/Suojelualueet/Natura_2000_alueet

Table 2. Natura 2000 areas in numbers in Estonia and Finland. Numbers cover Estonia and Finland in total, not only the Plan4Blue project area.

	Estonia	Finland
Number of SPA	66	468
Number of SCI/SAC	541	1721
Number of habitat types (Habitats Directive) occur	60	69
Marine area (including EEZ) covered by Natura 2000 sites	approximately 27 % (6788 km ²). No Natura 2000 sites in the EEZ yet.	approximately 9,5 % (81500 km ²).

2.6 National nature protection in Estonia and Finland

Estonia

In Estonia, all Natura 2000 sites are also national protected sites. A national protected area is established first and then, if relevant, the site is proposed/designated as a Natura 2000 site by the Ministry of the Environment (Nature Conservation Department). According to the Estonian Nature Conservation Act, there are six types of protected natural objects in Estonia:

1. **Protected areas** (including national parks, nature reserves, landscape protection areas) – established by the Government of the Republic
2. **Limited-conservation areas** (areas designated for the conservation of habitats, for the preservation of which the impact of planned activities is estimated and activities liable to damage the favourable conservation status of the habitats are prohibited) – established by the Government of the Republic
3. **Protected species and fossils** – placed under protection by a regulation of the Government of the Republic (species of I and II protection category) or by a regulation of the Minister of the Environment (species of III protection category, fossils)
4. **Species' protection sites** – established by the Minister of the Environment
5. **Individual protected natural objects** – placed under protection by the Minister of the Environment
6. **Natural objects protected at the local government level.**

The procedure of placing natural objects under protection is set in the Nature Conservation Act. Everyone has the right to submit a proposal to place a natural object under protection to the authority competent to initiate the proceedings for placing under protection.

The authority competent to initiate the proceedings for placing under protection will arrange for expert assessment of the justification and purposefulness of placing the natural object under protection and assessment of the purposefulness of the planned restrictions. If a natural object has the required prerequisites and placing the object under protection is purposeful, the relevant proceedings will be initiated and the authority conducting the proceedings is appointed by the Ministry of the Environment (except in case of proceedings for placing a natural object under local protection, which are initiated and conducted by the local authority). The authority conducting proceedings for placing a natural object under protection will publish a notice concerning the initiation of the proceedings in the official publication *Ametlikud Teadaanded* and at least one national daily newspaper and a local newspaper (in case of local protected area only in the local newspaper). A draft decision for placing a natural object under protection together with related documents will be displayed for public examination at facilities of the Environmental Board or the local authority. The duration of the public display must not be less than two weeks. After the proceedings regarding proposals and objections and revising the draft decision, a public discussion will be organized. The letter of explanation of placing a natural object under protection will be published on the website of the Ministry of the Environment (or on the website of the rural municipality or city government in case of local protected areas).

Protected areas, species protection sites and individual protected natural objects have protection rules establishing the protection procedure of the area, including the protection zones (strict nature reserve, conservation zone, limited management zone). The manager of a protected area, limited-conservation area, species protection site and protective zone of a protected natural monument is the Environmental Board.

A limited-conservation area is established with the aim to ensure the favourable conservation status of wild fauna, flora and fungi (in principle Natura 2000 sites that are not designated as other types of national protected areas). Limited-conservation areas do not have protection rules, but their protection is ensured by the Nature Conservation Act. Destruction or harming of the habitats for the protection of which a limited-conservation area was formed, significantly disturbing the protected species, and all activities which are likely to endanger the favourable conservation status of the habitats and protected species are prohibited within a limited-conservation area. The impact of activities planned within a limited-conservation area on the status of habitats and species will be evaluated in the course of the environmental impact assessment or based on notification about the planned activity submitted to the manager of the limited-conservation area (Environmental Board). Notification and approval of the manager of the limited-conservation area is required for construction of a road, removal of a natural rock or soil, altering the water levels and shorelines of bodies of water, use of biocides and plant protection products, cultivation and fertilising of natural and semi-natural grasslands and polders, cutting of trees located within areas that have the characteristics of a wooded meadow, construction and reconstruction of land improvement systems, collection of reed.

The Nature Conservation Act also sets the **restrictions for use of shores and banks**. The following are zones within the area of a shore or bank:

1. **the limited management zone** (200 m on the shores of the Baltic Sea and biggest lakes; 100 m on the banks of lakes $>0,10 \text{ km}^2$, rivers with a catchment area $>25 \text{ km}^2$; 50 metres in the event of springs and on the banks of lakes up to $0,10 \text{ km}^2$, rivers with a catchment area of up to 25 km^2)
2. **the building exclusion zone** (200 m on the sea coast within Narva-Jõesuu city limits, and on the sea-islands; 100 m on the sea coast and the shores of biggest lakes; 50 m on the banks of bodies of water within densely populated areas, on the banks of lakes $>0,10 \text{ km}^2$ and rivers with a catchment area $>25 \text{ km}^2$; 25 m in the event of springs and on the banks of lakes up to $0,10 \text{ km}^2$, rivers with a catchment area of up to 25 km^2)
3. **the water protection zone** – The extent of and restrictions to water protection zones of shores and banks are provided by the Water Act.

The following is prohibited within the limited management zones of shores and banks:

1. land treatment by sewage sludge;
2. establishment of burial sites;
3. construction and expansion of facilities prescribed for waste processing or storage, except in the territory of ports;
4. extraction of mineral resources;
5. driving a power-driven vehicle outside designated roads and driving an all-terrain vehicle, except for state monitoring, work related to the management of a protected natural object or the performance of maintenance work in a green zone of a densely populated area, transportation of watercraft needed for fishing activities by a person holding the right to fish as a professional activity or for recreation, for collecting reed and gathering seaweed, and for forestry work and agricultural work on profit-yielding land.

Related references:

<https://www.riigiteataja.ee/akt/128062013017>

Finland

In Finland, the national nature protection system is somewhat similar to that of Estonia. Protected areas are first established through national legislation and then included in the Natura 2000 network if relevant. The national protection is most commonly achieved through the Finnish Nature Conservation Act and then supplemented through the Water Act, Environmental Protection Act, Forest Act, Land Use and Building Act, Outdoor Recreation Act or the Act on the Protection of Rapids.

The protection status and degree of limitations to human uses depends on the type of protected area and the law(s) used in its designation:

- **National parks** (kansallispuisto) are larger (>10 km²) areas located in state owned areas, each established by a separate law by the parliament. National parks are used for outdoor recreation and they have rules and regulations to ensure sufficient nature conservation. Currently there are 40 national parks in Finland, all of which are managed by Metsähallitus, Parks and Wildlife Finland.
- **Strict nature reserves** (luonnonpuisto) are areas intended to be left in their natural state for nature conservation and research. They are located on state owned lands and are established by law or statute. Most of these 19 areas are totally closed for the public, with some exceptions that have access to marked trails only.
- **Mire reserves** (soidensuojelualue), **protected herb-rich forest reserves** (lehtojensuojelualue) and **old-growth forest reserves** (vanhojen metsien suojelualueet) area areas selected through national protection programmes. In most of these areas uses that are included in the everyman's rights area allowed but camping and making a fire are prohibited.
- **Seal reserves** (hylkeidensuojelualueet) have been established to protect the grey seals (*Halichoerus grypus*) and their habitats, and some of these seven areas are also important for the ringed seal (*Pusa hispida botnica*). The seal reserves are marked on official maps and charts and entering them without a permit is forbidden all year within half a nautical mile (926 m) of islets and groups of islets. Boating is allowed through official shipping lanes. Hunting is forbidden but professional fishing is allowed in the reserve areas as long as it is done further than half a nautical mile from the islets and seal-safe gear is used.
- **Privately owned protected areas** (yksityiset luonnonsuojelualueet) can be established by the environmental authorities (ELY-keskus) if the owner such as an individual, municipality or organization applies for it. Privately owned protected areas have so far been established on land and mostly in southern Finland, but plans have been declared to establish a private marine protected area in the Archipelago Sea in coming years.
- **National hiking areas** (valtion retkeilyalueet) have been established by the government by law and are included in the Natura 2000 network. Uses of these five areas area focused in outdoor recreation such as hiking and camping, but hunting, fishing and limited commercial forestry operations are also practised.
- **Wilderness areas** (erämaa-alueet) are large area situated in northern Finland, aimed to conserve nature and preserve local Sámi culture and livelihoods. These five areas have been designated by the Wilderness Act and are also included in the Natura 2000 network. Restrictions on mining and forestry operations may apply depending on area.

Other protected areas include areas established by Metsähallitus before the year 2005 Metsähallitus Act.

Related references:

<http://www.metsa.fi/web/en/protected-areas>

http://www.ym.fi/en-US/Nature/Biodiversity/Nature_Conservation_Areas

3. MATERIAL AND METHODS FOR EXAMINING THE INTERACTIONS OF NATURA 2000 AND MSP

3.1 Used material

The conclusions of this report on the interactions of the Natura 2000 framework and MSP are mainly based on existing literature (Figure 4). In addition, information was gathered during two workshops organized by the Plan4Blue project and involving MSP stakeholders in Estonia and Finland. After the first workshop, supplementary stakeholder interviews were conducted in Estonia and Finland. The workshops were held in September 2018 and March 2019.



Figure 4. Main material used in this report was literature. Workshops organized in September 2018 and March 2019 provided important material and feedback from experts. Supplementary interviews, conducted in the end of 2018 and beginning of 2019, deepened the understanding of the relevant issues related to Natura 2000 areas.

First workshop on the cross-border implications of MSP in the Gulf of Finland, 4.–5.9.2018, Turku

The first work package 4 (cross-border implications) workshop was held in Turku on 4th and 5th of September 2018. Participants were from the project partner organizations and also relevant external experts who were invited by sending email invitation. Three main themes in the workshop were Marine Natura 2000, Shipping and Fisheries. In total there were 36 participants during those two days.

In the workshop we mostly worked in the three thematic groups. The first day started with orientating background presentations of the project, Maritime Spatial planning in both countries and of the WP1 scenario work. After the presentations there was around two hours group work phase. The group works contained work in the thematic groups but also sharing the findings and adding some new ideas between the groups. The second workshop day was mainly group work and also included few cross-sectoral parts as the previous day.

In the first day the main focus in the Natura 2000 group work was to identify key drivers that affect marine Natura 2000 sites and nature protection in the future. There was also short discussion about what preconditions Natura 2000 sites set for MSP. In the second day the focus was on the future: as MSP processes are ongoing, how should Natura 2000 sites be handled in MSP. We also asked for hopes and expectations that participants have for MSP. Turku University produced several map layouts for the workshop. The main map was visualization of the current Natura 2000 sites in the project area. There were also visualizations of three Natura 2000 case study areas with the WP2 vulnerability profile product as the background information.

Second workshop on the cross-border implications of MSP in the Gulf of Finland, 13.–14.3.2019, Tallinn

The second work package 4 workshop was organized on 13th and 14th March 2019 in Tallinn. Participants were invited in a similar way as to the first WP4 workshop. Three main themes were also the same: Marine Natura 2000, Shipping and Fisheries.

The working format was working in thematic groups. Marine Natura 2000 group work covered three main topics: environmental aspects of the cases, possibilities of spatial analysis and key messages of the Natura 2000 case.

During the first day we had sessions on *environmental aspects of the case* and *possibilities of spatial analysis*. In the first session we had Sankey diagram showing pressures from human activities on different ecosystem components. The diagrams are based on classification developed in HELCOM TAPAS project. Participants were asked to define which links (human activities – pressures – ecosystem components) can be considered in MSP and which links in other planning levels. In the second session we discussed about spatial analysis in MSP – spatial analysis for locating conflicts and potential. In the second day we had a session on *key messages of marine Natura 2000 case*.

Interviews of environmental authorities and experts

Also, complementary interviews were conducted after the first workshop. The main aim of the interviews was to get deeper knowledge and views to the case main questions. The interviews were conducted in Finland and Estonia in December 2018 and January 2019. Public authorities in charge of Natura 2000 were interviewed in Finland and in Estonia, two different authorities in Finland and in Estonia experts from two authorities (Ministry of the Environment and Environmental Board) and from environmental NGOs. The interview questions were formed by the Natura 2000 case core team. The interview was semi structured, so it left space for other question to rise during the interview. The interview structure was formed in English and translated to Finnish and Estonian. Interviews were conducted in Finnish and in Estonian. The interview material was used to supplement the information from literature and from the first WP4 workshop.

3.2 Selection of exemplary Natura 2000 sites for examination

Examination of the implications of the Natura 2000 framework on the planning of human activities should take into account both the individual characteristics of the Natura 2000 sites and the entire site network. However, to more clearly illustrate the human-nature-interactions, three marine Natura 2000 sites located in Plan4Blue project area were selected for more detailed examination in this report. These included the *Pakri* site at the Estonian coast of the Gulf of Finland, the *Seilin saaristo* site in the Finnish Archipelago Sea and the *Uudenkaupungin saaristo* site in the Finnish Gulf of Finland (Figure 5).

All selected sites are class C sites and thus belong to both SPA (Birds Directive) and SCI/SAC (Habitats Directive) networks. In addition, the sites are located in areas of multiple marine activities. The C class is complex and therefore suited well for closer examination and comparison. With a closer look at these sites, we aimed at identifying some of the main restrictions and limitations set for human activities, comparing the restrictions between different sites, and finding out how individual Natura 2000 sites need to be incorporated into the MSP process.

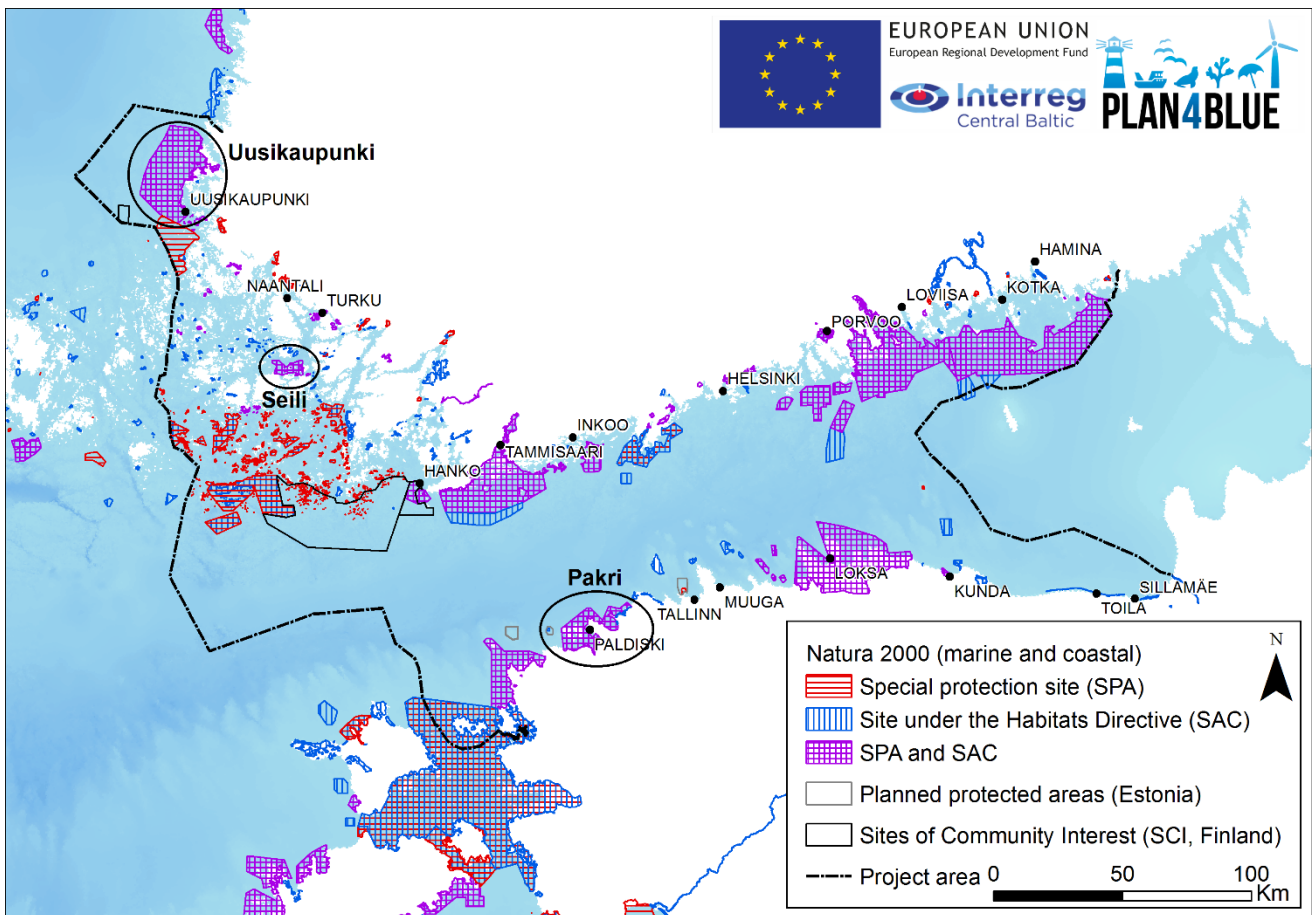


Figure 5. Marine and coastal Natura 2000 sites in the project area and the three selected case sites, Uudenkaupungin saaristo (Archipelago of Uusikaupunki), Seilin saaristo (Archipelago of Seili) and Pakri (Data: European Environment Agency 2017, Estonian Environment Agency 2018 and Finnish Environment Institute 2018).

3.3 Examination of the spatial interactions between human activities and nature in the Natura 2000 sites

To account for the impact of current human activities and the potential changes in those activities on the Natura 2000 conservation objectives, MSP would benefit from spatial analysis methodology. A preliminary examination of spatial data of the Plan4Blue project area (parts of Gulf of Finland and Archipelago Sea in Finland and Estonia) indicated that existing data may be insufficient for explicitly analysing the spatial interactions of human activities and the nature. Moreover, the final analyses should be carefully coordinated by spatial planning authorities to meet the particular needs of the national MSP process. However, the methodological principles and illustrative results are reported here. The analysis should consider following principles:

- Consider each Natura 2000 site as a unique unit with different conservation objectives and different forms of interactions with human activities
- Be based on appropriate spatial data and analysis methods, evaluated according to scientific standards
- Consider the impacts of human activities on Natura 2000 conservation objectives not only inside the Natura 2000 sites but also from outside

We propose that the analysis consists of following steps:

1. Identifying the key conservation objectives (protected species and natural habitat types) of each Natura 2000 site
2. Identifying the critical human activities that have important interactions with the key conservation objectives (step 1) and the interaction processes
3. Identifying appropriate spatial data of the key conservation objectives (step 1) and the critical human activities (step 2)
4. Identifying appropriate geospatial analysis methods for quantifying the interaction processes (step 2)
5. Performing, documenting and reporting the analysis and visualising the results on maps
6. *Weighting* the spatial results of human-nature-interactions based on different criteria, e.g. rareness of a species or natural habitat type
7. Combining the analyses of individual Natura 2000 sites into a cumulative impact surface
8. Transforming the analysis results into spatial recommendations: *implications of the interaction between human activities and conservation objectives in the Natura 2000 site*

When evaluating the influence of a human activity on Natura 2000, MSP should consider the entire site network. In other words, steps 1–6 should be repeated individually for all marine Natura 2000 sites and the results combined to produce a cumulative impact surface (step 7). This procedure ensures that both the individual characteristics of the Natura 2000 sites and the entire site network are taken into account.

Illustrative results of human-nature-interaction analyses are given in section 4.3 (for three example sites to illustrate the methodology more clearly). For each of the three exemplary Natura 2000 sites, one key natural habitat type and one critical human activity (shipping in all examples) were selected. In each case, the propagation of ship-induced disturbance was analysed using simple visibility analysis. The analysis identified the source areas of ship-induced waves and other disturbances for the Natura 2000 site. Moreover, the analyses weighted the impact of different parts of the source area based on the shipping density (based on AIS data from 2016 available via HELCOM data portal) and distance to the Natura 2000 site. The weighted impact was translated into spatial recommendations by subjectively classifying the marine area into three classes: 1. no conflicts regarding the examined Natura 2000 site (outside wave source area), 2. increased shipping not recommended (distant parts of the wave source area and/or areas with low shipping density) and 3. shipping requires special attention (wave source areas close or inside the Natura 2000 site and with high shipping density).

4. NATURA 2000 AND MSP IN PRACTICE

4.1 Limitations set by Natura 2000 for sea use

The marine Natura 2000 sites set legal limitations for sea use and marine activities. The **European Commission does not give specific binding restrictions** (e.g. a total ban of offshore wind energy production across entire network) for human activities inside the Natura 2000 network. Instead, it formulates a set of **broader principles that should be considered site-specifically** when regulating sea use. In other words, the Natura 2000 sites are not “no go” areas but areas where human activities may be practiced in a sustainable way. The state and regional authorities have a responsibility to interpret the general principles and put them into action. Consequently, the **management practices and specific restriction for human activities vary between member states and individual sites.**

In addition to the legislation (Birds Directive and Habitats Directive), more **informal guidance for the management of the Natura 2000 network** is provided at the European Union level. These are non-binding interpretations of the implications of the Natura 2000 legislation. Fishing and the harvesting of marine aquatic resources have been identified a common and significant pressures for marine ecosystems. Addressing these threats in the marine Natura 2000 sites would require establishing fishery management measures. [A review of commonly used approaches for managing fisheries in marine Natura 2000 sites](#), with some illustrative examples, has been prepared for the European Commission in 2018 by the *Natura 2000 group* (a European Union interest group for Natura 2000). The European Commission has also produced a number of sector-specific guidance documents for the implementation of the provisions of the Birds Directive and Habitats Directive in the marine environment, e.g. [Aquaculture and Natura 2000](#), [Estuaries and coastal areas](#), [Wind energy development and Natura 2000](#) and [Non-energy mineral extraction and Natura 2000](#).

Related references:

http://ec.europa.eu/environment/nature/natura2000/marine/index_en.htm

The [Espoo Convention](#) (Convention on Environmental Impact Assessment in a Transboundary Context) requires that the environment impact assessment must be prepared in cross-border collaboration for all internationally significant development plans. The Convention ensures that potential impact of a large-scale project beyond the national territory on Natura 2000 sites is evaluated. The assessment takes into account the conservation objectives of involved Natura 2000 sites and evaluates if the proposition can be allowed based on these criteria or if the favourable conservation status of the sites does not allow the proposed human activity.

While the restrictions set by the marine Natura 2000 sites on sea use depend on the conservation objectives (natural habitats and species) and local conditions of each site as well as local law, some rough generalizations can be made. For example, reef habitats (1170) as in Figure 6 are generally not as sensitive to environmental degradation as other marine habitats and therefore their favourable conservation status may allow more human activities in the vicinity of the Natura 2000 site. Some activities generally conflict with conservation objectives: e. g. mineral extraction is not possible in areas of sandbanks (1110) or reefs. **All conservation objectives are equally important based on the Birds Directive and the Habitats Directive.** In addition, all Natura 2000 sites and also their surroundings are important for protecting the environment, since isolating populations of threatened species or unsustainable sea use directly beyond the site borders have adverse effects on the nature. Thus, assessment for separate Natura 2000 sites is not sufficient: the entire Natura 2000 network and its surrounding environment should be considered simultaneously.



Figure 6. Underwater picture of reef. Photo by Kaire Kaljurand, Estonian Marine Institute, University of Tartu.

In **Estonia** all of the SACs and SPAs are protected according to one of the legal acts described below. Legal acts that establish site-level conservation measures depend on which type of protected area the site is protected as according to the national rules:

- For protected areas, area-specific protection rules;
- For limited conservation areas, the [Nature Conservation Act](#);
- For species protection sites, the species-specific protection rules;
- For individual protected natural objects the country-wide protection rules.

According to Estonian laws, whenever an appropriate assessment (Natura 2000 assessment) under Art 6(3) of the Habitats Directive should be carried out, it must be made according to EIA or SEA procedures. Conclusions of the Natura 2000 assessment are binding on the decision maker, i.e. according to the national EIA law, a positive decision may only be made if the EIA or SEA concludes that the project or plan does not harm the integrity or conservation objectives of Natura 2000 sites. The legal bases and procedure of environmental impact assessment and strategic environmental assessment is provided by the [Environmental Impact Assessment and Environmental Management System Act](#). The strategic environmental assessment that is conducted in the course of preparing a spatial plan is subject to the procedural requirements arising from the [Planning Act](#), requirements of the content of the strategic environmental assessment and of other conditions stem from the Environmental Impact Assessment and Environmental Management System Act. [The Water Act](#) regulates the use and protection of water, relations between landowners and water users and the use of public water bodies and water bodies designated for public use. [The Fishing Act](#) and [Fishing regulation](#) might be also relevant. In Estonia the Natura 2000 sites that are not confirmed yet are complicating the planning processes as there are different regulations for the proposed Natura 2000 sites and for the verified sites.

Related references:

[Country profile – Estonia. Support for the organisation of bilateral dialogues with Estonia. In the context of Action 5 of the Action Plan for Nature, People and the Economy](#)

In **Finland**, management of the Natura 2000 sites is mainly guided and human activities regulated by the national [Nature Conservation Act \(1996/1096\)](#). Depending on the site, also other national acts are relevant, including the Land Extraction Act (555/1981), Act on the Protection of Rapids (35/1987), Wilderness Act (62/1991), Forest Act (1093/1996), Land Use and Building Act (132/1999), Environmental Protection Act (86/2000) and Water Act (587/2011). Thus, the Finnish Natura 2000 sites should be protected in a way that the protection goals set in the law both at the European Union and national levels are achieved. If existing land use in a Natura 2000 site needs to be strongly restricted to meet the goals of the Birds Directive or the Habitats Directive, the site will be protected under the Nature Conservation Act and given a higher conservation status. For example, aquaculture can be permitted in a Natura 2000 site if it doesn't significantly influence the favourable conservation status of the protected habitats or species. In addition, the national [Act on Environmental Impact Assessment Procedure \(252/2017\)](#) requires that an environmental impact assessment must be prepared for all large projects. This ensures that the impact of all significant plans also in the Natura 2000 sites is examined and regulated if necessary.

Related references:

<https://mmm.fi/documents/1410837/1801200/Kansallinen+vesiviljelyn+sijainninhojaussuunnitelma/55a022d6-054b-4136-b8b3-bcae09e53379>

4.2 The national Natura 2000 process in practice

The Habitats Directive lists nine marine habitat types and 16 species for which marine site designation is required, and the Birds Directive lists a further 60 bird species whose conservation requires marine site protection. Under the Habitats Directive the EU Member States designate Special Areas of Conservation (SACs) to ensure the favourable conservation status of habitat types and species. The criteria for the choice of sites are specified in the directive. The Member States carry out an assessment of each of the habitat types and species on their territory and submitted lists of proposed Sites of Community Importance (pSCIs) to the European Commission. Scientific biogeographical seminars are convened for each region to determine whether sufficient sites have been proposed by the Member States. After the lists of Sites of Community Importance (SCIs) have been adopted, the Member States designate them as Special Areas of Conservation (SACs) within six years' time.

Under the Birds Directive the EU Member States designate Special Protection Areas (SPAs) according to scientific criteria such as the percentage of the population of a listed vulnerable species or wetlands of international importance for migratory waterfowl. Member States may choose the most appropriate criteria, but they must ensure that the most suitable territories both in number and surface area are designated. Based on information provided by the Member States, the European Commission determines if the designated sites are sufficient to form a coherent network for protection. The sites then become a part of the Natura 2000 network.

The Habitats Directive article 17 requires Member States to report every six years on the implementation of the Habitats Directive and the main focus is on maintaining and/or restoring a favourable conservation status for habitat types and species of Community interest. The Birds Directive reporting is

also done with similar six years' intervals. Currently the reporting for the period of 2013–2018 is being prepared and Member States will submit their reports to the Commission during the spring of 2019.

If it is evident in the reporting results that a Member State does not have enough designated Natura 2000 area e.g. for a marine habitat, the Commission will request the Member State to clarify the situation and take appropriate action to ensure the favourable conservation status.

Related references:

http://ec.europa.eu/environment/nature/natura2000/sites/index_en.htm

http://ec.europa.eu/environment/nature/natura2000/marine/index_en.htm

http://ec.europa.eu/environment/nature/knowledge/rep_habitats/index_en.htm

http://ec.europa.eu/environment/nature/knowledge/rep_birds/index_en.htm

In **Estonia** the Nature Conservation Department of the Ministry of the Environment is responsible for designation and reporting on the Estonian Natura 2000 network. In management and monitoring also its sub-ordinated institutions the Environmental Board, the Environmental Agency and the State Forest Management Centre are involved.

According to the EU Environmental Implementation Review (2017), Estonian Natura 2000 network was complete in the Marine Baltic region and almost complete in the Boreal region (terrestrial) already in 2013. The recent PILOT procedure (8344/16/ENVI) between the European Commission and Estonia concluded that Estonian Natura 2000 network (together with planned areas) is sufficient also on land. However, it does not mean that there will not be any new protected areas / Natura 2000 sites in future. For example, according to an interviewed Estonian bird expert, the recent bird inventories show that there are some areas in the Gulf of Finland that could fulfil the criteria for designation as Important Bird Areas, SPAs.

Management plans of the protected areas in Estonia: According to the Nature Conservation Act, for the purpose of organising the protection of a protected natural object, a management plan may be drawn up. The development and approval procedure as well as the content of management plans is set by the regulation of the Minister of the Environment No. 60 (adopted 20.10.2009). Development of management plans is coordinated by the Environmental Board and supervised by the Ministry of the Environment; management plans are adopted by the Environmental Board. Management plan must contain 1) description of the protected area (protection regime, conservation goals, international status, land use, interest groups, state monitoring in the area, incl. monitored objects and intervals); 2) description of nature values in the area (incl. status assessment of species and habitats that are conservation objectives), measurable and value-based conservation goals, expected results by the end of management plan period (10 years) and in 30 years perspective, indicators for evaluation of results; 3) factors impacting the main values (both, positive and negative), necessary management measures and expected results of each measure; 4) list of management activities with the aim to maintain, restore and introduce the main values (including the volume, location and preliminary costs as well as priority class (I, II or III) of each activity).

Adopted management plans are published on the [website of the Environmental Board](#). Management plans are not legally binding, but they are basis for implementing management measures and applying money for it (e.g. from Environmental Investment Centre). By November 15, 2018, according to the Ministry of Environment, 354 SCIs out of 541 and 47 SPAs out of 66 sites had up-to-date management plans. The Ministry of Environment plans to have up-to-date management plans for all sites that require active management by 2022. Information about protected areas (including areas of international

importance – HELCOM, IBA, Natura 2000, Ramsar, UNESCO biosphere reserve) and species in Estonia: EELIS (Estonian Nature Information System) information page – <https://infoleht.keskkonnainfo.ee/>

Related references:

<https://www.riigiteataja.ee/akt/128062013017>

Country profile – Estonia. Support for the organisation of bilateral dialogues with Estonia. In the context of Action 5 of the Action Plan for Nature, People and the Economy

European Commission (2017) *The EU Environmental Implementation Review Country Report – ESTONIA*. Commission Staff Working Document, SWD (2017) 40 final, 3.2.2017, Brussels. Available at: http://ec.europa.eu/environment/eir/pdf/report_ee_en.pdf

Approved management plans on the website of Estonian Environmental Board <https://www.keskkonnaamet.ee/et/eesmargid-tegevused/kaitse-planeerimine/kaitsekorralduskavade-koostamine/kinnitatud>

In **Finland** Ministry of the Environment is responsible for designation and reporting on the Finnish Natura 2000 network. The ministry is assisted in these tasks by the Finnish Environment Institute (SYKE), the Centre for Economic Development, Transport and the Environment (ELY) and Metsähallitus Parks and Wildlife Finland. The ELY and Metsähallitus Parks and Wildlife Finland are also responsible for the management and use plans for the Natura 2000 sites.

According to the EU Environmental Implementation Review (2017), the Finnish Natura 2000 network was complete in the Alpine region and almost complete in the Boreal and Marine Baltic regions. There were insufficiencies in designation for the marine components of the SCIs network, and because of this, several extensions for offshore Natura 2000 areas were proposed in December 2018. The marine Natura 2000 site extension process reaches back more than a decade when the network was first deemed to have insufficient coverage for the habitat types 1170 Reefs and 1110 Sandbanks in the Habitats Directive reporting process. In 2009 the FINMARINET project (Inventory and planning for the Finnish marine NATURA 2000 network) was launched as part of the VELMU programme and contributed to the process culminating in the propositions of the extensions in December 2018.

The Centre for Economic Development, Transport and the Environment (ELY) in cooperation with Metsähallitus Parks and Wildlife Finland produce the regional general plans for Natura 2000 sites. Analysis of Natura 2000 sites located in privately owned areas are mainly done by ELY and sites located in national property are mainly done by Parks and Wildlife Finland. The general plans consider the Natura 2000 sites needs for management and use plans, which then are produced if needed. If the need for a more specific management is recognized in the management and use plan, a more detailed action plan, will be prepared for the Natura 2000 site. Other plans such as a forestry plan or wider development plans relating to forest use or water management. ELY provides administrative statements for permitting authorities and acts as a supervising authority of the nature protection in Finnish waters. The regional Centres for Economic Development, Transportation and the Environment, the Finnish Environment Institute and the Parks and Wildlife Finland work together with the Ministry of the Environment providing expert knowledge about Natura 2000 and its habitats and species. Every six years, Finland hands in a report on the protection of habitats and species to the European Commission.

The regional general plans for the management of all the Natura 2000 areas including terrestrial and freshwater areas were updated in 2017 by the ELY centres and Parks and Wildlife Finland. According to the results of the update, when determined by area, a total of:

- 58 % of all Natura 2000 covered area has a an up to date management plan,

- 7 % does not need one,
- 10 % are slightly lacking (in coverage or plan not up to date),
- 6 % are significantly lacking (in coverage or plan not up to date) and
- 19 % does not have a plan or it is out of date.

When determined by the number of areas (1778 areas in total):

- 23 % of all Natura 2000 areas have an up to date management plan,
- 37 % do not need one,
- 9 % are slightly lacking (in coverage or plan not up to date),
- 4 % are significantly lacking (in coverage or plan not up to date) and
- 27 % don't have a plan or it is out of date.

According to Metsähallitus Parks and Wildlife Finland, out of the 144 Finnish Natura 2000 areas that include marine area 56 (39 %) have a management plan at the moment. However, marine (underwater) nature has not been fully taken into account in most of these management plans. Planning for the management of the underwater areas will be a focus of future work in e.g. the CoastNet LIFE project in the Archipelago Sea and Bothnian Sea areas.

Related references:

http://www.ym.fi/fi-FI/Luonto/Luonnon_monimuotoisuus/Luonnonsuojelualueet/Naturaalueet/Naturaverkoston_hoidon_ja_kayton_suunnittelu

https://www.ymparisto.fi/en-US/VELMU/VELMU_research_projects/FINMARINET

4.3 Local examples of human-nature-interactions from the Baltic Sea Natura 2000 sites

This chapter reviews the limitations set for human activities by the Natura 2000 designation in three Natura 2000 sites located in Estonia and Finland. Information on vulnerability of species and habitats and on impacts of different activities on them is collected in Plan4Blue project work package 2 (vulnerability profile, information booklets). All the Natura 2000 sites can be found in the European-wide Natura 2000 Network viewer: <http://natura2000.eea.europa.eu/>. It presents all Natura 2000 sites and their standard data forms. Each Natura 2000 site has its own standard data form where the conservation objectives are listed, among other important information on the site. Management and use plans (when available) include additional key information on specific Natura 2000 sites. Depending on countries and individual Natura 2000 sites, the current status of the management plans varies.

Pakri, Estonia

The **Pakri Natura 2000 site (site code EE0010129)** is located at the Paldiski coast in Estonian Gulf of Finland (Figure 7). As each Natura 2000 site, also Pakri has its [Standard data form](#) where conservation objectives are listed. Pakri belongs to the HELCOM network of marine protected areas as Pakri MPA (code 206). Nationally the area is protected as Pakri landscape protection area and Pakri limited conservation area.

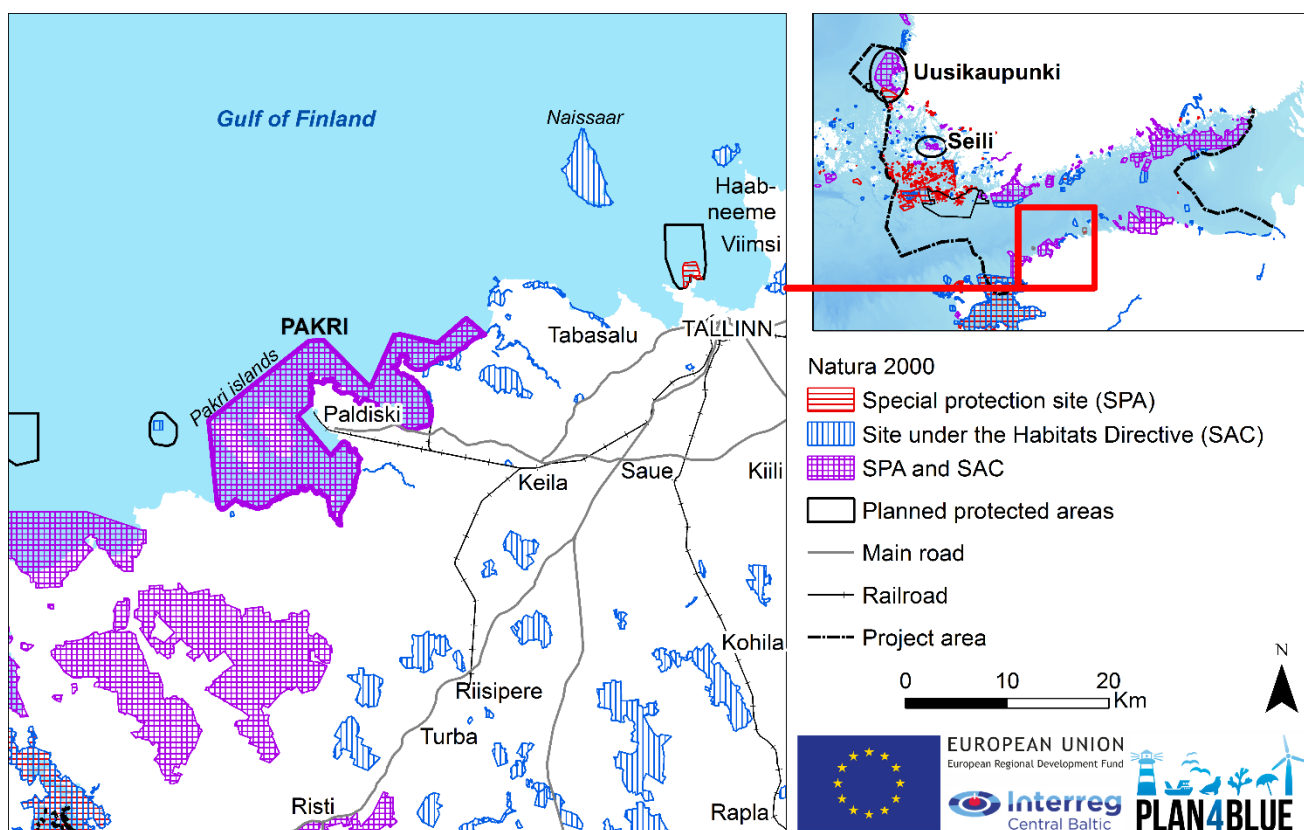


Figure 7. The Pakri Natura 2000 site at the coast of Paldiski, Estonia (Data: European Environment Agency 2017, Estonian Environment Agency 2018, Estonian Environment Agency 2018 and Estonian Land Board 2018).

There are several protected habitat types in Pakri (Table 3). Sandbanks (1110) as in Figure 8 is one of the protected habitat types.

Table 3. All the protected Habitats Directive Annex I habitat types in Pakri SAC are listed in the table (*-priority habitat types).

Habitat type code	Habitat type English name
1110	Sandbanks which are slightly covered with sea water all the time
1130	Estuaries
*1150	*Coastal lagoons
1160	Large shallow inlets and bays
1170	Reefs
1210	Annual vegetation of drift lines
1220	Perennial vegetation of stony banks
1230	Vegetated sea cliffs on the Atlantic and Baltic coasts
1620	Boreal Baltic islets and small islands
*1630	*Boreal Baltic coastal meadows
*2130	*Fixed coastal dunes with herbaceous vegetation ("grey dunes")
3140	Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> spp.
3260	Water courses of plain to montane levels with the <i>Ranunculon fluitantis</i> and <i>Callitricho-batrachion</i> vegetation
5130	<i>Juniperus communis</i> formations on heaths or calcareous grasslands
*6210	*Xeric sand calcareous grasslands
*6280	*Nordic alvar and precambrian calcareous flatrocks

*6530	*Fennoscandian wooded meadows
7160	Fennoscandian mineral-rich springs and springfens
7230	Alkaline fens
*9020	*Fennoscandian hemiboreal natural old broad-leaved deciduous forests
*9080	Fennoscandian deciduous swamp forests
*9180	* <i>Tilio-Acerion</i> forests of slopes, screes and ravines



Figure 8. Underwater sandbank, photo by Kaire Kaljurand, Estonian Marine Institute, University of Tartu.

According to the assessment of Estonian Marine Institute during the ESTMAR project (2011), Pakri area includes also the habitat type **1140 Mudflats and sandflats** not covered by seawater at low tide. The main (potential threats) for marine habitats include eutrophication, oil pollution from ships, building, dumping, dredging (causing changes of seabed, loss of habitats, covering biota with sediments, turbidity of water); for coastal habitats eutrophication, building, drainage, changing the coastline.

The protected bird species in Pakri SPA (EE0010129) include: Eurasian Wigeon (*Anas penelope*), Mallard (*Anas platyrhynchos*), Greater Scaup (*Aythya marila*), Eurasian Bittern (*Botaurus stellaris*), Common Goldeneye (*Bucephala clangula*), Black Guillemot (*Cepphus grylle*), Long-tailed Duck (*Clangula hyemalis*), Bewick's Swan (*Cygnus columbianus bewickii*), Whooper Swan (*Cygnus cygnus*), Mute Swan (*Cygnus olor*), White-tailed Sea-eagle (*Haliaeetus albicilla*), Mew Gull (*Larus canus*), Velvet Scoter (*Melanitta fusca*), Goosander (*Mergus merganser*), Ruff (*Philomachus pugnax*), Great Crested

Grebe (*Podiceps cristatus*), Common Eider (*Somateria mollissima*) and Common Redshank (*Tringa totanus*).

Pakri SPA is an important breeding as well as migration stop area for water birds. The most important breeding bird species is the Black Guillemot (ca 20 pairs breeding on Pakerort klint in Pakri area and feeding in Pakri Bay). At least 20 000 water birds are regularly stopping in Pakri area during migration. Pakri area is an internationally important migration stop area for the Long-Tailed Duck, Tufted Duck and Smew (the last 2 species are not listed as conservation objectives but a proposal to include them as conservation objectives has been made).

The main threats for water birds (according to the management plan developed in ESTMAR project) include people visiting islets during breeding season (disturbance), oil pollution, ship traffic (disturbance, oil and other pollution threat), fishing (bycatch of birds in fishing nets).

Related references:

European environment agency. Detailed lists of protected species and habitats: <http://eunis.eea.europa.eu/sites/EE0010129>

Standard data form of the site: <http://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=EE0010129>

Assessments and management plan developed for the marine part of Pakri limited conservation area and Pakri landscape protection area for 2011-2020 in the frames of ESTMAR project.

EELIS (Estonian Nature Information System) information page: <https://infoleht.keskkonnainfo.ee/>

Illustrative analysis of the human-nature-interactions at the Pakri Natura 2000 site identified potential conflicts between shipping and **submerged sandbank habitat (1110)**; Figure 9; see description of the methodology and a disclaimer in section 3.3). Submerged sandbank habitat was selected as a key conservation objective in Pakri based on its high prevalence (5767 of the total 205,75 km²). Ship-induced disturbance was identified as one critical conflict between shipping and the status of the sandbank habitat. Figure 9 presents the steps of the illustrative analysis and the potential implications of this conflict on MSP.

WORK FLOW FOR ANALYSING THE INTERACTION BETWEEN NATURA 2000 CONSERVATION CRITERION AND KEY MARINE ACTIVITY

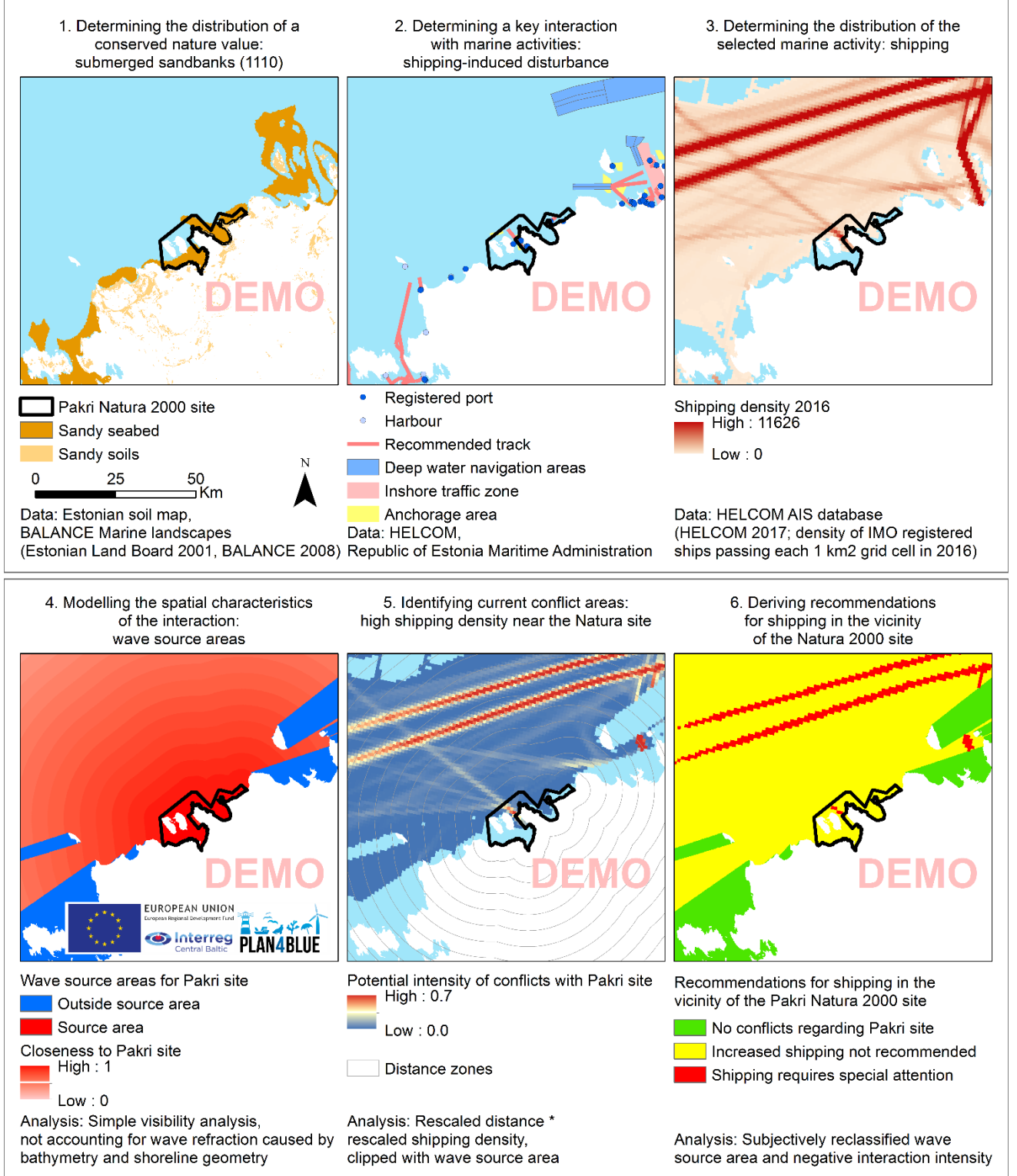


Figure 9. Exemplary work flow for analysing the interaction between a key conservation objective in the Pakri Natura 2000 site and a critical human activity. Data and analysis methods are indicated in the figure.

Uudenkaupungin saaristo (Archipelago of Uusikaupunki), Finland

The **Uudenkaupungin saaristo (Archipelago of Uusikaupunki) Natura 2000 site (site code FI0200072)** is located at the coast of Uusikaupunki and Pyhäranta in the Finnish Gulf of Bothnia (Figure 10). In [VELMU-map based internet page](#) there can be seen, that there are several coastal lagoons

(1150) in Uusikaupunki Natura 2000 area. In the [Standard data form of Uusikaupunki](#) all the conservation objectives are listed.

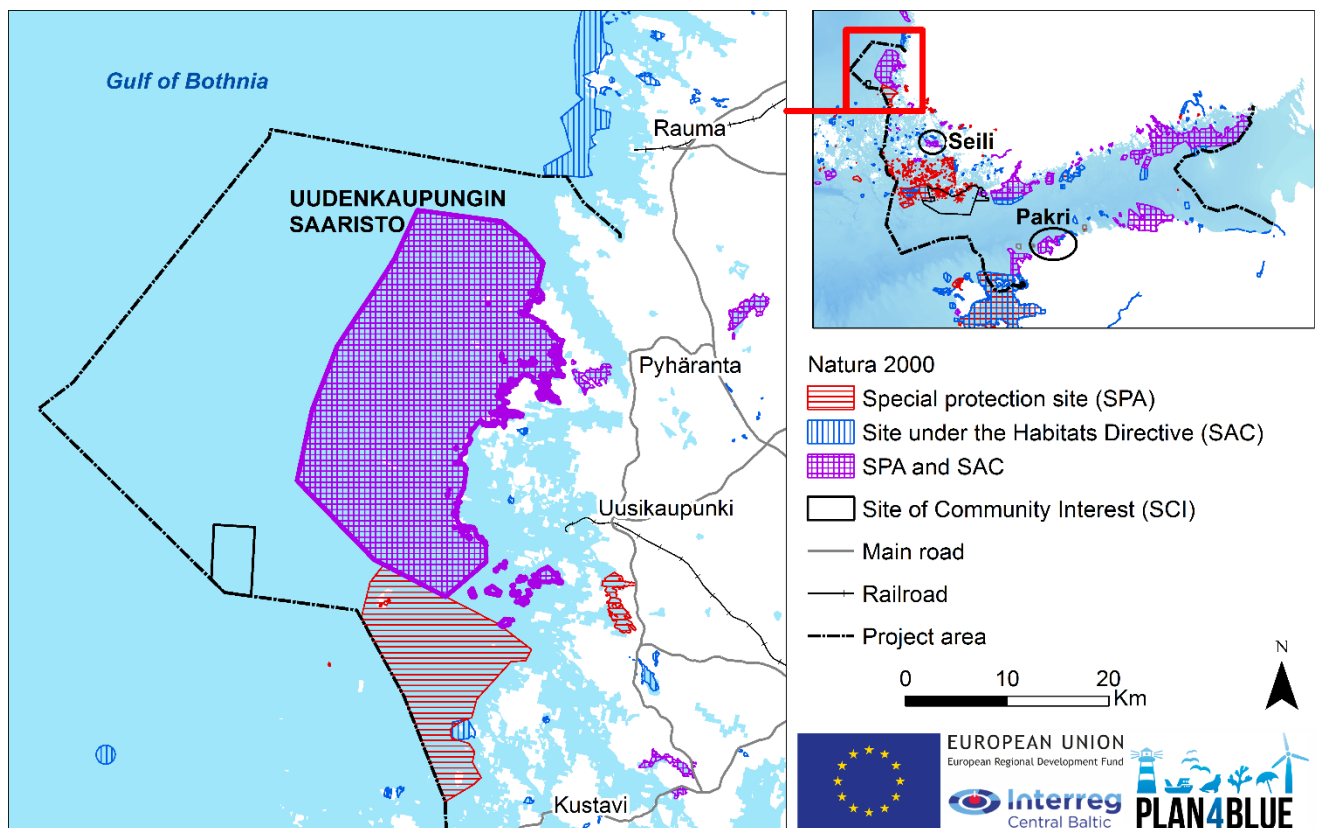


Figure 10. The Uudenkaupungin saaristo (Archipelago of Uusikaupunki) Natura 2000 site at the coast of Uusikaupunki and Pyhäranta, Finland (Data: European Environment Agency 2017, Estonian Environment Agency 2018, Finnish Environment Institute 2018 and National Land Survey of Finland 2018).

The Uudenkaupungin saaristo Natura 2000 site is class C, which means it is established under both Habitats and Birds Directives. There are 23 protected habitats of which the most marine ones are reefs (habitat code 1170) and coastal lagoons (habitat code 1150).

Table 4. All the habitat types protected in Uudenkaupungin saaristo Natura 2000 site, listed in Habitats Directive Annex I.

Habitat type code	Habitat type English name
1150	Coastal lagoons (rannikon laguunit)
1170	Reefs (riutat)
1210	Annual vegetation of drift lines
1220	Perennial vegetation of stony banks
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts
1620	Boreal Baltic islets and small islands
1630	Boreal Baltic coastal meadow
1640	Boreal Baltic sandy beaches with perennial vegetation
2320	Dry sand heaths with <i>Calluna</i> and <i>Empetrum nigrum</i>
3160	Natural dystrophic lakes and ponds
3260	Water courses of plain to montane levels with the <i>Ranunculus fluitans</i> and <i>Callitriche-Batrachion</i> vegetation

6270	Rivers with muddy banks with <i>Chenopodium rubri</i> p.p. and <i>Bidention</i> p.p. vegetation
6280	Nordic alvar and precambrian calcareous flatrocks
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels
7140	Transition mires and quaking bogs
8220	Siliceous rocky slopes with chasmophytic vegetation
8230	Siliceous rock with pioneer vegetation of the Sedo-Scleranthion or of the Sedo albi-Veronicion dillenii
9010	Western Taiga
9020	Fennoscandian hemiboreal natural old broad-leaved deciduous forests (<i>Quercus</i> , <i>Tilia</i> , <i>Acer</i> , <i>Fraxinus</i> or <i>Ulmus</i>) rich in epiphytes
9030	Natural forests of primary succession stages of landupheaval coast
9050	Fennoscandian herb-rich forests with <i>Picea abies</i>
9070	Fennoscandian wooded pastures
91D0	Bog woodland

In Finland **the coastal lagoons (1150)** include several types of shallow, semi-enclosed bays in marine areas. One special type are the flads, the first phase of the succession caused by post-glacial land uplift that results in shallow bays separating from the sea and transforming to glo lakes. Lagoons are an important marine habitat as they provide a shallow and protected environment for many macrophyte and fish species and harbour endangered or threatened species. Lagoons function as nursing area for fish and are important for birds as nesting grounds and feeding and resting areas during migration seasons. In their natural state the lagoons in coastal areas are free of construction or dredging and the sea bottom is untouched. However, in most populated areas lagoons are subject to human interference as they often provide a sheltered area suitable for e.g. docking boats. As a habitat, lagoons are sensitive for eutrophication, marine traffic and dredging.

In Finland **reefs (1170)** typically consist of rock or moraine formations that stand out from the surrounding seafloor. Reefs host many species of macrophytic algae and bottom fauna, which often form zones dependent on depth. One of the most prominent species is the blue mussel that forms large carpet-like growths in areas that are suitable by depth and water salinity. Blue mussel beds are provided an environment for many invertebrates and are important feeding areas for marine birds such as the eider and long-tailed duck. Typical fish species found in the Finnish reefs are e. g. eelpout and sculpin. Many important reef species are sensitive for eutrophication that limits the amount of light penetrating the water and increases silting resulting from added primary production.

Related references:

European environment agency. Detailed lists of protected species and habitats: <http://eunis.eea.europa.eu/sites/FI0200072>

Standard data form of the site: <http://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=FI0200072#6>

Additional info in Finnish: [http://www.ymparisto.fi/fi-FI/Luonto/Suojelualueet/Natura 2000 alueet/Uudenkaupungin saaristo\(5799\)](http://www.ymparisto.fi/fi-FI/Luonto/Suojelualueet/Natura%2000%20alueet/Uudenkaupungin_saaristo(5799))

Illustrative analysis of the human-nature-interactions at the Uudenkaupungin saaristo Natura 2000 site identified potential conflicts between shipping and **reef habitat (1170)**; Figure 11; see description of the methodology and a disclaimer in section 3.3). Reef habitat was selected as a key conservation

objective in Uudenkaupungin saaristo based on its high prevalence (600 of the total 569,92 km²). Ship-induced disturbance was identified as one critical conflict between shipping and the status of the reef habitat. Figure 11 presents the steps of the illustrative analysis and the potential implications of this conflict on MSP.

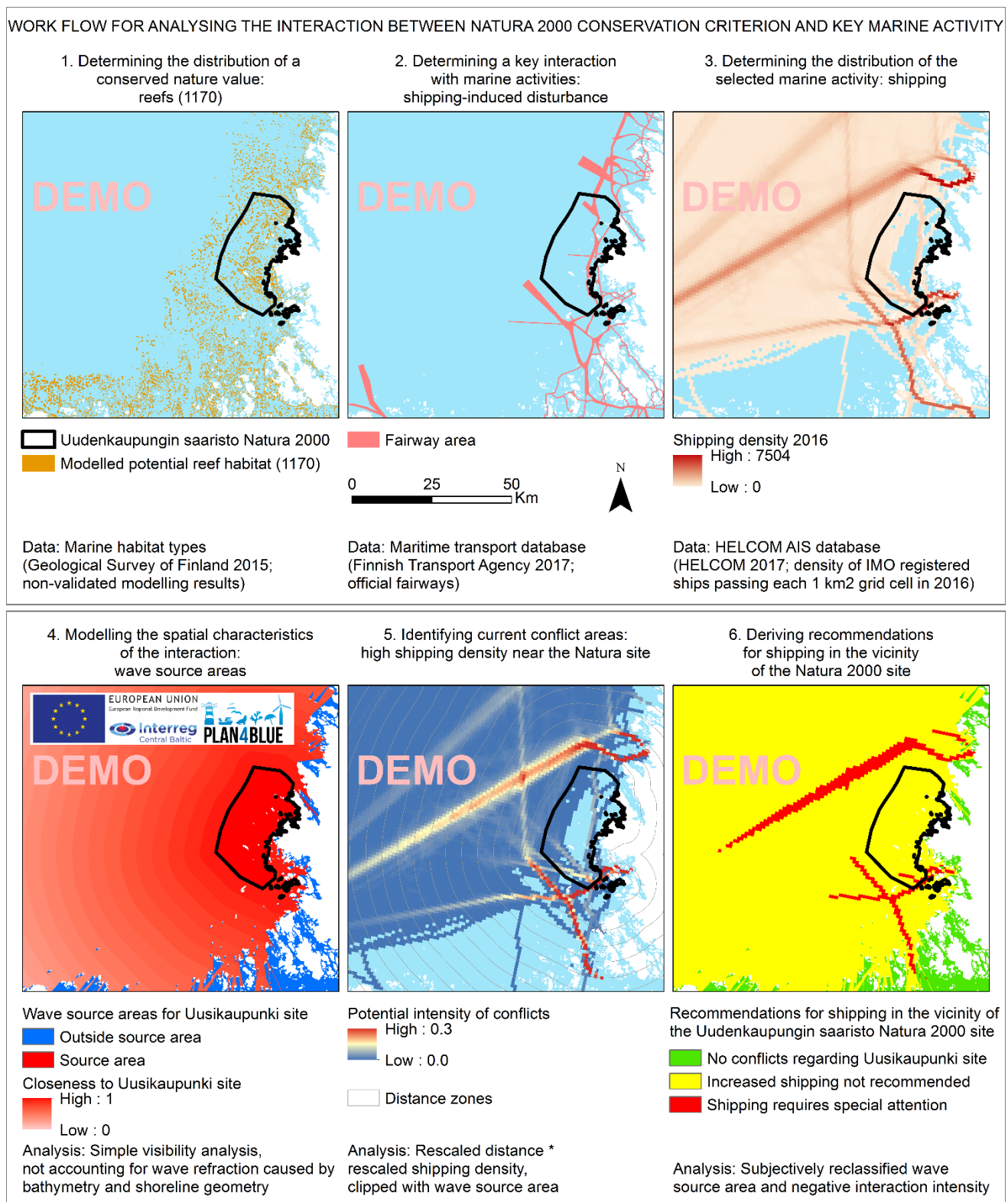


Figure 11. Exemplary work flow for analysing the interaction between a key conservation objective in the Uudenkaupungin saaristo Natura 2000 site and a critical human activity. Data and analysis methods are indicated in the figure.

Seilin saaristo (Archipelago of Seili), Finland

The **Seilin saaristo (Archipelago of Seili) Natura 2000**, site code is **FI0200064**, is located at the coast of Turku in the Finnish Archipelago Sea (Figure 12). The site is put into force with nature protection act, water act and planning. In the [Seili Standard data form](#) the conservation objectives can be found.

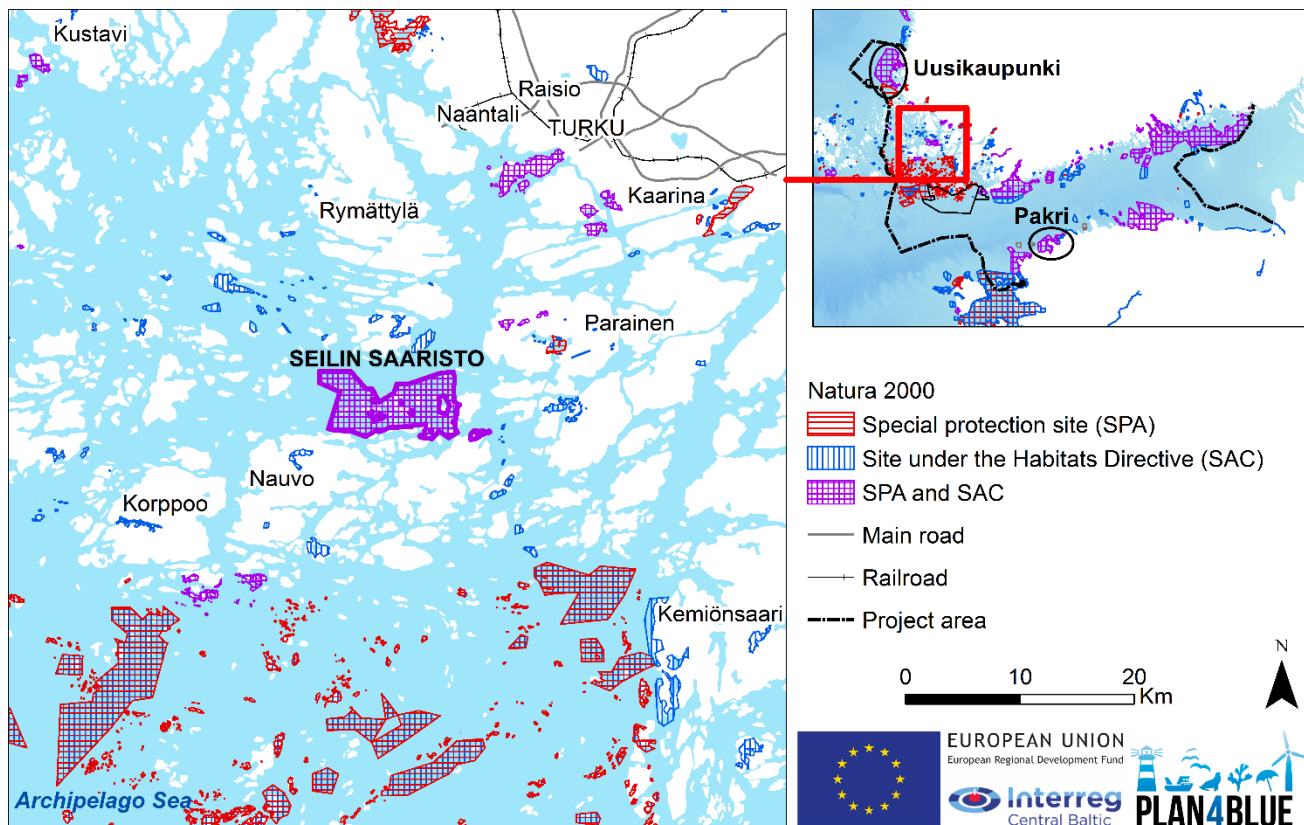


Figure 12. The Seilin saaristo (Archipelago of Seili) Natura 2000 site at the coast of Turku, Finland (Data: European Environment Agency 2017, Estonian Environment Agency 2018, Finnish Environment Institute 2018 and National Land Survey of Finland 2018).

Seilin saaristo Natura 2000 site is class C, which means it is established under both Habitats and Birds Directives. The site's conservation objectives include 11 habitats types (Table 5), of which the most marine ones are reefs (habitat code 1170) and coastal lagoons (habitat code 1150) – the same as in Uudenkaupungin saaristo Natura 2000 site. All the protected habitat types in table 5 are listed based on the database of the European Environment Agency (<http://eunis.eea.europa.eu/sites/FI0200064>).

The main characters of reefs (1170) and lagoons (1150) are written in the previous chapter, *Uudenkaupungin saaristo*.

Table 5. In Seili Natura 2000 site there are several protected habitats. Many of them are on land, and as marine habitats reefs and coastal lagoons are protected in Seili Natura 2000 site.

Habitat type code	Habitat type English name
1150	Coastal lagoons (rannikon laguunit)
1170	Reefs (riutat)
1210	Annual vegetation of drift lines
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts
1630	Boreal Baltic coastal meadow

6510	Lowland hay meadows (<i>Alopecurus pratensis</i> , <i>Sanguisorba officianalis</i>)
8220	Siliceous rocky slopes with chasmophytic vegetation
9010	Western Taiga
9030	Natural forests of primary succession stages of land upheaval coast
9050	Fennoscandian herb-rich forests with <i>Picea abies</i>
91D0	Bog woodland

Related references:

European environment agency. Detailed lists of protected species and habitats: <http://eunis.eea.europa.eu/sites/FI0200064>

Standard data form of the site: <http://natura2000.eea.europa.eu/natura2000/SDF.aspx?site=FI0200064>

Additional info in Finnish: [http://www.ymparisto.fi/fi-FI/Luonto/Suojelu-alueet/Natura_2000_alueet/Seilin_saaristo\(5495\)](http://www.ymparisto.fi/fi-FI/Luonto/Suojelu-alueet/Natura_2000_alueet/Seilin_saaristo(5495))

Illustrative analysis of the human-nature-interactions at the Seilin saaristo Natura 2000 site identified potential conflicts between shipping and **reef habitats (1170;** Figure 13; see description of the methodology and a disclaimer in section 3.3). Reef habitat was selected as a key conservation objective in Seilin saaristo based on its high prevalence (90 of the total 46,87 km²). Ship-induced disturbance was identified as one critical conflict between shipping and the status of the reef habitat. Figure 13 presents the steps of illustrative analysis and the potential implications of this conflict on MSP.

WORK FLOW FOR ANALYSING THE INTERACTION BETWEEN NATURA 2000 CONSERVATION CRITERION AND KEY MARINE ACTIVITY

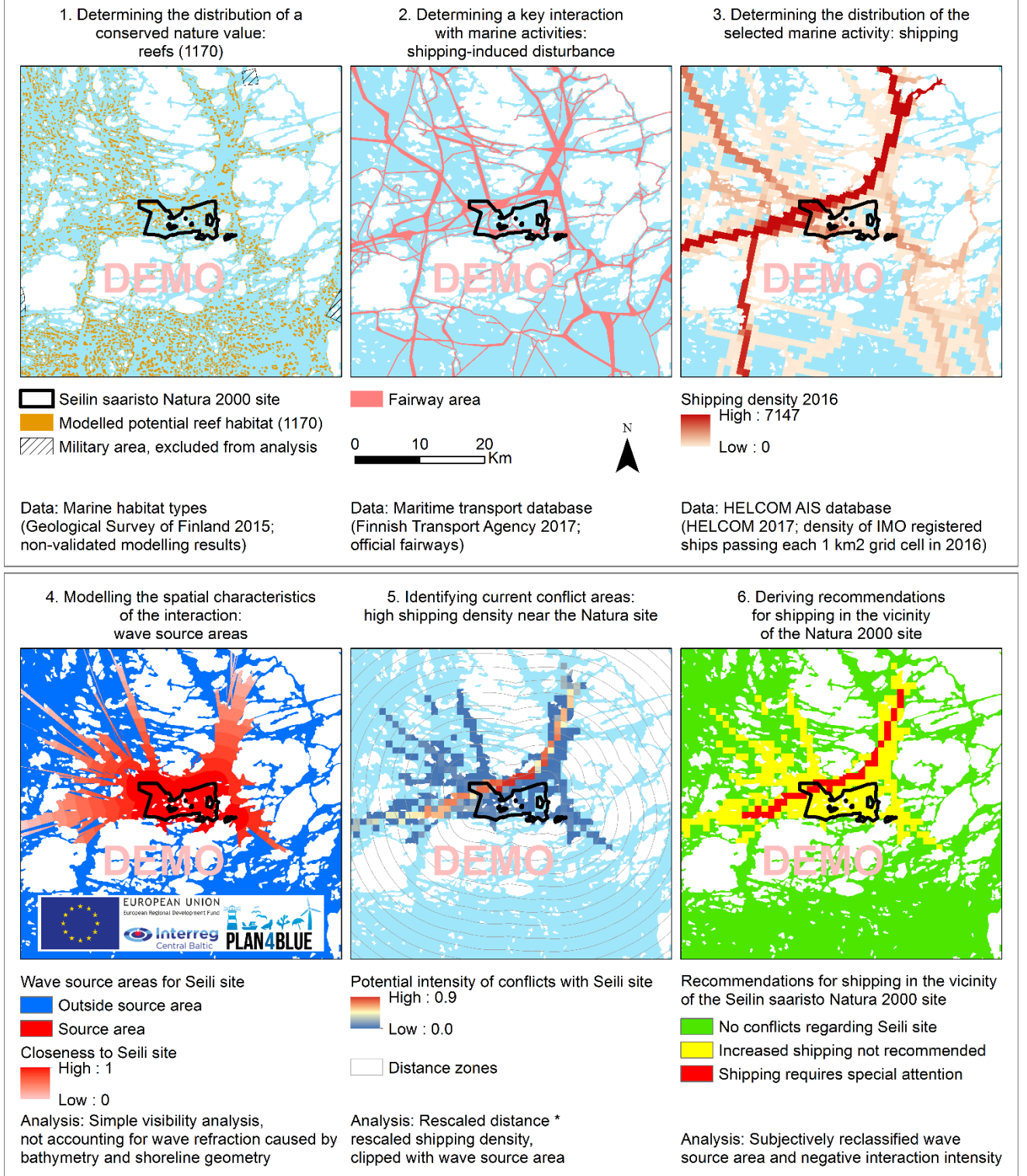


Figure 13. Exemplary work flow for analysing the interaction between a key conservation objective in the Seilin saaristo Natura 2000 site and a critical human activity. Data and analysis methods are indicated in the figure.

4.4 Human pressures to be considered in MSP and in other planning levels

Maritime human activities cause several pressures on different species and habitats. Pressures vary between activities and in time: some pressures are more constant whereas others are acute and last for a shorter time. Complex interactions between human activities, pressures and the nature (ecosystem components) were visualised in the Plan4Blue project using Sankey diagrams. The diagrams were drafted based on classification of anthropogenic pressures, uses and human activities drawn from the revised MSFD Annex III Table 2 (Commission Directive (EU) 2017/845) and modified and refined by HELCOM TAPAS project. Separate Sankey diagrams were drawn for selected marine sector. This section examines two diagrams: one for the shipping sector (Figure 14) and one for the fishing sector (Figure 15). The ecosystem components were selected to be compatible with the Plan4Blue work on environmental management, project's work package 2. In other words, ecosystem components in Sankey diagrams are the same as in the work package 2 report [The Gulf of Finland marine and coastal environmental vulnerability profile](#).

Some of the pressures identified in the Sankey diagrams can be considered in MSP and many pressures should be considered at other planning levels and in other processes.

Shipping sector

Shipping as a sector includes many different activities. Here shipping sector have divided into five activities: mooring, anchoring, beaching and launching; shipping; industrial and ferry ports; dredging; and deposition of materials (Figure 14).

One of the activities and pressures that can be considered in MSP is disturbance or damage to seabed from different activities. Activities causing that pressure are e. g. dredging and deposition of material. Same mentioned activities can cause also physical loss, which can also be considered in MSP. Physical loss is important aspect to consider as it has the most severe impact – it causes loss of habitat and ecosystem function. Related to dredging and other maritime activities e. g. fish farming and cleaning of boats input of organic matter can be considered in MSP. Another pressure that can be considered in MSP is underwater noise, both ambient underwater noise and impulsive noise, that influence marine mammals.

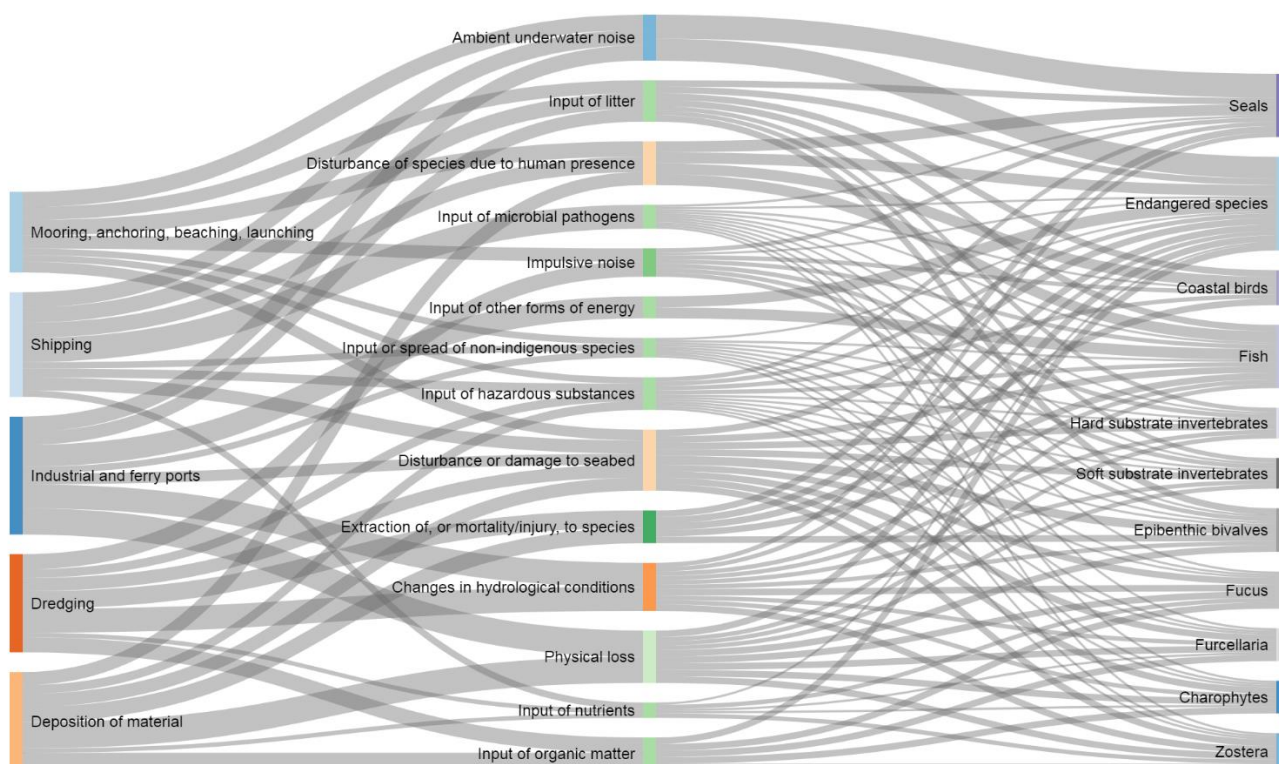


Figure 14. Sankey diagram of shipping sector, where on the left are human activities, pressures in the middle and on the right different ecosystem components. Human activities and pressures are from the third appendix of the Marine Strategy Framework Directive (MSFD). Linkages from human activities to pressures and their impacts on the ecosystem components have been researched e. g. in HELCOM TAPAS project. Important to note that this is one visualization of linkages based on certain classifications and knowledge. The ecosystem components for the visualisation were selected to cover specific habitat-forming species, fish, birds and mammals. The selected ecosystem components are also included in the Plan4Blue work on environmental management.

Many pressures can be considered in other planning levels and other processes. Input of litter, recreational traffic causing disturbance due to human presence and input or spread of non-indigenous species are issues to be handled in other planning levels and processes.

Fishing sector

Here fishing sector is divided into eight activities: benthic trawling; netting; benthic seining; demersal long lining; fishery with coastal stationary gear; pelagic trawling; pelagic long lining; and pelagic seining (see Figure 15).

As in shipping, also what comes to fishing physical loss and disturbance or damage to seabed are pressures that can be considered in MSP. It can be said that any activities and actions affecting seabed can be considered in MSP – actions and activities that cause habitat loss or disturbance or damage to seabed. Not a pressure but a separate issue to be considered in MSP is fish spawning areas.

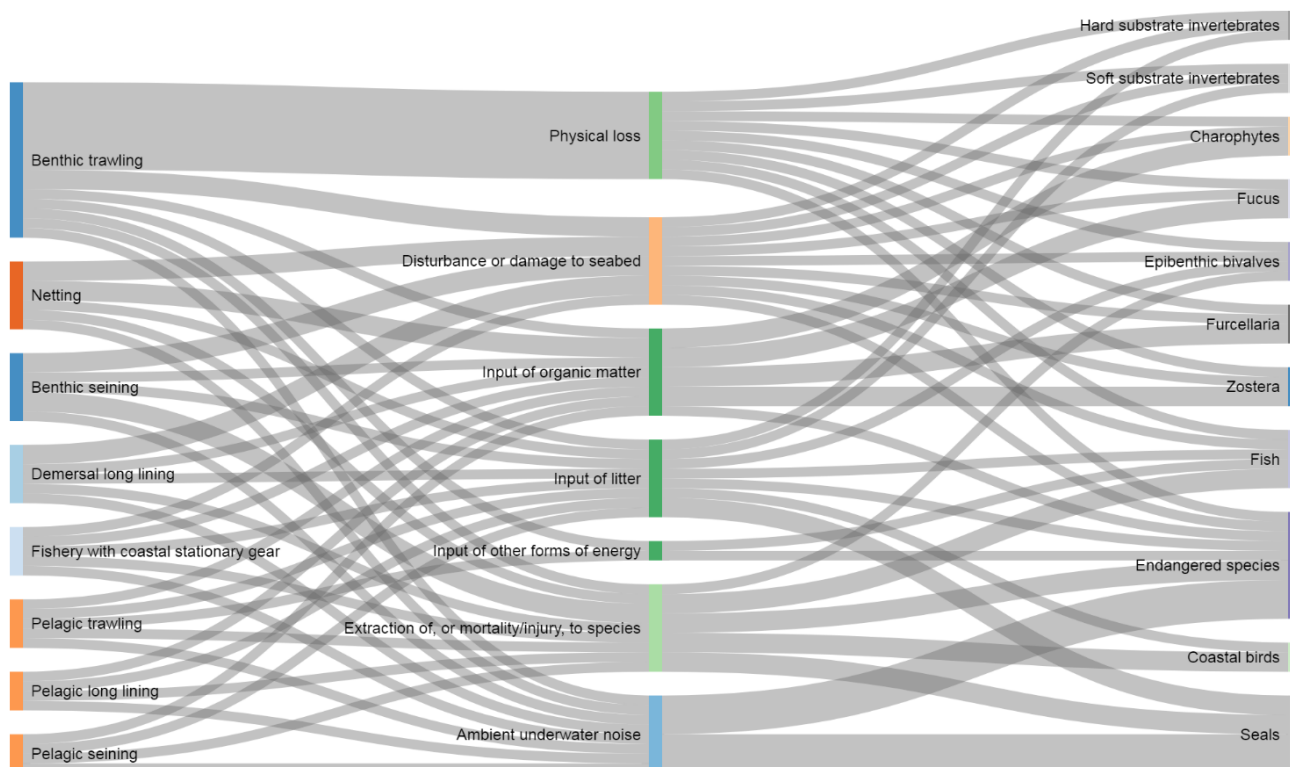


Figure 15. Sankey diagram of fishing, where on the left are human activities, pressures in the middle and on the right different ecosystem components. Human activities and pressures are from the third appendix of the Marine Strategy Framework Directive (MSFD). Linkages from human activities to pressures and their impacts on the ecosystem components have been researched e. g. in HELCOM TAPAS project. Important to note that this is one visualisation of linkages based on certain classifications and knowledge. The ecosystem components for the visualisation were selected to cover specific habitat-forming species, fish, birds and mammals. The selected ecosystem components are also included in the Plan4Blue work on environmental management.

Several pressures are relevant to be considered in other levels of planning. Ocean litter like ghost nets and mortality of species is important to be considered. Also impact on endangered species is important. Fishing is regulated in many ways, so MSP will not plan or regulate that sector.

Related references:

Commission Directive (EU) 2017/845 of 17 May 2017 amending Directive 2008/56/EC of the European Parliament and of the Council as regards the indicative lists of elements to be taken into account for the preparation of marine strategies. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32017L0845>

Korpinen et al 2017. [A protocol for the calculation of the Baltic Sea Impact Index and the Baltic Sea Pressure Index](#). Deliverable from [HELCOM TAPAS project](#) Theme 1 on Baltic Sea Pressure and Impact Indices.

5. CONCLUSIONS: THE ROLE OF NATURA 2000 IN MSP

5.1 Two processes and their linkages

In Estonia and Finland, the marine and coastal Natura 2000 network is extensive: in the Plan4Blue project area for example, it covers 20 % of the marine areas (Figure 1). The network protects those natural habitat types and species that are considered to require most attention at the scale of the European Union. Thus, the Natura 2000 network offers MSP an existing framework for efficiently

protecting important nature values. Taking the existing Natura 2000 network into account in the national MSP process ensures that an important aspect of nature values is incorporated into the planning.

One of the main challenges in integrating the Natura 2000 framework into MSP is that the European Union does not set strict regulations for human activities in the Natura 2000 sites. Instead, the conservation status, management and restrictions for sea use are site-specific and practices vary between member states. In many cases, the restrictions have been formulated merely as principles and their implications need to be interpreted case-specifically in the planning processes. In addition, member states have the freedom of applying the Maritime Spatial Planning Directive differently, ranging from legally binding and detailed zonation maps to non-binding strategic descriptions. As consequence, each member state ultimately makes their own choices on how to handle Natura 2000 in MSP process in practice.

The Natura 2000 does not automatically incorporate those nature values that are important only at the scale of the Baltic Sea or individual member state. The consideration of the ecosystem in MSP cannot therefore rely solely on the Natura 2000 network but should also deal with e.g. the regional and national nature protection frameworks and the results of scientific research.

Based on the examples from other member states of the European Union and preliminary plans from Estonia and Finland, the Natura 2000 framework can be taken into account in the MSP process in following ways (not a complete or exclusive list):

- Identifying new areas for Natura 2000 site proposals during the MSP process
- Modifying the boundaries of existing Natura 2000 sites during the MSP process, to better represent the distribution of nature values and Natura 2000 conservation objectives
- Preparing management plans (including regulations for the main human activities) for the existing Natura 2000 sites during the MSP process
- Determining single-function areas for nature protection based on the Natura 2000 network (potentially allowing strictly regulated and sustainable sea use that does not compromise favourable conservation status)
- Determining restriction areas (with total ban or regulations) for specified sea uses by taking the Natura 2000 sites into account
- Determining general (applying to the entire planning area or Natura 2000 sites only) restrictions for specified sea uses by taking the Natura 2000 conservation objectives into account
- Designating sea space or determining favourable conditions for the establishment of human activities with positive influence on Natura 2000 conservation objectives inside or beyond the existing Natura 2000 sites
- Not specifying any actions in the MSP based on the Natura 2000 framework but instead handling all human-ecosystem-conflicts case-specifically through other processes (such as regional planning or environmental impact assessment or the Espoo Convention hearing)

Planners involved in the national MSP process can take the Natura 2000 network into account mainly by considering three types of documents: First, the [basic information](#) of each Natura 2000 site (based on *standard data form*) and [spatial data](#) of the site network are distributed by the European Environment Agency. Secondly, the management (or management and use) plans need to be considered in MSP if they have been prepared. Thirdly, the existing environmental impact assessments or assessments of the environmental status (e.g. [The Natura 2000 Site Condition Assessment NATA](#) in Finland) provide valuable information on the vulnerability and status of the Natura 2000 sites.

In addition, MSP may benefit from further analyses of the interaction of human activities and the ecosystem. Spatial analyses have the potential for providing quantitative information on the interactions of overlapping but also neighbouring activities and functions (e.g. modelling the spatial eutrophication consequences of local aquaculture or the impact area of ship-induced disturbance outside the shipping lanes).

One important function of the Natura 2000 in the MSP process is communicating the value of the nature to the stakeholders and the general public. There is possibility in MSP process to increase the public awareness of the environment and involvement in planning. Keeping the Natura 2000 framework as part of the public MSP process has potential in increasing knowledge and appreciation of the valuable areas, natural diversity and threatened species. For example, public MSP portals may contain basic information of the national Natura 2000 network but also e. g. info cards on specific natural habitat types, key species and their sensitivity to environmental degradation.

5.2 Key messages for planners, MSP processes and other decision-makers on Natura 2000

- **Natura 2000s value in MSP:** The Natura 2000 network offers MSP an existing framework for efficiently protecting important nature values, since it covers a wide range of rare species and natural habitats and notable parts of the marine territories of EU states. Natura 2000 sites have good influence on marine sectors like blue tourism, bird watching and fishing (e. g. protecting spawning areas). Taking the existing Natura 2000 network into account in the national MSP process ensures that an important aspect of nature values is incorporated into the planning. However, it is important to note that there are also important nature values outside the Natura 2000 site network – there are nature values that are not evaluated and protected within the Natura 2000 framework. These must also be considered in spatial planning.

Natura 2000 has legal status and it is a network. As a network it is vital in mitigation to the climate change. However, it is also important to see high nature values outside of those protected areas.

- **Uniqueness of each Natura 2000 site:** Each Natura 2000 site is different. In general, there are two kinds of Natura 2000 sites: based on either the Habitats Directive or the Birds Directive. Third site type is when the site is established based on both directives mentioned above. Each Natura 2000 site is different as they have different conservation objectives, i.e. different natural habitats and species. Thus, each site sets different restrictions for sea use and must be considered individually in MSP.

Natura 2000 sites are based on Birds Directive and Habitats Directive. Each Natura 2000 site is unique as the conservation objectives (species and habitats) vary depending on each site.

- **Natura 2000 as a network:** The individual Natura 2000 sites should be considered as part of the site network and of the environment surrounding them, since connectivity between populations and threats from outside the site boundaries need to be examined. Global changes, like climate change, need to be considered when dealing with Natura 2000 areas and preparing new Natura 2000 areas. Natura 2000 as a network is important especially for migratory species.

Natura 2000 sites form a network, which is important especially for migratory species. Natura 2000 network has legal status.

- **Influence from outside:** MSP should consider the impact of human activities originating both from within and beyond the Natura 2000 sites, since local actions may have far-reaching influence on the surrounding sea. It is hard to define certain safety or buffer distance for all Natura 2000 sites because it is always different depending on conservation objectives, activities and location. Some rough buffer zones may be developed for specific sea uses.

Impacts of human activities beyond the Natura 2000 sites to the sites' conservation objectives need to be noted.

- **Involve Natura 2000 from the beginning:** Whatever planned, it is important to see if there are Natura 2000 sites in the surrounding area. And if there are, the sites and their conservation objectives should be taken into account in the planning process from the very beginning.

Natura 2000 is good to have as a part of the planning and permitting process from the beginning in order to see the possible impacts on Natura 2000 sites as soon as possible during the process.

- **Natura Assessment:** In case a planned activity is expected to have significant negative impact on the favourable conservation status of the Natura 2000 site(s) and its conservation objectives, an Appropriate Assessment according to Art. 6 of the Habitats Directive (Natura 2000 assessment), should be carried out.

If the planned activity is expected to have significant negative impact on the favorable conservation status of the Natura 2000 site appropriate Natura Assessment is needed.

- **Human pressures to be considered in MSP:** Disturbance or damage to seabed, linked to physical loss, from different activities can be considered in MSP. The activities damaging the seabed or causing disturbance include dredging, deposition of material, mineral extraction, industrial and ferry ports.

Disturbance and damage to seabed are pressures that can be considered in Maritime Spatial Planning process.

- **Spatial analysis:** Spatial data and spatial analysis methods offer an opportunity to quantify human-nature-interactions and, specifically, the impact of human activities on the conservation objectives within the Natura 2000 sites. Compared to verbal descriptions of the human-nature-interaction processes, spatial analysis provides the results as a map: easy to communicate and compatible with the overall spatial planning process. While the results are strongly dependent on the quality of the spatial data and subjective methodological choices, spatial analysis offers a useful starting point for more detailed examination.

Human-nature-interactions can be examined with spatial analysis. Results of the analysis are dependent on the quality of the spatial data and are also subjective.

- **Analysis of human interactions to conservation objectives:** The implications of the Natura 2000 framework on a marine activity should be examined by accounting for the individual characteristics of each Natura 2000 site and combining the results into a cumulative spatial impact assessment (see chapter 3.3 of this report for a general outline of the methodological approach).

Impacts on different conservation objectives can be examined with spatial data. Still it is hard to visualize many impacts with one analysis and visualization.

- **Cumulative impacts:** Cumulative impacts of all planned activities within and beyond the Natura 2000 sites should be taken into account. More coherent planning and permitting processes would help to see the cumulative impacts more clearly.

When many human activities take place within and close by Natura 2000 sites, the cumulative impact of those activities should be taken into account.

- **Data:** High-resolution spatial environmental data of the Natura 2000 sites (including distribution of natural habitats and protected species) would improve the possibilities for analysing and accounting for human-nature interactions in MSP.

Better data would improve the possibilities for analyzing human-nature-interactions.



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