MARINE SPATIAL PLAN PROPOSAL

EARLY STAGE — CONSUL-TATION — REVIEW — FINAL PROPOSAL — GOVERNMENT DECISION

Swedish Agency for Marine and Water Management

Proposal for the

Marine Spatial Plan Baltic Sea

Consultation document

15/02/2018

Marine Spatial Plan - Baltic Sea

National planning in territorial waters and exclusive economic zone

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Swedish Agency for Marine and Water Management
Marine Spatial Planning Unit

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Summary

Sweden is preparing three marine spatial plans – one for the Gulf of Bothnia, one for the Baltic Sea and one for Skagerrak and Kattegat. **A marine spatial plan provides guidance** on the best use of the sea. The marine spatial plan provides guidance to national authorities, municipalities and courts in future decisions, planning and permit reviews. Business operators can also find guidance in the plan.

The marine spatial plans shall contribute to sustainable development. It should combine economic policy, social and environmental objectives.

The marine spatial plan contains guidance on **most suitable use**. The use or uses that are presented in an area take priority over other uses. In almost the entire Baltic Sea different uses can coexist, with or without adaptions. In other places some uses cannot coexist, which is reflected in the designation of most suitable uses in the area.

The marine spatial plan sets out eight **uses** in the Baltic Sea: attractive living environments, energy extraction, defence, general use, nature, sand extraction, shipping and commercial fisheries.

The marine spatial plan also sets out areas where **particular consideration** should be taken to high nature value or the interests of total defence.

Proposals on uses are based on balancing different interests and a suitability assessment based on location, character and needs. National interests and other public interests are important in these considerations.

The consequences of the marine spatial plan are assessed from ecological, economic and social perspectives. The work of assessing the consequences has been conducted in parallel with the planning and has been integrated into it. The consequences are also analysed in a separate strategic environmental assessment (SEA) and a separate sustainability assessment.

The marine spatial planning has had its **points of departure** in laws, ordinances and societal goals, reports and not least the long-term dialogue that SwAM has conducted with others.

The consultation means that others have the opportunity to provide input on this marine spatial plan proposal so that SwAM can then revise the proposal.

Content

List of maps

This is a marine spatial plan

Marine spatial planning is aiming at the sustainable use of the sea, now and in the future. Many interests must share the sea, and the marine spatial plan facilitates this by providing guidance on the best use of the sea.

1

Sweden is preparing three marine spatial plans – one for the Gulf of Bothnia, one for the Baltic Sea and one for Skagerrak and Kattegat.

A marine spatial plan combines economic policy, social and environmental objectives. It should contribute to:

- achieving and maintaining good environmental status
- the resources of the sea being used sustainably so that maritime industries can develop
- promoting coexistence between various activities and areas of use

A marine spatial plan should also provide the guidance necessary to be able to use the areas for the purposes that they are best suited to considering character, location and needs[1].

The marine spatial planning work results in marine spatial plans that provide guidance and at the same time contribute to new knowledge. This is the first time that Sweden is preparing marine spatial plans.

Reading instructions

You can read the plan as a document or as web pages

This document is the marine spatial plan. It is this document that is the formal proposal for consultation. In addition to this, the marine spatial plan is also available as web pages.

The web version of the marine spatial plan is an aid in exploring the plan in a different way. Some maps are clickable and sometimes the texts are arranged in a different way. But the content in the web version and this document is the same. You can find both the web version and this document at *www.havochvatten.se/havsplanering*.

This document is structured as follows

Chapter 1. This is a marine spatial plan briefly explains what a marine spatial plan is and what areas Sweden prepares marine spatial plans for.

Chapter 2. Points of departure describes the conditions that form the basis of the planning. Among other things, the chapter presents the legal conditions, the relationship to the planning of municipalities and neighbouring countries, national objectives and strategies, environmental status and how the work of preparing marine spatial plans is done.

Chapter 3. A future we want to achieve describes a future that society wants to achieve by 2050 and the planning objectives that apply for marine spatial planning.

MSPs' geographic delimitation

The marine spatial plans cover Sweden's exclusive economic zone and Swedish territorial sea from one nautical mile outside the Swedish baseline. Privately owned water is excluded. One nautical mile is equivalent to 1,852 metres.

The municipal boundary between Östhammar and Norrtjälje forms the boundary between the Gulf of Bothnia's and the Baltic Sea's marine spatial planning areas. The southern municipal boundary between Helsingborg and Höganäs represents the boundary between the Baltic Sea and the Skagerrak/Kattegat marine spatial planning areas.

The municipalities have planning responsibilities for the marine area that is within the municipal boundaries, meaning internal waters and territorial sea. The municipalities' and the state's planning responsibilities thereby overlap in most of the territorial sea since 2015 in connection with the Marine Spatial Planning Ordinance.

Figure 2. Sweden's three marine spatial plans

1 *Section 4 of the Marine Spatial Planning Ordinance (2015:400).*

Chapter 4. Guidance on most suitable use consists of guidelines in the planning map and associated text that set out what use is proposed to take precedence in different areas. This guidance also includes particular consideration of high nature values and defence interests. How different uses can coexist and approaches to this are also described. The planning map is presented in this chapter as an overall planning map of the Baltic Sea's marine spatial planning area.

Chapter 5. Marine sub-regions begins with the plan's main features for the Baltic Sea and then describes the standpoints for each marine sub-region. This chapter has a planning map for each marine sub-region in the approximate scale that the marine spatial plans are to be interpreted in. The description includes especially important conditions and motivations for why the planning looks like it does. Here, any conflicting objectives between different interests in the same areas are explained and what trade-offs have been made.

Chapter 6. Themes describes the many interests that are in the sea divided into themes. Each theme is described in maps and text based on their conditions, future and interaction with the surroundings. National interest claims and public interests of material significance for the theme are presented separately in maps and text.

Chapter 7. Implementation and application describes how the plan should be used and at whom the marine spatial plan is directed.

Chapter 8. Consequences is a description of the work to assess the plan's consequences from ecological, social and economic perspectives. The strategic environmental assessments are available in their entirety as separate documents.

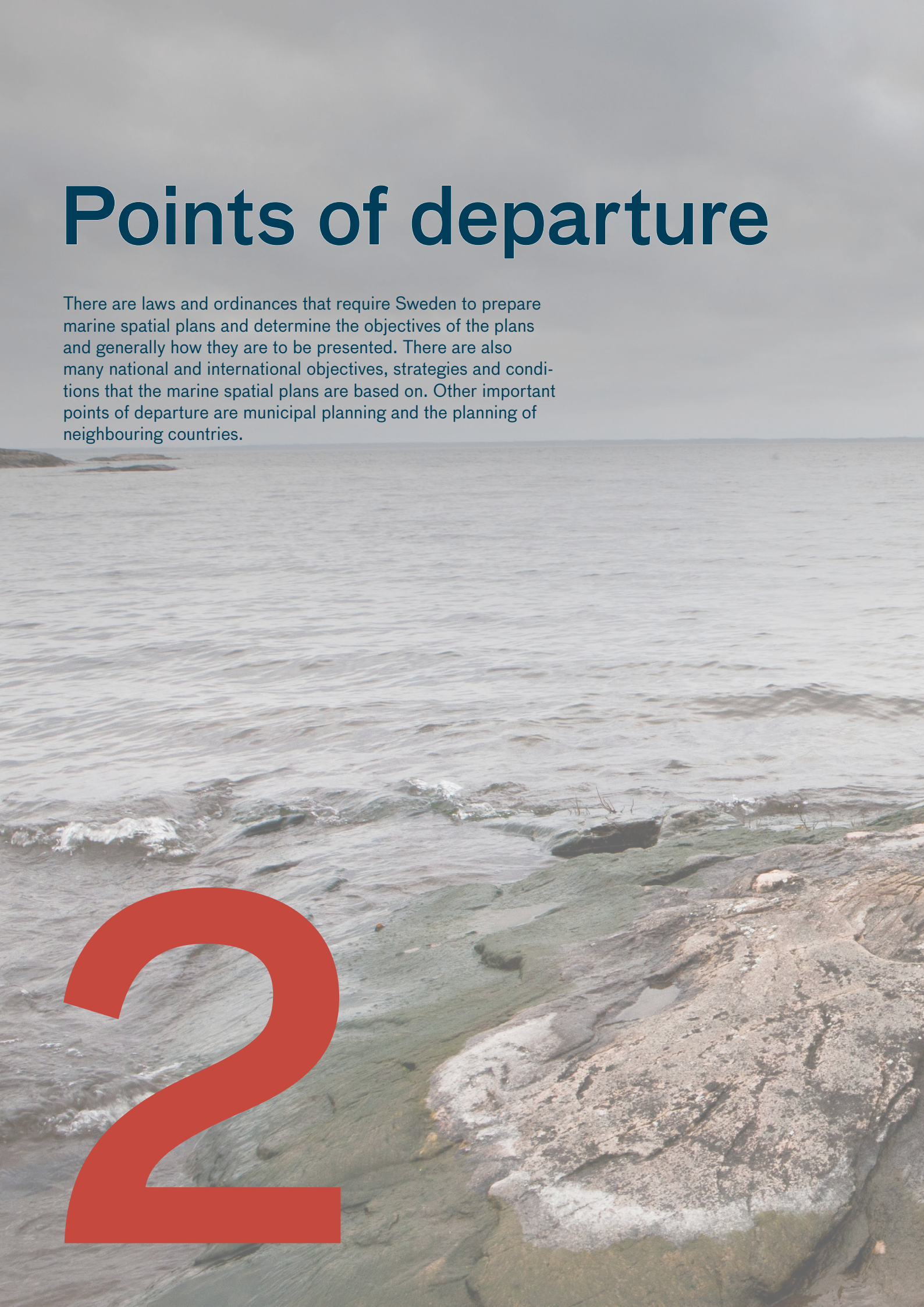
Chapters 1-3 and 7 are largely the same in the three marine spatial plans for the Baltic Sea, the Gulf of Bothnia and Skagerrak and Kattegat.

A strategic environmental assessment[2], a sustainability assessment[3] and a list of documents per area belong to each plan[4]. The list of documents per area presents the documents that are relevant in the respective geographic area. For example, information is available there on what kind of national interests or other public interests form the basis for the trade-offs of the marine spatial plan. The list is a complement to the maps and descriptions of the marine spatial plan that presents information in a different way.

2 Swedish Agency for Marine and Water Management. 2018. Strategic Environmental Assessment of the Baltic Sea MSP.
3 Swedish Agency for Marine and Water Management. 2018. Sustainability Assessment of the Baltic Sea MSP.
4 Swedish Agency for Marine and Water Management 2018. Documents per area. Marine Spatial Plan - Baltic Sea 15/02/2018.

Points of departure

There are laws and ordinances that require Sweden to prepare marine spatial plans and determine the objectives of the plans and generally how they are to be presented. There are also many national and international objectives, strategies and conditions that the marine spatial plans are based on. Other important points of departure are municipal planning and the planning of neighbouring countries.



2

The Marine Spatial Planning Ordinance and the Swedish Environmental Code form the basis.

Through the Swedish Environmental Code[5] and the Marine Spatial Planning Ordinance,[6] Sweden has transposed the EU Framework Directive on Maritime Spatial Planning[7] into Swedish legislation.

Under the Swedish Environmental Code, there shall be three national marine spatial plans – one for the Gulf of Bothnia, one for the Baltic Sea and one for Skagerrak and Kattegat. The plans shall provide guidance to public authorities and municipalities in the planning and review of claims for the use of the area. The marine spatial plans shall cover Sweden's exclusive economic zone and the areas that are not a part of private properties in Swedish territorial waters from one nautical mile outside the baseline that are considered to be in locations in Swedish territorial waters[8]. The marine spatial plans are approved by the Swedish Government. The Government may pronounce regulations on such prohibitions or limitations regarding operations and measures in an area subject to marine spatial planning as necessary to achieve [9].

The Marine Spatial Planning Ordinance regulates the implementation of marine spatial planning. It states that the SwAM shall prepare marine spatial plan proposals, what the plans shall contribute to, that an ecosystem approach shall be applied, that environmental impact shall be analysed and that follow-up shall take place.

The marine spatial plan shall guide and contribute to sustainable development

The objective of the marine spatial plan is to contribute to a long-term *sustainable development*. It shall provide guidance to public authorities and municipalities in the planning and review of claims for the use of the area subject to the marine spatial plan. The guidance shall aim for the marine sub-regions covered by the plan *to be used for the purpose or purposes that they are most suited for* considering the areas' characteristics, location and the needs that exist[10].

The foremost task of the marine spatial planning is to make a trade-off between different public interests, which are presented by the preparatory work for the marine spatial planning legislation[11]. National interests are a part of the public interests. The other public interests, in addition to the national

5 *The Swedish Environmental Code (1998:808)*
6 *Marine Spatial Planning Ordinance (2015:400)*
7 *Directive 2014/89/EU of the European Parliament and of the Council establishing a framework for maritime spatial planning*
8 *Act concerning the Territorial Waters of Sweden (1966:374). Act concerning Territorial Waters and Maritime Zones of Sweden (2017:1272),* effective 1 March 2018.
9 Ch. 4 Section 10 of the Swedish Environmental Code
10 Chapter 4 Section 10 of the Environmental Code and Section 4 of the Marine Spatial Planning Ordinance. Compare with the text in Chapter 3 Section 1 of the Swedish Environmental Code
11 *Conservation of marine areas (Government bill 2013/14:186 p 17)*

interests, that the marine spatial plans are to cover are not defined in the legislation. They shall, however, be public interests of *material significance*. According to Section 3 of the Marine Spatial Planning Ordinance, the marine spatial plan shall consist of a map and a plan description. The map shall present:

- the main outlines for the use of the marine area
- the areas of national interest, in accordance with Chapter 3 of the Environmental Code
- other public interests of material significance

The plan description shall

- specify the aim and direction for the use of the marine area
- specify and describe any areas of national interest in accordance with Chapter 3 of the Environmental Code
- account for other public interests of material significance, the current use of the marine area and the other planning conditions
- present the considerations that formed the basis for the plan
- indicate how issues regarding incompatible purposes should be resolved
- present the implications and consequences of the utilisation as stipulated in the plan

The plan shall promote coexistence between various activities and areas of use. The plan shall also provide the guidance necessary for the marine subregions covered by the plan to be used for the purpose or purposes that they are most suited for considering the areas' characteristics, location and the needs that exist[12]. The marine spatial plan proposal shall be consistent with Chapters 3 and 4 of the Swedish Environmental Code.

National interests in accordance with the Swedish Environmental Code

The areas and facilities that are or may be covered by national interest claims are presented by Chapters 4 and 3, respectively, of the Swedish Environmental Code. When an area is a national interest or covered by a national interest claim, it means that it outweighs other public interests in the spatial planning and that its value or importance may not be significantly damaged.

Ancillary management provisions are pointed out by public authorities and regulated in Chapter 3 of the Swedish Environmental Code. Such a national interest claim does not always entail a ban on other measures in or around the area, but means that its value shall be protected in the planning. If there are conflicting national interest claims, the marine spatial plan may contain a judgement and prioritisation of the use that best promotes sustainable management of the land, the water and the spatial environment otherwise. According to Chapter 3 of the Swedish Environmental Code, the national interests of total defence always outweigh other national interest claims.

12 Compare the text in Chapter 3 Section 1 of the Swedish Environmental Code (1998:808)

Geographically linked management provisions are in Chapter 4 of the Swedish Environmental Code. Areas of particularly great value in terms of nature and culture preservation, tourism and outdoor recreation are directly defined in Chapter 4, and these areas are of national interest in their entirety. This includes major coastal and archipelago areas that may not be subjected to exploitation that significantly damages their values. At the same time, the provisions do not hinder the construction of facilities for total defence purposes and the development of existing urban areas or local industry in these areas, if there are no other viable alternatives. It may also be allowed to extract deposits of substances or materials. Natura 2000 areas are also of national interest, in accordance with Chapter 4 of the Environmental Code. In them, special permit reviews are necessary for activities or measures that may significantly affect the natural area.

When Chapters 3 and 4 of the Environmental Code are to be applied in the review of a case or matter, the county administrative board shall work especially to see to the national interests. The county administrative board's work shall be based on the marine spatial plan in the areas covered by a marine spatial plan according to Section 3 of the Ordinance on Land and Water Management, etc.[13]. In other areas, the county administrative board's work is based on documentation from the respective national interest authority.

Public interests

As stated above, the foremost task of the marine spatial planning is to weigh up different public interests. Public interests in the planning of land and water are interests that contribute to achieving societal objectives for economically, socially and environmentally sustainable development The public interests, in addition to the national interests, that the marine spatial plans are to cover are not defined in further detail. They shall, however, be public interests of *material significance*. Public interests of material significance can, for example, be interests that are pursuant to the first paragraphs of Chapter 3 of the Environmental Code or municipal interests that are considered to be of national interest.

What is counted as a public interest in municipal planning is described in the Planning and Building Act. Public interests in municipal planning include natural and cultural aspects, consideration for the surroundings and certain provisions of the Environmental Code. National interests according to the Environmental Code are also a part of the public interests.

13 *Ordinance (1998:896) on Land and Water Management, etc.*

Assessment of use

The marine spatial plans set out use. The basis of the stated use builds on various national interest claims and other public interests according to the Environmental Code. The box below explains how:

Read more about coexistence in Chapter 4 Guidance on the most suitable use.

Uses are based on different public interests

The uses in the marine spatial plan are based on three kinds of interests:

- national interests in accordance with Chapter 4 of the Environmental Code
- national interest claims in accordance with Chapter 3 of the Environmental Code
- other public interests of material significance

The uses comprise these three to differing extents.

When the interests overlap

In large parts of the sea, several public interests overlap, such as different national interest claims.

The marine spatial plans address overlapping interests in the following ways:

A. Several interests are considered compatible

→ The marine spatial plan indicates several interests as the most suitable use in the same area since they can coexist.

B. A national interest claim according to Chapter 3 is an area that is also of national interest according to Chapter 4 of the Environmental Code.

→ National interest claims according to Chapter 3 will not become a use in the marine spatial planning if the use conflicts with the provisions in Chapter 4.

C. Different national interest claims according to Chapter 3 of the Environmental Code are considered incompatible.

→ The marine spatial plan gives priority to the national interest claim or claims that is/deemed to be the most suitable in the area. The motivation of the chosen use is then stated under the respective marine area. Defence interests are always given priority if the area is needed for a facility for total defence, in accordance with the provisions of the Environmental Code.

D. An area with a national interest claim according to Chapter 3 of the Environmental Code is also covered by a public interest of material significance. The national interest claim and the public interest are incompatible.

→ The marine spatial plan gives the national interest claim priority when it is deemed to be relevant.

A national interest claim being given priority over another national interest claim does not mean that a national interest claim disappears.

Boundaries in the sea

The UN Convention on the Law of the Sea[14] regulates the maritime law boundaries in the sea, i.e. what constitutes internal waters, territorial sea, a contiguous zone and an economic zone. The territorial sea extends a maximum of 12 nautical miles from the base line. The exclusive economic zone is the area outside, although no more than 200 nautical miles from the base line. The Swedish territorial sea and the economic zone have varying extents, depending on where they meet other countries' boundaries and zones. The contiguous zone can extend to a maximum of 24 nautical miles from the baseline. In the contiguous zone, Sweden may carry out certain police control functions, among other things. Sweden also has a right to protect the marine cultural heritage on the bottom in the zone.

In the territorial sea, Sweden has sovereignty. This entails the uncurtailed right to regulate various activities, with the exception of other states' right of innocent passage with vessels. In the exclusive economic zone, Sweden has the sovereign right to explore, utilise and manage natural resources. Sweden also has jurisdiction in respect of the protection and preservation of the marine environment, the establishment and use of artificial islands and other structures, and scientific research. At the same time, other states have the right to lay down cables and lines on the Swedish continental shelf and freedom of shipping and overflight. The regulation of fisheries takes place within the framework of the EU Common Fisheries Policy. The EU has delegated the right to issue certain regulations to the Member States.

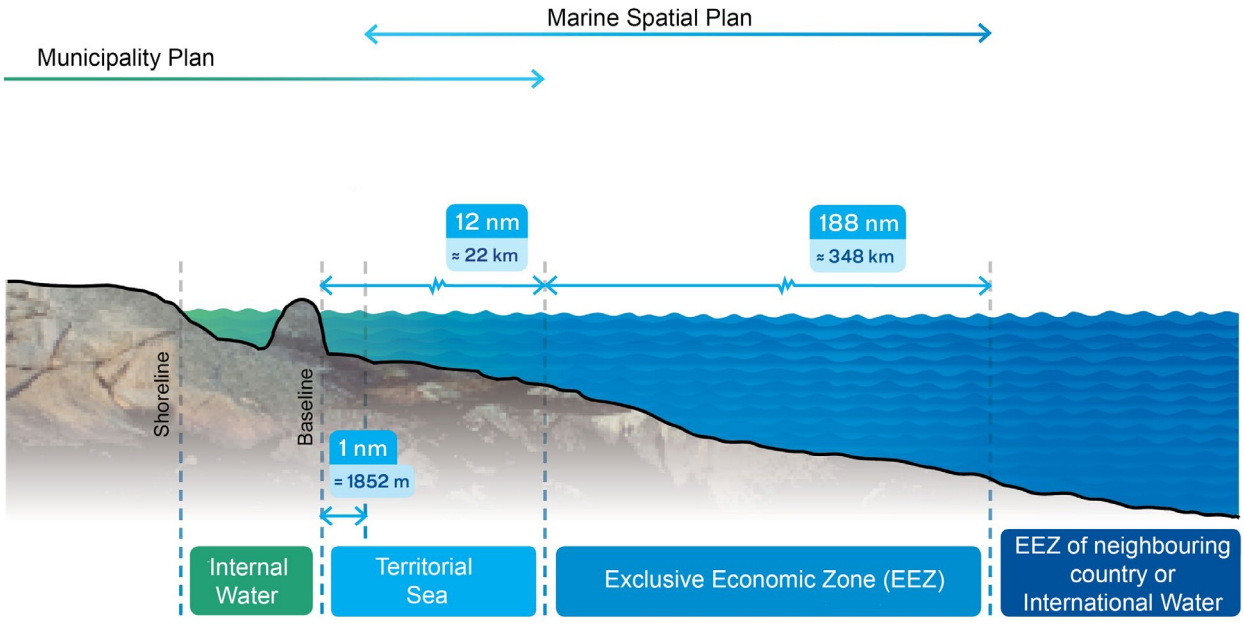


Figure 3. Terms, boundaries and planning responsibility. In the territorial sea, the state shares planning responsibilities with the municipalities. In the exclusive economic zone, the State has planning responsibility.

14 *UN Convention on the Law of the Sea (SÖ 2000:1)*

The marine spatial plans cover most of the territorial sea and the Swedish exclusive economic zone. In the territorial sea, the state shares planning responsibilities with the municipalities. In the exclusive economic zone, the State has planning responsibility.

The planning of the marine areas must also relate to other international law (besides the Law of the Sea) and EU law, which provides both opportunities and limitations in planning. A marine spatial plan cannot restrict an activity or an interest beyond what is made possible by the Law of the Sea, for example.

There is also legislation and policies at the EU level that concern the sea or activities linked to the sea. This involves, among other things, the EU's Marine Strategy Framework Directive[15] and other environmental protection directives and the Union's transportation, fisheries, shipping and energy policies.

Municipal planning of the territorial sea

According to the Planning and Building Act[16], the municipalities have planning responsibility for Sweden's territory, which also includes internal waters and territorial sea. Through the introduction of the marine spatial planning in Sweden, there are 65 municipalities where the planning responsibility overlaps between the municipality and the state in the territorial sea. Some 20 additional municipalities border the sea, but not waters that are included in the national marine spatial plan areas.

In the comprehensive plans, the municipalities present how they intend to promote long-term positive development in terms of land and water use. The comprehensive plan is the basis for the municipalities' right to decide on detail planning and to interpret the substance of public interests. Today, there are some 20 municipalities that have adopted comprehensive plans that encompass the entire territorial sea and present well-conceived municipal standpoints[17]. However, areas near land and in the coastal zone are addressed in the plans more often than the areas further out in territorial waters. The reasons for this may be the sea's traditionally free use and the lack of properties in offshore waters. In 2016 and 2017, many coastal municipalities either began preparatory work for the planning of the marine area or began work on comprehensive planning according to the Planning and Building Act. In Stockholm County, there is regional planning according to the Planning and Building Act and Stockholm County Council has standpoints that concern the archipelago environments in its regional plan. The Göteborg Region Association of Local Authorities, a regional planning body under the Planning and Building Act appointed by the Government, has produced a preliminary study on inter-municipal coastal planning.

On 16 November 2017, the Swedish Parliament decided to pass the Government bill on Sweden's marine territory and maritime zones (Government bill 2016/17:215). The bill proposes a new coherent act that sets out the geographic scope of Sweden's marine territory and maritime zones with uniform geographic coordinates expressed in the Swedish reference system SWEREF 99.

Through the decision, Sweden's baselines are revised, which affects the delimitation of Sweden's territorial sea and exclusive economic zone. The decision also means that a contiguous zone is established. The new legislation also defines the extent of the line that designates one nautical mile from the baseline, meaning the marine spatial planning area's delimitation to the coast.

This new legislation came into force on 1 March 2018.

In this consultation proposal on MSPs, a preliminary delimitation of the marine spatial planning area is used. In the next stage, meaning the review stage, the delimitation for the marine spatial planning area will be updated based on the new legislation.

15 *Directive 2008/56/EC of the European Parliament and of the Council*
16 *Planning and Building Act (2010:900)*
17 National Board of Housing, Building and Planning. 2017. Spatial planning – land, coast and sea (working draft 21/12/2017)

Many neighbouring countries to collaborate with

The Swedish marine spatial plans border on nine neighbouring countries' territorial waters or exclusive economic zones. Moreover, Åland is an autonomous region with its own jurisdiction in terms of planning of its territorial waters.

The neighbouring countries have made extensive progress in the planning of their marine areas. The seven neighbouring countries that are members of the EU are obliged to draft marine spatial plans in accordance with the EU Framework Directive on Maritime Spatial Planning. Article 11 of the Directive sets forth an obligation to cooperate with neighbouring countries. Here, Sweden is taking an active role by leading and participating in the

Figure 4. Stages in the marine spatial planning in our neighbouring countries. Light blue marks land where the first national marine spatial planning process is under way. Dark blue marks land where the first national marine spatial planning process is completed. In Russia, preparations are under way for marine spatial planning legislation.

EU-financed projects Baltic SCOPE in 2015-2017, Pan Baltic SCOPE in 2018-2019, Baltic LINES in 2016-2019 and NorthSEE in 2016-2019.

The neighbouring countries work together in the projects to coordinate planning issues that concern various sectors, such as shipping and fisheries, and to coordinate data and documentation. In Baltic SCOPE, for example, energy, fisheries, nature and shipping were addressed. The participating countries' responsible planning authorities participated in the project and the sector authorities were invited to participate in the discussions. Based on needs and the joint work in the project, recommendations were drafted for the handling of cross-border issues[18]. In Pan Baltic SCOPE, the cross-border collaboration is continuing as a support for the national marine spatial planning processes. This includes cooperation on green infrastructure, collective (cumulative) impact, economic and social impact analysis of the marine spatial plans and coordination of land spatial planning and marine spatial planning.

Cooperation is also taking place within the scope of the regional marine environment conventions, the Baltic Sea Convention (Helcom) (including the Gulf of Bothnia) and Kattegat and the Convention for the Protection of the Marine Environment of the North-East Atlantic (the 'OSPAR Convention') which includes the North Sea, Skagerrak and parts of Kattegat. There is also a special forum for cooperation between the ministers that have responsibility for spatial planning in the Baltic Sea region, namely Vision and Strategies around the Baltic Sea (Vasab). Vasab and Helcom have formed a working group for spatial planning of the sea that has developed guidelines for consultations and how the ecosystem approach can be applied to marine spatial planning.

The neighbouring countries have had the opportunity to submit comments on the drafts of the marine spatial plans at an early stage in 2017 during a dialogue that SwAM held with stakeholders. The specific comments received are described in *Chapter 6 - Themes*.

A climate refuge is an area that may need special protection in order to preserve important plants and animals the spread of which decreases when the climate changes. These areas often constitute the more stable areas that are expected to be left of a species' larger range when salinity and temperature change. A climate refuge is deemed to be important for the species to continue to exist in the marine area. The documentation that is available for climate refuges is preliminary and needs to be developed moving ahead. The term climate refugia can also be used to describe a climate refuge.

Global Sustainable Development Goals

The UN has adopted 17 Global Sustainable Development Goals[19]. They cover the economic, environmental and social dimensions of sustainable development. The Swedish marine spatial plans mainly have points of contact with the following goals:

Goal 3 *Good health and well-being* is planned for by protecting the areas with attractive living environments, to promote health and well-being.

Goal 9 *Industry, innovation and infrastructure* and Goal 7 *Affordable and clean energy* are planned for by promoting good shipping routes and energy extraction and research in renewable energy at sea.

18 Baltic SCOPE (2017). Recommendations on Maritime Spatial Planning across Borders
19 *UN Global Sustainable Development Goals*

Goal 13 *Climate action* is planned for by integrating climate refuges in the marine spatial planning.

Goal 14 *Life below water* and Goal 15 *Life on land* are planned for through focus on sustainable use and more areas with greater protection of nature and ecosystems.[20]

National environmental objectives

In addition to the overall generation objective, which is a guide for the environmental efforts at all levels in society, several of Sweden's 16 national environmental quality objectives have ties to the marine environment[21]. The environmental quality objective of *Seas in balance and living coasts and archipelagos* has a particularly prominent connection to marine spatial planning since the objective's specifications tie into ecosystem services, a good environmental status and thereby also the *environmental quality standards that SwAM established* in the scope of the Marine Environment Ordinance and the Water Authorities in the scope of the Water Management Ordinance.[22]

The following environmental quality objectives were deemed to be[23] the most relevant to marine spatial planning as a whole in the marine spatial planning roadmap:

- *A Balanced Marine Environment, Flourishing Coastal Areas and Archipelagos* – the central thematic objective for the sea and coastal zone.
- *A Rich Diversity of Plant and Animal Life* – concerns marine plant and animal life, including birds and bats.
- *A Non-Toxic Environment* – concerns the emission and dispersion of pollutants.
- *Reduced Climate Impact* – concerns emissions of greenhouse gases from e.g. shipping, and the conversion to renewable energy sources.
- *Zero Eutrophication* – concerns emissions of nitrogen compounds and phosphorus compounds into the air and water.

Sweden's maritime strategy

In 2015, the Government decided on a Swedish national maritime strategy for *competitive, innovative and sustainable maritime industries that can contribute to increased employment, reduced environmental pressure and an attractive living environment*[24].

20 *Swedish Agency for Marine and Water Management's response in Government assignment Fi2016/01355/SFÖ Appendix 2.*
21 *Sweden's environmental objectives*
22 *The Marine Environment Ordinance (2010:1341)* and *the Water Quality Management Ordinance (2004:660)*
23 *Swedish Agency for Marine and Water Management. Report 2016:21, Färdplan havsplanering [Marine Spatial Planning Roadmap].*
24 *A Swedish national maritime strategy – for people, jobs and the environment*

This vision is based on three equal perspectives:

- a balanced marine environment
- competitive maritime industries
- attractive coastal areas.

The strategy comprises and integrates many areas of policy and is thereby an instrument for implementing a Swedish integrated marine policy. The maritime strategy identifies national marine spatial plans as an important instrument to control the development of Sweden's offshore areas. The maritime strategy is of major relevance to the marine spatial plans and is integrated into the planning objectives.

Climate adaptation

Climate change will impact the seas and the opportunity for human kind to use the sea as a resource in many different ways. There is a considerable likelihood that a changed climate will also entail significant changes in the ecosystems, ice cover patterns, salinity, currents and oxygenation, wind and wave patterns[25]. Man-made emissions of carbon dioxide also entail an increased acidification of the seas, with potentially far-reaching consequences for organisms and ecosystems. Climate change is also linked to the actual demands made on the use of the sea. An impending need to reduce emissions of greenhouse gases in a short period of time will entail greater use of the sea for the extraction of various forms of fossil-free energy, such as sea-based wind and wave power. Effects on land may entail a greater interest in activities at sea through changed transport patterns that lead to a shift from road to maritime transports and for beach nourishment activities at sea to adapt coastal zones to the climate and combat coastal erosion. The possibility of conducting activities at sea has secondary effects on land or abroad and thereby affects the total emissions of greenhouse gases[26].

Altogether, the climate as an environmental issue is linked to the marine spatial planning through both direct and indirect effects on use and claims and the impact on the ecosystems in general and the services they provide. Marine spatial planning can also prevent effects of climate changes and the contribution of the use of the sea to this by pointing out areas for sustainable energy conversion and fuel-efficient shipping lanes.

Planning for good environmental status

To turn the negative environmental development and stimulate a sustainable use of the sea's resources, the European Community (now the EU) prepared and adopted the Marine Strategy Framework Directive[27], which

25 *Swedish Agency for Marine and Water Management. Report 2017:26. Havsplanering med hänsyn till klimatförändringar [Marine spatial planning in consideration of climate change].*

26 Swedish Agency for Marine and Water Management. Report 2018:5. Miljösystemanalys för svensk havsplanering [Environmental system analysis for Swedish marine spatial planning].

27 *Directive 2008/56/EC of the European Parliament and of the Council*

in Sweden was introduced through the Marine Environment Ordinance[28]. The Marine Strategy Framework Directive aims to achieve or maintain a good environmental status in Europe's seas by 2020. For Sweden, this involves the management areas of the North Sea and the Baltic Sea. According to the Marine Strategy Framework Directive, the Baltic Sea's management area consists of the Gulf of Bothnia and the Baltic Sea Proper. In the marine spatial planning, the latter is called the Baltic Sea. Definition and assessment of good environmental status, environmental quality standards with associated indicators, action programmes and monitoring programmes for the marine environment are tools in the Marine Environment Ordinance to reduce the load. Definition and assessment of good environmental status is summarized in *Initial assessment 2018*[29].

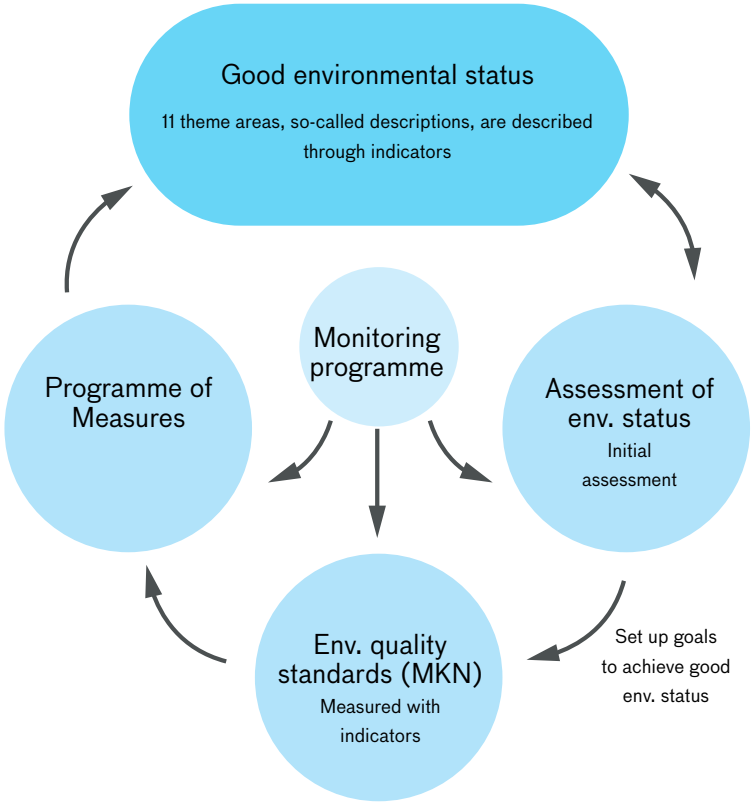


Figure 5. Overall illustration of the Marine Strategy Framework Directive's process and concepts.

According to the Swedish Marine Spatial Planning Ordinance, the marine spatial planning should contribute to achieving and maintaining good environmental status. To achieve a good environmental status by 2020, the use of the sea must change so that the burden the use entails is reduced. The marine spatial plans' guidance on the most suitable use and particular consideration of high nature values can contribute to achieving and maintaining good environmental status.

28 *Marine Spatial Planning Ordinance (2010:1341)*
29 *Swedish Agency for Marine and Water Management. Report 2017:32. Samråd om inledande bedömning 2018, genomförande av havsmiljöförordningen [Consultation on initial assessment 2018, implementation of the Marine Environment Ordinance]*

Environmental quality standards

Environmental quality standards are legal means of control intended to ensure that good environmental status is achieved or maintained. The starting point when establishing an environmental quality standard is knowledge about what mankind and nature can endure without consideration of economic or technical conditions. The standard should therefore reflect the lowest acceptable environmental quality or the desired environmental status, but usually does not set its sights on how human activities should be structured.

The overall environmental quality standard with the implication that a good environmental status shall be achieved or maintained in the North Sea and Baltic Sea by 2020 is in Section 17 of the Marine Environment Ordinance. What good environmental status entails is specified in SwAM's regulations[30] on what characterises good environmental status and environmental quality standards with indicators for the North Sea and Baltic Sea. In these regulations, there are also other environmental quality standards with indicators that aim to for us to be able to achieve good environmental status in the long term.

The marine spatial plan's guidance on the use of various marine areas is an important tool in the work on achieving the environmental quality standards. For example, activities with a potential negative impact on hydrographic conditions are steered away from the areas where such impact may be negative for biological diversity and ecosystems.

Marine protected areas

An important part of the marine environment management is the development of an ecological representative, coherent and functional networks of marine protected areas[31]. The marine spatial planning completes this network by presenting areas outside the protected areas, where particular consideration shall be taken to nature values.

Green infrastructure

Green infrastructure is the natural areas, biotopes, structures and elements in the landscape, including seas and coasts, that create an ecological context. Coherent structures are important for preserving a rich plant and animal life that preserves both species-specific characteristics and the ecosystems' functionality. Green infrastructure is a specification of the environmental quality objective of *A rich plant and animal life*. The marine spatial planning contributes to coherent green structures by providing guidance on where different uses are most suitable and indicating areas were particular consideration must be taken to nature values.

30 *SwAM's regulations (HVMFS 2012:18) on what characterises good environmental status and environmental quality standards with indicators for the North Sea and Baltic Sea.*
31 *Swedish Agency for Marine and Water Management. Report 2016. Handlingsplan för marint områdesskydd, myllrande mångfald och unika naturvärden i ett ekologiskt nätverk under ytan. [Action plan for marine area protection, teeming diversity and unique nature values in an ecological network below the surface.] Final report on the Government assignment M2015/771/Nm.*

Ecosystem services

Ecosystem services are services and products that the ecosystems provide to us humans, such as food, air or places for recreation. In marine spatial planning, it is important to have knowledge of the significance of ecosystem services to be able to analyse, evaluate and motivate why an area is suitable or unsuitable for various uses.

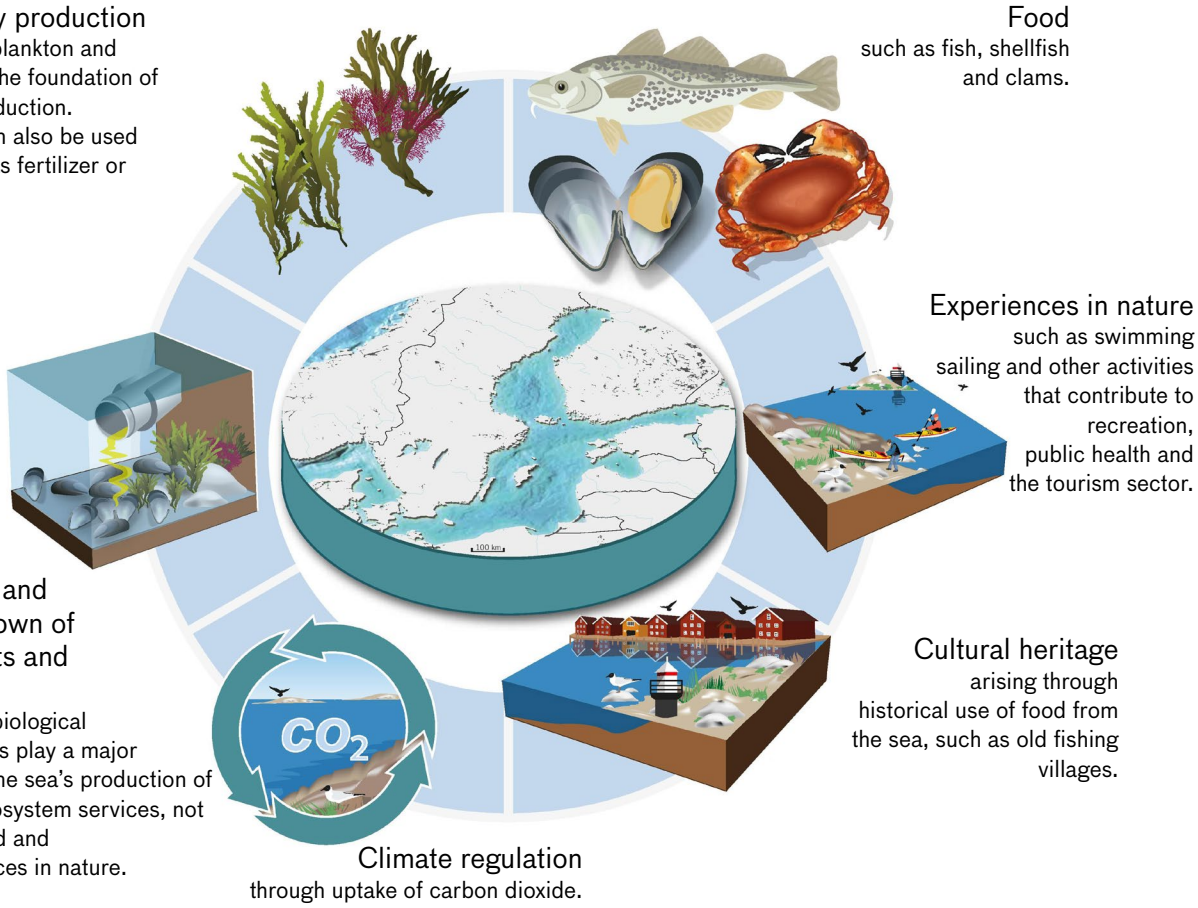


Figure 6. The sea's ecosystems contribute several functions critical to society, such as production of food. The more visible ecosystem services affect and are dependent on others that are not as visible, such as fish dependent on other parts of nature breaking down nutrients and toxins.

Work on preparing proposals for marine spatial plans

SwAM prepares proposals on marine spatial plans while coastal county administrative boards and central authorities support this work and assist with input for the planning. Affected municipalities, regional planning bodies, municipal collaboration bodies and county councils have the possibility of participating in the proposal work. This way, the marine spatial plans can take local and regional conditions and needs into consideration. Sweden also cooperates with other countries so that the Swedish marine spatial plans are coordinated with the neighbouring countries' marine spatial plans. SwAM has also held a dialogue with trade associations and interest groups to be able to take consideration of their conditions and needs.

The process of preparing marine spatial plans is done in multiple stages where revisions and an extensive dialogue take place for each stage. Discussions at an *early stage* were conducted in 2016-2017 based on drafts of marine spatial plans. During these discussions, more than 150 stakeholders participated and a large number of comments and improvement suggestions were submitted on the three draft plans with strategic environmental assessments. The discussions were conducted in the form of a large number of large or small dialogue meetings, nationally, regionally and with neighbouring countries. The coastal county administrative boards were responsible for the dialogue with municipalities and actors responsible for regional development.

Now, *consultations* are being held based on these consultation proposals for the marine spatial plans. Before the marine spatial plans are approved, they will be subject to *review*. During the review, a possibility to submit comments will also be provided.

Sweden and the other EU countries must have established marine spatial plans no later than 2021. Regulations that can be linked to the marine spatial plans with prohibitions against or limitations to activities or measures are not proposed in connection with the consultation proposals for the marine spatial plans, but may become relevant at a later phase. The marine spatial plans and any regulations are adopted by the Government. When necessary or at least every eight years, new proposals must be prepared so that the marine spatial plans are kept up-to-date and can fulfil their purpose.

Planning with the ecosystem approach as a basis

According to the Marine Spatial Planning Ordinance, an ecosystem approach shall be applied in the work on drafting the marine spatial plans. The ecosystem approach is an international strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. The goal is to ensure that ecosystems are used without compromising their long-term survival in terms of their structure, dynamics and function[32].

32 *Swedish Agency for Marine and Water Management. Report 2012:14. Tillämpning av ekosystemansatsen i havsplaneringen [Application of the ecosystem approach in marine spatial planning] and Schmidtbauer Crona, J. 2017. The Ecosystem Approach in Maritime Spatial Planning – A Checklist Toolbox.*

The ecosystem approach is applied through an inclusive dialogue process in the planning work, knowledge-based planning, the application of the precautionary principle and planning being done based on the requirement of a good environmental status that has been set in the scope of the Marine Environment Ordinance. There is a more detailed presentation of how the ecosystem approach is applied in the planning work in the *Marine Spatial Planning Roadmap*.

The precautionary principle and management of a lack of knowledge

The planning is based on the best available knowledge regarding marine activities and ecosystems. In the planning, consideration has been taken to the current state of knowledge and the knowledge shortcomings that have been identified.

The precautionary principle requires that a lack of knowledge regarding environmental effects is not used as an argument to permit an activity. The marine spatial plan is comprehensive and strategic, and in-depth knowledge may be required in the review of various marine activities and in the development of the management based on the guidance of the marine spatial plan.

Strategic environmental assessment and sustainability assessment

A strategic environmental assessment (SEA) is done for every marine spatial plan according to the Marine Spatial Planning Ordinance. The objective of the SEA is to integrate environmental consideration into the marine spatial plans. In addition to the SEAs on the marine spatial plans, sustainability assessments are done with a broader perspective. The objective of the sustainability assessments is to analyse the marine spatial plans' impact from economic, social and environmental perspectives. Read more in*Chapter 8. Consequences.*

Read more about the starting points for the MSPs in Marine spatial planning – Current status 2014 and Marine Spatial Planning Roadmap. Reports and documents on marine spatial planning are available here.

Current status description, roadmap and documentation

The work on marine spatial planning in Sweden has been under way for several years and a large number of documents have been prepared and are being prepared. In *Marine Spatial Planning – Current Status 2014*,[33] a current situation description was provided regarding interests and conditions, as well as an analysis of cooperating and competing interests. The planning objectives were established in the *Marine Spatial Planning Roadmap*,[34] as well as planning strategies that guide the work to develop the marine spatial plans and the delimitation of the SEAs. The objective was to create clarity and support for the continued planning process.

33 *Swedish Agency for Marine and Water Management Report 2015:2. Marine Spatial Planning – Current Status 2014.*

34 *Swedish Agency for Marine and Water Management. Report 2016:21. Färdplan havsplanering. [Marine Spatial Planning Roadmap.]*

A future we want to achieve

An marine spatial plan is future-oriented and should lead to the future we want to have. The marine spatial plans set their sights on 2030. At the same time, 2050 is used to paint a future farther out that stimulates discussions and thoughts on the long-term perspective of the plan.

3

The sea in 2050

In 2050, we use the sea through competitive, innovative and sustainable maritime industries. The sea has a good environmental status and a rich biological diversity. We preserve natural and cultural environments in the sea and safeguard its ecosystem services. There are plenty of experiential values and possibilities for recreation. The sea provides enjoyment and benefits to all. Industry and management collaborate and the marine spatial plans contribute a holistic view, advanced planning and predictability. In 2050, we continue to live in peace and freedom in the Baltic Sea and North Sea region.

Planning objectives

The marine spatial plan should integrate economic policy, social and environmental objectives in accordance with the Marine Spatial Planning Ordinance. The main focus of the planning is that marine resources should be used in a way that allows maritime industries to develop and grow while preserving and restoring ecosystems. The marine spatial plans should contribute to achieving and maintaining a good marine environment. According to the Environmental Code, marine spatial plans should contribute to long-term sustainable development. The planning also takes into account the UN Global Sustainable Development Goals as well as goal formulations in the scope of our national legislation, which in many cases can be traced to international agreements.

The marine spatial planning has identified 10 planning objectives based on societal objectives, existing legislation, national strategies and other input. The planning objectives consist of an overall objective that is supported by the other nine objectives. The overall objective is a *Good marine environment and sustainable growth*. The other nine are divided into two groups: creating conditions and establishing preparedness. This division captures the difference between the claims that are clear and comprehensive in the short term, i.e. conditions, and the issues that are deemed to possibly have comprehensive claims in the sea in a longer future perspective, i.e. preparedness.

The preparedness objectives mean that the marine spatial planning must provide margins for future needs and activities, such as growing aquaculture or more mineral extraction and carbon dioxide storage. This figure shows the planning objectives and legislation, strategies and other overall objectives.

The planning objectives' implications are described in detail in the Marine Spatial Planning Roadmap.

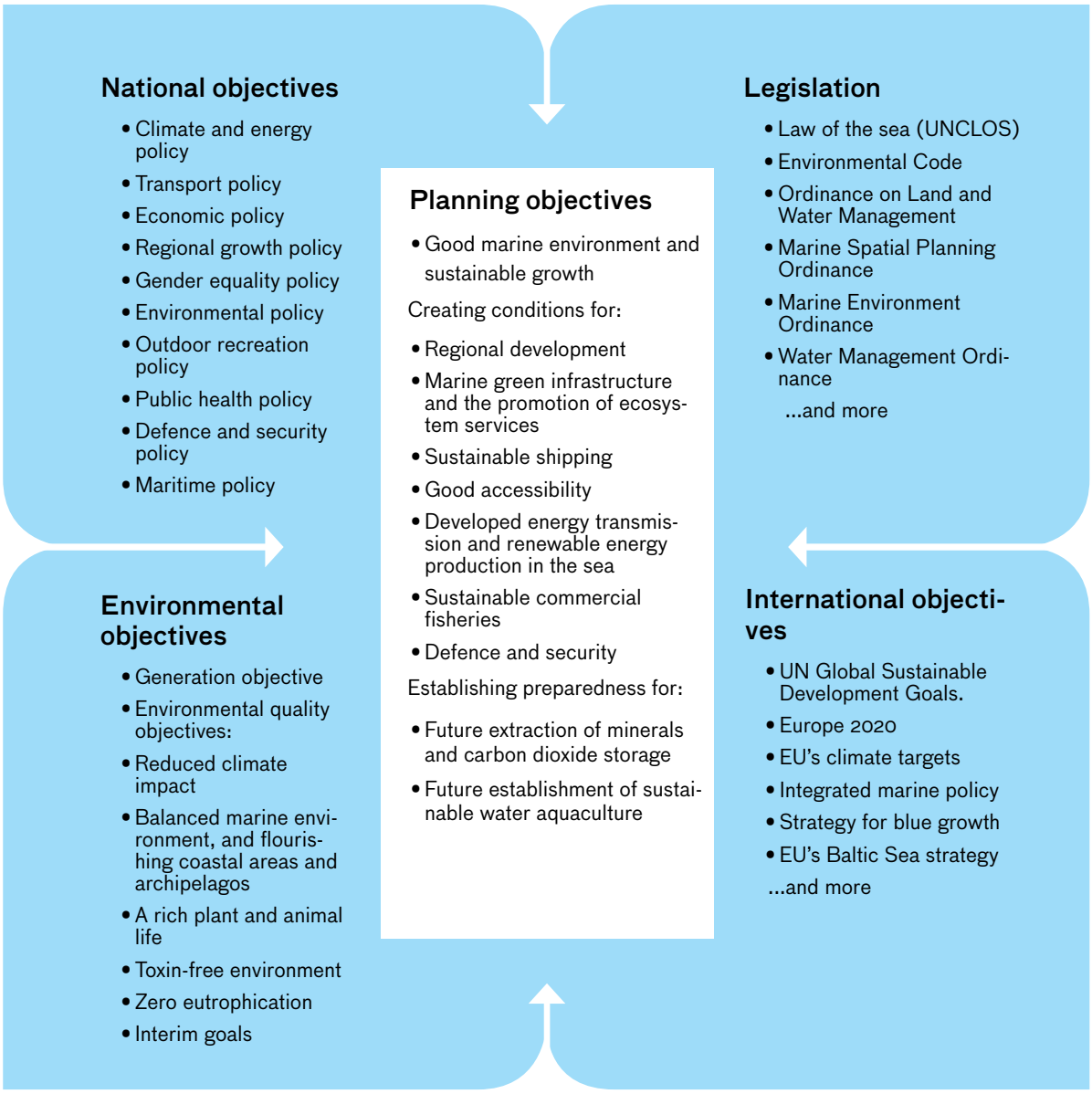


Figure 7. Marine spatial planning objectives

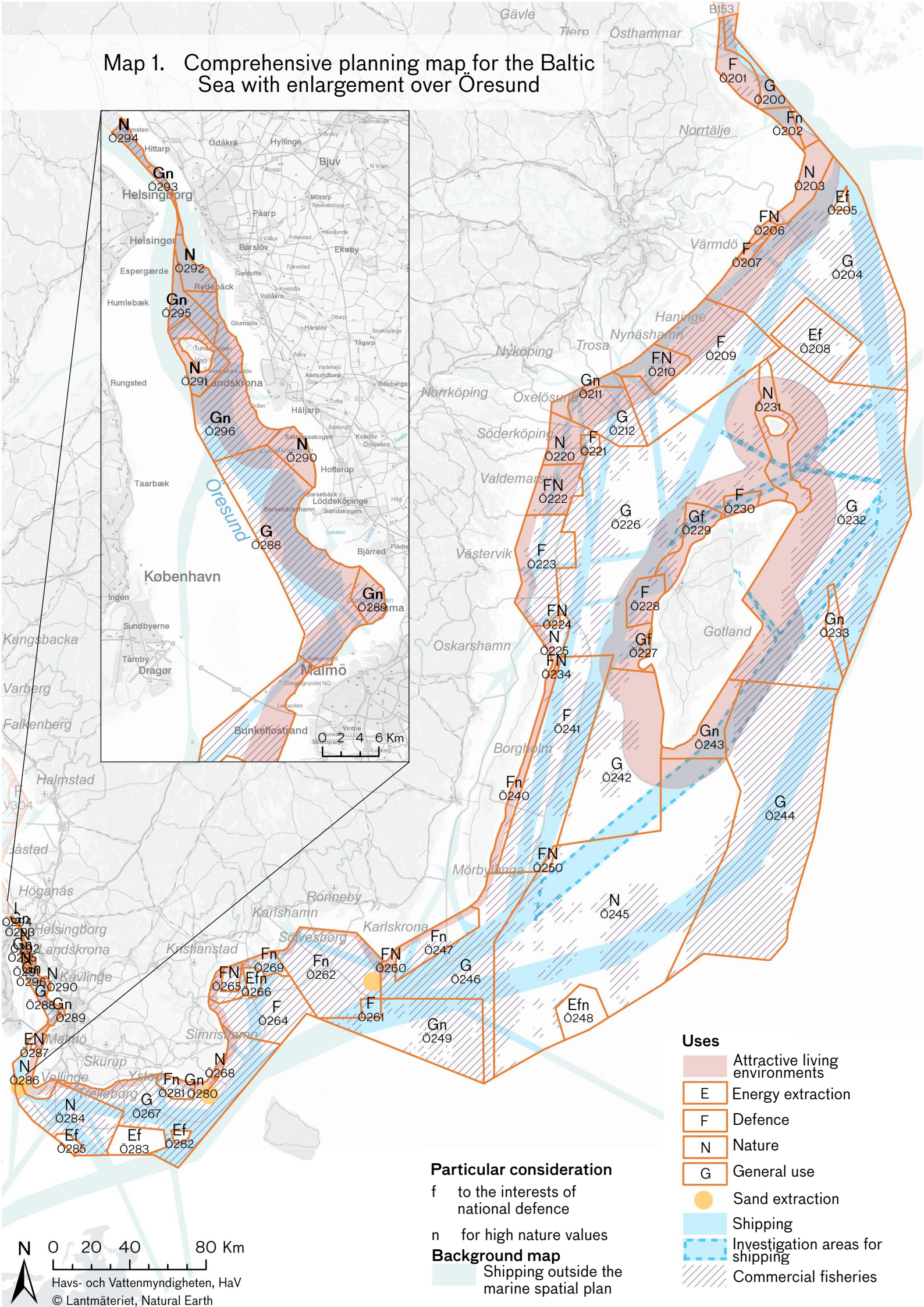
Guidance on most suitable use

The marine spatial plan contains guidance in text and maps. The planning map shows the most suitable use of the marine area, such as commercial fisheries, shipping and energy extraction. The planning map also shows areas where particular consideration should be taken to high nature value and the interests of total defence. This chapter contains guidance on the various uses, the particular consideration and how various uses can coexist. This chapter also contains an overall planning map for the entire marine spatial plan area. Planning maps for each marine sub-region are in Chapter 5. Marine sub-regions.

The map is also available at www.havochvatten.se/havsplanering.

4

Map 1. Comprehensive planning map for the Baltic Sea with enlargement over Öresund



Particular consideration

f to the interests of national defence

n for high nature values

Background map

Shipping outside the marine spatial plan

Uses

- Attractive living environments
- E Energy extraction
- F Defence
- N Nature
- G General use
- Sand extraction
- Shipping
- Investigation areas for shipping
- Commercial fisheries

The plan comprises all areas within the planning area – the sea, the space above the surface of the sea, the seabed and underlying soil layers.

The planning map should be interpreted in the approximate scale between 1:700,000 and 1:1,000,000.

Most suitable use

The uses presented by the planning map have been deemed to be the most suitable uses and take precedence over other uses. Therefore, all other use in the area should adapt to the conditions and needs of the uses shown.

In many cases, several uses are shown as most suitable in the same place. They then have the same degree of priority over other uses. Where more than one use is shown, coexistence had been deemed to be possible. The uses where coexistence is deemed possible may, however, still need to adapt to each other. If any of the uses are based on national interest claims, the assessment that coexistence is possible entails a preliminary assessment that there is no risk of substantial damage to the national interest.

Uses are presented in different ways in the planning map:

- The four uses **energy, defence, general use** and **nature** are presented with a letter and delimited with lines that form the areas. Each area has a number, such as Ö100.
- The other uses are delimited by their own markings.

The following applies to the entire planning area:

- the laying, operation and maintenance of data and telecommunication cables, power cables, pipelines and gas lines must be made possible where appropriate.

The uses are described below. In general, values are described that are important to the use and should not be negatively impacted by other uses.

Attractive living environments

Areas for recreation, cultural heritage, natural environment and tourism.

For attractive living environments, good conditions for recreation activities and nature and cultural experiences are important. Accessibility to the public should be good, meaning the possibility of travelling to the areas and partaking of their values. Valuable natural and cultural environments need to be preserved for current and future generations. The use is based on areas of national interest according to the Environmental Code.

E

Energy extraction

Area for energy extraction.

The areas' scope, depth and wind conditions are important for the possibility of energy extraction with wind power. The stability of the seabed is also important to the laying of foundations for wind power plants. Ships need good accessibility to the areas for construction, operation and maintenance. To be able to distribute and transmit electricity, there needs to be possibilities for connections on land.

F

Defence

Area for defence activities.

Defence areas can comprise different activities and installations, such as training and artillery ranges and influence areas.

G

General use

Area for general use.

General use means that no special use is indicated as the most suitable. If general use coincides with **shipping, commercial fisheries, sand extraction** or **attractive living environments,** these uses take precedence over all other uses.

N

Nature

Area for nature.

Vigorous ecosystems and good conditions for the spread of species and types of nature, long-term survival and an ability to recover are especially important in the nature areas.

Sand extraction

Area for sand extraction.

The composition of the seabed material is important to the extraction of sand and gravel that may be used for building material, filling and coastal replenishment measures. The accessibility needs to be good for ships, which are needed during extraction.

Shipping

Area for shipping.

Shipping needs to be able to traverse the sea to ports in safe and sustainable ways. This most often takes place along appointed routes with adequate depth and room to manoeuvre. In narrow, highly trafficked areas, shipping lanes are organised into traffic separation schemes. Important shipping areas also include anchorages.

Investigation areas, shipping

Areas for further investigation to determine if shipping is the most suitable use.

Commercial fisheries

Area for commercial fisheries.
To be able to conduct sustainable fisheries, commercial fishing vessels must have access to fishing areas and ports.

Read more about the interests forming the basis of the uses in Chapter 6, Themes.

Particular consideration

f – particular consideration to the interests of total defence

Within this area, all use should show particular consideration to the interests of total defence.

In an area designated as Gf, consideration refers to limitations of high objects due to aviation activities.

In an area designated Ef, it is possible from a defence perspective to build permanent installations for energy extraction, but not always in every part of the area.

Particular consideration of the interests of total defence may mean that the placement and design of a wind farm must be adapted to defence interests. This also applies to other kinds of permanent installations and other uses. Particular consideration to the interests of total defence can also entail adaptation in design relative to several energy areas that together can have an impact on total defence. A risk of cumulative impacts on defence interests must accordingly be taken into account. This means that expansion in an energy area can affect the possibility of using another area that in the plan has been designated E for energy extraction.

n – particular consideration of high nature values

Within this area, all use shall show particular consideration of the area's high nature values, which are listed below.

Read more in the document *Documentation per area, Marine Spatial Plan, Baltic Sea*.

Area number	High nature values
Ö202	Reef environment, especially important mammal area and climate refuge for sea mussels.
Ö211	Reef environment and spawning and mammal areas
Ö233	Climate refuge for sea mussels.
Ö240	Reef environment and spawning, mammal, and bird area with especially low environmental impact
Ö243	Reef environment and spawning, mammal, and bird area with especially low environmental impact
Ö247	Reef environment and spawning and mammal areas
Ö248	Reef environment and spawning, mammal and bird area and climate refuge for sea mussels
Ö249	Spawning and mammal area with especially high environmental impact.
Ö262	Reef environment, spawning and mammal area, and climate refuge for sea mussels
Ö266	Reef and soft-bottom environment, spawning and bird area, and climate refuge for sea mussels and herring.
Ö269	Reef and soft-bottom environment, spawning and bird area, and climate refuge for sea mussels, seaweed, and herring.
Ö280	Spawning and bird area with especially low environmental impact.
Ö281	Reef environment with spawning, mammal, and bird area.
Ö289	Reef and soft-bottom environment and spawning, mammal, and bird area with especially high environmental impact.
Ö293	Spawning and mammal area.
Ö295	Reef environment and spawning area with especially high environmental impact.
Ö296	Reef and soft-bottom environment, spawning area and bird area with specially high environmental impact.

Table 1. Values for particular consideration to nature.

Coexistence

The marine spatial plan shall promote coexistence between various activities and uses. The examples under the following three headings aim to provide guidance on how coexistence can work and explain how the marine spatial plan relates to coexistence between the various uses that it presents.

The planning map presents coexistence by uses overlapping. A colour marking can, for example, occur in the same place as a letter and several letters after each other can occur in the same area.

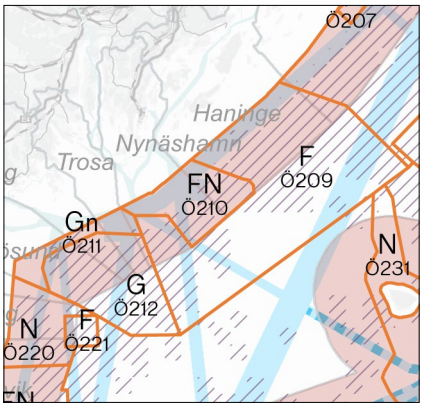


Figure 8. Examples of what coexistence might look like in the planning map. The planning map presents coexistence by uses overlapping. In area Ö210, the uses attractive living environments, defence, nature, and commercial fisheries coexist.

Where coexistence can require some adaptation

Attractive living environments, defence, commercial fisheries and shipping

In many cases, the aforementioned uses can coexist without problem – sometimes there are even synergy effects between the uses. The uses therefore overlap in many areas. For example, **shipping** and **commercial fisheries** with moving equipment can often be conducted in the same area. Another example is **shipping** and **defence**. Shipping traffic, even fishing traffic, may need to be suspended in the marine training areas when the Swedish Armed Forces exercises are under way, but can otherwise be conducted without restriction in the same place. Both **commercial fisheries** and **shipping** are often considered as being a part of the landscape that is appreciated in areas of **attractive living environments**, for example where fishing has been grounds for the development of coastal communities and where shipping is foundation for the possibility of housing and tourism.

Figure 9. Where coexistence can require some adaptation

Energy extraction and nature

An example of coexistence that can become a synergy is the potential of a wind farm at sea to form an artificial reef that creates protected feeding grounds for fish.

Defence and nature

In several cases, defence activities overlap with valuable nature areas and the marine spatial plan indicates both uses **defence** and **nature** as most suitable use. In some of the areas, the nature values are mostly located on the seabed. Under such conditions, both defence activities and shipping can continue without disruption. In other areas, the defence activities may need to be adapted so that the nature values are not damaged.

Read more about the assessment of use in Chapter 2 Points of departure

Where coexistence can require more adaptation

Commercial fisheries, shipping, defence, energy extraction, sand extraction and nature

Most of the areas with the use **nature** are covered by existing or planned marine area protection, such as Natura 2000. This means that the protection need for the nature values pointed out sets the limits for activities in these areas. For the already protected areas, existing regulations ensure that the nature values pointed out are not damaged or destroyed.

Figure 10: Shipping and nature

In the areas with the use **nature**, steps may need to be taken by responsible authorities and/or operators. The measures may mean that a certain use should be limited, but that it nonetheless otherwise can coexist with the use **nature** within the same area.

A few examples of measures:

- Certain kinds of fisheries entail by-catch of protected species and are limited or therefore not allowed in a certain location.
- Shipping traffic causes turbulence at shallow passages and is therefore limited by depth or speed in a certain location.
- The Swedish Armed Forces' exercises that include explosives damage identified nature values and are therefore avoided in a certain location.

Attractive living environments

Wind power stations impact the landscape and are not always suitable in locations near the coast where valuable natural and cultural landscapes can be affected. Wind farms can also affect accessibility, actual or perceived, for activities such as recreational fisheries and boating. How the landscape and accessibility are at risk of being affected and what adaptation is required needs to be assessed in a local perspective.

Cultural relics on the seabed are at risk of being damaged by several different activities in the sea, both in construction works and moveable activities, such as trawling and defence. More knowledge is needed about where the cultural relics are located and measures may be needed in different management areas.

Where coexistence may require extensive adaptation or is not possible

There are uses that compete and where coexistence is not possible. Therefore, these uses are not presented together. The use that is deemed most suitable in the location is given priority.

Energy extraction and commercial fisheries

One example where coexistence requires adaptation is **energy extraction** and **commercial fisheries.** This may for example be about a certain type of fishing gear not being able to be conducted, or that the design of the facilities for energy extraction need to be adapted. In other cases, the uses are deemed not to be able to coexist since permanent installations, for example, mean that there is not room to conduct fishing.

Figure 11: Commercial fisheries and energy extraction.

Energy extraction and shipping

Shipping usually cannot pass through an area with a wind farm. The use of **shipping** is therefore usually not proposed within an area for **energy extraction**.

Energy extraction and nature

The use **energy extraction** is not presented together with the use **nature** in areas where nature values are so high and of such characteristics or conditions that there is major uncertainty if wind power can be established without damaging or impeding conservation.

Energy extraction and sand extraction

Wind power stations need a stable seabed for their foundations. In sand extraction, sand is sucked up or dug up from the seabed, which changes its stability. The use **sand extraction** is therefore not proposed in the same areas as the use **energy extraction**.

Energy extraction and defence

Wind farms affect the possibility of conducting defence activities. The use **energy extraction** is therefore usually not proposed in areas with the use of **defence.**

Several of the interests of total defence can be negatively affected by wind power stations and other tall objects. The more detailed impact may in some cases not be described openly considering that the information is covered by military secrecy. Read more in Section 6.3, Defence.

Conditions can change so that energy extraction and defence in the future can coexist in locations where the plan currently does not provide for the energy interest. Technical development may for example take place within both energy and the defence sector.

Marine sub-regions

In the Baltic Sea, there are five marine sub-regions:

- Northern Baltic Sea and South Kvarken
- Central Baltic Sea
- South-eastern Baltic Sea
- Southern Baltic Sea
- South-western Baltic Sea and Öresund

This chapter begins with the planning's main features for the Baltic Sea. For each marine sub-region, the planning's standpoints are then described together with a planning map on a scale of 1:1,000,000, one to one million. Tables clarify the areas within which an interest is given priority over another interest, where coexistence requires extensive adaptation and which areas are investigation areas.

The plan should be interpreted on a scale between 1:700,000 and 1:1,000,000.

5

5.1 Main features of the planning for the Baltic Sea

Attractive and valuable with good conditions

In the Baltic Sea's marine spatial planning area, there are high nature values and many attractive living environments for people. The coastal and archipelago landscapes are frequently used for recreation and outdoor life, and there are large cultural heritage values in both the coastal areas and the sea.

Commercial fisheries are extensive and is conducted on both a small and a large scale. The Baltic Sea is of major significance to international trade and is therefore also one of the most intensively trafficked areas in the world. Sweden's national defence has extensive interests in the marine spatial planning area, among other things in the form of marine training areas. There are some areas here that might have the potential for the extraction of sand, and there are good conditions for renewable energy extraction though marine wind power in parts of the planning area.

At the same time that there are good conditions for various activities, the environment in the Baltic Sea needs to be improved to achieve a good environmental status.

Many activities work well together in the planning area, meaning that they are deemed to be able to coexist. Coexistence is often regulated. This might involve areas being restricted during defence exercises or rules for how ships may be sailed in shipping lanes that are a part of a traffic separation system, such as fishing boats that are fishing.

Competition for space

In some geographic areas there is competition between different uses. For example, wind power is unsuitable in several areas in terms of the interests of national defence and due to high nature values. At the same time, the marine spatial plan should contribute to achieving the societal objective of 100 per cent renewable energy production by 2040. In the planning, an effort has therefore been made to find more areas for wind power, in addition to the existing national interest claims for wind power. The planning of areas for energy extraction builds on a comprehensive assessment of how the marine spatial plan can best contribute to achieving the energy objectives without risking other societal objectives.

Sand is needed to meet climate change, among other things. Therefore, three areas in the marine spatial plan are presented with the use of sand extraction. At the same time, one area is a Natura 2000 area, which means that sand extraction can only be permitted if it does not risk damaging or disturbing the habitats or species that are to be protected.

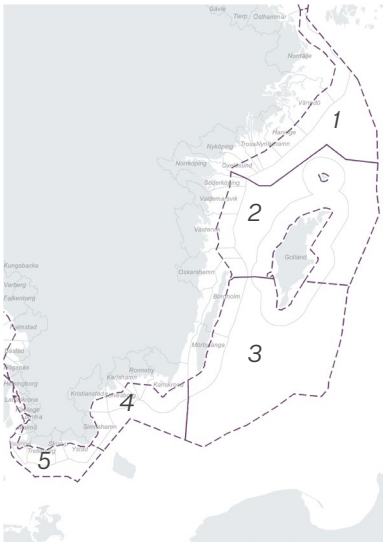


Figure 12. The five marine sub-regions in the Baltic Sea.

1. Northern Baltic Sea and South Kvarken
2. Central Baltic Sea
3. South-eastern Baltic Sea
4. Southern Baltic Sea
5. South-western Baltic Sea and Öresund

Nature for fisheries, recreation, and the future

There are large areas with high nature values in the marine spatial planning area, and several of them are nature reserves or Natura 2000 areas that have the use of nature in the marine spatial plan. In addition to these, there are areas where activities need to take particular consideration of high nature values. These are based, among other things, on spawning and nursery areas that are national interest claims for commercial fisheries. Some of the areas that are presented are intended climate refuges, meaning areas that might need special protection to preserve important plants and animals whose range decreases as the climate changes.

Commercial fisheries take place on very large areas, and catch areas also change from year to year and over a longer time. The area for the use of commercial fisheries is therefore widespread in the marine spatial plan.

Oil spills from shipping south of Gotland have a negative impact on the population of long-tailed ducks in the area. One way to avoid this impact might be to redirect the traffic, but there might also be other solutions. Possible changes in any part of the traffic system are complex and can have consequences in other parts of the system. The problems need to be investigated further, and therefore the marine spatial plan indicates the use investigation shipping in the south, north, and east of Gotland. The population of long-tailed ducks can also be negatively impacted by wind power. Consideration of this has been taken in the collective assessment for wind power in the marine spatial planning area.

5.2 Northern Baltic Sea and South Kvarken

See the planning map for the Northern Baltic Sea and South Kvarken.

In the Northern Baltic Sea, there is the outer part of Stockholm's archipelago with high cultural, recreational, and nature values. Over South Kvarken, a unique stretch of shallow archipelagos is formed together with Åland's archipelago and the west coast of Finland.

Standpoints

Shipping link to the inland and the Gulf of Bothnia

The narrow area of South Kvarken is the passage between the Northern Baltic Sea and the Bothnian Sea. In order to make the shipping waters safe, a traffic separation system is in place. The system is located half in Sweden and half in Finland.

The planning contributes to the planning objectives:

- Create conditions for good accessibility
- Create conditions for sustainable shipping
- Create conditions for regional development

The passages to Lake Mälaren through Södertälje canal into Stockholm, the way into Oxelösund's port, and the new large port being built in Nynäshamn Municipality are other important sections for the use of **shipping** in the marine sub-region.

Around Gotland, in the marine sub-regions of the Central Baltic Sea and South-eastern Baltic Sea, there are investigation areas for shipping; see the text on the standpoints in Sections 5.3 and 5.4. Possible future changes in maritime traffic in these marine sub-regions can also affect the routing of maritime traffic in the Northern Baltic Sea, which needs to be included in the investigation.

Energy and defence interests compete for space

In the Northern Baltic Sea, there are good conditions for energy extraction and the need is great due to the electricity consumption in the Mälardalen region. There are both good wind conditions and suitable depths for sea-based wind turbines. Offshore of Svenska Björn, the plan therefore indicates an area for **energy extraction** (Ö205).

The planning contributes to the planning objectives:

- Create conditions for the development of energy transmission and renewable electricity production in the sea
- Create conditions for defence and security
- Create conditions for marine green infrastructure and the promotion of ecosystem services

North-east of Kopparstenarna and Gotska Sandön and east of Utö, there is a large offshore area where the plan indicates the use **energy extraction** (Ö208). Depth conditions are deemed to provide good conditions for floating wind power stations, a technology that in Sweden is further out in time compared to bottom-based sytems.

There are several national interest claims for national defence in and near the Northern Baltic Sea and South Kvarken. Väddö artillery range is located in Norrtälje Municipality at South Kvarken, and it has an influence area out over the sea. In Stockholm's southern archipelago, there is the Utö artillery range and the marine training area of Nåttarö that extends from the coast through the territorial sea out into the Swedish exclusive economic zone off of the municipalities of Värmdö, Haninge, and Nynäshamn. These are indicated with the use **defence.** Valuable nature within the defence areas is safeguarded by the use **nature**. All national interest claims for national defence are not presented openly; see Section *6.3 Defence*.

The national interest claims for wind power that are in the marine area are not deemed to be compatible with the national defence interests, and the defence interests are therefore given priority.

Interests given priority	Area
Within the areas, there are national interest claims for wind power (in their entirety or partially): Svenska Björn, Almagrundet, Söder Landsort, Söderköping /Norrköping /Oxelösund / Nyköping and Nyköping /Trosa /Nynäshamn. The national interest claims for national defence are given priority over the national interest claim for wind power.	Ö203-204, Ö209-212
Energy extraction and commercial fisheries are public interests of material significance in the area. In the design and distribution of potential energy facilities, consideration should be taken to commercial fisheries' access and need for the area in order to conduct its activities.	Ö208
A large part of the national interest claim for commercial fisheries (catch area) in the area is not confirmed. An assessment has been made against claims for commercial fisheries (75% of the total landing value). For the period 2003-2015, low or no economic landing values are shown in the parts not confirmed. Also see Section 6.8 Commercial fisheries about the method for the assessment and on-going work.	Ö211

Table 2. Interests given priority

Valuable coastal and archipelago landscapes with extensive recreation

Significant areas with valuable coastal and archipelago landscapes extend along the entire coast, and there are many sunken wrecks in the marine area. Outdoor recreation and recreational boating are extensive in the Northern Baltic Sea and South Kvarken, and the plan indicates the use **attractive living environments** adjacent to the coast. Recreational boating traffic often moves both to and from the Gulf of Bothnia in the north and Gryts and Sankt Anna's archipelagos in the south to Gotland and across the Sea of Åland. Stockholm's archipelago is one of Sweden's most heavily visited with many natural harbours and marinas.

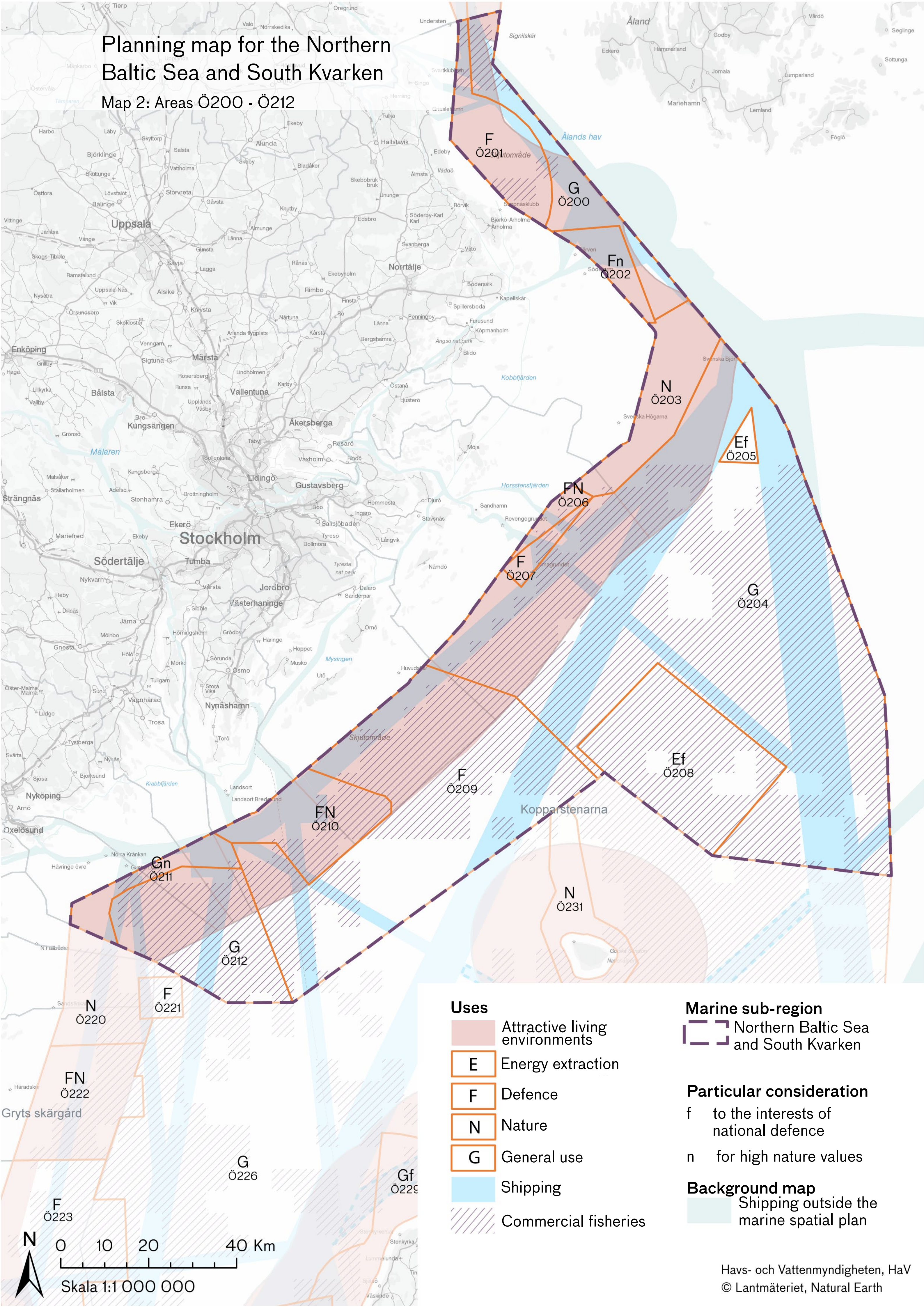
Along the entire area's coast, Stockholm's outer archipelago, and the Södermanland coast and archipelago, there are large areas with valuable nature that are safeguarded in the plan by the use **nature**. North of Svenska Högarna, there is a potential climate refuge for sea mussels, one of six identified in the areas in the Baltic Sea[35]. Within area Ö202, the climate refuge is safeguarded through *particular consideration to high nature values*.

In the entire Northern Baltic Sea from Värmdö Municipality and southwards, and in a smaller area in South Kvarken, pelagic fisheries is conducted that relates to offshore fishing for herring and sprat. There, the plan indicates the use **commercial fisheries.**

The planning contributes to the planning objectives:

- Create conditions for regional development
- Create conditions for marine green infrastructure and the promotion of ecosystem services
- Create conditions for sustainable commercial fisheries

35 Swedish Agency for Marine and Water Management. Report 2017:37. Möjliga klimatrefugier i Östersjön baserat på två olika scenarier [Possible climate refuges in the Baltic Sea based on two different scenarios]


Planning map for the Northern Baltic Sea and South Kvarken
Map 2: Areas Ö200 - Ö212
F Ö201
G Ö200
Fn Ö202
N Ö203
Ef Ö205
FN Ö206
F Ö207
G Ö204
Ef Ö208
F Ö209
FN Ö210
Gn Ö211
G Ö212
N Ö231
F Ö221
N Ö220
FN Ö222
G Ö226
Gf Ö229
F Ö223
Kopparstenarna
Gryts skärgård
Stockholm
Uppsala
Norrtälje
Södertälje
Nynäshamn
Nyköping
Oxelösund
Åland
Mariehamn
Ålands hav
Uses
Attractive living environments
E Energy extraction
F Defence
N Nature
G General use
Shipping
Commercial fisheries
Marine sub-region
Northern Baltic Sea and South Kvarken
Particular consideration
f to the interests of national defence
n for high nature values
Background map
Shipping outside the marine spatial plan
N
0 10 20 40 Km
Skala 1:1 000 000
Havs- och Vattenmyndigheten, HaV
© Lantmäteriet, Natural Earth

5.3 Central Baltic Sea

See planning map over Central Baltic Sea.

The Central Baltic Sea encompasses the outer part of the Gryts and Sankt Anna's archipelagos and the northernmost parts of Öland and Gotland. The areas have valuable nature and high recreational and cultural values. A large part of the Baltic Sea's shipping traffic passes through this marine sub-region to and from the Gulf of Bothnia and the Gulf of Finland.

Standpoints

Many shipping lanes and passages through Salvorev

The planning contributes to the planning objectives:

- Create conditions for good accessibility
- Create conditions for sustainable shipping
- Create conditions for regional development

Several important ports are along the coast in the Central Baltic Sea. Shipping traffic is important with traffic both to the mainland coast, to Gotland, and further north or south to both Swedish and foreign ports. The use **shipping** is therefore assigned in several shipping lanes within the Central Baltic Sea.

Across Salvorev, between Fårö and Gotska Sandön, there is today a passage for maritime traffic through an area with a great deal of high nature values, including, among other things, the red-listed species long-tailed duck[36]. The study shows that long-tailed ducks are negatively impacted by oil spills from ships. The effect of this needs to be investigated further, and for the shipping lanes across Salvorev the plan therefore indicates **investigation area shipping**. Shipping lanes east of Gotland and the lane into Slite are also part of the **investigation area shipping** that can affect shipping in the Central Baltic Sea. Read more about this in Section *5.4 South-eastern Baltic Sea*.

Investigation areas	Area
Investigation area shipping. Refer to the text on standpoints above.	Ö226, Ö229-232
Investigation area shipping. See text on standpoints and table in Section 5.4 South-eastern Baltic Sea.	Ö232-233 (and Ö242-245 in the South-eastern Baltic Sea)

Table 3. Investigation areas

Defence areas and valuable nature

The planning contributes to the planning objectives:

- Create conditions for marine green infrastructure and the promotion of ecosystem services
- Create conditions for defence and security

Areas with valuable nature extend along the coasts in the Central Baltic Sea, mainly at Salvorev, around Öland's northern cape, and in the Östergötland archipelago. Mainly at Salvorev, around Öland's northern cape and in the Östergötland archipelago. These are safeguarded in the plan by the use **na-**

36 *Swedish Agency for Marine and Water Management. Report 2017:28. Shipping burden on Salvorev north of Gotland.*

ture. For Klints bank east of Gotland, the plan indicates that all use shall show particular consideration to the area being a potential climate refuge for sea mussels (Ö233).

There are several defence areas in the Central Baltic Sea, which in the marine spatial plan are indicated as the use **defence**. South of Visby out into the territorial sea, the use defence is indicated because the area is an influence area for the Tofta artillery range. A little further north is the Fårö marine training area. Along the mainland coast are the marine training areas Sandsäkan and Urban, which extend through the territorial sea out into the Swedish exclusive economic zone off of the municipalities of Valdemarsvik, Västervik, and Oskarshamn. Within the defence areas in Östergötland and Kalmar County, there is valuable nature that in the plan is safeguarded by the use **nature**.

Interests given priority	Area
Within the area's northern section, there is part of the national interest claim for wind power in Söderköping /Norrköping / Oxelösund /Nyköping, which is not deemed to be compatible with the national defence interests; refer to the text on standpoints in Section 5.2 Northern Baltic Sea and South Kvarken. The national interest claims for shipping and national defence are given priority over the national interest claim for wind power.	Ö220
Within this area, there is a national interest claim for national defence, and the western part of the area is a part of the national interest claim for nature conservation, Östergötland's archipelago, which is not deemed to be compatible because the defence activities include explosives. The national interest claim for national defence is given priority over the national interest claim for nature conservation.	Ö221

Table 4. Interests given priority

Extensive recreation and widespread fisheries

Significant areas with valuable coastal and archipelago landscapes extend along the coasts in the Central Baltic Sea. Recreation and recreational boating are extensive, and the use **attractive living environments** is indicated along the entire coast at the Gryts and Sankt Anna's archipelagos to Northern Öland and around Gotland.

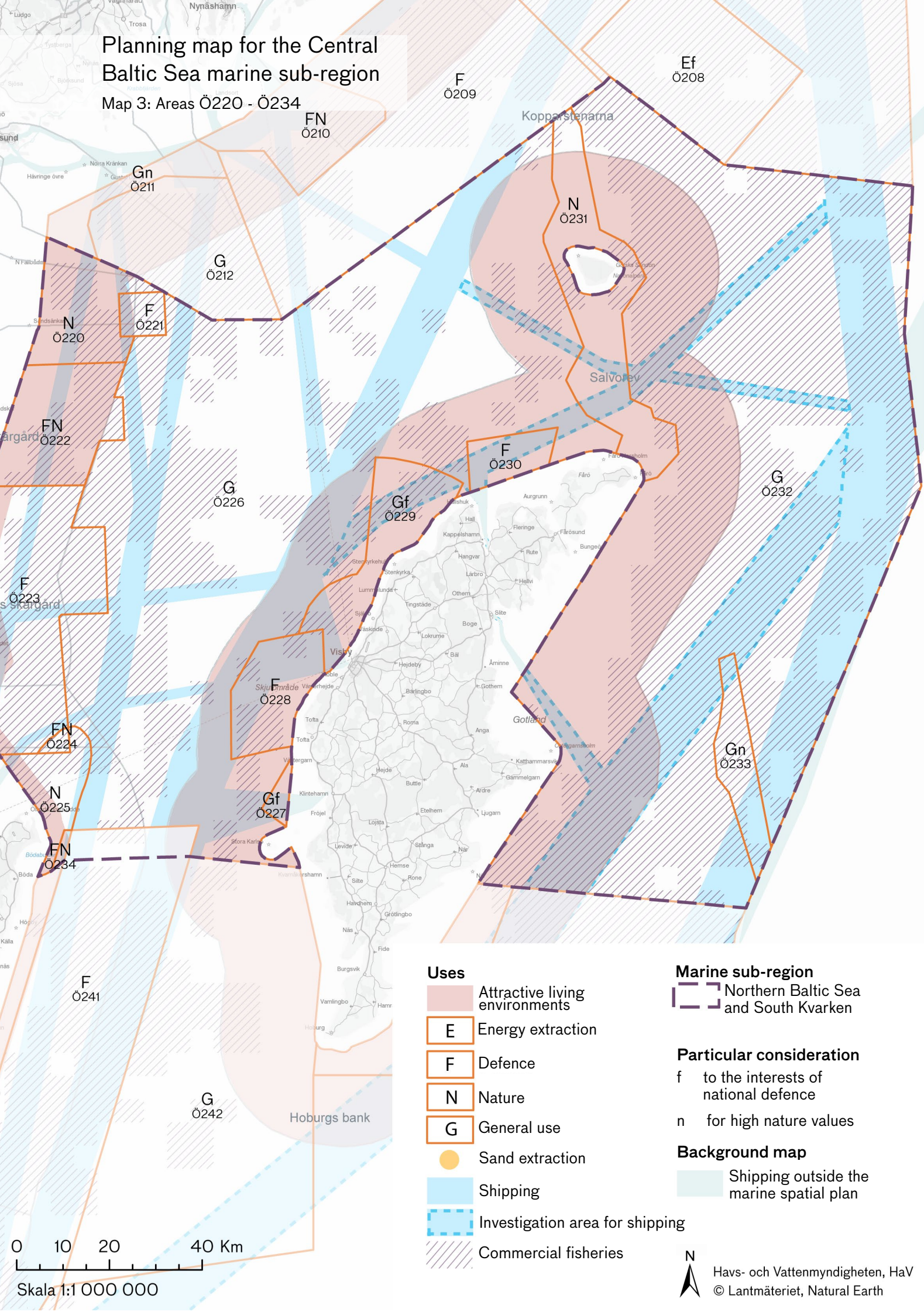
Commercial fisheries are widespread in the Central Baltic Sea. Main part of the sector is related to pelagic fisheries where catches of herring and sprat are made throughout the offshore areas. Some sparse fisheries with passive gear takes place in towards the coast. The plan indicates the use **commercial fisheries** in a large part of the marine area.

The planning contributes to the planning objectives:

- Create conditions for regional development
- Create conditions for sustainable commercial fisheries

Interests given priority	Area
A part of the national interest claim for commercial fisheries (catch area) in the area is not confirmed. An assessment has been made against claims for commercial fisheries (75% of the total landing value). For the period 2003-2015, low or no economic landing values are shown in the parts not confirmed. Also see Section 6.8 Commercial fisheries about the method for the assessment and on-going work.	Ö222, Ö225-226
A large part of the national interest claim for commercial fisheries (catch area) in the area is not confirmed. An assessment has been made against claims for commercial fisheries (75% of the total landing value). For the period 2003-2015, low or no economic landing values are shown in the parts not confirmed. Also see Section 6.8 Commercial fisheries about the method for the assessment and continued work.	Ö232, Ö234

Table 5. Interests given priority


Planning map for the Central Baltic Sea marine sub-region
Map 3: Areas Ö220 - Ö234
F Ö209
Ef Ö208
FN Ö210
Gn Ö211
G Ö212
F Ö221
N Ö220
FN Ö222
F Ö223
N Ö231
F Ö230
G Ö232
Gf Ö229
G Ö226
F Ö228
FN Ö224
N Ö225
Gf Ö227
FN Ö234
Gn Ö233
F Ö241
G Ö242
Hoburgs bank
Kopparstenarna
Salvorev
Gotland
Visby
Uses
Attractive living environments
E Energy extraction
F Defence
N Nature
G General use
Sand extraction
Shipping
Investigation area for shipping
Commercial fisheries
Marine sub-region
Northern Baltic Sea and South Kvarken
Particular consideration
f to the interests of national defence
n for high nature values
Background map
Shipping outside the marine spatial plan
0 10 20 40 Km
Skala 1:1 000 000
N
Havs- och Vattenmyndigheten, HaV
© Lantmäteriet, Natural Earth

5.4 South-eastern Baltic Sea

The South-eastern Baltic Sea contains Sweden's largest protected nature area. It is in the open sea over the offshore banks Hoburgs bank, Norra Midsjöbanken, and parts of Södra Midsjöbanken. Here, the two red-listed species, porpoises and long-tail ducks, are protected.

See planning map over South-eastern Baltic Sea.

Standpoints

Important passage for Swedish and international shipping

In the South-eastern Baltic, maritime traffic is important with extensive traffic to both foreign and Swedish ports. A large amount of the traffic moves to the mainland coast and to Gotland and further northwards or southwards. West of Gotland, there is mainly traffic with Swedish destinations, while international traffic to and from the Gulf of Finland and the Baltic countries is dominant south and east of Gotland[37]. The use **shipping** is therefore indicated in several shipping lanes within the marine area.

The planning contributes to the planning objectives:

- Create conditions for good accessibility
- Create conditions for sustainable shipping
- Create conditions for regional development

Between Norra Midsjöbanken and Hoburgs bank, shipping traffic today goes through a shallow area with very high nature values for the red-listed species porpoises and long-tailed duck. Studies show that the long-tailed duck population is negatively impacted by oil spills from ships and that porpoises are disturbed by noise from shipping lanes[38]. From a nature conservation perspective, there is reason to move maritime traffic from this area. Secondary effects of a potential relocation of the shipping have also been studied in terms of emission increases, travel times, and accident risks[39]. The problems need to be studied further, and the shipping lane at Hoburgs bank is therefore pointed out as an **investigation area shipping.** The shipping lane continues into the Central Baltic Sea's marine area. Connections with shipping over Salvorev and Kopparstenarna, with their possible consequences for natural and cultural values, also need to be investigated further. A possible future adjustment of shipping movements through the area needs to be rooted and negotiated internationally, which sets high standards on documentation.

Several areas in the South-eastern and Central Baltic Sea are indirectly affected by the problems described above because a potential relocation of shipping would affect the traffic flows through the deep water route between Hoburgs bank, Norra Midsjöbanken and Södra Midsjöbanken, the routes west and east of Gotland (Ö226, Ö232-Ö233, Ö241), and in neighbouring countries.

37 *Swedish Agency for Marine and Water Management. Report 2017:11. Rerouting analysis of shipping around Hoburgs bank and the Midsjöbanks.*
38 *Swedish Agency for Marine and Water Management. Report 2016.24. Shipping and nature values at the offshore banks in the Central Baltic Sea* and the *Swedish Agency for Marine and Water Management. Report 2018:6. Effects of rerouting of shipping on long-tailed duck and porpoise at Hoburgs bank and the Midsjöbanks.*
39 *Swedish Agency for Marine and Water Management. Report 2017:11. Rerouting analysis of shipping around Hoburgs bank and the Midsjöbanks.*

Investigation areas	Area
The current routing system of shipping between Hoburg and Hoburgs bank is proposed as an **investigation area shipping.** According to earlier studies, shipping entails a significant threat to species covered by marine protected area. Further investigation will show what use is the most suitable. The investigation should be comprehensive and shed light on the problems from a socio-economic, maritime safety, and nature conservation perspective. The international aspects are also important. Also refer to the text on standpoints above.	Ö242- Ö245 (and Ö232-233 in the Central Baltic Sea)

Table 6. Investigation areas

Offshore banks with very valuable nature

A very large area with valuable nature extends from Gotland's southern cape at Hoburg through Hoburgs bank to Norra and Södra Midsjöbanks. In large parts of this area, the environmental impact is low and the marine environment can be seen as relatively pristine[40]. The high nature values that exist here comprise valuable bottom environments, reproduction areas for the threatened Baltic Sea porpoise, and the most important wintering areas for the red-listed long-tailed duck. There are also food-gathering areas for common eider and black guillemot, as well as spawning areas for fish in the area. The marine area's banks have been pointed out as possible climate refuges for several species, which indicates that the area's ecological significance will be very high in the future[41]. These environments and the species are protected by an extensive Natura 2000 area and are safeguarded in the marine spatial plan through the use **nature** (Ö245).

The planning contributes to the planning objectives:

- Create conditions for marine green infrastructure and the promotion of ecosystem services

Sea-based wind power with consideration of nature

In the South-eastern Baltic Sea, there are good conditions for energy extraction, and the need for electricity is great due to the consumption in southern Sweden. The offshore banks have both good wind conditions and suitable depths for sea-based wind power stations. The two Norra and Södra Midsjöbanks are covered by national interest claims for wind power. As input to the spatial planning, the Swedish Environmental Protection Agency conducted an inventory of marine nature types on Swedish offshore banks[42]. The report states that it is important that some of the banks remain exempt from development. Of the banks in the South-eastern Baltic Sea, Hoburgs bank and Norra Midsjöbanken are pointed out as particularly important to not use for purposes other than nature conservation. For this reason, Södra

The planning contributes to the planning objectives:

- Create conditions for the development of energy transmission and renewable electricity production in the sea
- Create conditions for defence and security

40 Swedish Agency for Marine and Water Management. Report 2018:1. *Symphony - Integrerat planeringsstöd för statlig havsplanering utifrån en ekosystemansats.* [Symphony - Integrated planning support for national marine spatial planning based on an ecosystem approach.]

41 Swedish Agency for Marine and Water Management. Report 2017:37. Möjliga klimatrefugier i Östersjön baserat på två olika scenarier [Possible climate refuges in the Baltic Sea based on two different scenarios]

42 Swedish Environmental Protection Agency. Report 5576. *Inventering av marina naturtyper på utsjöbankar.* [Inventory of marine nature types on offshore banks.]

Midsjöbanken is more suitable to energy extraction than the two at Norra Midsjöbanken. Today, wind power project is under way at Södra Midsjöbanken where a facility is under review by the Government. The area at Södra Midsjöbanken has also been excluded from the Government's decision on the introduction of Natura 2000 areas. For these reasons, the marine spatial plan indicates the use **energy extraction** at Södra Midsjöbanken (ö248). Because Södra Midsjöbanken is still very important for porpoises and as a wintering location for sea birds, energy extraction should take place with *particular consideration to high nature values*. Through adaptation of, for example, time periods for the construction works, noise levels, and placement of wind turbines, wind power is deemed to be able to coexist with the nature values. Poland is also planning for wind power on its side of Södra Midsjöbanken, which can give rise to a need for coordination to prevent negative environmental impacts. Good coordination can also promote an efficient use of infrastructure.

The interests given priority or coexistence that requires a large amount of adaptation	Area
At Kårehamn, there are national interest claims for both wind power and national defence. They are deemed to not be compatible, and the national interest claims for national defence are given priority over national interest claims for wind power. In part of the area, there is an existing wind power facility. Future expansion of the area is not deemed to be compatible with the national defence interests. Expansion of the facility is limited, and the marine spatial plan therefore does not indicate energy extraction in the area.	Ö240-241
At Norra Midsjöbanken, there are two areas with national interest claims for wind power. The area is also covered by Natura 2000, which is given priority because the claims are not deemed to be compatible. The collective assessment is that Norra Midsjöbanken is less suitable for energy extraction than the other appointed national interest areas for wind power in the marine sub-region.	Ö245
Sea-based wind power is deemed to be able to coexist with the area's nature values through particular consideration to high natur values. The comprehensive assessment is that the central part of Södra Midsjöbanken is more suitable for energy extraction for several reasons than the other areas covered by national interest claims for wind power in the marine area. National interest claims for wind power also take precedence over public interests of material significance for commercial fisheries in the area.	Ö248

Table 7. The interests given priority or coexistence that requires a large amount of adaptation

Beautiful coasts and plentiful fishing areas

Commercial fisheries are widespread in the South-eastern Baltic Sea, but is rarely conducted at the offshore banks. Fishing for cod is mostly conducted in the south-western parts of the marine sub-region conducted mainly by offshore trawlers while passive fisheries are dominant closer to the coast. Pelagic fisheries are targeted to catches of herring and sprat and are conducted in large parts of the open sea, but not at the banks. Some fisheries with passive gear is done off of Öland's coast. The use **commercial fisheries** is indicated in most of the areas. A large amount of Swedish fisheries are also conducted in the Polish exclusive economic zone south of the Midsjöbanks.

Recreation and recreational boating is extensive in parts of the South-eastern Baltic Sea. Extensive areas with valuable coastal and archipelago landscapes extend along the coasts. The use **attractive living environments** is indicated along Öland's and Gotland's coasts.

Off of Öland are the Hanö nord and Martin marine training areas. They extend from the coast through the territorial sea out to the Swedish exclusive economic zone outside the municipalities of Borgholm and Mörbylånga. The areas are indicated for the use **defence** (Ö240,Ö241 and Ö247).

In the south-eastern part of the marine area, there is a potential area for future carbon dioxide storage.

The planning contributes to the planning objectives:

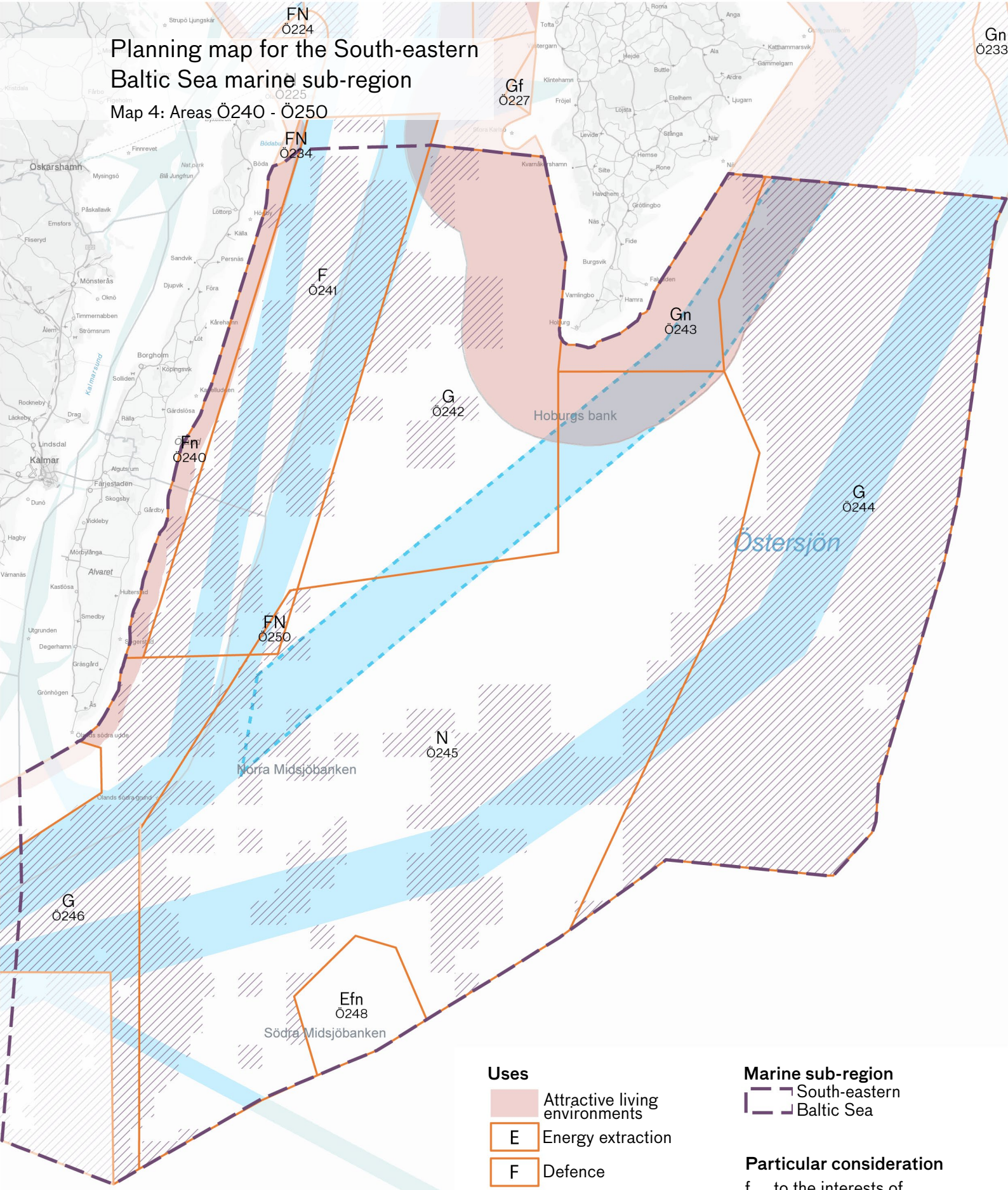
- Create conditions for sustainable commercial fisheries
- Create conditions for regional development
- Create conditions for peace and security

Interests given priority	Area
A large part of the national interest claim for commercial fisheries (catch area) in the area is not confirmed. An assessment has been made in relation to claims for commercial fisheries (75% of the total landing value). For the period 2003-2015, low or no economic landing values are shown in the parts not confirmed. Also see Section 6.8 Commercial fisheries about the method for the assessment and continued work.	Ö240, Ö242-243, Ö245

Table 8. Interests given priority

Planning map for the South-eastern Baltic Sea marine sub-region

Map 4: Areas Ö240 - Ö250



Uses

- Attractive living environments
- E Energy extraction
- F Defence
- N Nature
- G General use
- Shipping
- Investigation area for shipping
- Commercial fisheries

Marine sub-region

- South-eastern Baltic Sea

Particular consideration

- f to the interests of national defence
- n for high nature values

Background map

- Shipping outside the marine spatial plan

N

0 10 20 40 Km

Skala 1:1 000 000

Havs- och Vattenmyndigheten, HaV

5.5 Southern Baltic Sea

The Southern Baltic Sea is a marine sub-region with many interests that coexist, but also potential conflicts. Commercial fisheries, defence, and shipping are of major significance. Here, there are also high natur and cultural heritage values.

See planning map over Southern Baltic Sea.

Standpoints

Important international shipping lanes and wind power

The most trafficked shipping lane in the Baltic Sea runs through the Southern Baltic Sea along Sweden's southern coast in traffic separation schemes from Öresund or Gedser between Denmark and Germany, through Bornholmsgattet towards southern Öland. A deep shipping lane also begins here for certain vessels upon passage eastwards through the Baltic Sea. Shipping goes in to the coast, but mainly further onwards to both Swedish and foreign ports. The use **shipping** is therefore indicated in several shipping lanes through the area.

In the Southern Baltic Sea, there are good conditions for energy extraction, and the need is extensive due to the energy consumption in southern Sweden. The offshore banks and coast have both good wind conditions and suitable depths for sea-based wind turbines. The use **energy extraction** is indicated in the Southern Baltic Sea in an area closer to land in Hanöbukten in Kristianstad and Sölvesborg Municipalities where the Taggen wind power project has already received a permit (Ö266).

The planning contributes to the planning objectives:

- Create conditions for good accessibility
- Create conditions for sustainable shipping
- Create conditions for regional development
- Create conditions for the development of energy transmission and renewable electricity production in the sea

Interests given priority	Area
The permit-granted Taggen wind farm project is in this area. Within parts of the area, there are national interest claims for public shipping lanes, and the area is covered by the influence area for Ravlunda artillery range, which constitutes a national interest claim for national defence. Because the wind farm project has been permitted, the energy interest is given priority. Accessibility to the ports of Sölvesborg and Kristianstad is deemed to be fulfilled through other shipping lanes. National interests for wind power take precedence over public interests of material significance for commercial fisheries in the area.	Ö266

Table 9. Interests given priority

Defence and commercial fisheries

The uses **defence** and **commercial fisheries** are presented as most suitable uses in large parts of the marine area. In several cases, there is a need for *particular consideration to high natur values*, but the operations also need to coexist with shipping.

One of Sweden's largest and most important marine bases is the Karlskrona naval port. The Ravlunda and Rinkaby artillery ranges have influence areas in the sea off of the municipalities of Simrishamn, Kristianstad, and Sölvesborg. The Hanö marine training area extends from the coast through the territorial sea out into the Swedish exclusive economic zone from Sölvesborg municipality to Mörbylånga municipality. The marine training area and the influence areas are shown with the use **defence**.

Commercial fisheries are widespread in the Southern Baltic Sea. Commercial fisheries for cod is mostly conducted by trawler in the open sea, but also with passive gear closer to the coast. Pelagic commercial fisheries for herring and sprat is conducted in the open sea. Other fisheries with passive gear is conducted to varying extents along the coast and in Hanöbukten. The use **commercial fisheries** is indicated in most of the areas.

The planning contributes to the planning objectives:

- Create conditions for defence and security
- Create conditions for regional development
- Create conditions for sustainable commercial fisheries

Interests given priority	Area
A large part of the national interest claim for commercial fisheries (catch area) in the area is not confirmed. An assessment has been made in relation to claims for commercial fisheries (75% of the total landing value). For the period 2003-2015, low or no economic landing values are shown in the parts not confirmed. Also see Section 6.8 Commercial fisheries about the method for the assessment and continued work.	Ö260
In the northern part of the area, there is somewhat of a national interest claim for wind power. In the area, there are also national interest claims for national defence. The Government has rejected an application for wind power in the area with reference to the national interest claim for national defence having priority over national interest claims for wind power.	Ö262
A part of the national interest claim for commercial fisheries (catch area) in the area is not confirmed. An assessment has been made in relation to claims for commercial fisheries (75% of the total landing value). For the period 2003-2015, low or no economic landing values are shown in the parts not confirmed. Also see Section 6.8 Commercial fisheries about the method for the assessment and on-going work.	Ö247, Ö269

Table 10. Interests given priority

Marine cultural heritage village and active outdoor recreation

The planning contributes to the planning objectives:

- Create conditions for regional development

Outdoor recreation and recreational boating are important in the Southern Baltic Sea, and the use **attractive living environments** is indicated along the entire coast in the area. Areas with valuable coastal and archipelago landscapes extend along the coast in Simrishamn municipality and at Listerlandet and in the archipelagos in Blekinge. Areas with a concentration of sunken wrecks are mainly located at Karlskrona.

In Hanöbukten and at further locations outside of the coast in Skåne and Blekinge, there are preserved Stone Age landscapes on the seabed. Off of the mouth of the Verkeån river in Haväng, marine archaeologists have in recent years documented and done a pilot survey of an area with Stone Age remains that in the marine spatial plan might need to be covered by guidance regarding particular consideration (Ö264, Ö269). See the description in the section on *cultural heritage sites in Attractive living environments.*

Baltic porpoises and climate refuges safeguarded for the future

The planning contributes to the planning objectives:

- Create conditions for marine green infrastructure and the promotion of ecosystem services

There are relatively few areas with protected nature in the Southern Baltic Sea. To ensure green infrastructure, *particular consideration to high nature values* is indicated for several areas. In Hanöbukten, there is, among other things, the strongly endangered Baltic Sea population of the red-listed porpoise, which are even found in the Swedish Armed Forces' marine training areas. Particular consideration must be given to porpoises there (Ö262). In Hanöbukten's north-western corner, there is the most important marine area in Sweden for the protection of nature in consideration of future climate change – a so-called climate refuge[43]. The area is safeguarded through *particular consideration to high nature values* (Ö262, Ö266, Ö269).

At Utklippan, there are high nature values to which consideration must be shown, but also a possibility for sand extraction in parts of the area (Ö262).

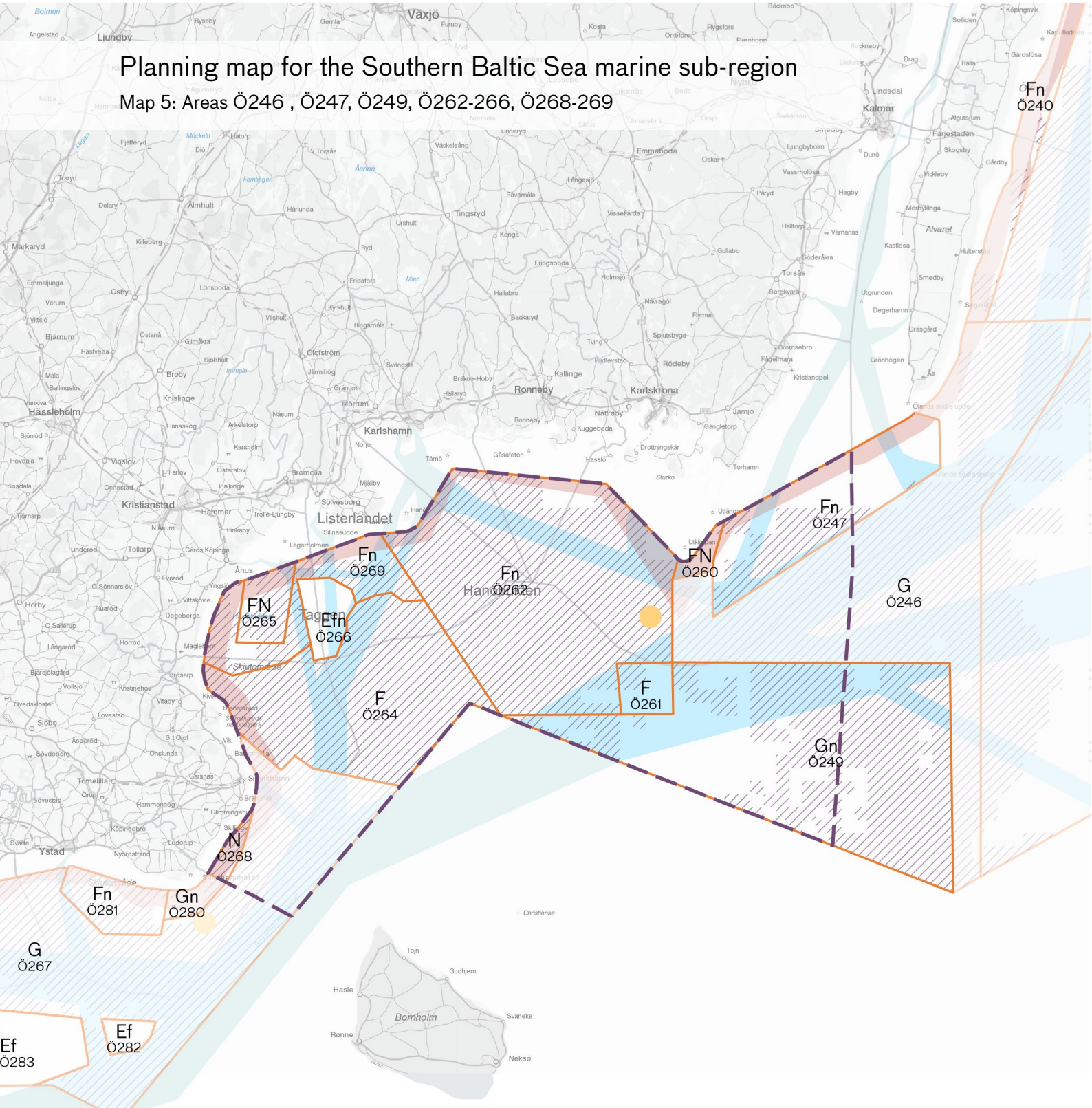
Coexistence that requires extensive adaptation	Area
In the northern part of the area, there is part of the national interest claim for national defence. In the area, there are also national interest claims for nature conservation and a planned marine protected area. The plan confirms both the national interest claim for nature conservation and the national interest claim for national defence, but the defence activities should not affect the nature values negatively. Underwater blasting should, for example, be avoided to the greatest possible extent in the area.	Ö260

Table 11. Coexistence that requires extensive adaptation

43 Swedish Agency for Marine and Water Management. Report 2017:37. *Möjliga klimatrefugier i Östersjön baserat på två olika scenarier* [Possible climate refuges in the Baltic Sea based on two different scenarios]

Planning map for the Southern Baltic Sea marine sub-region

Map 5: Areas Ö246 , Ö247, Ö249, Ö262-266, Ö268-269



Uses

- Attractive living environments
- E — Energy extraction
- F — Defence
- N — Nature
- G — General use
- Sand extraction
- Shipping
- Commercial fisheries

Marine sub-region

- Southern Baltic Sea

Particular consideration

- f — to the interests of national defence
- n — for high nature values

Background map

- Shipping outside the marine spatial plan

N

0 10 20 40 Km

Skala 1:1 000 000

Havs- och Vattenmyndigheten, HaV

5.6 South-western Baltic Sea and Öresund

See the planning map for the South-western Baltic Sea and Öresund.

Öresund is one of the most intensively used marine areas in Sweden, and at the same tim e there is valuable nature in the area. The South-western Baltic Sea has good conditions for sea-based wind power and is also important for porpoises, seals, and birds. Shipping is substantial in the entire area.

Standpoints

The most trafficked lanes in the Baltic Sea

The most trafficked shipping lanes in the Baltic Sea go through the South-western Baltic Sea along Sweden's coast in a traffic separation system from Öresund via Falsterbo in Vellinge Municipality or Gedser, between Denmark and Germany, to Bornholmsgattet. Shipping goes mainly onwards to both Swedish and foreign ports. Öresund is one of only three ways into the Baltic Sea for large ships. The use **shipping** is therefore indicated in several shipping lanes through the marine area.

The planning contributes to the planning objectives:

- Create conditions for good accessibility
- Create conditions for sustainable shipping

There are also significant aviation approaches in the area to Kastrup Airport. Besides the Öresund Bridge, another permanent connection is being investigated – between Helsingborg and Helsingör.

Widespread commercial fisheries and developed outdoor recreation

Commercial fisheries are widespread in the Southern Baltic Sea and Öresund. Commercial fisheries for cod is mostly conducted by trawler in the open sea, but also with passive gear closer to the coast. Pelagic fisheries targeted for herring and sprat is conducted throughout the open sea. Other fisheries with passive gear is conducted to varying extents along the coast and in Öresund where bottom trawling is not permitted. The commercial passive fisheries are mainly targeted for catches of cod among other species. The use **commercial fisheries** is therefore widespread in the marine area, although not in the three areas for energy extraction.

The planning contributes to the planning objectives:

- Create conditions for sustainable commercial fisheries
- Create conditions for regional development

Valuable coastal landscapes extend along western and southern Skåne. In Öresund, there are recreational fisheries and fishing tours. Outdoor recreation and recreational boating are important in the marine sub-region, and the marine spatial plan indicates the use **attractive living environments** along the entire coast.

Good conditions for renewable energy extraction

There are good conditions for wind power in the marine area, with good wind conditions and coasts and offshore banks with good depth conditions for bottom-based wind turbines and close to areas with large electricity consumption in southern Sweden. In Öresund, there is Sweden's largest existing sea-based wind farm, Lillgrund, next to the Öresund Bridge.

The use **energy extraction** is indicated in the South-western Baltic Sea at Kriegers Flak next to Germany's and Denmark's exclusive economic zones (Ö285). There is a wind power project in the area that has permits. Denmark and Germany have also planned for wind power here. In the marine area farther east in the open sea towards Germany and Bornholm, there are another two areas with the use **energy extraction** (Ö282 and Ö283). In all three areas, wind power is given priority over fisheries interests. These fisheries interests constitute a small part of the fisheries in the marine spatial planning area, and energy extraction is deemed to be a more suitable use.

In the Southern Baltic Sea, there is the Kabusa artillery range in Ystad Municipality with an influence area in the sea. This is shown with the use **defence.** In the area, the marine spatial plan indicates *particular consideration of high nature values*.

The planning contributes to the planning objectives:

- Create conditions for the development of energy transmission and renewable electricity production in the sea
- Create conditions for defence and security

The interests given priority or coexistence that requires a large amount of adaptation	Area
Within the western part of the area, there are national interest claims for wind power in Trelleborg, Skurup, and Ystad. Wind power is not deemed to be compatible with the national defence interests. The national interest claims for national defence are given priority over the national interest claim for wind power.	Ö267
Wind power constitutes a public interest of material significance in these areas. There is also a public interest of material significance for commercial fisheries in the areas, but energy extraction is deemed to be the most suitable use based on the area's location and features as well as the need for renewable sea-based energy in Sweden.	Ö282-283
Through decisions on permits for the construction of wind power stations at Kriegers Flak, the national interest for wind power is given priority over the national interest for commercial fisheries in the permitted area. A small part of the area coincides with Natura 2000 areas.	Ö285

Table 12. The interests given priority or coexistence that requires a large amount of adaptation

High nature values

There are high nature values in the marine area, and several nature reserves and Natura 2000 areas have been established. For example, porpoises and seals are protected in the Natura 2000 area that extends out into the open sea north of Kriegers Flak and to the east. In southern Öresund off of Falsterbonäset, birds and seals are protected. Around Ven in Öresund, there is a Natura 2000 area for porpoises and important growths of eelgrass (Zostera marina).

There are two areas with the use **sand extraction**; one off of Falsterbo and the other at Sandhammaren south of Ystad. At Sandhammaren, there is a permit for sand extraction. The sand is used for coastal restoration measures. In the south-western part of the marine area and in Öresund, there are potential areas for carbon dioxide storage.

The planning contributes to the planning objectives:

- Create conditions for marine green infrastructure and the promotion of ecosystem services
- Establish preparations for the future extraction and storage of materials.

Coexistence that requires extensive adaptation	Area
Sand extraction constitutes a public interest of material significance in the area and is deemed to be able to coexist with nature values through adaptation. The area is a Natura 2000 area, and operations or measures may therefore only take place if they are consistent with Chapter 7. Sections 28a-29 of the Environmental Code.	Ö284
Sand extraction constitutes a public interest of material significance in the area and is deemed to be able to coexist with nature values through adaptation. The southern part of the area is a Natura 2000 area, and operations or measures may only take place if they are consistent with Chapter 7. Sections 28a-29 of the Environmental Code. A small part of national interest claims for national defence at Falsterbonäset, designated as another influence area, appears in marine spatial plan area. Due to the marine spatial plan's overall scale, the defence interest is not shown on the planning map. The national interest claim for national defence is met because the defence interest and the uses the marine spatial plan indicates are deemed to be able to coexist.	Ö286

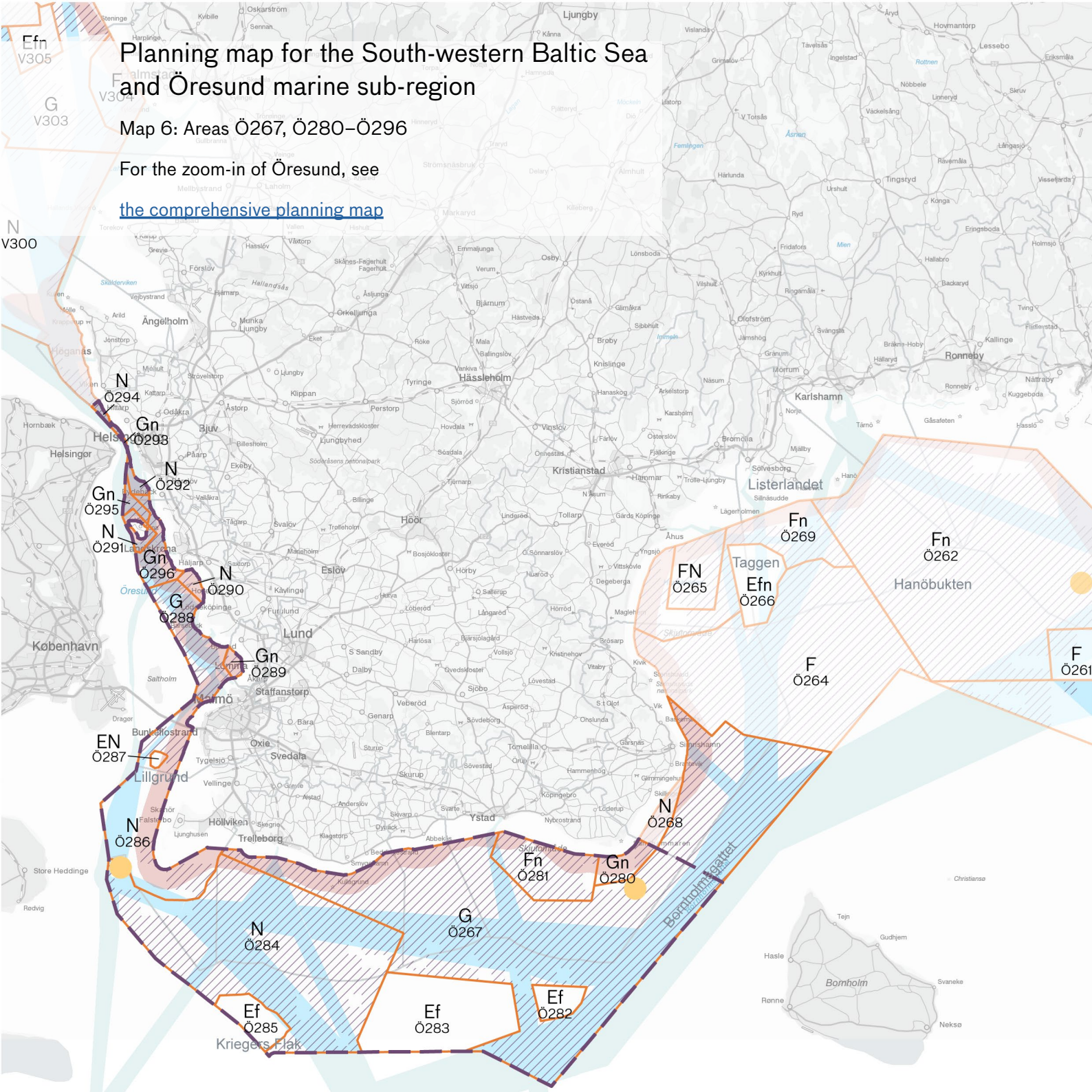
Table 13. Coexistence that requires extensive adaptation

Planning map for the South-western Baltic Sea and Öresund marine sub-region

Map 6: Areas Ö267, Ö280–Ö296

For the zoom-in of Öresund, see

the comprehensive planning map



Uses

- Attractive living environments
- E Energy extraction
- F Defence
- N Nature
- G General use
- Sand extraction
- Shipping
- Commercial fisheries

Marine sub-region

- South-western Baltic Sea and Öresund

Particular consideration

- f to the interests of national defence
- n for high nature values

Background map

- Shipping outside the marine spatial plan

N

0 10 20 40 Km

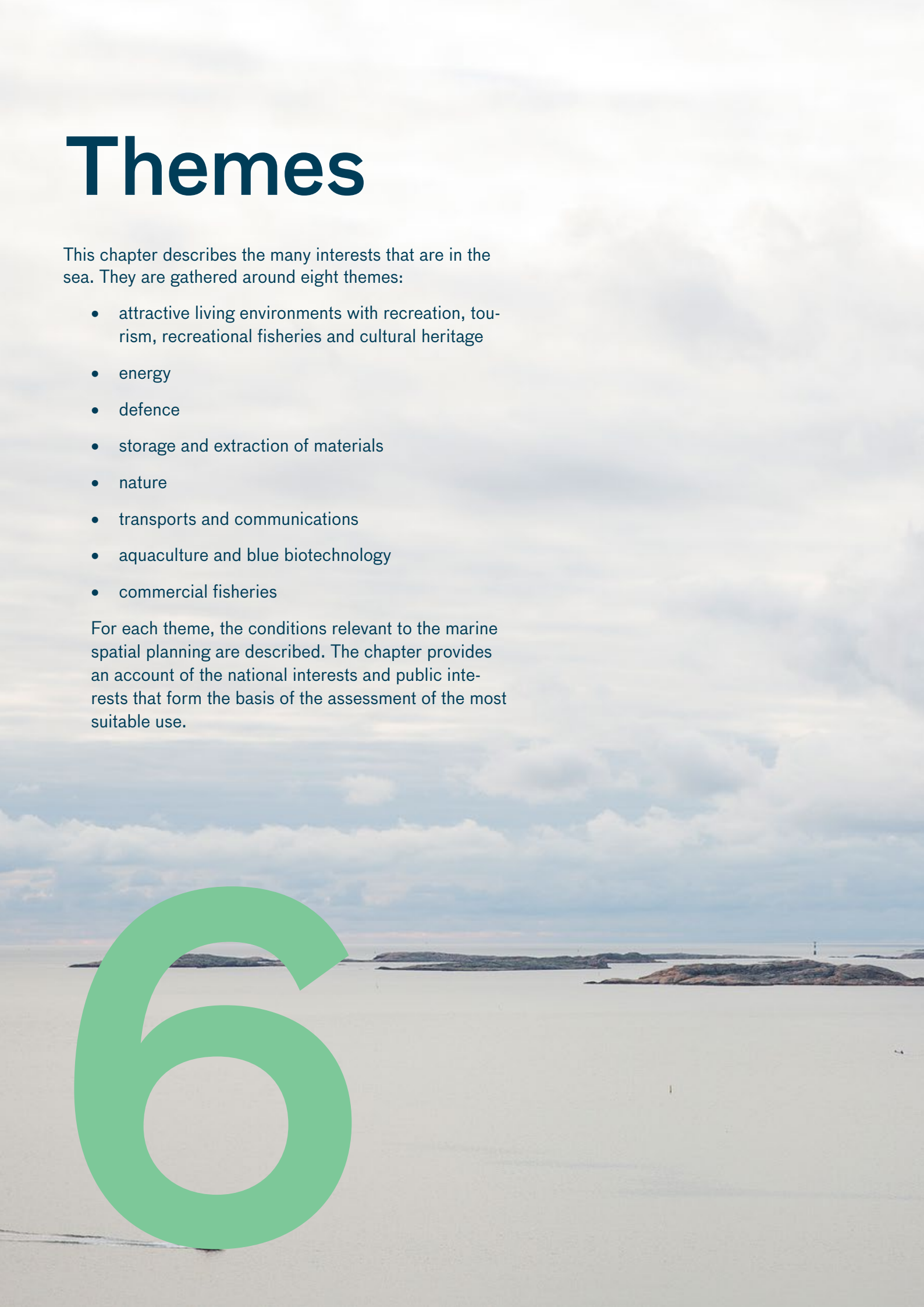
Skala 1:1 000 000

Themes

This chapter describes the many interests that are in the sea. They are gathered around eight themes:

- attractive living environments with recreation, tourism, recreational fisheries and cultural heritage
- energy
- defence
- storage and extraction of materials
- nature
- transports and communications
- aquaculture and blue biotechnology
- commercial fisheries

For each theme, the conditions relevant to the marine spatial planning are described. The chapter provides an account of the national interests and public interests that form the basis of the assessment of the most suitable use.



6

6.1 Attractive living environments

Areas that are attractive to visit, live and work in are important for regional development and the development of maritime industries. In the marine spatial plan, attractive living environments refers to areas for recreation, tourism and cultural environments along the coast - environments that are attractive to visit and live in. Spending time in these coastal areas contributes to health and well-being, and they are important for the tourism industry. The value also consists of the landscape and cultural history, among other aspects.

This section describes common conditions for attractive living environments. The upcoming section first describes recreation, recreational fisheries and tourism and then cultural heritage.

Use in the marine spatial plan for the theme:

Attractive living environments

The use **attractive living environments** is based on the national interest areas in the sea for active outdoor recreation, unbroken coastline and a highly developed coast, as well as national interest claims for cultural environments and recreation where recreational fisheries is included and which is described below.

The planning objectives that attractive living environments relate to are to *create conditions for a good marine environment and sustainable growth* and to *create conditions for regional development*.

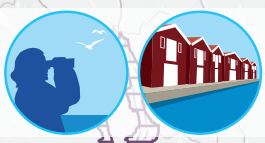
National interests

There are geographically delimited national interest areas set out in the Environmental Code[44]:

- active outdoor recreation, Chapter 4 Section 2
- unbroken coastline, Chapter 4 Section 3
- highly developed coastline, Chapter 4 Section 4

Considering their natural and cultural values, these areas are in their entirety of national interest. Use may not substantially damage the areas' natural and cultural values.

44 *The Swedish Environmental Code (1998:808)*



Map 7. National interests for the attractive living environments theme

Areas of national interest

Areas for national interest for outdoor recreation Ch.4 §2 Env. Code

Areas for national interest coastal values Ch.4 § 3 Env. Code

Areas for national interest coastal values Ch.4 § 4 Env. Code

Attractive living environment in the marine spatal plan

Use: Attractive living environment

N

0 20 40 80 km

Havs- och Vattenmyndigheten, HaV

National interest claims

Recreation, Chapter 3, Section 6 of the Swedish Environmental Code

Recreation refers to time spent outdoors in the natural and cultural landscape for well-being and experiences of nature.

An area is deemed to be of national interest to recreation if its natural and/or cultural qualities and accessibility to the public mean that it is or can become attractive to visitors from far away. Other areas may also be of national interest to recreation if they are important to many people's recreation and are used a great deal. This applies above all to the three metropolitan regions, where the need for nature close to built areas shall receive special attention.

In addition, an area may be of national interest to recreation if it has especially good conditions for:

- enriching experiences in natural and/or cultural environments
- recreation activities and thereby enriching experiences.

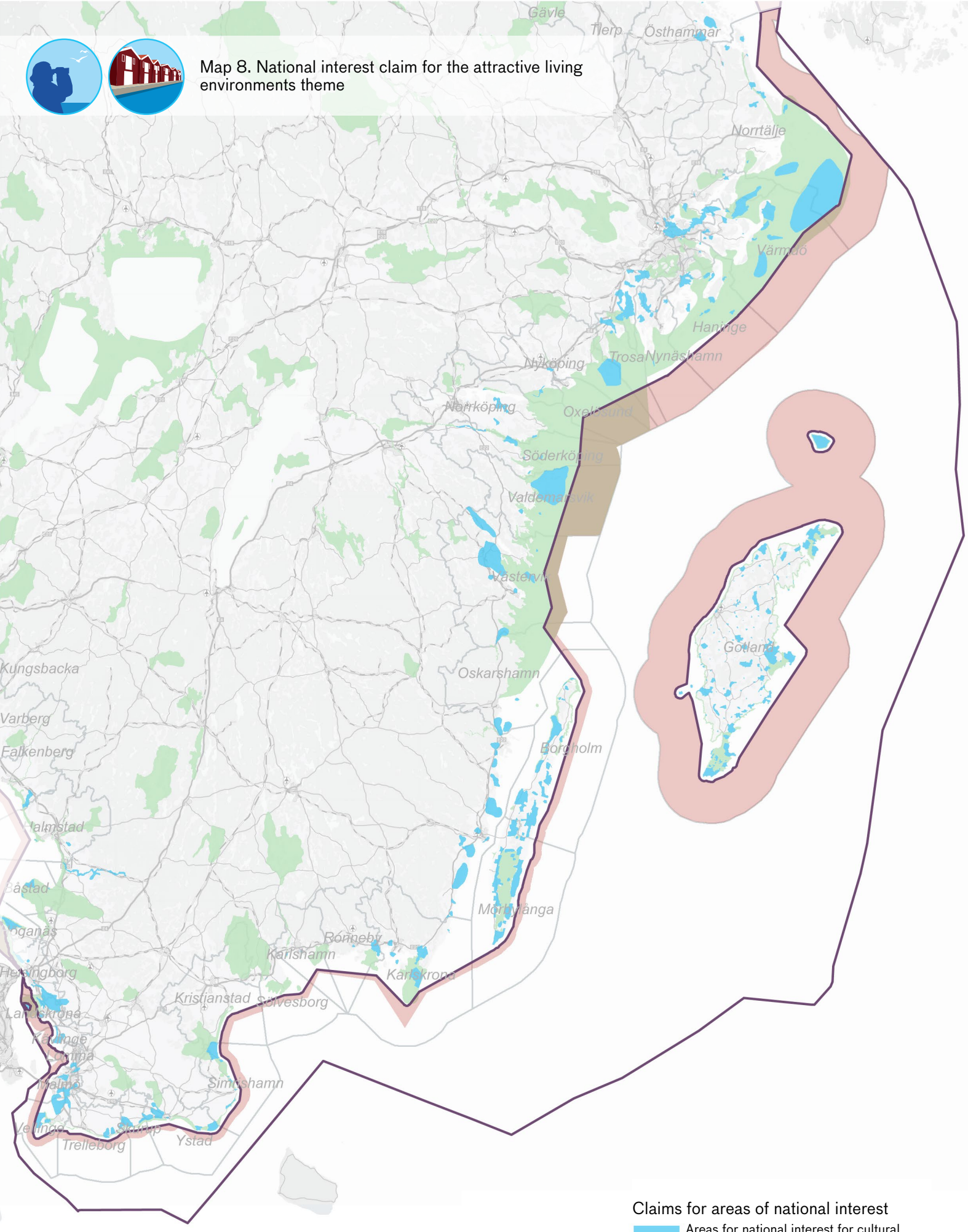
In addition to this, there are special support criteria.

Cultural heritage preservation, Chapter 3, Section 6 of the Swedish Environmental Code

Today, there are no highlighted areas of national interest to cultural heritage preservation in the area covered by the marine spatial plans. The Swedish National Heritage Board has begun drafting assessment grounds and a plan for how national interest claims in the sea shall be pointed out. Along the coast, there are national interests that can indirectly be affected by activities at sea.

Read more about the national interests on the websites of the Swedish Environmental Protection Agency, the Swedish National Heritage Board and the Swedish Agency for Marine and Water Management.

Map 8. National interest claim for the attractive living environments theme



Claims for areas of national interest

Areas for national interest for cultural environment Ch. 3 § 6 Env. Code

Areas for national interest for outdoor recreation Ch. 3 § 6 Env. Code

Attractive living environment in the marine spatial plan

Use: Attractive living environment

N

0 20 40 80 km

Havs- och Vattenmyndigheten, HaV

Public interests and other planning conditions

World heritage sites are deemed to be so valuable from cultural or natural environment perspectives that they are a matter for all of mankind. They are pointed out in accordance with the UNESCO Convention concerning the Protection of World Cultural and Natural Heritage[45].

Cultural history value cores are presented in a report by the Swedish National Heritage Board. The value cores coincide to a significant extent with the areas that are covered by the Environmental Code's geographic management provisions. The report is the Swedish National Heritage Board's presentation of a Government assignment to describe the interests of cultural heritage preservation in relation to an expansion of wind power in coastal and marine areas, among others[46].

Out of Sweden's 1.8 million registered ancient remains, approximately 20,000 are maritime objects[47]. The majority of these are vessel remains, wrecks. Based on the Swedish National Heritage Board's ancient remains information system, FMIS, an analysis has been done of where the concentration of wrecks and sinkings are the highest[48].

Maritime strategy

In the maritime strategy, the Government has formulated three perspectives where an attractive coast is one of the three[49]. One of the five highlighted industries that are most strongly associated with attractive living environments is recreation and tourism, which includes ferry traffic, cruise activities, archipelago tourism, recreational fisheries, the trade in recreational craft and marinas. Areas that are attractive to visit, live in, and work in are important for regional development and for the development of maritime industries. The coastal areas need to be accessible with access to necessary public service to provide possibilities for support, recreation and natural and cultural experiences. Preserved and attractive natural and cultural values are an important part of the development of a long-term sustainable regional development and maritime tourism.

45 *The Swedish National Heritage Board's questions and answers regarding world heritage sites*

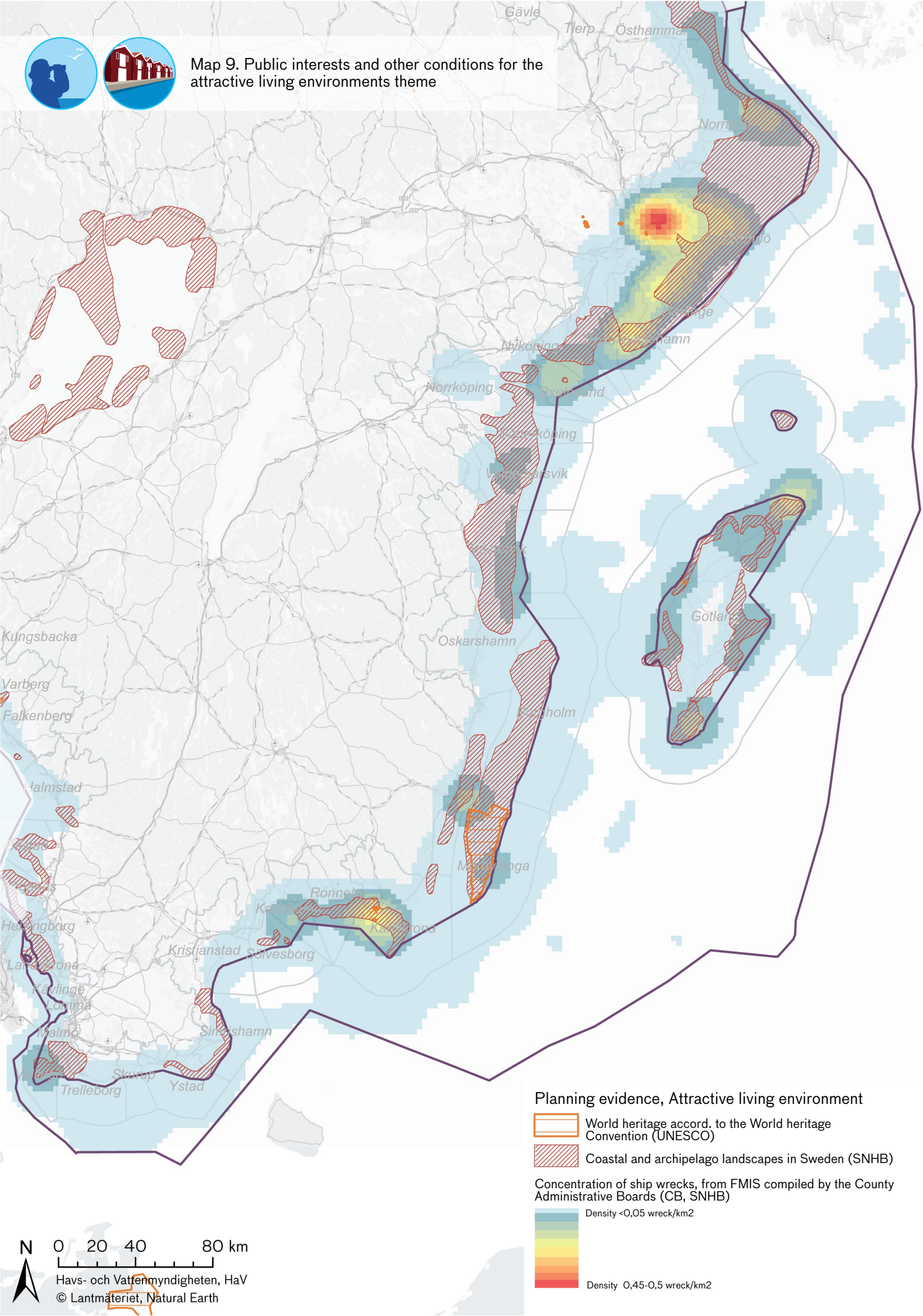
46 Swedish National Heritage Board. Report 2003:4. *Sveriges kust- och skärgårdslandskap: kulturhistoriska karaktärsdrag och känslighet för vindkraft.* [Sweden's coastal and archipelago landscape: cultural history characteristics and sensitivity to wind power.]

47 *Swedish Agency for Marine and Water Management Report 2015:2. Marine Spatial Planning – Current Status 2014.*

48 County Administrative Board. 2017. *Länsstyrelsernas redovisning av Uppdrag 2017-06- välj värdeområden.* [County administrative boards' report of assignment June 2017 choosing areas of value.]

49 *A Swedish national maritime strategy – for people, jobs and the environment*

Map 9. Public interests and other conditions for the attractive living environments theme



Havs- och Vattenmyndigheten, HaV

Ecosystem services

Ecosystem services create conditions for attractive living environments, partly indirectly through e.g. purification of water, and party directly in the form of landscapes to spend time in and experiences of a rich animal life and various natural and cultural environments. The values also include natural and cultural heritage for current and future generations.

Activities in recreation and tourism can affect different ecosystem services through noise, emissions of hazardous substances from recreational craft, or litter and anchoring that affect the seabed environments and cultural environments.

Spatial planning of the sea and coastal zone can work to both reduce burdens and strengthen ecosystem services, and thereby work for attractive living environments for well-being, quality of life and health, recreational activities, regional development, local identity and employment.

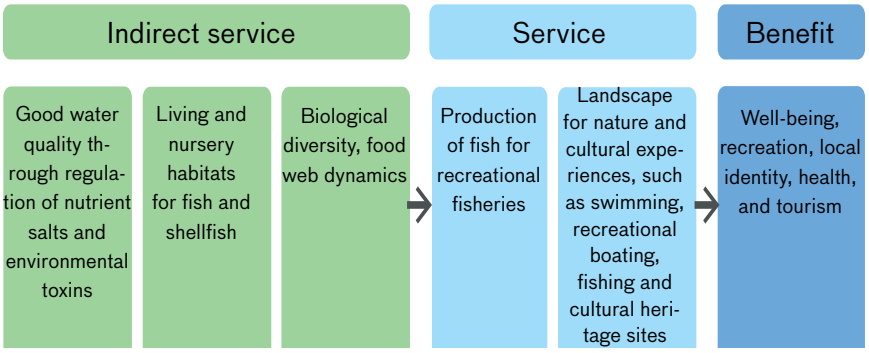


Figure 13. Important ecosystem services for an attractive living environment

Relevant environmental aspects

Activities and operations in this theme can be related to various impacts on the environment, theme areas in the Marine Strategy Framework Directive and various environmental quality objectives. The relationships are important in the assessment of the theme's environmental impact. The table on the next page shows these relationships.

Activity	Potential impact or pressure	Theme area Marine Strategy Framework Directive (descriptors)	Sweden's environmental quality objectives
Recreational fisheries	Selective extraction of species, marine litter (lost fishing gear), underwater noise	D1 Biodiversity D10 Marine litter	Balanced seas and vibrant coastal areas and archipelagos A rich plant and animal life
Recreational craft	Underwater noise, marine litter, pollutants, anchoring, and seabed impact	D1 Biodiversity, D8 Contaminants, D10 Marine litter, D11 Introduction of energy	Balanced seas and vibrant coastal areas and archipelagos A rich plant and animal life Toxin-free environment
Cruise ships	Atmospheric emissions in the form acidifying and climate-impacting compounds, pollutants, the addition of nutrients (e.g. dumping of sewage and other waste), underwater noise Introduction/relocation of foreign, potentially invasive species	D1 Biodiversity D2 Invasive species D5 Eutrophication D8 Contaminants D11 Introduction of energy	Balanced seas and vibrant coastal areas and archipelagos A rich plant and animal life Only natural acidification Reduced climate impact Zero eutrophication Toxin-free environment
Ferry traffic	Atmospheric emissions in the form of acidifying of climate-impacting compounds, pollutants, underwater noise Coastal erosion	D1 Biodiversity D2 Invasive species D5 Eutrophication D8 Contaminants D11 Introduction of energy	Balanced seas and vibrant coastal areas and archipelagos A rich plant and animal life Only natural acidification Reduced climate impact Toxin-free environment

Table 14. The relationship between attractive living environments and relevant environmental aspects

Read more about conditions in the marine spatial planning current status description, roadmap, the thematic report on regional development and the report on ecosystem services from Swedish seas that you can find at www.havochvatten.se.

Recreation, recreational fisheries and tourism

Recreation, recreational fisheries and tourism at sea include landscape and nature experiences and activities, such as boating, bird watching, swimming and canoeing. It also includes visits to cultural environments, such as fishing villages, lighthouse stations and pilot stations and wreck diving. These environments are of significance to local identity, well-being and quality of life. The areas are often included in the national interest for recreation. Nature and marine protected areas can also be important to recreation, recreational fisheries and tourism.

Tourism contributes to the growing national tourism industry in terms of employment, incomes and a possible increase in international visitors. This development mainly takes place in the coastal zones, but affects and is affected by the spatial planning at sea.

Recreation and tourism in Skagerrak and Kattegat

The Baltic Sea marine spatial planning area encompasses the metropolitan regions of Stockholm and Malmö, Sweden's largest islands Gotland and Öland, unique cross-border archipelago environments, and areas of great importance for holiday homes and outdoor recreation.

Land conditions vary, from Skåne's sandy beaches via the limestone cliffs of the Gotland coastline to Stockholm's archipelago with its islands and skerries of gneiss and granite. In the more densely populated coastal areas of Skåne and Stockholm county, there is more pressure on the attractive coastal areas. On Gotland and Öland, the recreational sector and tourism are important to regional development. Along the coast outside of Stockholm's archipelago, there are valuable areas for recreation.

Öresund is densely populated and one of the most developed areas in Sweden. Frequent recreational boating traffic and fishing tours are conducted there. Along Sweden's southern coast, there are valuable natural environments that form the basis for recreation, tourism, and activities such as sports and wreck diving. The areas are important to regional development with regard to housing, recreation, and tourism.

The coast of Gotland has largely untouched and varying natural areas. It is one of Gotland's greatest assets for recreation, and it is used by both residents and tourists. Along the coast, there are also many old and well-preserved fishing villages with a high cultural heritage value. Hoburgs bank, Salvorev, and Gotska sandön are Sweden's most important bird areas in the Baltic Sea, which together with the Natura 2000 areas in the coastal zone are important destinations for outdoor life, recreation, and bird watching.

Recreational fisheries in the Baltic Sea

Recreational fisheries is a significant recreational activity in the Baltic Sea area. Recreational fisheries provide quality of life to many people and contributes to an attractive living environment along the coast. Statistics show that Swedes spent around 1.8 million fishing days in the Baltic Sea proper and Öresund in 2015[50].

Recreational fisheries refers to all fishing that does not take place with the support of a fishing licence or personal fishing licence. Recreational fisheries can be divided up into sports fisheries and household need fisheries, depending on what type of equipment is used and what the purpose of the fisheries are. This is fishing for recreation or for consumption of the catch in one's own household. The catch may not be sold.

There is a lack of more detailed information on how the fishing days are distributed between the marine spatial planning area and the area closest to the coast. However, it is reasonable to assume that most recreational fisheries take place close to the coast and not in the planning area. In terms of quantity, pike and perch are the most important species for recreational fisheries in the Baltic Sea. Other species are cod, whitefish, and flatfish.

Some of the recreational fisheries take place through organised excursion tour boat fisheries, especially in Öresund. Excursion tour boat fisheries make the recreational fisheries accessible at the same time that it provides local employment. The extensive interest in recreational fisheries combined with good conditions for fishing means that there is a significant development potential for tourism with ties to recreational fisheries.

Interaction between land and sea

The interaction between land, coast and sea is important for the context and the surroundings where sea-based activities are conducted. Activities at sea can change the landscape and navigability on land as well, and affect recreation and the tourism industry. The planning of the sea is therefore clearly linked to the municipal planning of the coastal zone. Important aspects that can influence or be influenced by activities on land and on the coast are how many people live in the coastal zone, the existence of transportation and ports, the scope of the recreational boat traffic, etc.

International interaction

Intensive recreational boat traffic and fishing tours are conducted between Sweden and our neighbouring countries. Mainly during the summer, this may mean that it becomes crowded and competition for space in the marine spatial plan area.

50 Statistics Sweden. 2016. Recreational fisheries catches

The Future

The proximity to the sea makes the coastal landscape attractive for living, recreation and tourism. The tourism industry is expected to continue to grow and can thereby create conditions for further development along the coasts. It may also increase the pressure mainly on the coastal zones of the metropolitan regions, and thereby affect and be affected by the development in the marine spatial plan areas.

Continued work

The county administrative boards will continue their work of identifying values and areas for recreation and tourism in coastal and marine environments. New documentation and criteria for assessment in the marine spatial planning can for example be drafted.

Cultural environment

In Swedish waters, there is a comprehensive cultural heritage consisting of vessel remains, settlements from the Palaeolithic, palings, harbour facilities and so on. Shipping has been very intensive over the last century, and this has resulted in a large number of shipwrecks in Swedish waters. However, there is little knowledge of where the remains are, mainly due to a lack of systematic inventories.

Cultural heritage values promote our well-being, build our identity and put our existence into context. The cultural heritage is also important to local and regional economic development. Coastal and archipelagic landscapes have largely been characterised by traditional industries such as fisheries, shipping, agriculture and tourism which, in turn, arose where they did due to their link with the sea. Precious environments, landscape and buildings are therefore linked to archipelagic agriculture, fishing villages and seaside resorts, ports, fortifications, lighthouses and pilot stations, as well as to coast-linked industry. Cultural values at sea can often be explained and given context by relics or environments on land.

In activities in the sea, an archaeological investigation may be needed. A decision on an archaeological investigation is made by the county administrative board and a change to an ancient remnant requires permission from the county administrative board.

Early consultations with the county administrative board according to the Heritage Conservation Act should take place to reduce the risk of impact on cultural environments. For example, it may be more difficult to change the location of a land connection at a late stage. When a marine area is developed, the impact area on the seabed may be significantly larger than the actual development area.

Ancient remains are protected according to the Heritage Conservation Act regardless of whether they are known or not, but there is often a lack of knowledge about and planning evidence for cultural environments in the sea. Archaeological investigation according to the Heritage Conservation Act should be taken into account in the planning of operations that can affect cultural environments in the sea.

The act prescribes that a shipwreck shall be considered as ancient remains if it is older than from 1850. However, the county administrative board can decide that a younger shipwreck is to be counted as ancient remains if it has sufficient cultural heritage value.

Cultural heritage sites in the Baltic Sea

In the Baltic Sea, cultural heritage remains are often well-preserved because the low salinity and low water temperature means that there are few processes or organisms that break down wood.

Legal prerequisites

The Heritage Conservation Act (1988:950) regulates permit processes for activities that can affect ancient remains.

On 16 November 2017, the Swedish Parliament decided that Sweden would establish a **contiguous zone.** This new legislation came into force on 1 March 2018. The Heritage Conservation Act will also be changed to protect archaeological and historical objects that are encountered in the contiguous zone.

In the marine sub-regions of the *Southern Baltic Sea* and *South-western Baltic Sea and Öresund*, it is possible to find Stone Age remains down to a depth of around 30 metres There are discoveries of settlements from the Paleolithic here, when there was a fixed land connection between what is today Sweden and the continent. Traces also exist of fossil landscapes that show the landscape development since the Ice Age. The remains that are preserved underwater provide an extensive possibility to increase knowledge about the Stone Age.

Off of the mouth of the Verkeån River in Haväng in Hanöbukten, there is an area with Stone Age remains in the former now flooded riverbed. The site also consists of well-preserved remains from the pine forest that was in the area. The bottom landscape's special nature and the scientific potential are deemed to be globally unique[51].

Interaction between land and sea

The cultural heritage values in and at the sea being of different types means that the use of the sea can affect the values in multiple ways. The landscape and historical ties can be affected, as well as individual remains and cultural environments.

Structures near the coast can change the visual impression and with it the perception of cultural environments on land. In locating and designing installations in the sea, such as wind farms, the landscape and contexts must be taken into account in a holistic perspective. Valuable cultural environments in coastal and archipelago landscapes that are at risk of being affected visually by wind power are presented in a report by the Swedish National Heritage Board[52].

Remains can be damaged in construction work and with moveable activities such as shipping and fishing through, for example, erosion, anchoring and bottom trawling. Both commercial fisheries and recreational fisheries are done around ancient remains based on the reef-forming effect that arises and attracts fish to the area. Other potentially harmful activities are dredging, dumping, extraction or storage of materials, or recreation in the form of diving. Land connections for activities in the sea, such as cables for energy installations, can affect cultural environments both on the seabed and on land.

In activities in the sea, the impact on cultural environments must be assessed for every individual project at an early stage.

51 County Administrative Board. 2017. *Länsstyrelsernas redovisning av Uppdrag 2017-06- välj värdeområden.* [County administrative boards' report of assignment June 2017 choosing areas of value.]
52 Swedish National Heritage Board. Report 2003:4. *Sveriges kust- och skärgårdslandskap: kulturhistoriska karaktärsdrag och känslighet för vindkraft.* [Sweden's coastal and archipelago landscape: cultural history characteristics and sensitivity to wind power.]

International interaction

The countries around the Baltic Sea are cooperating in the EU project *Balti-cRIM* with the aim of integrating the sea's cultural heritage into the marine spatial planning.

The Future

Claims from different sectors to use the sea and technological developments may entail a greater impact on cultural environments in the future. Environmental toxins and the water's chemical composition and content of micro-organisms, among other things, can affect the cultural heritage in the sea. Climate change can affect the speed of natural processes such as shoreline displacement and seabed movements, and entail impact from invasive species and wood-eating organisms.

Continued work

The coastal county administrative boards have begun improving the planning evidence for marine spatial planning regarding cultural heritage interests in the sea and along the coast. The documents need to be coordinated between the counties and also developed based, among other things, on the significance of the spatial planning. The coastal county administrative boards are also involved in the Swedish National Heritage Board's work of preparing national interest claims for cultural environments in the sea. New documents may affect the guidance in the continued marine spatial planning. For ancient remains under water, guidance may be needed regarding particular consideration, based on coordinated and developed planning evidence.

6.2 Energy

The energy sector is under constant development. Political objectives in the environmental and climate area are driving a transformation towards a renewable energy system. At present, wind power is the type of energy being expanded fastest in Sweden and sea-based wind power will probably constitute increasingly important additions to the energy supply in the future. When wind power contributes a larger share of Sweden's electricity production, higher requirements are set on the power infrastructure. Electricity grids are interconnected both within the country and internationally to become more robust. New electricity production at sea and new connection to other countries' electrical grids increase the need for new power cables at sea.

Use in the marine spatial plan for the theme:

E **Energy extraction**

The areas in the planning map where **energy extraction** is indicated as a use are either areas covered by national interest claims for energy production (wind power) or areas that are considered to be of significant public interest for energy production.

The planning objective related to energy is to create conditions for the development of energy transmission and renewable electricity production in the sea.

National interest claims

Facilities for energy production, Chapter 3 Section 8 of the Swedish Environmental Code

National interest claims for facilities for energy production, in the form of wind power at sea, have been prepared based on criteria, such as average annual wind, depth and area size. These areas largely correspond to existing and planned wind power projects. These areas are to be protected from measures that can substantially impede the creation or use of such facilities. No national interest claims have been pointed out for sea-based energy distribution or transmission.

Read more about national interest claims on the Swedish Energy Agency website.

Map 10. National interest claims for the energy theme

Ö203, Ö204

Ef

Ef

Ö220

Ö209-Ö212

Ö240-241

Ö245

Efn

Ö262

Efn

EN

Ö267

Ef

Ef

Ef

Gävle
Tierp
Östhammar
Norrtälje
Värmdö
Haninge
Nyköping
Trosa
Nynäshamn
Norrköping
Oxelösund
Söderköping
Valdemarsvik
Västervik
Gotland
Kungsbacka
Oskarshamn
Varberg
Falkenberg
Borgholm
Halmstad
Båstad
Mörbylånga
Höganäs
Bromölla
Karlshamn
Helsingborg
Karlskrona
Kristianstad
Sölvesborg
Kävlinge
Lomma
Malmö
Simrishamn
Vellinge
Skurup
Trelleborg
Ystad

Claims for areas of national interest

Facilities for energy extraction, wind energy (Ch. 3 §8 Env. Code)

Energy extraction in the marine spatal plan

Use: Energy extraction

Where claims for areas of national interests have not been confirmed (clickable link)

N

0 20 40 80 km

Havs- och Vattenmyndigheten, HaV

Public interests and other planning conditions

Areas of interest for wind power

To meet the needs of 100 per cent renewable electricity production by 2040, the Swedish Energy Agency assesses that around an additional 100-120 TWh will need to be produced in Sweden in total. The planning need for areas that have the conditions to contribute renewable electricity production in the sea is estimated to amount to the equivalent of 50 TWh of the total production[53].

The marine spatial planning process shows that the areas that the Swedish Energy Agency has pointed out as national interest claims for wind power will not be enough to reach the target, due in part to competing interests. Additional interest areas for energy extraction have therefore been worked out in the marine spatial planning process.

Public interests of a material significance for wind power are generally based on the following types of documentation:

1. *Projects*
   Projects in various phases. A compilation done by vindlov.sefrom October 2017 was used.

2. *Wind power in municipal comprehensive plans*
   Areas that a municipality has pointed out for wind power through comprehensive planning under the Plan and Building Act. A compilation made by the county administrative boards was used. Every area has been assessed individually, and all areas that are presented in municipal comprehensive plans have not been assessed to be of public interest of material significance.[54]

3. *Other areas identified in the marine spatial planning process*
   The areas have been pointed out based, among other things, on
   - depth (down to 40 m for permanent seabed installations, in deeper water for floating wind power plants)
   - stable, flat and homogeneous seabed
   - average wind (at least around 9 m/s annual average wind speed)
   - distance from land, proximity to connection to the electrical grids on land and proximity to areas with high consumption.

The Swedish Energy Agency's LCOE data[55] for wind power was used in the

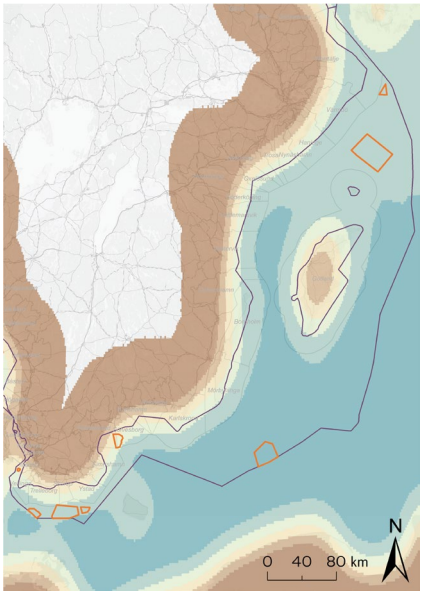


Figure 14. Production expenses for wind power at sea (LCOE). Main scenario 2025 with 6% average weighted cost of capital.

53 Swedish Energy Agency. *Energimyndighetens genomgång av energiområden i havsplaneringen, 2017-10-06* [The Swedish Energy Agency's review of energy areas in marine spatial planning, 06/10/2017]

54 County Administrative Board of Västra Götaland County, Geografisk information om energi i kommunala planer [Geographic information on energy in municipal plans], 03/07/2013

55 Swedish Energy Agency. ER 2017:3. *Havsbaserad vindkraft - En analys av samhällsekonomi och marknadspotential.* [Sea-based wind power - An analysis of societal economy and market potential].

Map 11. Public interests and other conditions for energy – wind power areas

Svenska Björn Offshore

Ef
Öster om Svenska Högarna

Ef
Kopparstenarna NO utsjö

Långgrund

Långgrund II

Gotland

Gotland
Bockstigen

Kårehamn

Utgrunden II

Trolleboda

Yttre Stengrund

Öland Syd

Efn
Blekinge Offshore

Efn
Taggen

Efn
Södra Midsjöbanken

EN

Skåne 1

Ef
Kriegers Flak

Ef
Skåne 3

Ef
Skåne 2

Other planning evidence for the use Energy extraction

- Projects
- Areas for wind energy in municipalities' comprehensive plans
- Other areas identified in the marine spatial planning process

Energy extraction in the marine spatal plan

- Use: Energy extraction

N

0 20 40 80 km

Havs- och Vattenmyndigheten, HaV

calculations. LCOE stands for Levelised Cost of Energy, production cost. The areas have been identified by SwAM together with other participants in the marine spatial planning process.

Power cables

The Swedish electric system is characterised by high production in the north and large consumption in the south, and the imbalance is expected to increase if more nuclear power is closed. It increases the demand for cables and other resources in the transmission system that enables transport of electricity from the hydroelectric power stations in the north to the consumers in the south.

The system is largely land-based, but the expanded planning scope for wind power at sea places new high demands on a flexible transmission system, which will be able to handle a large share of variable energy from wind power.

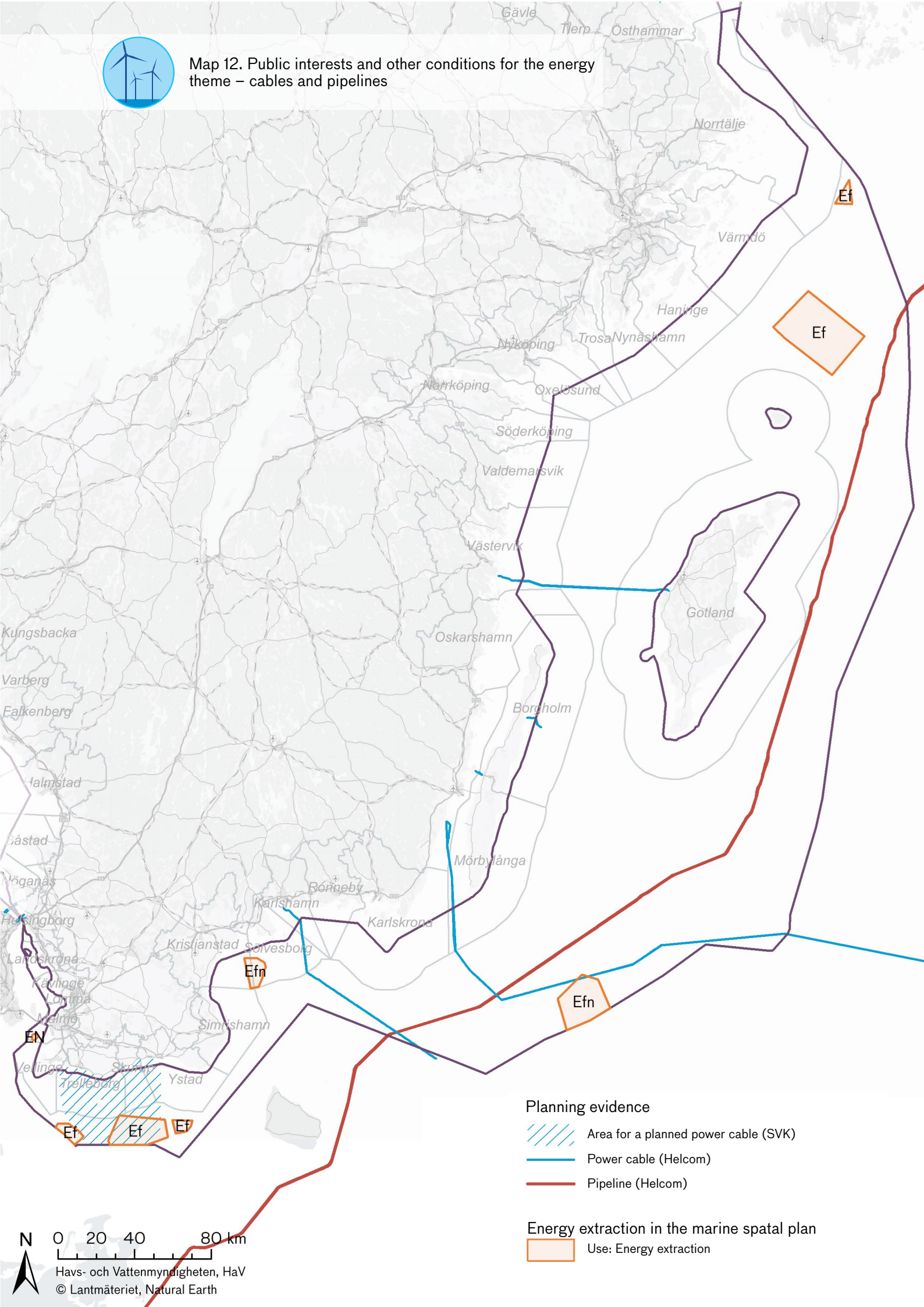
The marine spatial plan provides an overall guide that the laying of cable must be taken into account where appropriate. Specific areas for energy transmission and distribution are not presented in the planning map in this version of the marine spatial plan. The Swedish Energy Agency and Svenska Kraftnät believe that it is not appropriate as the planning horizon exceeds ten years and the uncertainties are too large. The areas for cable laying should be identified as early as possible to reduce conflicts with other claims.

Pipelines

Two parallel lines for the transport of natural gas extend between Russia and Germany and pass through Sweden's exclusive economic zone (the Nord Stream line). An application for permission to lay further lines with a similar extent (Nord Stream 2) is being prepared (in January 2018). Another natural gas pipeline extends between Denmark and Sweden in Öresund, and a new one is planned between Poland and Denmark, possibly through Sweden's exclusive economic zone.

Legal prerequisites

In order to build a wind farm within the territorial sea, permits are required according to Chapters 9 and 11 of the Environmental Code. The application is reviewed by the Land and Environmental Court. In the exclusive economic zone, a permit is required under the Exclusive Economic Zone Act (1992:1140), and the application is reviewed by the Government. In addition, a permit is required according to the Continental Shelf Act (1966:314) for surveys of the seabed and the laying of lines during wind power establishment in the exclusive economic zone (EZ). For the laying of lines and cables within the territory, permits are required according to other national laws. When an activity or measure might affect the environment in a Natura 2000 area in a significant manner, a special Natura 2000 permit according to Chapter 7 of the Environmental Code is also required. The requirement of such a permit applies both in the territorial sea and in the exclusive economic zone, and the application is reviewed by the Land and Environmental Court if the permit application otherwise is to be decided by the court and by the county administrative board if the permit application pertains to a facility in the exclusive economic zone.


Map 12. Public interests and other conditions for the energy theme – cables and pipelines
Gävle
Tierp
Östhammar
Norrtälje
Värmdö
Haninge
Trosa
Nynäshamn
Nyköping
Norrköping
Oxelösund
Söderköping
Valdemarsvik
Västervik
Gotland
Oskarshamn
Borgholm
Mörbylånga
Kungsbacka
Varberg
Falkenberg
Halmstad
Båstad
Höganäs
Helsingborg
Landskrona
Bromölla
Kristianstad
Sölvesborg
Karlshamn
Karlskrona
Simrishamn
Ystad
Trelleborg
Skurup
Vellinge
Lomma
Kävlinge
Malmö
Ef
Efn
EN
Planning evidence
Area for a planned power cable (SVK)
Power cable (Helcom)
Pipeline (Helcom)
Energy extraction in the marine spatal plan
Use: Energy extraction
N
0 20 40 80 km
Havs- och Vattenmyndigheten, HaV
© Lantmäteriet, Natural Earth

Interaction between land and sea

The planning has taken general consideration of there being wind turbines near the parts of the country that have extensive energy consumption, meaning from Gävleborg County and south (electricity areas 3 and 4). Because the laying of cable is costly, it is also an advantage if wind power is built near the coast. Likewise, existing infrastructure on land should be possible to use to the greatest extent possible, such as in areas close to today's nuclear power plants. The impact on the landscape is addressed in Section 6.1 Attractive living environments.

International interaction

At Södra Midsjöbanken, which is partly in Poland's exclusive economic zone and partly in Sweden's, there is an on-going (December 2017) review for the construction of wind power. Poland has issued location permits for energy extraction on its side, which was done at an early stage for continued investigation. The planning in the respective country can affect different national interests, so the countries should collaborate in cross-border issues.

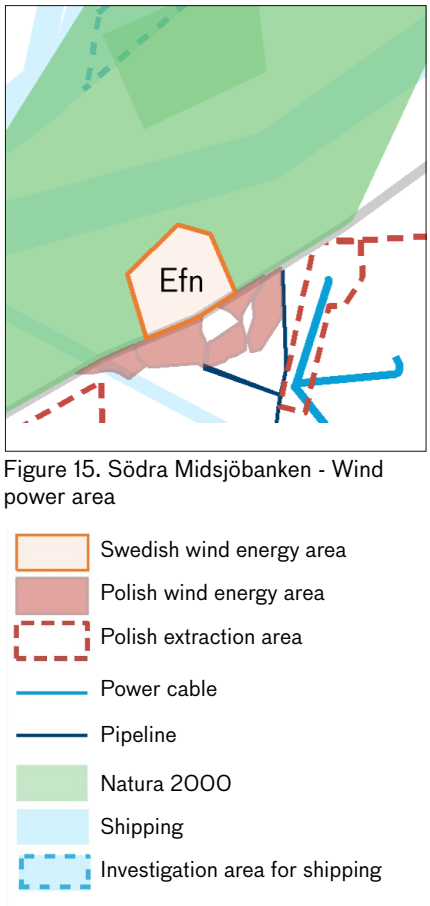


Figure 15. Södra Midsjöbanken - Wind power area

At Kriegers Flak, there are permits for wind power in Denmark, Germany, and Sweden. In the Swedish exclusive economic zone, it is the wind power project engineering company that is responsible for the connection to land.

In the area between Kriegers Flak and Bornholm, the marine spatial plan proposes two areas for energy extraction. These need to be coordinated with Denmark and Germany.

Coordination may also need to take place with the Danish marine spatial planning around wind power in the Öresund region.

Svenska Kraftnät and a German system operator have reached a cooperation agreement regarding the details around a planned Swedish-German electrical connection. The connection, which is called Hansa Power Bridge, will extend 300 km from Güstrow in north-eastern Germany to Hurva in Skåne and have a capacity of 700 MW.

Through its planning authority, Germany has presented a need for Sweden to include connection points for interconnection of the planned Hansa Power Bridge between Sweden and Germany. According to Svenska Kraftnät, it is not suitable at present to indicate any specific location in the marine spatial plan for the connection between the two countries.

An increased exchange and trade are in line with the EU objectives for energy system development. The connections to the European grid are not underdimensioned today, but there is pressure to bring about more connections to further strengthen the stability of the system. Since the electricity market is developing and major changes can arise relatively quickly, the electric system's transmission needs both internally and to neighbouring countries are continuously being developed. This means that additional foreign connections in Sweden, in addition to those mentioned here, may be necessary.

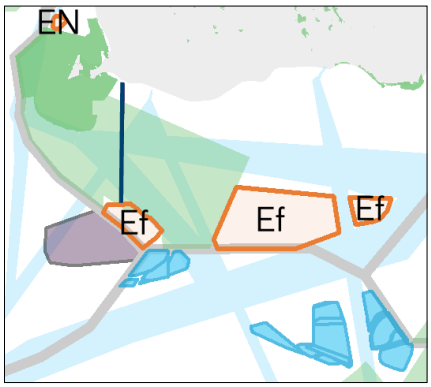


Figure 16. Kriegers Flak and south of Skåne - Wind power area

The Future

Likely changes until 2030 and 2050 are deemed to be that profitability for sea-based energy extraction will increase and that expansion will gain speed. At the same time, the on-going energy transformation entails higher objectives for wind power also at sea.

During the planning process, it has come forth that several areas that would otherwise be suitable for wind power do not have wind power as the most suitable use due to the interests of total defence. In the future, with new conditions and new technology, these areas may be re-evaluated and considered suitable for energy extraction.

New technologies, such as wave power and floating wind power stations, are under development. Room is needed at sea for pilot projects and test platforms. The technology development in the energy field affects the various types of traffic's significance to the energy system.

Analyses of sea-based wind power have been prepared by the Swedish Energy Agency, and analyses of wave power will also be coming. The cost effectiveness for sea-based energy extraction is expected to increase until 2050[56].

Maritime strategy

In the maritime strategy, the Government has pointed out *the sea as a natural resource* as one of the five industries that the strategy comprises and where energy from waves, water and wind are included. An expansion of the energy supply in sea areas entails development opportunities for other industries, such as service and construction companies, manufacturers of equipment and companies that provide service and maintenance. The most important prerequisite for companies in the service area is the development in other maritime industries.

The sea is a potential energy resource even as a producer of biomass for various areas of use. Extraction and cultivation of biomass for biogas production can also be combined with water purification.

Ecosystem services

Energy extraction in the marine spatial plans mainly comprises sea-based wind power, which is not dependent on ecosystem services. However, wind power can indirectly reduce the burden on climate-regulating ecosystem services by replacing climate-loading energy with renewable energy and fossil-free energy.

56 Swedish Energy Agency. ER 2017:3. Havsbaserad vindkraft - En analys av samhällsekonomi och marknadspotential. [Sea-based wind power - An analysis of societal economy and market potential].

Energy extraction may entail a burden on the ecosystems and their services, such as a degradation of living environments and competition for space. For example, the wind power stations' lines, cables and noise can damage the living environments. The landscape can be affected, and with it also cultural environments, recreation and tourism.

Possible advantages:

- less burden from climate gases and a need for climate-regulating services
- higher biodiversity at sea through artificial reefs and reduced local impact from trawling.

Read more about conditions in the marine spatial planning current status description, roadmap, the thematic report on energy, and the report on ecosystem services from Swedish seas that you can find at www.havochvatten.se.

Relevant environmental aspects

Activities and operations in this theme can be related to various impacts on the environment, theme areas in the Marine Strategy Framework Directive and various environmental quality objectives. The relationships, which are shown in the table below, are important in an assessment of the theme's environmental impact.

Activity	Type of potential impact or pressure	Theme area Marine Strategy Framework Directive (descriptors)	Environmental quality objectives
Wind power	Physical damage/ loss Biological disruption Underwater noise	D1 Biodiversity D6 Seabed integrity D11 Introduction of energy	Seas in balance and flourishing coasts and archipelagos Limited climate impact A rich plant and animal life
Power from waves, currents, tides, and salinity gradients	Physical damage/ loss and disruption Underwater noise	D1 Biodiversity D6 Seabed integrity D7 Hydrological conditions D11 Introduction of energy	Seas in balance and flourishing coasts and archipelagos Limited climate impact A rich plant and animal life,
Pipelines/ cables	Physical damage (seabed), electromagnetic fields	D6 Seabed integrity D11 Introduction of energy	Seas in balance and flourishing coasts and archipelagos A rich plant and animal life

Table 15. The relationship between energy extraction and relevant environmental aspects

6.3 Defence

Sweden's total defence consists of military activities (military defence) and civil activities (civil defence).

The task of the Swedish Armed Forces is to maintain and develop a military defence with the capability for armed combat. The Armed Forces must be able to defend Sweden and to promote Swedish security through both national and international missions; they must also be able to detect and repel any infringements on Swedish territory and safeguard Sweden's sovereign rights and national interests outside of Swedish territory.

Civil defence shall safeguard the civil population, ensure the most important societal functions and contribute to the Swedish Armed Forces' ability in the event of an armed attack or war in the surrounding world. Several national authorities and other participants are responsible within civil defence. In recent years, the planning of civil defence was resumed.

The planning objective related to defence is to: Create conditions for defence and security.

The Swedish Armed Forces' marine sector conducts signal tracing and monitoring. Both parts have a technical function, but monitoring is also physical. In contrast to the army, the marine activities are constantly conducted live due to monitoring. This means that what applies in crises or war also applies in to other times. To achieve and develop armed combat capability on, above and under the water, naval exercise areas and artillery ranges have been established around the Swedish coast.

Use in the marine spatial plan for the theme:

F **Defence**

The use **defence** and *particular consideration to national defence interests* are based on national interest claims for national defence or the areas considered to be of public interest of material significance for national defence.

National interest claims

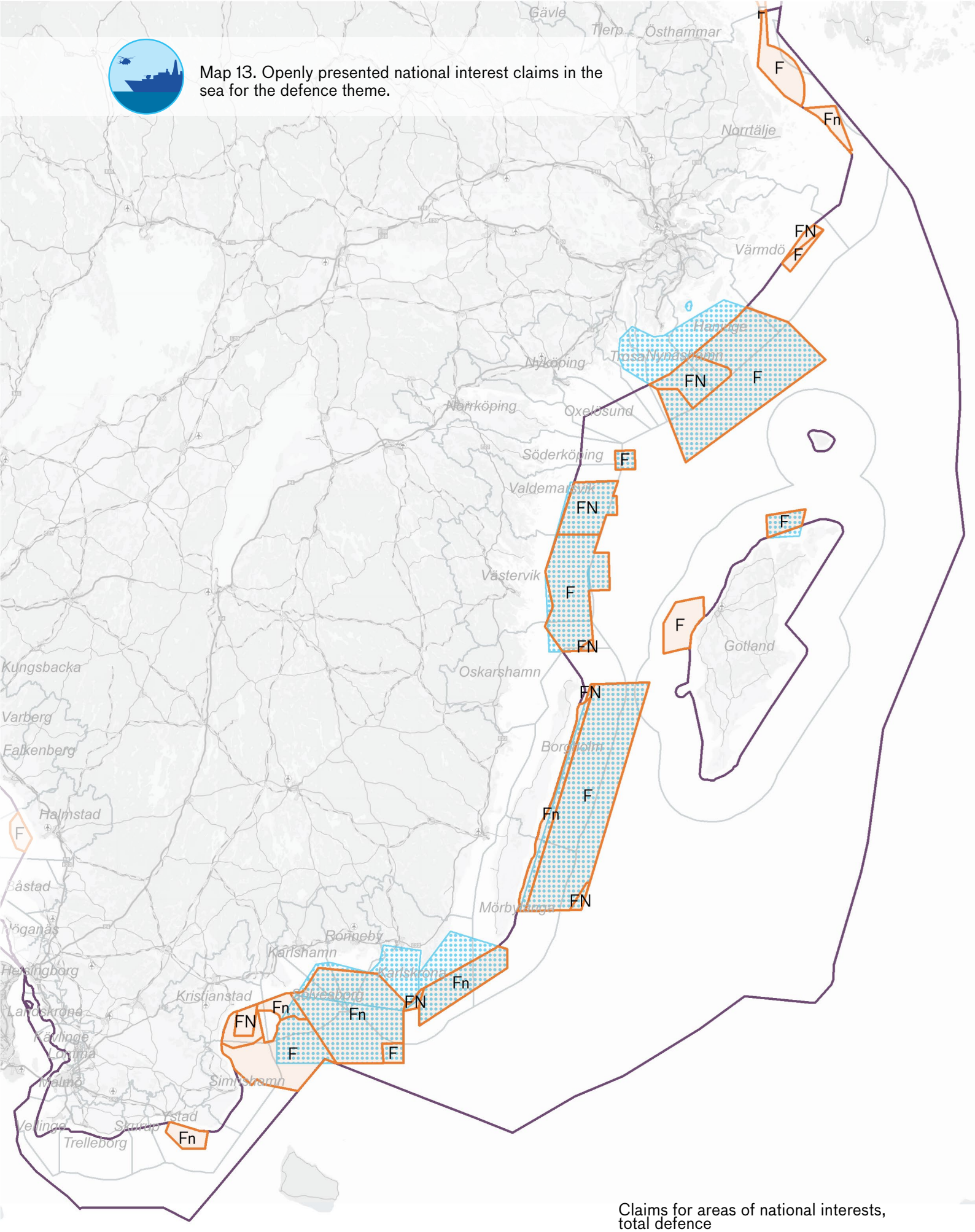
Total defence facilities, Chapter 3 § 9 of the Swedish Environmental Code

Areas that are of national interest due to them being needed for total defence's facilities must be protected from measures that can substantially impede the creation or use of the facilities.

Civil component of total defence

The Swedish Civil Contingencies Agency (MSB) has responsibility to identify national interests for the civil components of total defence. Areas that relate to marine spatial planning will form a basis in the upcoming planning cycles.

Map 13. Openly presented national interest claims in the sea for the defence theme.



Claims for areas of national interests, total defence

Excercise area (Ch. 3 §9 Env. Code)

Defence in the marine spatial planning

Use: Defence, F

N

0 20 40 80 km

Havs- och Vattenmyndigheten, HaV

Military component of total defence
The Swedish Armed Forces point out national interest claims and their areas of influence and other areas of significance to the military component of the military component of total defence. Within the areas pointed out as national interests by the Swedish Armed Forces, there are the training and artillery ranges, technical facilities and military airbases. Value descriptions are on the Swedish Armed Forces' website. The Swedish Armed Forces' national interests are comprised in part of national interests that can be presented openly and national interests that cannot be presented openly for reasons of secrecy. Even the areas that in consideration of military secrecy cannot be presented openly are taken into account in the marine spatial planning.

In addition to national interest claims, there are other areas that the Swedish Armed Forces consider to be of major public interest. Such areas may be confidential.

Description of national interest categories in total defence's military component and influence areas

National interest marine training area
In a marine training area, operations are conducted both at sea and in the air. Temporary closure of areas occurs. Permanent facilities are at risk of damaging the national interest.

National interests with influence areas; impact on surroundings
National interest areas (training and artillery ranges or airbases) that have an influence area linked to them in the form of noise and risk areas. Temporary closure of areas occurs.

Areas with a particular need to be obstacle-free (influence areas)
Influence areas for military artillery ranges where the actual function of military activities in the form of e.g. target planes and other joint exercises between land and air constitute the national interest. Within such an area, tall objects can entail damage to the activities the Swedish Armed Forces conduct.

The influence area can also concern coastal weather radar. Within the weather radar's influence area, tall objects can be a disturbance. It is prohibited to erect wind power stations closest to the weather radar. In the surrounding area, an assessment of the impact can be made in individual cases.

Stop areas for tall objects (influence area)
Influence areas for military airbases, where the actual function of military aviation activities constitutes the national interest. Within these areas, no new tall objects can be built considering applicable rules on operating security and the Swedish Armed Forces tactical behaviour in the airspace.

MSA area (influence area)

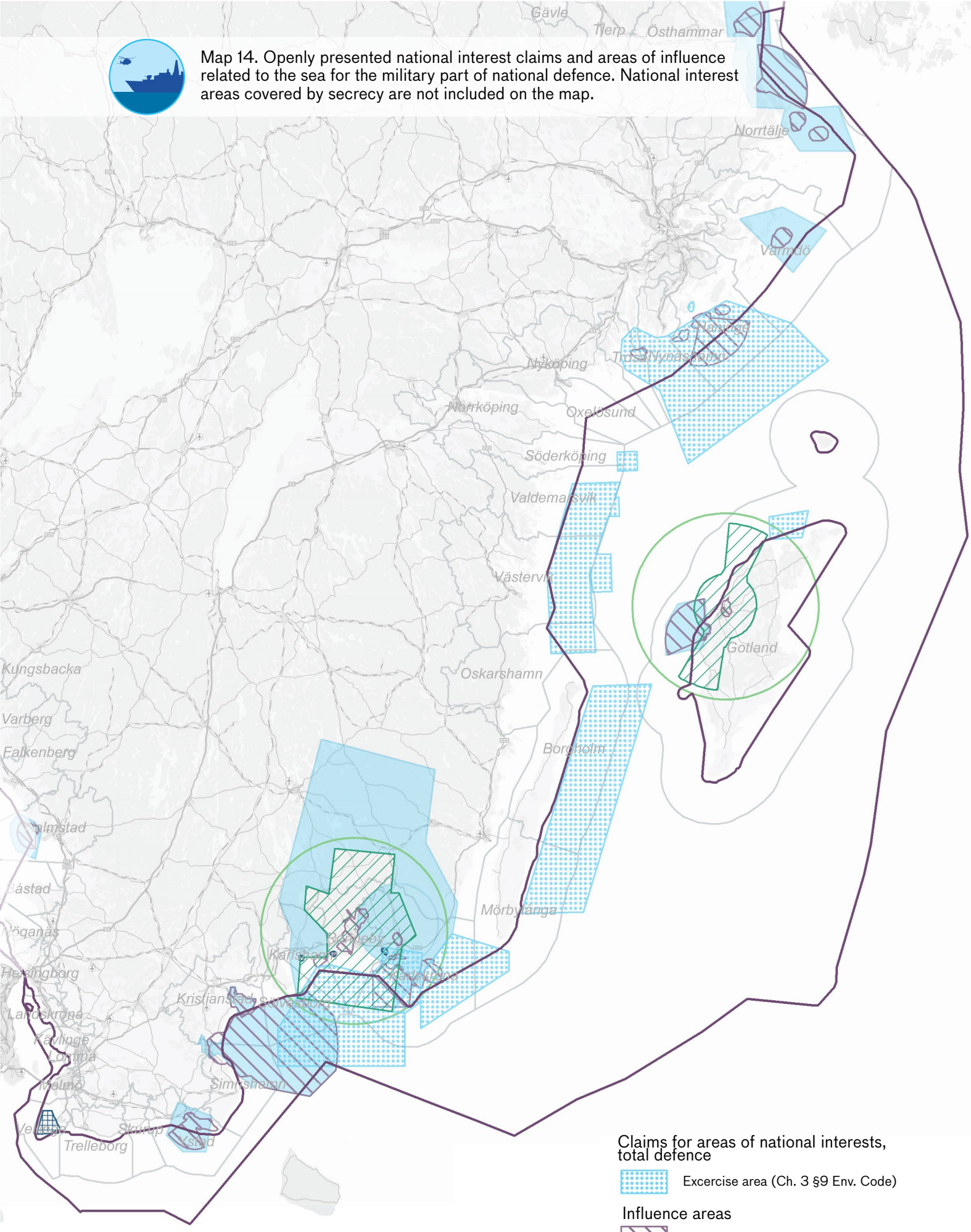
MSA areas (Minimum Safe Altitude, military definition) are an influence area for airspace and entail a protection of all air traffic at take-off and landing. Such an area constitutes the area within which there are set heights for the highest permitted objects that can occur in the area around an airport. The military MSA area is 46 kilometres, the civil MSA area is 55 kilometres. Permanent installations that are taller than the set MSA height are not permitted.

Other influence area

The influence areas for national interests that cannot be presented openly. Here, individual reviews are done in each case for both tall objects and other establishment to assess if a risk of conflict arises. Permanent installations should be avoided.

Read more about national interest claims on the Swedish Armed Forces website.

Map 14. Openly presented national interest claims and areas of influence related to the sea for the military part of national defence. National interest areas covered by secrecy are not included on the map.



Claims for areas of national interests, total defence

Excercise area (Ch. 3 §9 Env. Code)

Influence areas

Surrounding impact area

Areas with a need to be obstacle free

Stop high objects

MSA-area

Other influence area

N

0 20 40 80 km

Havs- och Vattenmyndigheten, HaV

Impact on permanent installations

In some areas, establishment of wind power stations and other tall objects is at risk of having a significant negative impact on military interests and appointed national interests for the military component of total defence. The more detailed impact may in some cases not be described openly considering that the information is confidential. In general, wind power stations can be said to entail harm to military interests among other things in the form of:

- impact on technical systems and the possibility of using them to implement surveillance of Sweden's territory,
- limitations to the possibility of training and practising the abilities that are a prerequisite for the Swedish Armed Forces to achieve operational effect,
- limitations to the possibility of protecting the country's territory in a possible future conflict in strategically important areas.

Establishment of wind power stations and other tall objects may in some areas entail conflicts with national interests for the military component of total defence. Facilities for energy extraction may be compatible with the military interests, but the exact design of wind farms and placement of individual wind power stations needs to be assessed in each individual case to investigate the exact effect on the military interests.

Legal prerequisites

Defence activities in the territorial sea must comply with the general rules of consideration in Chapter 2 of the Environmental Code. In general, the activities also need to be reviewed for permits under the Environmental Code. This might be an issue for artillery ranges that are environmentally hazardous activities subject to permits or registration. Blasting in water areas can also be viewed as water operations subject to permits or registration.

According to Chapter 3 Section 10 of the Environmental Code, in a decision between two incompatible national interests, priority shall be given to the defence interest if an area or part of an area is needed for a national defence facility.

Interaction between land and sea

The Swedish Armed Forces' interest areas in the sea are linked to land-based areas for defence activities and consideration is taken to the aviation approach areas, etc.

International interaction

Defence issues in marine spatial planning are addressed nationally and are not part of the collaboration with other countries. Possible impact on the interests of total defence is taken into account when cross-border planning issues in other sectors are addressed.

The Future

In June 2015, the Swedish Parliament decided that Sweden's military operational ability must increase. A greater ability is achieved through, among other things, more exercises in the marine areas. It is expected that the Swedish Armed Forces will increase their use of national interest claims areas linked to the sea.

The defence policy situation has changed in recent years as has the situation for civil defence, which means that the freedom to act is important. An important issue is to keep shipping lanes open, both main shipping lanes and alternative shipping lanes.

The development is moving towards mobile technical installations, which means that it is becoming more difficult to predict where the defence activities may be disrupted. The technology is becoming more sensitive to disruption and disruption from permanent installations in the sea is assessed to increase.

Ecosystem services

Activities in defence entail a physical impact on living environments, noise and the spread of environmental toxins, which increases the load on regulating ecosystem services. Defence activities may also affect other interests' possibilities of using ecosystem services, such as access to natural and cultural environments, recreation, tourism and fishing.

Read more about conditions in the marine spatial planning current status description, roadmap, the thematic report on defence and security, and the report on ecosystem services from Swedish seas that you can find at www.havochvatten.se.

Relevant environmental aspects

Activities and operations in this theme can be related to various impacts on the environment, theme areas in the Marine Strategy Framework Directive and various environmental quality objectives. The relationships, which are shown in the table below, are important in an assessment of the theme's environmental impact.

Activity	Type of potential impact or pressure	Theme area Marine Strategy Framework Directive (descriptors)	Environmental quality objectives
Artillery range/training area	Underwater noise and impact on water environments	D1 Biodiversity D8 Contaminants D10 Marine litter D11 Introduction of energy	Balanced seas and vibrant coastal areas and archipelagos A rich plant and animal life Toxin-free environment
Dumped ammunition	Introduction of hazardous substances	D1 Biodiversity D8 Contaminants	Balanced seas and vibrant coastal areas and archipelagos A rich plant and animal life Toxin-free environment

Table 16. The relationship between defence and relevant environmental aspects

6.4 Storage and extraction of materials

Storage and extraction of materials encompasses carbon dioxide storage and sand extraction. Carbon dioxide storage means that carbon dioxide from emissions to the air is separated and stored in geological formations deep below the seabed. Sand extraction means that financially interesting fractions of sand and gravel are extracted from the seabed to be used mainly in the production of building materials, for filling or for coastal replenishment measures.

Today, no carbon dioxide storage is done in Sweden. The potential for future storage is being investigated.

Sand extraction only takes place to a limited extent. The potential for future sustainable extraction of marine sand and gravel has been investigated and a number of interesting areas are presented as the most suitable use in the marine spatial plans for the Baltic Sea and the Gulf of Bothnia[57].

There is no Swedish interest in or legal possibility of bringing about the extraction of fossil fuels in Swedish territorial waters or Sweden's exclusive economic zone. In 2009, the Government rejected a request for an extension of exploration permits for prospecting of oil in the south-eastern Baltic Sea[58]. Sweden has also not incorporated the parts of the EU Safety of Offshore Oil and Gas Operations Directive[59] that concerns permits for gas and oil extraction.

Activities in extraction and storage of materials may entail a physical impact on habitats of species.

57 *Geological Survey of Sweden. Report 2017:05. Förutsättningar för utvinning av marin sand och grus i Sverige. [Conditions for extraction of marine sand and gravel in Sweden.]*
58 Supreme Administrative Court, 2009-3771 Supreme Administrative Court ruling on 04/11/2009, Case no. 3771-3772-09 Stockholm
59 *Directive 2013/30/EU of the European Parliament and of the Council*

Carbon dioxide storage

According to calculations there is a significant capacity for carbon dioxide storage in Sweden and within the Swedish exclusive economic zone. However, more data and research is needed before any areas for storage can be proposed in the marine spatial plan. A preparedness for potential future carbon dioxide storage is created since it is possible to point out such areas in the marine spatial plan at a later phase.

Public interests and other planning conditions

Areas for geological storage of carbon dioxide, Chapter 4 Section 9 of the Environmental Code

In the future, carbon dioxide storage may become relevant in areas where the conditions allow it. In a report, the Geological Survey of Sweden indicated areas for further investigation of the suitability for carbon dioxide storage[60]. The report shows that there might be a significant potential for storage in southern Sweden. The most and largest possible storage locations have been found in the Baltic Sea. The formations, which together extend under the seabed from east of Gotland through the southern Baltic Sea and up through Öresund, have a combined estimated storage capacity of 3400 megatons of carbon dioxide. The storage unit that the Geological Survey of Sweden has deemed most suitable to date is called the Faludden and is located south-east of Gotland.

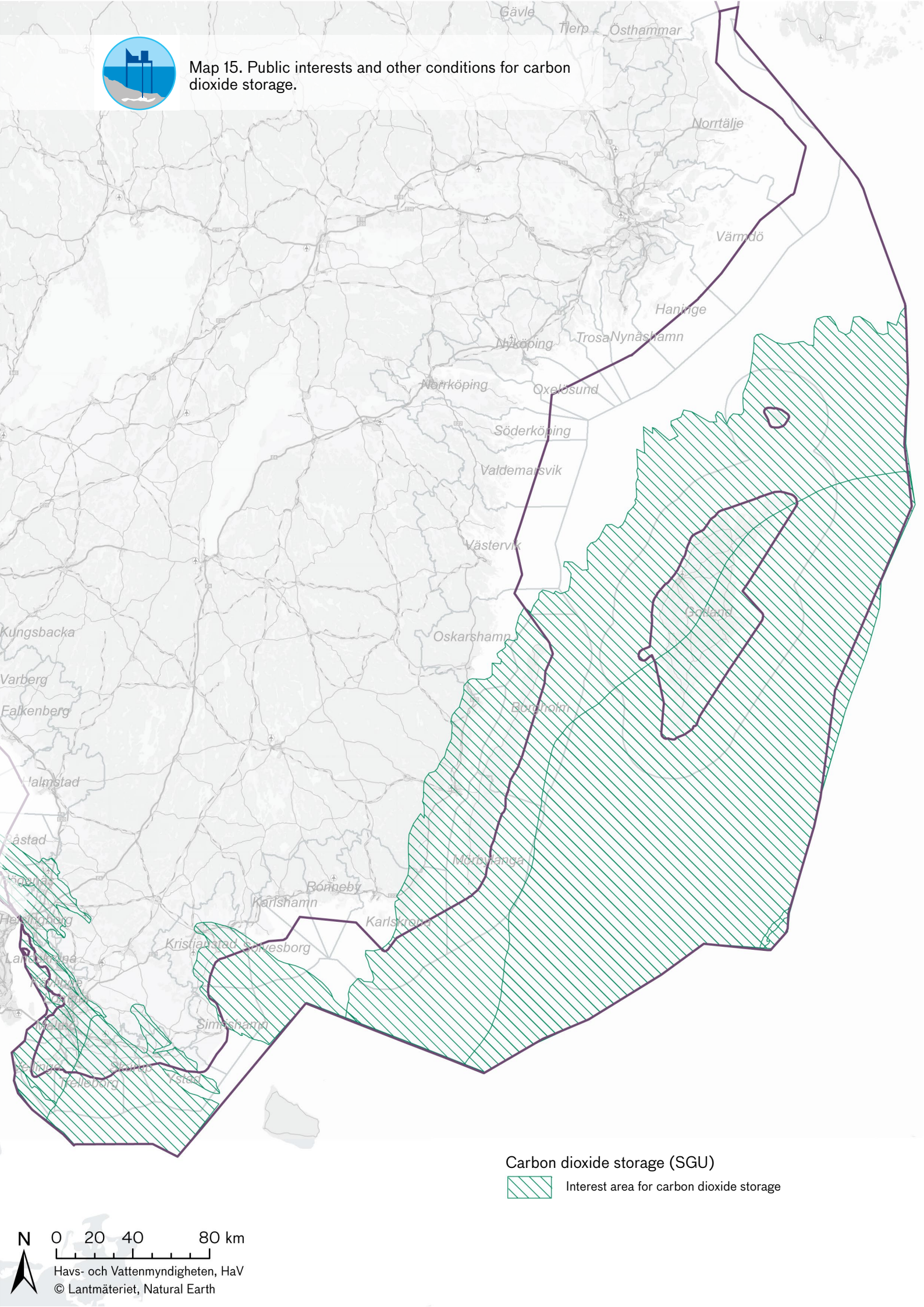
The planning objective related to carbon dioxide storage is to: *Establish preparedness for the possible future extraction of minerals as well as for carbon dioxide storage*

Legal prerequisites

Geological storage of more than 100,000 tonnes of carbon dioxide may only take place in the Swedish exclusive economic zone and in public waters of the territorial sea from one nautical mile outside the baseline , according to the Ordinance on geological storage of carbon dioxide (2014:21), in other words corresponding to the area designated for marine spatial planning.

To obtain a permit, a permit review is required under the Environmental Code by the Land and Environmental Court and a permit is required from the Government under the Continental Shelf Act.

60 *Geological Survey of Sweden. Report 2016:20. Koldioxidlagring i Sverige – sammanställning och resultat från NORDICCSGU. [Carbon dioxide storage in Sweden – compilation and results from NORDICCSGU.]*


Map 15. Public interests and other conditions for carbon dioxide storage.
Gävle
Tierp
Östhammar
Norrtälje
Värmdö
Haninge
Nyköping
Trosa
Nynäshamn
Norrköping
Oxelösund
Söderköping
Valdemarsvik
Västervik
Gotland
Oskarshamn
Kungsbacka
Varberg
Falkenberg
Borgholm
Mörbylånga
Karlshamn
Karlskrona
Kristianstad
Simrishamn
Ystad
Carbon dioxide storage (SGU)
Interest area for carbon dioxide storage
N
0 20 40 80 km
Havs- och Vattenmyndigheten, HaV
© Lantmäteriet, Natural Earth

Coastal areas and neighbouring countries

Altogether, the Nordic countries have a high theoretical storage capacity, corresponding to storage of more than 500 years of emissions of current levels[61]. Research and data collection on the large-scale storage of carbon dioxide is conducted through international cooperation.

The Future

Technical development is considered to be crucial to what role carbon dioxide storage will have in the future and Sweden's ambitions of minimising climate change. The possibility of carbon dioxide storage will be reflected in future marine spatial plans.

Read more about conditions in the marine spatial planning current status description, roadmap, and the report on ecosystem services from Swedish seas that you can find at www.havochvatten.se.

61 *Geological Survey of Sweden. Report 2016:20. Koldioxidlagring i Sverige – sammanställning och resultat från NORDICCSGU. [Carbon dioxide storage in Sweden – compilation and results from NORDICCSGU.]*

Sand extraction

Extraction of sand and gravel may be of major significance to the production of building materials and to coastal replenishment measures. When these geological resources are extracted on land, it entails negative consequences to the drinking water supply.

Uses in the marine spatial plan for the theme:

- Sand extraction

The areas in the planning map where sand extraction is indicated as a use are based on areas that are considered to be of significant public interest for the extraction of sand.

The planning objective is to *Establish preparedness for the possible future extraction of minerals as well as for carbon dioxide storage.*

National interest claims

No national interest claims have been pointed out for the extraction of marine sand and gravel by the Geological Survey of Sweden, as the responsible authority.

Public interests and other planning conditions

Pursuant to Chapter 3, Section 7, Paragraph 1 of the Environmental Code, land and water areas that contain valuable substances or materials shall to the furthest possible extent be protected from measures that can substantially impede their extraction.

Nine different areas have been proposed as being of interest for the extraction of marine sand and gravel in the Government assignment that the Geological Survey of Sweden conducted together with SwAM in 2017[62]. Six of these areas are in the marine spatial plan for the Baltic Sea.

Four of the nine areas are deemed to be most suitable from a sustainability perspective. The assessment is done based on geological and ecological criteria. Three of these most suitable areas are in the Baltic Sea, of which one, Sandflyttan off of Falsterbo, is now within a Natura 2000 protection area.

In the report to the Government from the Geological Survey of Sweden, examples are provided of prerequisites that must be met for extraction activities to be able to begin. Before extraction activities can be established, an area must be carefully evaluated in terms of physical, archaeological, and biological aspects, among other things. To ensure that negative effects do not arise from a potential extraction activity, it is necessary that the activity is continuously evaluated using suitable control programmes. In the presentation, there are also proposals on guidelines for how extraction activities should be carried out.

In terms of sand extraction in a Natura 2000 area, operations or measures may only take place if they are consistent with Chapter 7. Sections 28a-29 of the Environmental Code.

Legal prerequisites

Depending on the scope, the Government or the Geological Survey of Sweden (SGU) issues permits for sand, gravel and stone extraction within public waters on the continental shelf according to the Continental Shelf Ordinance. SGU also supervises compliance to regulations and terms for permits according to the Continental Shelf Act (1966:314).

62 *Geological Survey of Sweden. Report 2017:05. Förutsättningar för utvinning av marin sand och grus i Sverige. [Conditions for extraction of marine sand and gravel in Sweden.]*

Map 16. Public interests and other conditions for sand extraction.

Gävle
Tierp
Östhammar
Norrtälje
Värmdö
Haninge
Nynäshamn
Trosa
Nyköping
Norrköping
Oxelösund
Söderköping
Valdemarsvik
Västervik
Gotland
Oskarshamn
Borgholm
Mörbylånga
Kungsbacka
Varberg
Falkenberg
Halmstad
Båstad
Höganäs
Helsingborg
Landskrona
Kävlinge
Lomma
Malmö
Simrishamn
Ystad
Skurup
Trelleborg
Hässleholm
Bromölla
Karlshamn
Karlskrona
Kristianstad
Sölvesborg

Interest areas sand extraction (SGU)

- Most suitable areas
- Other potential areas

Sand extraction in the marine spatial plan

- Sand extraction

N

0 20 40 80 km

Havs- och Vattenmyndigheten, HaV

Interaction between land and sea

Sand and gravel are moved through natural processes and there is often a strong connection between beaches and the sand or gravel found in deeper waters off of the coast. Sand that disappears from the coast through erosion caused by storms, currents or hydrographic changes ends up in deposits in deep waters or moves back and forth in the area. Sand extraction close to the coast can therefore in some cases reduce the amount of sand at the beach and also accordingly impact an area's value for housing and recreation.

International interaction

Sand extraction takes place in several of Sweden's neighbouring countries. Above all, sand extraction in southern Kattegat and Öresund takes place close to Swedish waters.

The Future

From several areas, interest is growing in investigating the possibilities of using sand, gravel and rock from the continental shelf for construction, infrastructure and coastal replenishment measures. The need for coastal replenishment measures may increase with coastal exploitation and climate changes. These problems have thus far been especially clear in south-eastern Skåne. Sand and gravel extraction on land increasingly comes into conflict with the drinking water supply, and imports of marine sand entail an environmental impact that is difficult to control.

The areas that are indicated as suitable for sand extraction in the marine spatial plan are not clearly delimited. What parts of the areas that can enable sustainable extraction must be investigated further, based on the report prepared by the Geological Survey of Sweden and SwAM[63].

Relevant environmental aspects

Activities and operations in this theme can be related to various impacts on the environment, theme areas in the Marine Strategy Framework Directive and various environmental quality objectives. The relationships, which are shown in the table below, are important in an assessment of the theme's environmental impact.

Activity	Potential impact or pressure	Theme area Marine Strategy Framework Dir. (descriptors)	Sweden's environmental quality objectives
Quarries: Sand, gravel, and shells	Physical damage/ loss and disruption	D1 Biodiversity D6 Seabed integrity D7 Hydrographical conditions	Balanced seas and vibrant coastal areas and archipelagos A rich plant and animal life

Table 17. The relationship between extraction and relevant environmental aspects

Read more about conditions in the marine spatial planning current status description, roadmap, and the report on ecosystem services from Swedish seas that you can find at www.havochvatten.se.

63 *Geological Survey of Sweden. Report 2017:05. Förutsättningar för utvinning av marin sand och grus i Sverige. [Conditions for extraction of marine sand and gravel in Sweden.]*

6.5 Nature

The sea is an indispensable resource for mankind and society. The marine ecosystems offer a rich range of goods and services that mankind is dependent on, so-called ecosystem services. Examples are food, oxygen and cultural experiences that contribute to people's well-being. Vigorous ecosystems are therefore the foundation of sustainable use of the sea's resources.

The sea's ecosystems are complex and have diminished resilience due to anthropogenic pressures. This means that the long-term ability of the system to handle changes and continue to develop has decreased. Mobility in organisms and in the marine system means that impact in one place can spread and have effects on other places. How the ecosystem is affected depends on the collective effect of various types of loads.

Protection of marine environments is one of the tools for achieving good environmental status in the sea and through support from the marine spatial planning can contribute to achieving goals for the entire marine environment. Through the marine spatial planning, valuable areas for marine organisms and birds, so called green infrastructure, can be secured. It also contributes to strengthening distribution corridors which create conditions for achieving the milestone of an ecologically representative and very cohesive network of protected areas.

The planning objective related to nature is to: *Create conditions for marine green infrastructure and the promotion of ecosystem services.*

Uses in the marine spatial plan for the theme:

N **Nature**

The areas in the planning map where nature is indicated as a use are either:

- protected according to the Natura 2000 legislation,
- areas where marine area protection is planned,
- areas that are covered by other marine area protection,
- or areas that are covered by national interest claims for nature values.

Particular consideration to high nature values – n also relates to the theme. Particular consideration to high nature values is based on areas that are of public interest of a material significance for nature as well as spawning and nursery areas that are national interest claims for commercial fisheries.

National interests

Natura 2000 areas, Chapter 4 Section 8 of the Swedish Environmental Code

Natura 2000 is a network of valuable nature areas with species or nature types that are in particular need of protection from a European perspective. The network exists to increase the possibilities of preserving plant and animal life in Europe for future generations. Approved Natura 2000 areas are an important foundation for preserving a representative selection of natural environments in Sweden. In a Natura 2000 area, nature types should develop well and species should grow into vigorous stocks. It is prohibited to conduct activities without permission or implement measures that can substantially affect the environment in a Natura 2000 area.

The Natura 2000 areas are one of the bases for the use **nature.**

National interest claims

Nature conservation, Chapter 3, Section 6 of the Swedish Environmental Code

National interest claims for nature conservation at sea have been prepared based on such criteria as being undisturbed and number of unique, threatened or vulnerable types of nature or species.

The areas appointed as national interests for nature conservation have few equivalents in the region, in Sweden or internationally due to especially high nature values. The appointed areas should together represent the main features of Swedish nature well. The areas should be protected from measures that can substantially harm their value.

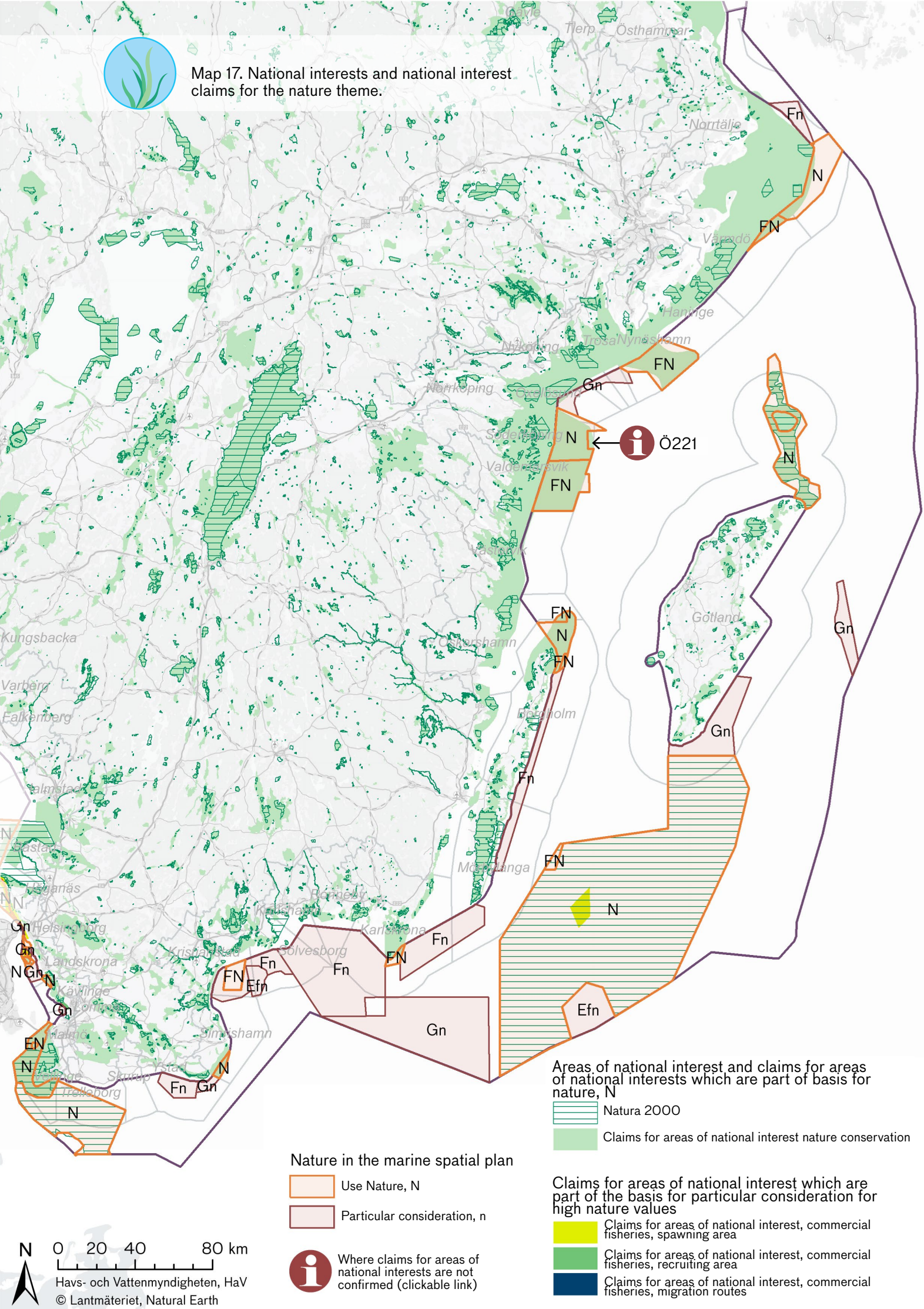
The areas with national interest claims for nature conservation are one of the bases for the use **nature.**

Commercial fisheries, Chapter 3, Section 5 of the Swedish Environmental Code

National interest claims for commercial fisheries are defined and delimited based on the areas' significance to specific fish species. Besides catch areas, spawning and nursery areas, as well as migration paths are also covered. In the Baltic Sea marine spatial plan, there are seven national interest claims for commercial fisheries that pertain to spawning and nursery areas.

The areas of national interest claims for commercial fisheries that pertain to spawning and nursery areas are one of the basis for *particular consideration of high nature values*.

Read more about national interest areas on the websites of the Swedish Environmental Protection Agency and the Swedish Agency for Marine and Water Management.


Map 17. National interests and national interest claims for the nature theme.
Ö221
Areas of national interest and claims for areas of national interests which are part of basis for nature, N
Natura 2000
Claims for areas of national interest nature conservation
Nature in the marine spatial plan
Use Nature, N
Particular consideration, n
Where claims for areas of national interests are not confirmed (clickable link)
Claims for areas of national interest which are part of the basis for particular consideration for high nature values
Claims for areas of national interest, commercial fisheries, spawning area
Claims for areas of national interest, commercial fisheries, recruiting area
Claims for areas of national interest, commercial fisheries, migration routes
N
0 20 40 80 km
Havs- och Vattenmyndigheten, HaV
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Public interests and other planning conditions

Protected marine areas according to Chapter 7 of the Environmental Code

Marine protected areas include nature reserves, national parks and biotope protection.

The areas with marine protected areas are one of the bases for the use **nature.**

Other bases and assessment of the areas with particular consideration to high nature values, n

Land and water areas that are especially sensitive from an ecological perspective shall to the furthest extent possible be protected from measures that can harm the natural environment according to Chapter 3 Section 3 of the Environmental Code.

The use **nature** is comprised of areas that are already covered by marine area protection in the form of e.g. Natura 2000, which is of national interest for nature conservation according to Chapter 3 Section 6 of the Environmental Code and/or is planned for marine area protection. The use **nature** accordingly does not cover all valuable or sensitive nature areas that should be protected according to the Environmental Code, the ecosystem approach and the objective of sustainable development. The marine spatial plans need to clearly present these other valuable and sensitive areas as well. Guidance on *particular consideration to high nature values* is used to show that all uses at the actual location need to show consideration of the high nature values. *Particular consideration to high nature values* is indicated for areas that have high or especially sensitive nature values compared with their surroundings.

The marine spatial plans do not specify what measures may be appropriate to fulfil the particular consideration. Appropriate measures can when necessary be specified by the Government or by other authorities both in permit reviews and in other management.

Despite earlier and on-going efforts within marine mapping, there is today substantial uncertainty about the nature values in the sea. Some areas can easily be pointed out as valuable or sensitive but a transparent and uniform process is required in order for identification of such areas to be comprehensive and accurate. Therefore, the identification of areas with *particular consideration to high nature values* was done based on a national analysis based on selected criteria.

The identification of areas with *particular consideration to high nature values* is based on a large amount of supporting information. However, the process and criteria should be adjusted and improved in pace with methods and the state of knowledge being improved.

The following documentation has been used to identify areas with *particular consideration to high nature values*:

- *Commercial fisheries' national interest claims regarding spawning and nursery areas.*

- *County Administrative Board*. Coastal county administrative boards' documentation on especially high nature values in the sea[64].

- *Green Map 2*. This documentation is an aggregation of nature values and shows important areas for bottom-dwellers, fish, marine mammals and sea birds. Green Map 2 shows if an area is important for at least three of the four categories[65].

- *Green Map 3*. This documentation is an aggregation of 32 different ecosystem components and shows what areas have the highest collective values. The 32 components include bottom environments, fish, marine mammals and sea birds. Green Map 3 identifies if an area has values that are markedly higher than their surroundings[66].

- *Symphony cumulative environmental impact*. This documentation shows the distribution of cumulative environmental impact in Sweden's seas. This documentation identifies areas that constitute the 10 per cent most affected areas in the marine spatial plans[67].

- *Symphony naturalness*. This documentation shows the distribution of cumulative environmental impact in Sweden's seas where particularly low environmental impact indicates naturalness on condition that the area at the same time has high ecological value. This documentation identifies the areas that constitute the 10 per cent least affected areas in the marine spatial plan if the area at the same time is identified according to the indicator Green Map 3[68].

Symphony is an assessment method that calculates the cumulative environmental impact from a spatial perspective. For every area in the MSP, an estimated value is given that describes to what extent people affect the marine environment. The method builds on three main components: maps of loads, maps of ecosystem components, and a table over how sensitive every ecosystem component is to every load.

Read more in *Symphony - Integrated planning support for national marine spatial planning based on an ecosystem approach.*

64 County Administrative Board. 2017. *Länsstyrelsernas redovisning av Uppdrag 2017-06- välj värdeområden.* [County administrative boards' report of assignment June 2017 choosing areas of value.]
65 Swedish Agency for Marine and Water Management. Report 2018:1. *Symphony - Integrerat planeringsstöd för statlig havsplanering utifrån en ekosystemansats.* [Symphony - Integrated planning support for national marine spatial planning based on an ecosystem approach.]
66 Geological Survey of Sweden. *Green Map based on Symphony ecosystem components.* 20/11/2017. Unpublished.
67 Swedish Agency for Marine and Water Management. Report 2018:1. *Symphony - Integrerat planeringsstöd för statlig havsplanering utifrån en ekosystemansats.* [Symphony - Integrated planning support for national marine spatial planning based on an ecosystem approach.]
68 Swedish Agency for Marine and Water Management. Report 2018:1. *Symphony - Integrerat planeringsstöd för statlig havsplanering utifrån en ekosystemansats.* [Symphony - Integrated planning support for national marine spatial planning based on an ecosystem approach.]

- *Uncertainty map*. This documentation shows the uncertainty in the environmental data that is included in Green Map 3 and Symphony. The category of a *good model* indicates low uncertainty while the category of a *weak model/extrapolation* indicates a high uncertainty[69].

- *HELCOM/OSPAR area protection*. Proposals on marine protected areas (MPA) pointed out by regional marine environment conventions[70].

- *Proposal on climate refuges, also known as climate refugia.* This documentation provides proposals on areas that should be protected to preserve key species in a future Baltic Sea. Climate change is expected to result in major changes in salinity and temperature, among other aspects[71].

- *Assessment of good environmental status in the sea.* This documentation provides an indication of which organism groups do not meet good ecological status under the *Marine Environment Ordinance* in different areas. The working material from SwAM's consultation regarding the initial assessment was used[72].

Areas are designated to be with *particular consideration to high nature values - n* if one or more of the following applies:

A. The area is *a national interest claim for commercial fisheries that pertains to spawning and nursery areas.*

B. The area has nature values or consideration needs confirmed multiple times. This criteria is met if at least two of the following documents have identified the area: *County administrative board, Green Map 2, Green Map 3, Symphony cumulative environmental impact, Symphony naturalness, HELCOM/OSPAR area protection.*

C. The area has certain nature values or consideration needs. This criteria is met if the County Administrative Board's documentation on its own if especially well-supported with data or if either of the documents *Green Map 3* and *Symphony cumulative environmental impact* have identified the area, at the same time that uncertainty is low according to the *uncertainty map*. This means that values that have been identified based on documentation with low uncertainty (meaning high certainty) can individually result in particu*lar consideration to high nature values* while less certain documentation needs to be confirmed from multiple sources (as per the point above).

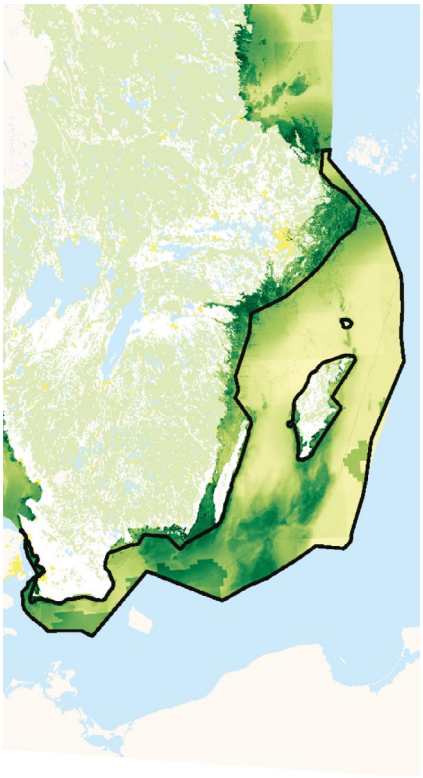


Figure 18: Map image from the Green Map that shows aggregated nature values

Figure 19: Map image from Symphony that shows the cumulative environmental impact

69 Swedish Agency for Marine and Water Management. Report 2018:1. *Symphony - Integrerat planeringsstöd för statlig havsplanering utifrån en ekosystemansats.* [Symphony - Integrated planning support for national marine spatial planning based on an ecosystem approach.]

70 HELCOM Maps & Data website and OSPAR website 2018.

71 Swedish Agency for Marine and Water Management. Report 2017:37. *Möjliga klimatrefugier i Östersjön baserat på två olika scenarier* [Possible climate refuges in the Baltic Sea based on two different scenarios]

72 Swedish Agency for Marine and Water Management Report 2017:32. *Consultation on initial assessment 2018, implementation of the Marine Environment Ordinance.*

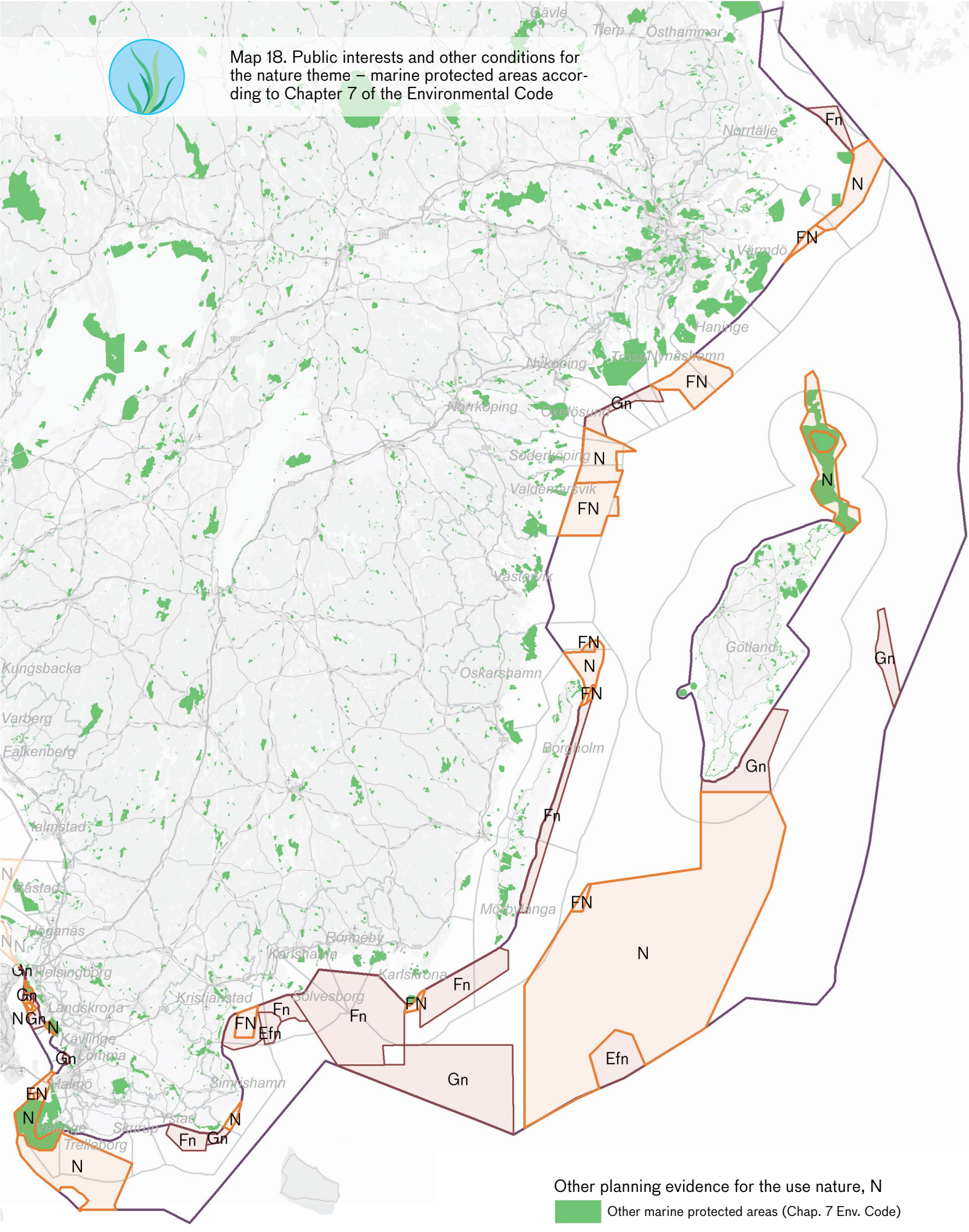
D. The area has especially high naturalness. This criteria is met if the indicator *Symphony naturalness* is shown at the same time that the uncertainty is low according to the *uncertainty map*. This means that areas that are among the 10 per cent least affected areas in the see meet the criterion if it can be confirmed at the same time that the uncertainty in the documentation is low.

E. The area has a need for consideration due to future threats. This criterion is met if the area has been proposed as a future climate refuge.

All of the areas with green infrastructure have not received the consideration designation *particular consideration to high nature values*, but rather only those that are in need of particular consideration. Areas with *particular consideration to high nature values* accordingly do not represent a mapping of green infrastructure, but rather are a result of trade-offs between interests and the areas' need for particular consideration based on existing knowledge about their marine nature values.

Monitoring and investigations at sea

The marine areas are currently being monitored and surveyed, in terms of oceanographic conditions, such as marine geology, depth, the water's physical and chemical characteristics and biodiversity, including fish stocks. There are special areas and locales in the marine spatial planning area where monitoring is done of sediment with regard to metals and organic toxins. The monitoring is local and concerns small areas. The areas for environmental monitoring are therefore not presented in the marine spatial plan.


Map 18. Public interests and other conditions for the nature theme – marine protected areas according to Chapter 7 of the Environmental Code
Gävle
Tierp
Östhammar
Norrtälje
Värmdö
Haninge
Nyköping
Trosa
Nynäshamn
Norrköping
Oxelösund
Söderköping
Valdemarsvik
Västervik
Oskarshamn
Kungsbacka
Varberg
Falkenberg
Borgholm
Gotland
Mörbylånga
Karlshamn
Karlskrona
Ronneby
Helsingborg
Landskrona
Kristianstad
Sölvesborg
Kävlinge
Lomma
Malmö
Simrishamn
Ystad
Skurup
Trelleborg
Fn
FN
N
Gn
Efn
Other planning evidence for the use nature, N
Other marine protected areas (Chap. 7 Env. Code)
Nature in the marine spatial plan
Use Nature, N
Particular consideration, n
N
0 20 40 80 km
Havs- och Vattenmyndigheten, HaV
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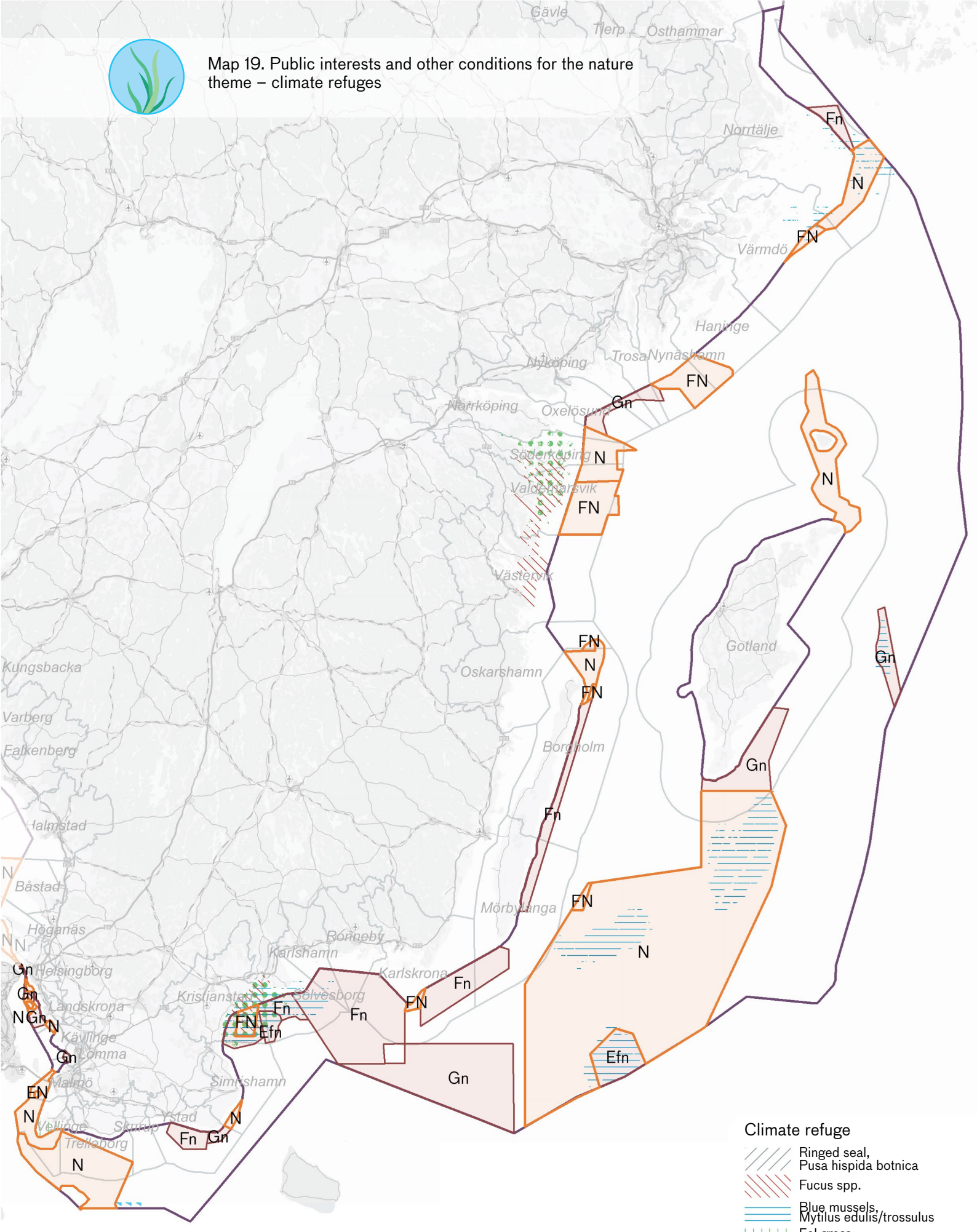
Map 19. Public interests and other conditions for the nature theme – climate refuges



Nature in the marine spatial plan

- Use Nature, N
- Particular consideration, n

Climate refuge

- Ringed seal, Pusa hispida botnica
- Fucus spp.
- Blue mussels, Mytilus edulis/trossulus
- Eel grass, Zostera marina
- Saduria entomon
- Herring
- Cod

N

0 20 40 80 km

Havs- och Vattenmyndigheten, HaV

Interaction between land and sea

There are clear connections between land and sea. Activities on land affect the natural environment in the sea. There happens through, among other things, run-off and emissions of both nutrients and pollutants.

The documentation for loads that has been used to analyse the cumulative environmental impact includes data for the impact from land, such as nutrients, metals and synthetic compounds

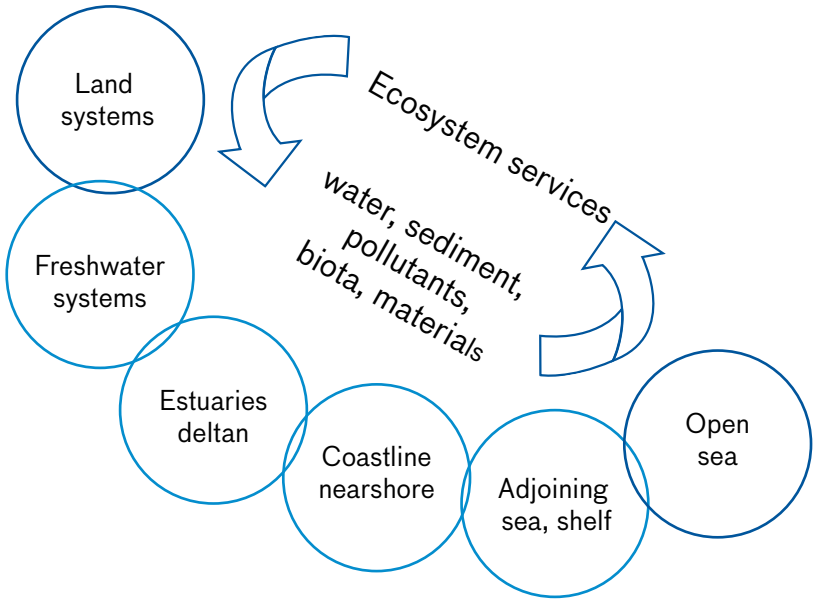


Figure 20: Everything is interrelated from source to sea. Marine spatial planning is a part of a larger context. The planning must take into consideration both how it affects and is affected by the surrounding world in a broader system perspective.

Particular consideration to high nature values and good environmental status

The selection of areas with *particular consideration to high nature values* has taken consideration of the environmental status of known species. In *proposals on the* initial assessment of the marine environment, it is reported that wading birds, grey seals, ringed seals, bottom-feeding birds and coastal fish do not achieve a good environmental status in either Skagerrak and Kattegat or the Baltic Sea.

In the Baltic Sea, harbour seals, porpoises, bottom-dwelling species, such as cod, or fish and habitats in open water, such as herring, also do not achieve a good environmental status. Good environmental status not being achieved makes it even more important to point out areas with *particular consideration of high nature values*.

International interaction

Administration and planning of the sea requires cooperation between neighbouring countries. In the Swedish marine spatial planning, discussions have been held with neighbouring countries regarding their planning and networks of protected areas.

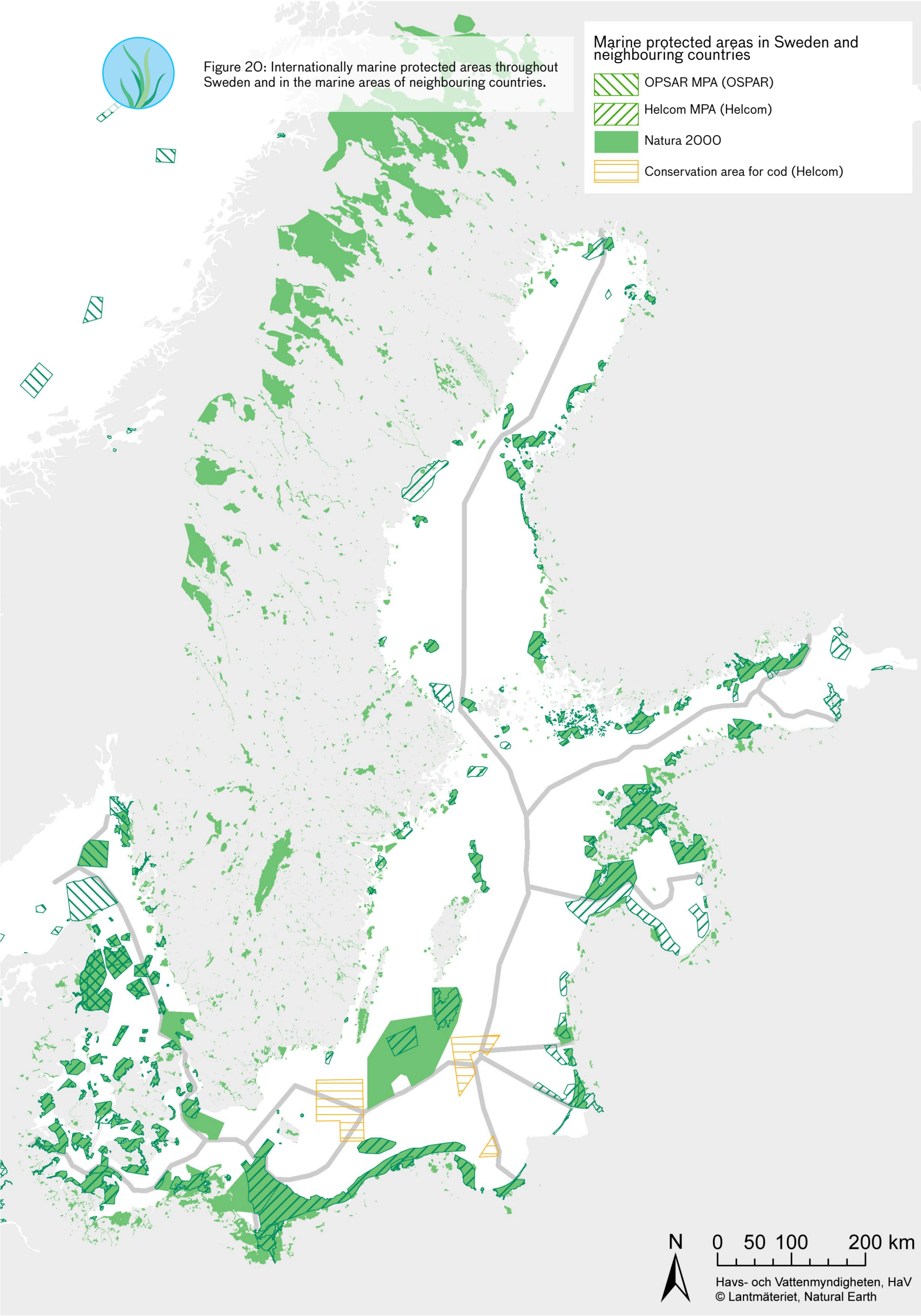


Figure 20: Internationally marine protected areas throughout Sweden and in the marine areas of neighbouring countries.

The Future

The management of marine protected areas is in an active phase. A national action plan for marine protected areas has been prepared and three regional plans for area protection are under development.

The county administrative board is responsible for preparing conservation plans for Natura 2000 areas. The conservation plans describe what species and habitats are to be protected. The use of the sea in and near existing and planned protected areas may not harm appointed protection values. Conservation plans are being prepared for recently established Natura 2000.

At the same time, the analysis of the status in the marine environment shows that many environments and species do not have a good environmental status. Sweden has an obligation to ensure that the marine environment achieves a good environmental status by 2020, which is in two years, according to the Marine Environment Ordinance[73] which is based on the Marine Strategy Framework Directive[74].

In addition, there are more long-term goals in the UN's Agenda 2030. The UN Global Sustainable Development Goal 14 on the seas and marine resources includes requirements on protection and restoration of coastal and marine areas. The objective is to preserve biodiversity and fishing resources, but also to strengthen resilience to climate change.

Maritime strategy

The Government's vision for development of the maritime industries presupposes an environmentally, economically and socially sustainable growth. The point of departure is that environmental and cultural values related to marine and coastal areas are preserved or restored to contribute to the development of the industries.

A strong growth in the maritime industries, increased claims to marine and coastal areas and an increased use of marine resources entails challenges to society. For example, this concerns the need to achieve a sustainable utilisation of land and sea, to contribute to climate and environmental objectives and to ensure possibilities of recreation as well as retain cultural values in marine and coastal areas.

The management of the sea and its resources forms the basis for the sea continuing to be able to provide goods, services and other value. A good environmental status according to the Marine Strategy Framework Directive must therefore be achieved. Pollutants need to be addressed at every source, both on land and in maritime activities. The coastal area protection should secure access to nature areas for recreation and tourism.

73 *Marine Environment Ordinance (2010:1341)*
74 *Directive 2008/56/EC of the European Parliament and of the Council*

Ecosystem services

Nature areas and values include basic structural and functional ecosystem services, such as living environments, spawning and nursery areas for fish, foodwebs and biodiversity. These supportive services create conditions for direct services, such as fish and shellfish for commercial and recreational fisheries, and natural environments for outdoor life and recreation that is significant to health and well-being. Natural environments can in turn contribute to regional development in, for example, sustainable tourism.

Nature also includes functions, such as regulation of environmental toxins, pollutants and nutrient salts and thereby also contributes to improved water quality. Ensuring these ecosystem services promotes both the rebuilding of commercial fisheries stocks and biodiversity. This can in turn contribute to a greater recovery capacity upon potential disruptions, such as pollutants, and climate changes.

So nature encompasses services that are largely conditions for a long-term sustainable management of the sea and to ensure long-term sustainable use of marine resources.

Continued work

Sweden is developing a marine environment management that uses the Marine Environment Ordinance as a point of departure. The marine spatial planning has a role to play in this context and will contribute to good environmental status being achieved and maintained. Pointing out areas with particular consideration to high nature values is a new addition in marine environment management.

As a part of the continued implementation of the Marine Environment Ordinance, SwAM will decide in 2018 on an initial assessment of the status of Swedish seas, i.e. how the sea is doing, how it is used and what loads have an impact on it. In 2018, the agency will make necessary changes to its regulations (HVMFS 2012:18) about what characterises good environmental status and environmental quality standards with indicators for the North Sea and Baltic Sea.

SwAM was commissioned by the Government to identify areas in 2018 that may constitute marine protected areas with strong protection without local human impact and prepare proposals on processes for the continued work on such areas[75]. In this work, the agency will pay particular attention to the action plan for marine area protection and a government assignment regarding conservation measures in terms of fishing in marine protected areas[76]; read more in Section 6.8 Commercial fisheries.

Read more about conditions in the marine spatial planning current status description, roadmap, the thematic report on nature, and the report on ecosystem services from Swedish seas that you can find at www.havochvatten.se.

75 *Ministry of the Environment and Energy, 21/12/2017. Public service agreement for the 2018 budget year for the Swedish Agency for Marine and Water Management*

76 *Ministry of the Environment and Energy, 19/10/2017. Assignment regarding conservation values with regard to fishing in protected areas*

SwAM has also been assigned by the Government during 2018 to propose necessary supplements and adjustments to the network of Helcom and Ospar Marine Protected Areas (MPAs). This work will focus on the areas that today are partly or entirely protected.

Regional action plans for green infrastructure are an important measure in the Government bill on a *Swedish strategy for biological diversity and ecosystem services*[77]. The county administrative boards must have prepared action plans for their counties by 2018. A framework for marine nature value assessment, called MOSAIC[78] has been developed, has been circulated for comment and has been tested in several counties. In the continued marine spatial planning process, MOSAIC documentation and regional action plans for green infrastructure that comprise marine areas will be included as planning evidence.

77 *A Swedish strategy for biological diversity and ecosystem services (Government bill 2013/14:141).*

78 Swedish Agency for Marine and Water Management. Förslag om ramverk för naturvärdesbedömning i marin miljö – MOSAIC [Proposed framework for nature value assessment in marine environments – MOSAIC], 20/06/2017

6.6 Transportation and communications

Transportation and communications refer to the four modes of transport road, rail, air and shipping, and communication cables for telecommunication and data traffic. Shipping is a global sector of considerable significance to Sweden, that concerns more than 90 per cent of our exports and imports by volume[79]. The vessels mainly move in an extensive network of shipping lanes and shipping routes in Sweden's seas and major lakes. Shipping has an extensive need for flexibility in terms of area for safe and efficient transports, while only a few roads and railways have claims in the sea through bridges and ferry connections. Air traffic has claims to the airspace over certain parts of the sea as no buildings taller than 300 metres may be built in approach areas (Minimum Sector Altitude, MSA areas, civil definition).

Uses in the marine spatial plan for the theme:

Shipping

Investigation areas, shipping

The areas in the planning map where shipping is indicated as a use are either areas covered by national interest claims for communication and shipping or areas that are considered to be of significant public interest for commu-

The planning objectives that relate to transportation and communication are to: Create conditions for sustainable shipping and Create conditions for good accessibility.

Read more about interest claims on the websites of the Swedish Transport Administration and the Swedish Post and Telecom Authority.

National interest claims

Facilities for communications, Chapter 3 Section 8 of the Swedish Environmental Code

Existing and planned facilities for shipping, ports, roads, railways and aviation are national interest claims for the facilities of the modes of transportation.

No national interest claims have been pointed out for sea-based data and telecommunications.

Read more about terms in the Swedish Maritime Administration's Glossary and concept diagram - Shipping lanes and ports

79 Swedish Transport Administration. 2013. *Kunskaps- och planeringsunderlag för en nulägesbeskrivning av havet.* [Knowledge and planning documentation for a current status description of the sea.]

Map 20. National interest claims for the transportation and communications.

Claims for areas of national interest, communication (Ch.3 §8 Env.Code)

- Port, existing
- Railroad, Öresund bridge
- Railroad, future Helsingborg-Helsingör
- Shipping: Shipping routes inc. buffer zones
- Shipping, deep and protected areas
- Shipping, planned/future shiping lane incl. buffer zones
- Aviation: MSA-area

Transports in the marine spatial plan

- Use Shipping
- Investigation areas, Shipping

N 0 20 40 80 km

Havs- och Vattenmyndigheten, HaV

Public interests and other planning conditions

Other suitable areas for shipping

During the marine spatial planning process, the transport authorities have prepared supporting evidence for other especially suitable areas for shipping in addition to the national interest claims that formed the basis for the use shipping.

About routing systems

Routing systems are intended to reduce the risks of accidents. The term routing system encompasses traffic separation schemes (TSS), one- and two-way lanes, recommended lanes, deep water lanes and prohibition areas.

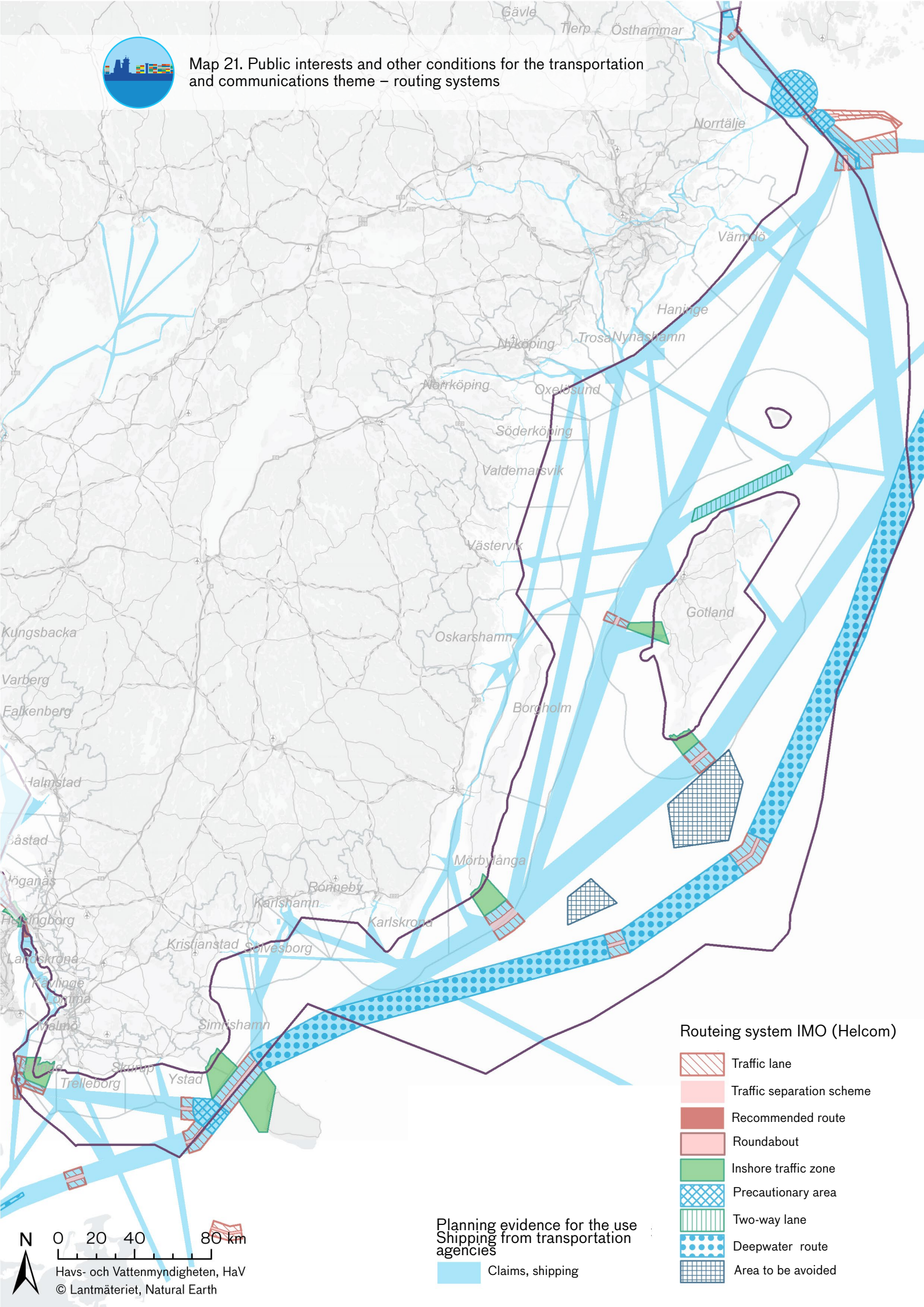
The UN International Maritime Organization (IMO) is the international body that can establish and adopt regulations regarding routing systems for international shipping. Routing systems are recommended, but may be made compulsory through IMO decisions. These changes are negotiated with all member countries in IMO by the Swedish Transport Agency, which on behalf of the Swedish Government represents Sweden in the negotiations.

Legal prerequisites

In the territorial sea, Sweden has sovereignty, which implies the unlimited right to regulate various activities, with the exception of other states' right of innocent passage with vessels. Sweden has a right to regulate traffic within the territorial sea by setting shipping lanes and establishing traffic separation schemes. However, this right must be exercised in consideration of IMO's recommendations, among other things.

The vessels of other countries have the right to travel within Sweden's exclusive economic zone. Within the exclusive economic zone, the coastal state has limited possibility to legislate in order to e.g. protect the marine environment due to IMO norms. Changes in international shipping lanes for environmental reasons are nonetheless possible if they are supported by the neighbouring countries and approved by IMO

Map 21. Public interests and other conditions for the transportation and communications theme – routing systems

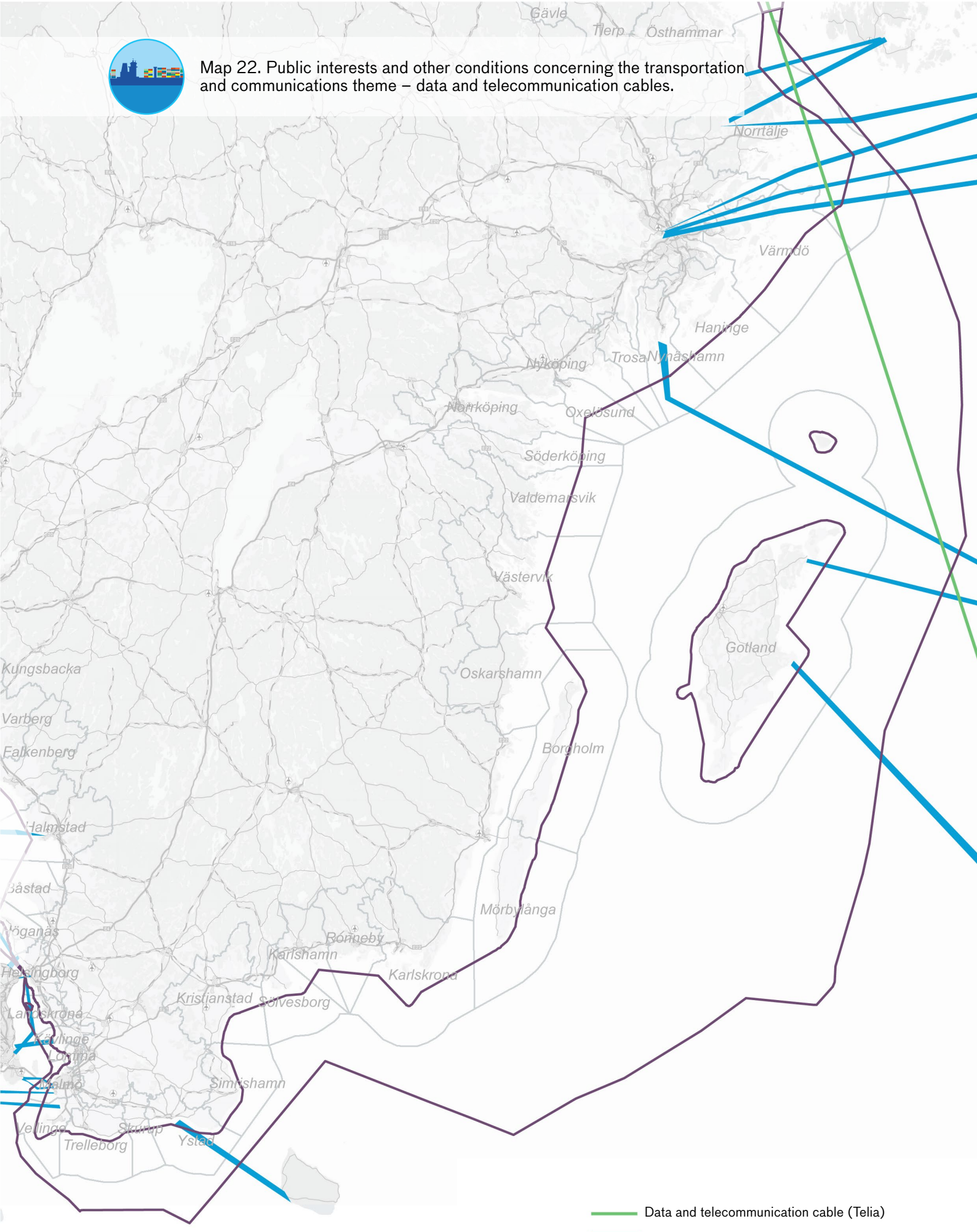


Havs- och Vattenmyndigheten, HaV

Cables for data and telecommunications

Society's dependence on the Internet is constantly growing, as is the need for communication between Sweden and other countries. The majority of this communication with other countries takes place over cables in the sea.

Even if the transmission capacity in the cables is growing, more cables are needed to create space and security in the networks.



Map 22. Public interests and other conditions concerning the transportation and communications theme – data and telecommunication cables.

Havs- och Vattenmyndigheten, HaV

Interaction between land and sea

In the planning process, the land locations connected to existing or planned traffic nodes, such as roads and railways over bridges or ferry connections have been taking into account. Moreover, the national interest areas for shipping include approaches and fairways to and from ports. Sweden's ambition to increase domestic and locally bound as well as coastal and lake shipping can entail greater use of shipping lanes close to and along the coast in the long term, which is taken into account in the plan through adequate areas for shipping.

International interaction

Shipping lanes and traffic separations are largely shared for Sweden and Denmark, but large international shipping lanes also go through Swedish waters from Gotland to Skåne. During planning, dialogue has been held with neighbouring countries regarding the shipping areas. Specific requests have come from Poland, Latvia and Germany regarding the coordination of the shipping routes, and from Finland regarding permanent connections between our countries and Åland. The issues will be addressed further during the marine spatial planning process and discussed in collaboration with Sweden's transportation authorities.

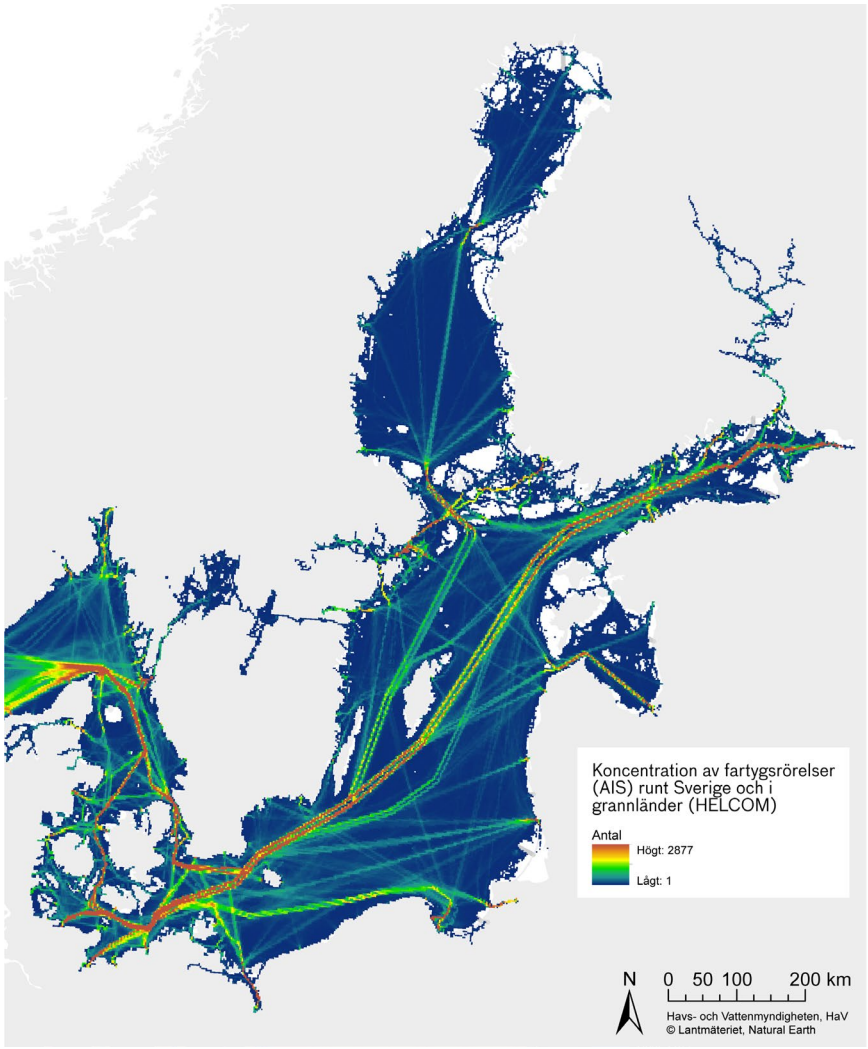


Figure 22: Concentration of ship movements (AIS) around Sweden and in neighbouring countries.

The Future

The area needed for communications on and across the sea is not expected to change in the foreseeable future, but preservation of existing areas is of major importance for securing navigability and accessibility. Changed trading patterns and requirements on new connections may, however, change the area needs in the long term.

New technology such as automated vessels and vessels with other designs and fuels are under development, but difficult to plan for at present. However, there may be a need to point out areas for pilot projects and test facilities. The amount of goods transported by sea is deemed to increase until 2030 and 2050[80].

A transition to more vessels that use liquefied natural gas (LNG), methanol and other alternative fuels can contribute to less dependence on oil. This may mean that some ports need to rebuild or that the traffic intensity to bunker ports with LNG will intensify.

Maritime strategy

In the strategy, the Government has pointed out *transport* including shipping companies, ports and logistics companies as one of the five industries that the strategy covers. To contribute to a more developed transport system and ultimately in order for Swedish industry to be able to maintain and develop its competitiveness, it is important that Swedish ports and Swedish shipping are competitive. In terms of the amount of goods transported in relation to its environmental impact, shipping is an environmentally efficient way of transporting goods. A transfer of goods from land to sea transports contributes to reducing both the environmental impact from the transport sector and congestion on land.

Ecosystem services

Transportation and communications can affect ecosystem services. Cables and lines may entail physical damage and wear to marine environments and cultural relics. Animal and bird life can also be affected. Shipping can entail noise, water flow and sediment impact, such as coastal erosion and emissions of hazardous substances and climate gases. It increases the need for regulation of, for example, air pollution and acidification substances, such as nitrogen oxides.

Read more about conditions in the marine spatial planning current status description, roadmap, the thematic report on shipping, and the report on ecosystem services from Swedish seas that you can find at www.havochvatten.se.

80 *Swedish Agency for Marine and Water Management. Report 2016:24. Sjöfart – rapport från havsplaneringens tematiska arbete från oktober 2015 till mars 2016. [Shipping – report from marine spatial planning thematic work from October 2015 to March 2016.]*

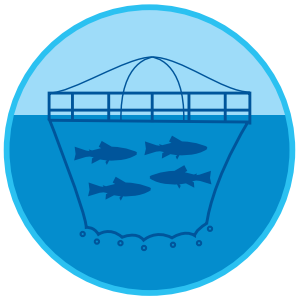
Relevant environmental aspects

Activities and operations in this theme can be related to various impacts on the environment, theme areas in the Marine Strategy Framework Directive and various environmental quality objectives. The relationships, which are shown in the table below, are important in an assessment of the theme's environmental impact.

Activity	Potential impact or pressure	Theme area Marine Strategy Framework Directive (descriptors)	Sweden's environmental quality objectives
Maritime transports	Underwater noise Air emissions such as acidifying, climate-impacting compounds, pollutants Introduction/relocation of foreign, potentially invasive species Coastal erosion	D1 Biodiversity D2 Invasive species D5 Eutrophication D8 Contaminants D11 Introduction of energy	Balanced seas and vibrant coastal areas and archipelagos A rich plant and animal life Only natural acidification Reduced climate impact Zero eutrophication, Toxin-free environment
Shipping lanes - dredging and dumping dredged materials	Physical damage, Biological disruption, Dispersion of pollutants	D1 Biodiversity D6 Seabed integrity D7 Hydrographical conditions	Balanced seas and vibrant coastal areas and archipelagos A rich plant and animal life

Table 18. The relationship between transportation/communications and relevant environmental aspects

6.7 Aquaculture and blue biotechnology



Aquaculture and blue biotechnology are examples of activities in what is called the blue economy. Aquaculture is the cultivation of all kinds of animals and plants in water such as fish, crayfish, clams and algae. Blue biotechnology is about exploring and utilising various marine organisms to develop new products. In the Baltic Sea, aquaculture is today only conducted close to the coast and not in the marine spatial plan area. There is ongoing research and technology development, both in terms of the use of various species and farming methods.

At present, there is no compiled mapping of possible geographic development areas for aquaculture in the planning area. In the national strategy for aquaculture, one of the objectives is that a majority of Sweden's municipalities identify and include suitable locations for aquaculture in their comprehensive plans. Such new supporting documentation together with developed cultivation technology may become planning conditions for aquaculture in the planning area in the long term. In this phase, the marine spatial plan creates preparedness for aquaculture, but assigns no specifically delimited areas intended for aquaculture in the marine spatial plan area.

For the Baltic Sea, aquaculture is especially interesting, and it also contributes to improved marine environments by, for example, e.g. nutrient uptake because eutrophication is present in the marine area. Sea mussels and algae are examples of species that might be of interest. Sea mussels can also form the basis of production of animal feed.

The planning objective that relates to aquaculture and blue biotechnology is to: *Establish preparations for the future establishment of sustainable aquaculture.*

Public interests and other planning conditions

Pursuant to Chapter 3, Section 5 Paragraph 1 of the Environmental Code states that marine areas of significance to aquaculture shall be protected to the greatest possible extent from measures that can substantially impede the industry's operation.

In the Baltic Sea, there is limited aquaculture. The farming takes place in the coastal waters and includes the farming of sea mussels for nutrient uptake. Activities in the marine spatial planning area can affect the water quality and thereby the aquaculture production that takes place closer to the coast.

Legal prerequisites

Permits from the county administrative board are required to build and conduct a fish farm pursuant to Chapter 2 Section 16 of the Ordinance for fishing, aquaculture and the fishing industry (1994:1716). Fish farming also refers to the cultivation of aquatic molluscs and aquatic crustaceans, compare with Section 4 of the Fishery Act (1993:787).

A fish farm (not shellfish) can also be subject to registration and permitting as an environmentally hazardous activity under Chapter 9 of the Environmental Code. The case is reviewed in accordance with the Environmental Impact Assessment Ordinance (2013:251) by the county administrative board or is subject to registration with the affected municipality depending on how much feed is used in the farming.

Interaction between land and sea

The sea-based cultivation requires infrastructure on land.

International interaction

The international interaction pertains primarily to market development for farmed fish, access to fish food and the extent to which the shared marine environment withstands greater fish farming in the Baltic Sea and the Gulf of Bothnia.

The Future

Well-informed consumers who demand innovative, environmentally adapted and beneficial alternatives mean that there is significant development potential for the cultivation of marine food.

Algae farming is an industry in early development in Sweden. Both to create biogas and for marine food.

There is extensive interest in the cultivation of clams in the Baltic Sea for nutrient uptake, i.e. to reduce eutrophication.

Maritime strategy

In the strategy, the Government has pointed out the *Sea as a natural resource* where food, substrates for biofuels and minerals are included as one of the five industries covered by the strategy. Aquaculture has grown strongly globally and is deemed to have a growth potential in Sweden. However, conditions for aquaculture are limited considering water quality status, mainly with regard to eutrophication and higher impact by nutrient salts. Farming of fish and shellfish should thereby take place with the least possible impact.

Farming of micro- and macro-algae has major potential of producing high-value products, such as oils, vitamins and special proteins and replacing products that today come from unsustainable fishing. Aquaculture can therefore contribute to the development of industries and companies, food production and employment at a regional level.

Ecosystem services

Through aquaculture, fish, shellfish and algae are provided. The cultivation is dependent, among other things, on the existence of ecosystem services in the form of biological diversity and good water quality.

Aquaculture affects ecosystem services through emissions of nutrients, eutrophication, genetic impact and emissions of hazardous substances. Farming of algae and clams and their uptake of nutrient compounds can, however, contribute to reducing eutrophication and thereby have positive effects on ecosystems.

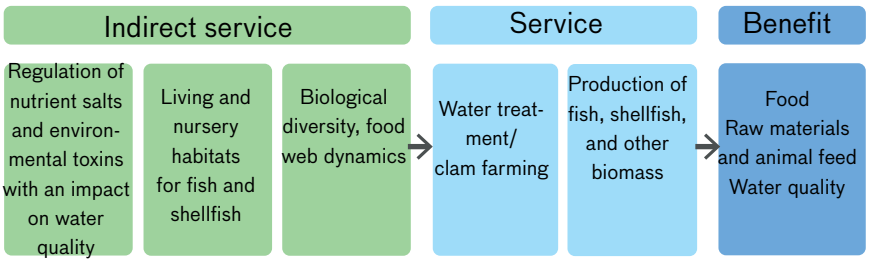


Figure 23. Important ecosystem services for aquaculture

Relevant environmental aspects

Activities and operations in this theme can be related to various impacts on the environment, theme areas in the Marine Strategy Framework Directive and various environmental quality objectives. The relationships, which are shown in the table below, are important in an assessment of the theme's environmental impact.

Activity	Potential impact or pressure	Theme area Marine Strategy Framework Directive (descriptors)	Sweden's environmental quality objectives
Farming fish, shellfish and algae	Impact through increased regulating capacity, nutrient salt reduction, and reduced eutrophication.	Introduction of nutrients and organic material Introduction of pollutants Biological disruption	Balanced seas and vibrant coastal areas and archipelagos Living lakes and watercourses Toxin-free environment

Table 19. The relationship between aquaculture and relevant environmental aspects

Read more about conditions in the marine spatial planning current status description, roadmap, the thematic report on regional development, and the report on ecosystem services from Swedish seas that you can find at www.havochvatten.se.

6.8 Commercial fisheries

Fisheries in the Baltic Sea planning area has a long tradition and is a large part of the Swedish commercial fisheries industry both in terms of value and catch amounts. The fishing is conducted by companies based on both the east and west coasts. It provides employment and supplies the market with in-demand fish and shellfish products. It also contributes to the identity and vibrancy of the coastal communities through both fishing in itself and its significance to industries on land, such as port operations and fish processing. The tourism industry also benefits from vibrant local commercial fisheries.

The most important species economically and quantity-based in the Baltic Sea are sprat, herring, and cod. Other species targeted by commercial fisheries, but of significantly less importance, are flounder and turbot. There is also coastal eel fisheries. The fishing is conducted both passively with, for example, nets and actively with trawlers. In Öresund, only fishing with passive equipment is done. The first catches of herring and sprat come from an area south of Gotland, between Sweden and Poland, while cod is largely caught in the Hanöbukts area.

The planning objective related to commercial fisheries is to: *Create conditions for sustainable commercial fisheries.*

Cod is used as food, while herring and sprat largely go to the industries involved in the production of fishmeal and fish food. Important landing ports are Västervik and Byxelkrok in Småland, Ronehamn on Gotland, Nogersund and Karlskrona in Blekinge, and Simrishamn and Trelleborg in Skåne. Large quantities are also landed in Denmark.[81]

Small-scale fisheries are normally conducted within more limited areas due to the boats' capacity and fishing focus, while other fishing is more dynamic with activities spread over larger areas, including areas outside of the Swedish territorial waters or exclusive economic zone. Where fisheries are conducted vary by the season, and also depends on how the fishing possibilities develop over time, meaning how the fish stocks and the regulations surrounding them develop.

A basic prerequisite for commercial fisheries is access to good fish stocks. Moreover, good fish stocks are dependent on different habitats during different lifestages of the fish. Coastal areas in particular are spawning and nursery areas for many marine organisms, but the spawning areas also occur even farther out to sea. Protection is required mainly of important spawning, nursery, and fish migration areas in relation to development pressure in the surroundings in order to ensure vibrant fish stocks. Besides protection of the fish habitats, continued commercial fisheries need space to use the resources where they occur and to travel to and from catch areas and fishing ports.

81 Swedish Agency for Marine and Water Management. 2017. Fishing data.

Use in the marine spatial plan for the theme:

Commercial fisheries

The areas in the planning map where commercial fisheries is indicated as a use are either areas covered by national interest claims for commercial fisheries as catch areas or areas that are considered to be of public interest of a material significance for commercial fisheries. Spawning and nursery areas that are national interest claims for commercial fisheries are in the plan instead of *particular consideration to high nature values.*

Only national interest claims included in areas with catches that correspond to 75 per cent of the value of landings from Swedish vessels during the period 2003-2015 are included in the use commercial fisheries. National interest claims with low or no economic landing values during the period 2003-2015 are accordingly not presented as a use in the marine spatial plan.

The national interest areas or parts thereof that are not indicated are reported in *Chapter 5 Marine sub-regions*. SwAM shall implement a more detailed analysis of the areas of national interest claims in 2018.

National interest claims

Commercial fisheries, Chapter 3, Section 5 of the Swedish Environmental Code

National interest claims for commercial fisheries relate to the areas in the sea, lakes, rivers, and home and landing ports. The national interest areas were pronounced by the former Swedish National Board of Fisheries in 2006. For the sea, national interest claims relate to catch areas or spawning and nursery areas and migration routes for fish.

National interest claims of the catch areas are mainly defined base on catch value per surface unit, which is an economic criterion. The individual national interest areas are based on specific fish species. The areas are called national interest areas for commercial fisheries (catch areas). In the Baltic Sea, there are cohesive national interest areas that extend between the coast and the open sea.

National interest claims for spawning and nursery areas and migration routes are defined and delimited based on the areas' significance to specific fish species. In the Baltic Sea marine spatial plan, there are seven national interest claims for commercial fisheries that pertain to spawning and nursery areas.

The areas of national interest should be protected from measures that can substantially harm the interest.

Legal prerequisites

Commercial fisheries is regulated in the scope of the EU Common Fisheries Policy with supplemental national Swedish fishing legislation.

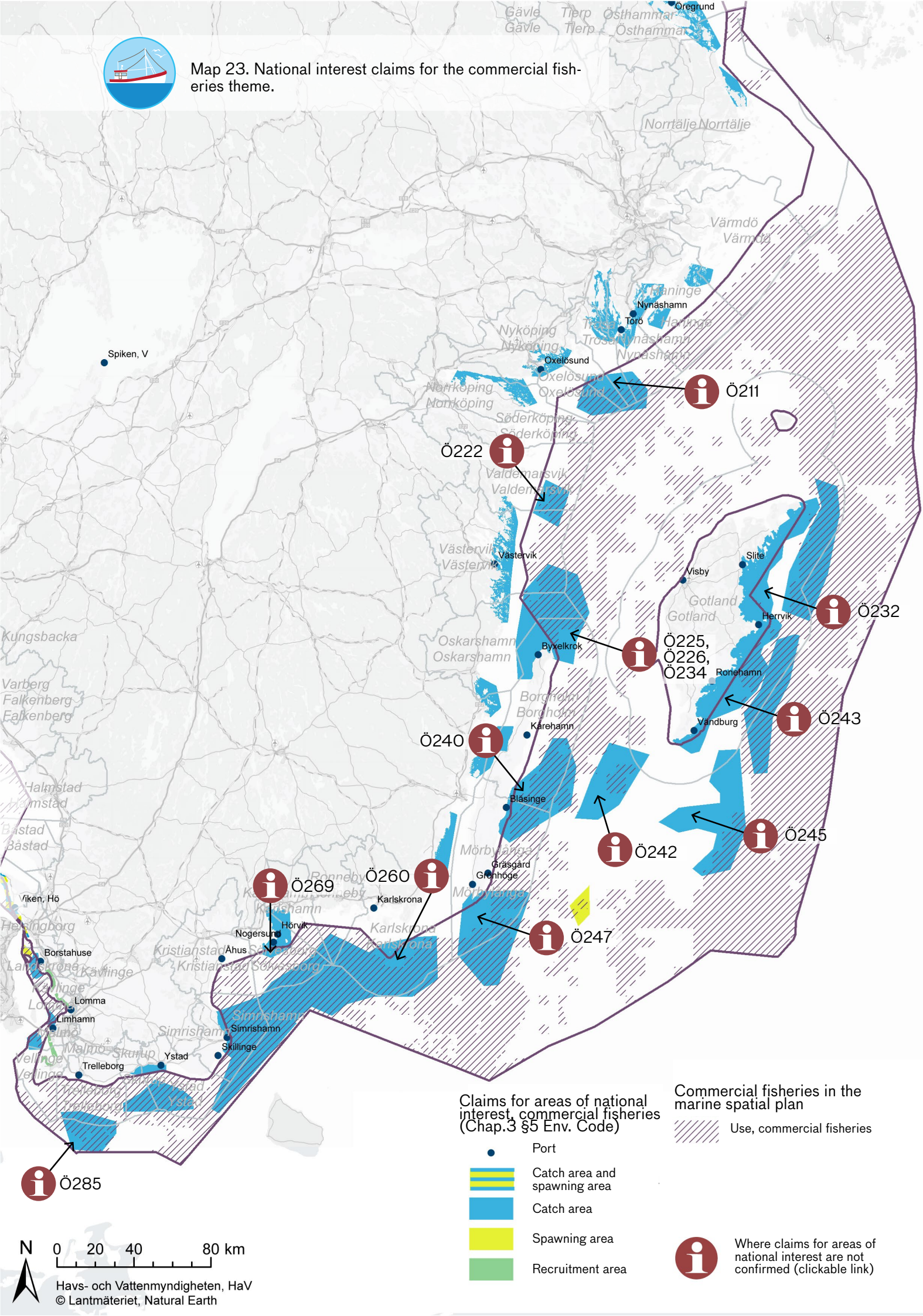
Geographically, the fisheries policy regulates commercial fisheries out to the outer boundary of the exclusive economic zone, but applies to EU vessels even outside EU waters according toRegulation (EC) No 1380/2013 of the European Parliament and of the Council. The Member States can have some rules of their own within the territorial boundary and also some rules for the country's fishing fleet in all EU waters. For fishing that is not commercial, most of the provisions are in national legislation, which in Sweden is in the Fishery Act (1993:787).

The EU Member States have free access to the EU waters up to 12 nautical miles from the baselines outside other Member States' coasts. In terms of Swedish waters in the Baltic Sea, Denmark and Finland also have access up to 4 nautical miles. According to the access agreement that Sweden has with Finland and Denmark, the fishing state may conduct fishing according to its own rules, meaning the flag state's rules. Within Öresund, fishing is shared for Swedish and Danish fishermen. How the fishing may be conducted there is stated in Chapter 2 Section 2 of the Swedish Board of Fisheries regulations (FIFS 2004:36).

The delimitation is the same that applies for the so-called trawling boundary. The trawling boundary means that trawler fishing is prohibited within the trawling boundary except for the trawling fishing areas.

Read more about the national interest claims on the SwAM website.

Map 23. National interest claims for the commercial fisheries theme.



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Public interests and other planning conditions

Public interest of a material significance for commercial fisheries is based on the largest landing values for 12 different defined fisheries over the years 2003-2015. For each fishery, 75 per cent of the catch value was included when the sum of the value for the respective fishery was calculated[82]. The parts of the identified areas that do not form national interest claims are deemed to be of public interest of a material significance.

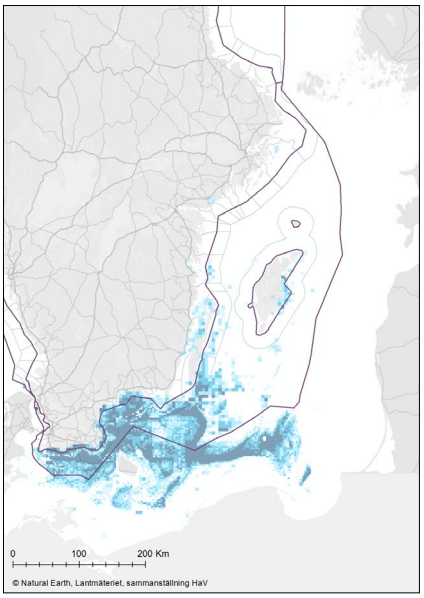


Figure 24. Economic landing values of fishing for cod (trawler or passive equipment) in the Baltic Sea in the period 2003-2015. Light blue shows low values and dark blue shows high values.

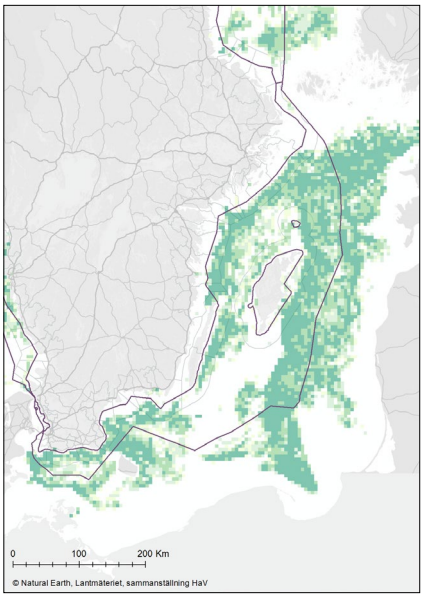
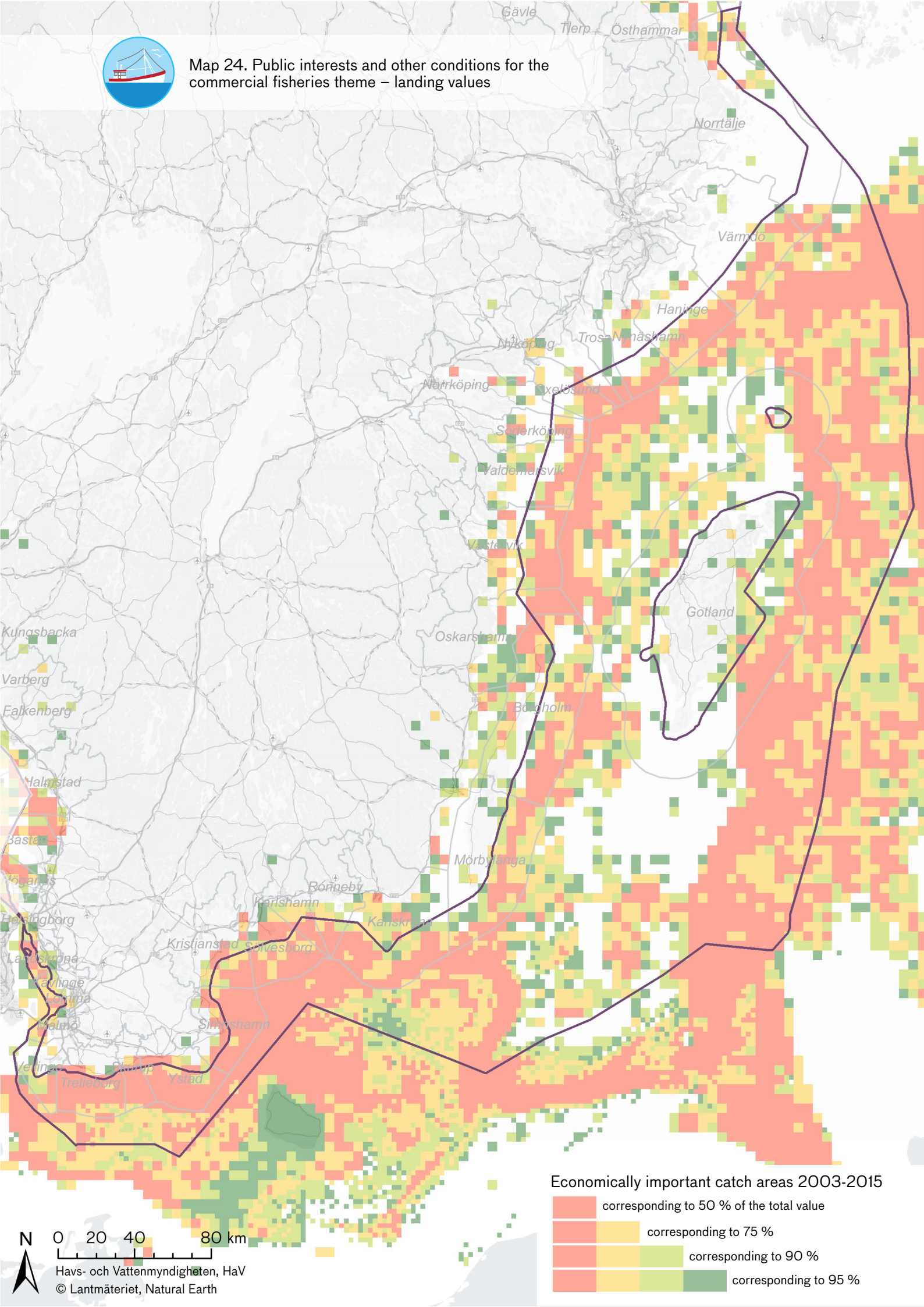


Figure 25. Economic landing value of pelagic fishing in the Baltic Sea during the period 2003-2015. Light green shows low values and dark green shows high values.

82 Swedish University of Agricultural Sciences. 2018. *Compilation and analysis of the spread of commercial fisheries.*

Map 24. Public interests and other conditions for the commercial fisheries theme – landing values



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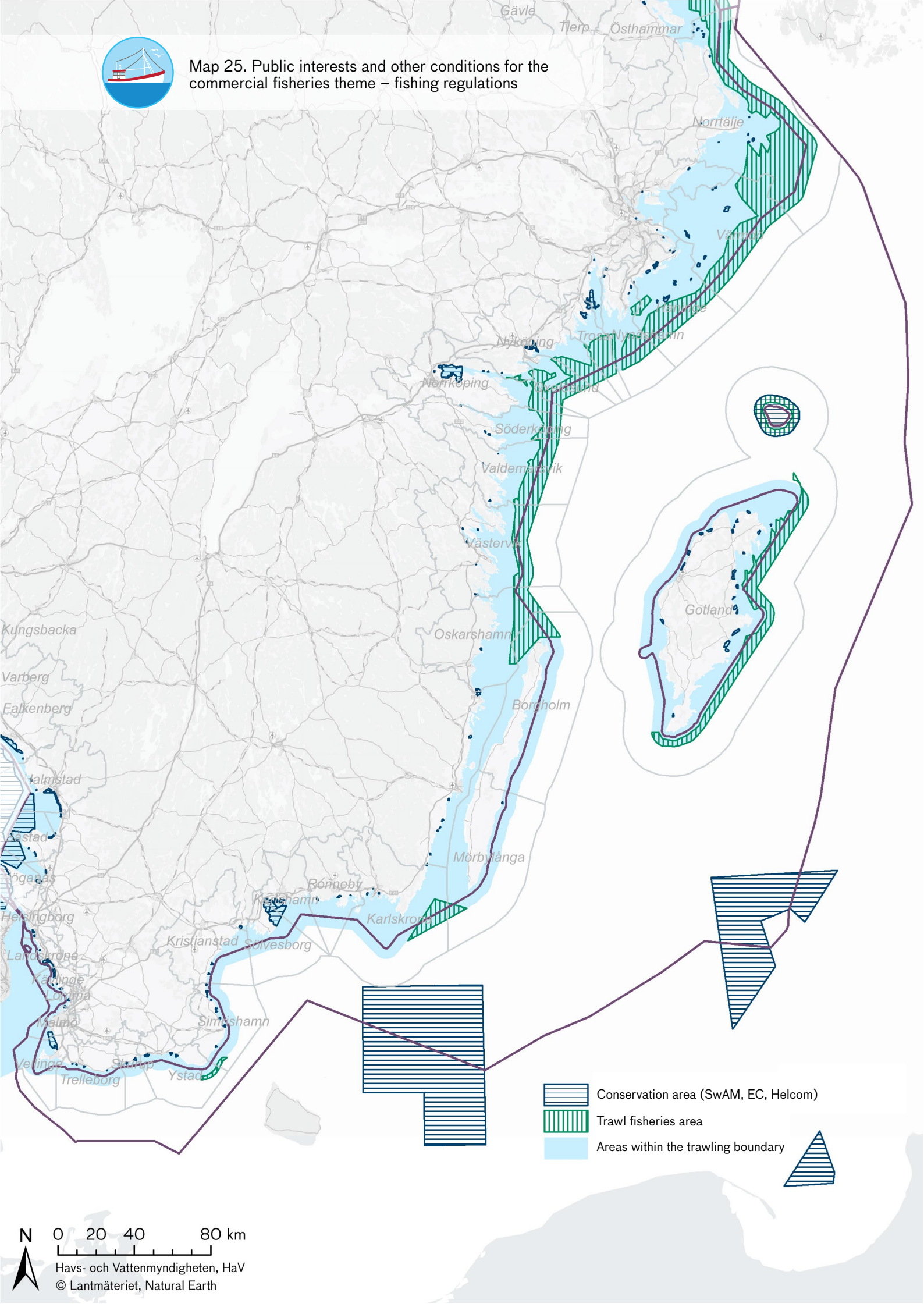

Map 25. Public interests and other conditions for the commercial fisheries theme – fishing regulations
Gävle
Tierp
Östhammar
Norrtälje
Nyköping
Norrköping
Söderköping
Valdemarsvik
Västervik
Oskarshamn
Gotland
Kungsbacka
Varberg
Falkenberg
Borgholm
Mörbylånga
Karlskrona
Kristianstad
Sölvesborg
Simrishamn
Trelleborg
Ystad
Conservation area (SwAM, EC, Helcom)
Trawl fisheries area
Areas within the trawling boundary
N
0 20 40 80 km
Havs- och Vattenmyndigheten, HaV
© Lantmäteriet, Natural Earth

Interaction between land and sea

The interaction between land and sea involves landing and home ports and other necessary infrastructure for the commercial fisheries industry, and it is important that these activities contribute to the local economy. A large part of the Swedish commercial fisheries in the Baltic is conducted by companies based on the Swedish west coast but that fish in the Baltic Sea during part of the year and are in ports around the Baltic Sea coast. But there are also local companies based in Baltic Sea ports.

Commercial fisheries is important as a bearer of culture in many places along the coast. The plan takes these aspects into account by providing spatial conditions for fishing in the marine spatial plan area. Different kinds of fishing have also been taken into account in the planning process, including both large-scale and small-scale commercial fisheries.

International interaction

The fisheries is administered jointly within the scope of the Common Fisheries Policy. Among other things, Danish fishermen fish in the Swedish territorial sea and exclusive economic zone, and the other EU countries around the Baltic Sea also fish in the Swedish exclusive economic zone. The regulation of fisheries outside the trawling boundary, but within Swedish territorial waters, requires agreements with Denmark and Finland and decisions within the EU. Swedish catches are also landed in other countries in the same way that catches from foreign vessels are landed in Sweden.

The Future

Good professional knowledge and well-informed consumers who demand innovative, environmentally adapted and beneficial alternatives mean that there is significant potential for development in commercial fisheries.

As in other industries, a rationalisation and streamlining of commercial fisheries has long been under way, resulting in fewer commercial fishermen and fishing vessels. At the same time, there are societal objectives that aim to promote small-scale coastal fishing. Other factors that can change the activities are changed consumption patterns and technical development and adaptation to reduce the impact of fisheries on, for instance, bottom habitats.

Alongside of prevailing dynamics, climate change can further entail that commercial fisheries needs to change fishing patterns and catch areas since different fish species' ranges change. This places demands on the marine spatial plan providing space for commercial fisheries in regard of future flexibility and dynamics.

Maritime strategy

In the strategy, the Government has pointed out the *Sea as a natural resource* where food is included as one of the five industries covered by the strategy. A prioritised issue for the Government is strengthening the fish stocks and maintaining them at a safe level on the long term. This is important, partly to achieve sustainable management of all stocks, and partly to increase the conditions for a higher yield within fisheries. Long-term predictable conditions and a balance between the fishing fleet and fishing possibilities are central to continued development in the fisheries. For the small scale fisheries which conduct in a limited range, good logistics possibilities and a local reception of the fishing raw materials are requiered.

Ecosystem services

Commercial fisheries and the extraction of marine food are dependent on multiple ecosystem services, directly and as fish and shellfish. Examples of conditions are good living and nursery environments for various species and foodweb dynamics. Fisheries also affects ecosystem services. Examples of the impact are changes in foodwebs caused by catches, effects on marine cultural environments and effects on habitats through, among other things, damage, wear, litter and lost fishing gear.

Sustainable use of ecosystem services can create conditions for regional business development. This is partly based on food supply and raw materials and partly on local identity and cultural values. This can in turn entail other ecosystem services that are important to the community and industries such as tourism.

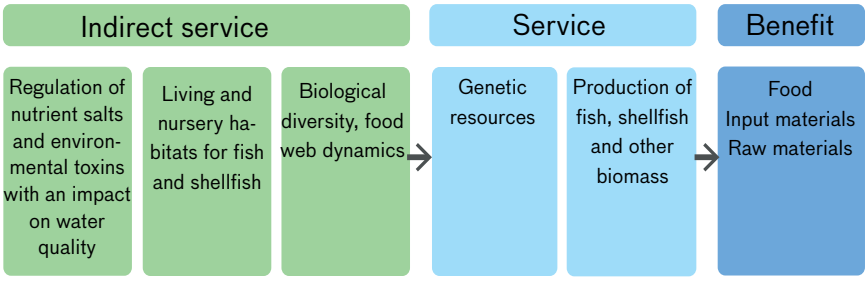


Figure 26. Important ecosystem services for commercial fisheries.

Relevant environmental aspects

Activities and operations in this theme can be related to various impacts on the environment, theme areas in the Marine Strategy Framework Directive and various environmental quality objectives. The relationships, which are shown in the table below, are important in an assessment of the theme's environmental impact.

Activity	Potential impact or pressure	Theme area Marine Strategy Framework Dir. (descriptors)	Sweden's environmental quality objectives
Benthic trawling (bottom trawling)	Selective extraction of species, physical damage (seabed), by-catch of fish, birds, and mammals Vessels, noise, emissions of hazardous substances, and air emissions and climate gases	D1 Biodiversity D3 Fish and shellfish D4 Marine food webs D6 Seabed integrity	Balanced seas and vibrant coastal areas and archipelagos A rich plant and animal life
Pelagic trawling (trawling in open water)	Selective extraction of species, by-catch of fish, birds, and mammals Vessels, noise, emissions of hazardous substances, and air emissions and climate gases	D1 Biodiversity D3 Fish and shellfish D4 Marine food webs	Balanced seas and vibrant coastal areas and archipelagos A rich plant and animal life
Other fisheries	Selective extraction of species, by-catch of fish, birds, and mammals, marine litter (e.g., ghost nets) Vessels, noise, emissions of hazardous substances, and air emissions and climate gases	D1 Biodiversity, D3 Fish and shellfish D4 Marine food webs D10 Marine litter	Balanced seas and vibrant coastal areas and archipelagos A rich plant and animal life

Table 20. The relationship between commercial fisheries and relevant environmental aspects

Continued work

SwAM will begin a review of the national interest for commercial fisheries in 2018.

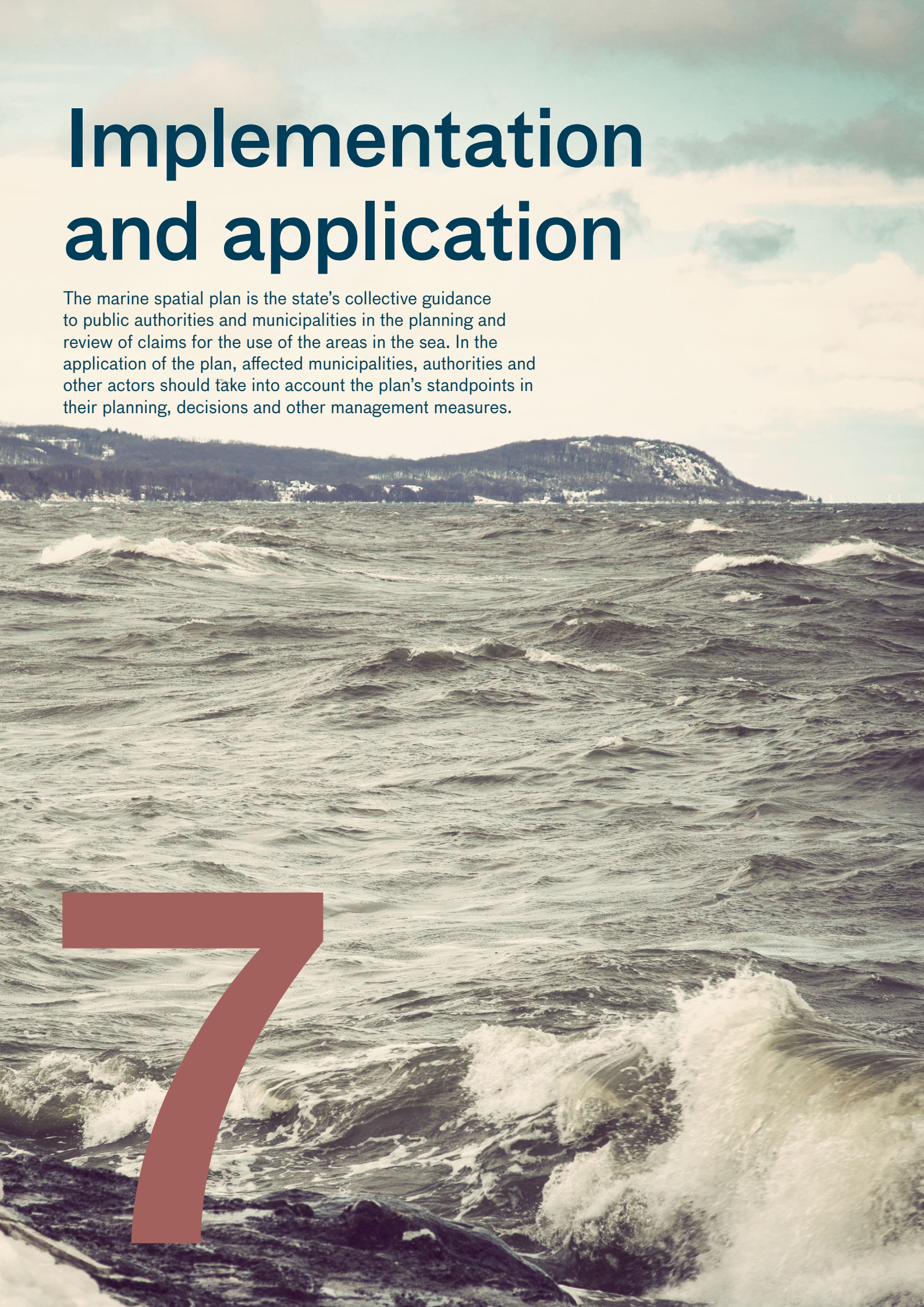
In order to strengthen the protection in marine protected areas, the Government has assigned SwAM the task of proposing fishing regulations in both new and already established protected areas. The objective is to preserve valuable environments. The agency will also investigate the effects of bottom trawling within protected areas and within the trawling boundary, and propose measures where necessary. A number of different regulations may be of interest, such as areas with a total closure on fisheries in the area or prohibition of using certain fishing gear. A potential regulation can change both the actual patterns of fisheries and the planning prerequisites for the use commercial fisheries in the marine spatial plan. The agency will also review and modernise the regulations for coastal fisheries. The assignment will be reported to the Ministry of the Environment and Energy in 2018[83].

Read more about conditions in the marine spatial planning current status description, roadmap, the thematic report on commercial fisheries, and the report on ecosystem services from Swedish seas that you can find at www.havochvatten.se.

83 *Ministry of the Environment and Energy, 19/10/2017, Assignment regarding conservation values with regard to fishing in protected areas*

Implementation and application

The marine spatial plan is the state's collective guidance to public authorities and municipalities in the planning and review of claims for the use of the areas in the sea. In the application of the plan, affected municipalities, authorities and other actors should take into account the plan's standpoints in their planning, decisions and other management measures.



7

How the plan should be used

The marine spatial plan's guidance is directed at:

- **municipalities and regional planning bodies** that plan the use of the sea or areas affected by the sea
- **public authorities and municipalities** that plan, decide on and develop or implement management measures that concern the sea
- **business operators** within maritime operations, by contributing predictability and facilitating enterprise

The marine spatial plan constitutes the state's collective view of how the sea in a certain area should be used.

In order for the plan's objective of a long-term sustainable development to be achieved, it is necessary in some cases that the marine management and associated regulations be developed. This can, for example, involve measures in the form of regulation or other actions that facilitate coexistence between different interests in the sea. In terms of measures in commercial fisheries or shipping, agreements or decisions in the EU or the International Maritime Organization (IMO) are required in many cases.

Marine spatial plan's role in permit reviews

In various permit reviews and other matters according to the Environmental Code,[84] the marine spatial plans will be a guiding input. Each authority or municipality that applies the Environmental Code must accordingly ensure that the marine spatial plans are available in the case or matter in a review of an activity or measure in the marine spatial planning area. In issues that concern new or changed use of a marine area, Chapters 3 and 4 of the Environmental Code must be applied. In the interpretation of what constitutes the most suitable use according to these provisions, the marine spatial plans will serve as guides.

The marine spatial plans will also serve as guiding input in permit reviews according to other laws, such as the Exclusive Economic Zone Act[85], the Continental Shelf Act and the Establishment[86], Enlargement and Closure of Public Navigation Channels and Public Ports Act[87]. The provisions in Chapters 3 and 4 of the Environmental Code must also be applied in reviews in cases and matters under these laws.

84 *The Swedish Environmental Code (1998:808)*
85 *Lag (1992:1140) om Sveriges ekonomiska zon*
86 *Lag (1966:314) om kontinentalsockeln*
87 *Lag (1983:293) om inrättande, utvidgning och avlysning av allmän farled och allmän hamn*

The marine spatial plan's role in municipal comprehensive planning

According to the Planning and Building Act[88], the municipality must prepare a comprehensive plan for the entire municipal areas, including the territorial sea. The national marine spatial plan is rooted in the Environmental Code and extends out to and including the exclusive economic zone. The comprehensive plan and the marine spatial plan overlap in a part of the territorial sea. In the area where the plans overlap, both of the plans are in effect, while in the outermost marine area, only the marine spatial plan is in effect and in the coastal area, only the comprehensive plan is in effect.

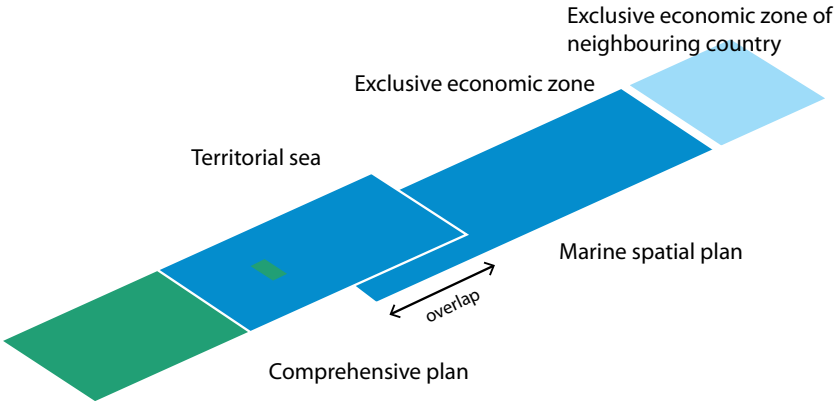


Figure 27. The municipality's comprehensive plan and the national MSP overlap in a part of the territorial sea. Both of the plans are in effect there.

Sweden has 65 coastal municipalities whose sea area partly overlaps with an upcoming marine spatial plan. In addition to them, around 15 municipalities have sea coasts, but do not overlap any marine spatial plan.

Both the national marine spatial plan and the municipality's comprehensive plan must integrate economic policy, social and environmental objectives, but the marine spatial plan and the municipalities' comprehensive plan have different levels of detail and scale. The marine spatial plan's strategic level and rough delimitations for various interests can be specified in more detail in the municipal comprehensive plan. The marine spatial plan's rough scale may also mean that something that is pointed out in a comprehensive plan cannot graphically be depicted in the marine spatial plan.

The consultation on the marine spatial plan proposal is an opportunity for the municipality to call SwAM's attention to already made and possibly upcoming standpoints in the overlapping marine spatial planning area so that a common perception of the consequences of the differences in scale can grow forth during the consultation and review stages of the marine spatial planning.

88 Chapter 3 Section 1 of the *Planning and Building Act (2010:900)*

Status of the municipalities' planning of the sea

Today, few municipalities have adopted comprehensive plans that encompass the entire territorial sea and present well-conceived municipal standpoints. The reasons for this may be the sea's traditionally free use and the lack of properties in offshore waters. In 2016 and 2017, many coastal municipalities either began preparatory work for the planning of the marine area or began work on comprehensive planning according to the Planning and Building Act. The national marine spatial planning has entailed a strong increase in municipal coastal and marine planning.

Guidance for municipal planning

The marine spatial plan should provide the guidance necessary to meet the requirements of good land and water use pursuant to Section 4 of the Marine Spatial Planning Ordinance[89]. The marine spatial plan is a guide in the municipal planning.

Coordination between the marine spatial plan and comprehensive plan and issues not yet answered

Today, few municipalities have a spatial planning that encompasses the offshore areas. Currently applicable comprehensive plans can therefore to a marginal extent form the basis of the national marine spatial planning, and this is reflected in this consultation proposal on the marine spatial plan - only a few municipal claims are presented in the plan. As the coastal municipalities gradually adopt plans over the marine areas, it will become apparent what municipal standpoints can suitably be reflected in upcoming marine spatial plans.

Another issue is the manner in which the marine spatial plan serves as a guide for the municipal planning:

- What standpoints can be made with the comprehensive plan's higher degree of detail without conflicting with the marine spatial plan?
- What will the collaborative process between municipalities, county administrative boards and SwAM look like?

All three dialogue stages in the marine spatial planning work are intended, among other things, to answer these questions, where the municipalities can also participate in the process.

89 *Marine Spatial Planning Ordinance (2015:400)*

Follow-up of the plan

Once the marine spatial plans have been approved, SwAM is responsible for follow-up by continuously staying informed about developments in affected areas. When necessary or at least every eight years, SwAM must prepare and submit new marine spatial plan proposals.

SwAM must also especially follow up and evaluate the environmental impact that the plans have in practice. The intention is to obtain knowledge early on about significant environmental impact that has not been identified previously in the process so that this impact can be stopped or reduced. The follow-up is also intended to monitor the environmental impact that is expected and has been described in the plan's strategic environmental assessment.

A control programme will therefore be prepared that describes how the follow-up will be done and what parameters are followed up. The control programme will be coordinated with other existing environmental follow-up to ensure an effective implementation.

Consequences

The consequences of the marine spatial plan are assessed from ecological, economic, and social perspectives. The work of assessing the consequences has been conducted in parallel with the planning and has been integrated into it. The consequences are also analysed in a separate strategic environmental assessment (SEA) and a separate sustainability assessment.

8

Effects of the planning are assessed both continuously and for marine spatial plan proposals in the consultation and review phase.

- The on-going work uses specially ordered studies; reports; internal analyses; discussions with the national interest authorities and the county administrative boards; the results of the dialogue with industries, municipalities, public authorities, trade associations and neighbouring countries; and other documentation.

- For the marine spatial plan proposals in the consultation and review phase, sustainability and environmental impacts are assessed by external consultants. Results and methods for the external assessments are described in separate documents.

Both sustainability assessment and strategic environmental assessment

The Marine Spatial Planning Ordinance places requirements on a strategic environmental assessment (SEA) being done for each marine spatial plan. The objective of the SEA is to integrate environmental considerations into the marine spatial plans. By analysing what environmental impact different choices in the marine spatial plans might have, decisions can be made on different ways to reduce negative impacts and increase positive impacts. The so-called significant environmental impact can be analysed and described in a document that is called an environmental SEA-document or environmental report.

In addition to the SEAs on the marine spatial plans, sustainability assessments are done with a broader perspective. The objective of the sustainability assessments is to analyse the marine spatial plans' impact from economic, social and environmental perspectives. Both the SEA and the sustainability assessment describe ecosystem services and how they are affected by the marine spatial plans. The sustainability assessment analyses the change in societal benefit that results from the impact on the ecosystem services. This contributes to a broad holistic assessment of how the plan relates to sustainable development. Questions such as "Are we headed in the right direction? What can we do better in the plan?" should be answered by both the SEA and the sustainability assessment. These answers can then be included in the revision of the plan prior to the next stage, the review stage.

Integrated impact assessment – a part of the planning

The impact assessments' results are fed back into the planning process. It is the feedback that makes it possible to take consideration of and to change draft plans based on the results provided by the impact assessments. This way, environmental, social, and economic aspects can be integrated into the

planning.
A point of departure in the work of developing this consultation proposal has been the impact descriptions prepared for the drafts at an early phase and the comments received on both drafts of the marine spatial plans and the impact descriptions during the dialogue in 2017.

In addition to this, more continuous assessments have been made of consequences of various planning alternatives. Among other things, in the course of the work SwAM prepared national thematic documents and special studies concerning specific planning issues and geographic areas. The documents and studies concern both the environmental impact and the impact on activities affected by the marine spatial plans, such as commercial fisheries, the establishment of wind power and shipping. Documentation and studies were prepared by SwAM, collaborating authorities, and through contracts with external actors.

To be able to better plan in order to avoid a high environmental impact in sensitive areas, the planning tool *Symphony* was developed. With Symphony, the cumulative environmental impact from various human activities and the cumulative burden on animal and plant life in the sea are assessed. The planning tool makes an integrated approach possible and means that the environmental impact for various planning alternatives can be assessed in a continuous manner.

The documentation prepared in the continuous assessment work was also used as one of several inputs for the SEA and the sustainability assessment presented for this consultation proposal.

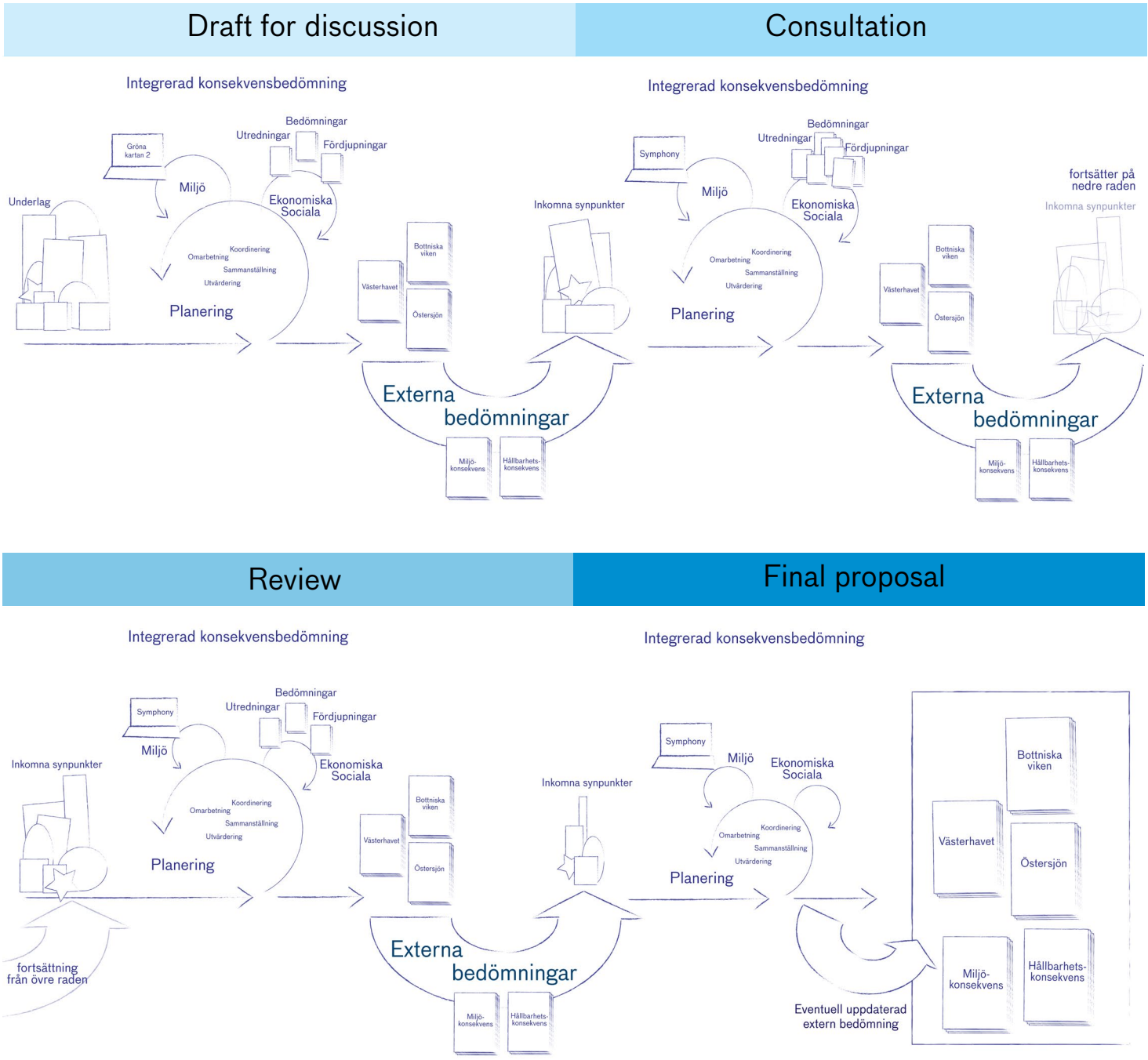
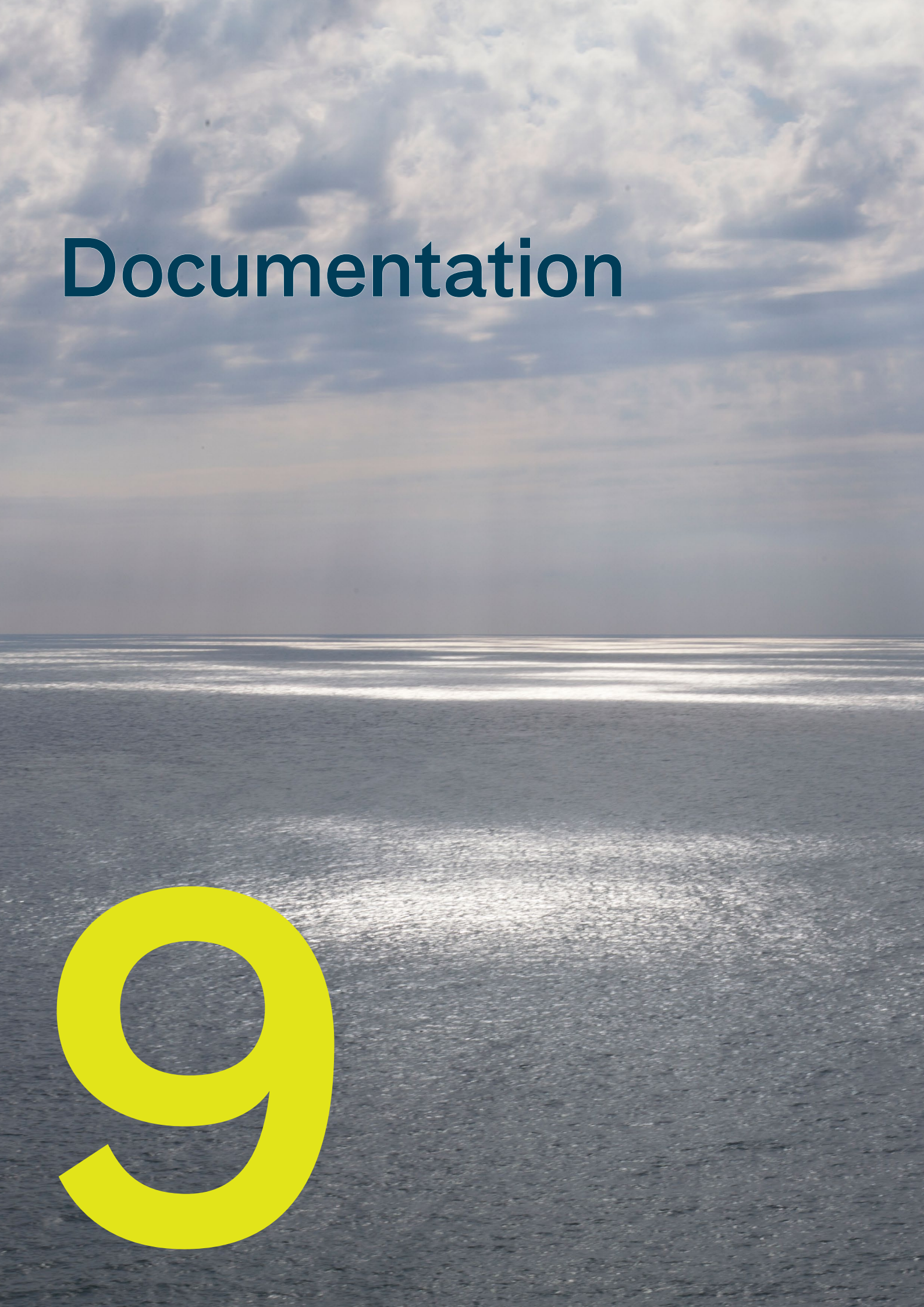


Figure 28. The work of analysing and assessing impact is done in cycles that follow the stages in the planning.



Documentation

9

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Input for maps

Background maps: Natural Earth, Lantmäteriet's topographical online map and a selection of the Swedish map's municipalities (municipalities with a part in the marine spatial plan). Shipping outside of the marine spatial plan.

All maps were prepared by SwAM unless otherwise stated. The planning maps contain, besides a background map, layers for the uses attractive living environments, sand extraction, shipping, and commercial fisheries, as well as uses divided by area (with map text). Further geographic information that is used in the maps is in layers for the marine spatial planning boundary and the marine area boundaries.

Map 7. National interests for the attractive living environments theme
National interest active outdoor recreation (Chapter 4 Section 2), National interests active outdoor recreation (Chapter 4 Section 2), National interest highly developed coast (Chapter 4 Section 4)

Map 8. National interest claim for the attractive living environments theme
National interest claim cultural heritage conservation (Chapter 3 Section 6), National interest claim outdoor recreation (Chapter 3 Section 6)

Map 9. Public interests and other conditions for the attractive living environments theme
Documentation: World Heritage site according to the World Heritage Convention (UNESCO), Sweden's coastal and archipelago landscape (RAÄ), Concentration of wrecks and sinking information from FMIS, compiled by the coastal county administrative boards (LST, RAÄ)

Map 10. National interest claims for the energy theme
National interest claims: Facilities for energy production, Wind power (Chapter 3 Section 8 Environmental Code)

Map 11. Public interests and other conditions for energy – wind power areas
Documentation, E: On-going projects, Wind power in municipal comprehensive plans, Additional areas identified in the marine spatial planning process.

Map 12. Public interests and other conditions for the energy theme – cables and pipelines
Documentation: Power cables, Planned new power cables, Pipelines

Map 13. National interest claims for marine training areas
National interest claims for total defence: Marine training areas (Chapter 3 Section 9 Environmental Code)

Map 14. Openly presented national interest claims and areas of influence for the military part of total defence
National interest claims for total defence: Marine training areas (Chapter 3 Section 9 Environmental Code), Influence areas: Stop areas for tall objects, Stop areas for wind power stations, Surrounding impact, MSA areas, Other influence areas, Areas with special need of being free from obstacles

Map 15. Public interests and conditions for carbon dioxide storage
Documentation, Storage of carbon dioxide (SGU): Interest area for storage of carbon dioxide (Chapter 4 Section 9 Environmental Code),

Map 16. Public interests and conditions for sand extraction
Documentation, Sand extraction (SGU): Interest areas for extraction of sand (Chapter 3 Section 7 Environmental Code), Suitable areas for extraction of sand (Chapter 3, Section 7 Environmental Code)

Map 17. National interests and national interest claims for the nature theme
Natura 2000 areas SPA (NVV), Natura 2000 areas SCI (NVV), National interest claims nature conservation, National interest claims for commercial fisheries

Map 18. Public interests and other conditions for the nature theme – other marine protected areas
Documentation N: Other marine protected areas (Chapter 7 Environmental Code)

Map 19. Public interests and other conditions for the nature theme – climate refuges
Documentation n: Climate refuges for ringed seals, bladder wrack, sea mussels, Zostera marina, Saduria entomon, herring, and cod

Map 20. National interest claims for the transportation and communications theme
Port – existing, Railway – Öresund bridge connection, Railway – future (Helsingborg-Helsingör), Shipping – existing shipping land including buffer zones, Shipping – deep and protected areas, Shipping – planned shipping lanes including buffer zones, Aviation – MSA areas

Map 21. Public interests and other conditions for the transportation and communications theme – routing systems
Documentation Routing systems (IMO): Traffic separation zone, Recommended route, Coastal traffic zone, Attention area, Two-way lane, Deep-water lane, Prohibition area. Shipping authorities: Expanded claims shipping

Map 22. Public interests and other conditions for the transportation and communications theme – data and telecommunication cables
Data and telecom cable (Telia), Data and telecom cable (PTS)

Map 23. National interest claims for the commercial fisheries theme
National interest claims for commercial fisheries (Chapter 3 Section 5 Environmental Code): Port, Catch areas, Spawning areas, Recruitment areas, Migration areas

Map 24. Public interests and other conditions for the commercial fisheries theme – landing values
Landing values for 12 different fisheries 2003-2015

Map 25. Public interests and other conditions for the commercial fisheries theme – fishing regulations
Area closed to fishing, Trawler fishing area, Trawling boundary

Input for figures

Figures without reference to input documentation are prepared by the Swedish Agency for Marine and Water Management.

Figure 6. The sea's ecosystems.
Ministry of the Environment

Figure 14. Production expenses for wind power at sea (LCOE).
Bergman et al., 2017. *Sea-based wind power potential and costs – a report to the Swedish Energy Agency*

Figure 15. Södra Midsjöbanken - Wind power area
Wind power areas (Sweden, Poland), Sand extraction, Natura 2000 (species and habitats, birds)
Documentation in the Polish exclusive economic zone: Maritime Institute in Gdańsk et al. 2016. Study of Conditions of Spatial Development of Polish Sea Areas. Gdynia. http://www.umgdy.gov.pl/?cat=96

Figure 16. Kriegers Flak - Wind power area
Wind power areas (Sweden, Germany, Denmark), Sand extraction, Natura 2000 (species and habitat, birds)

Figure 18. Map image from Symphony that shows the cumulative environmental impact. Swedish Agency for Marine and Water Management. Report 2018:1. *Symphony - Integrated planning support for national marine spatial planning based on an ecosystem approach*

Figure 19: Map image from the Green Map that shows aggregated nature values Geological Survey of Sweden. *Green Map based on Symphony ecosystem components.* 20/11/2017. Unpublished.

Figure 20. Everything is interrelated from source to sea.
Granit et al.2017. Water Policy

Figure 21. Internationally marine protected areas throughout Sweden and in neighbouring countries As per *OSPAR (OSPAR MPA), As per HELCOM (HELCOM MPA), Natura 2000, Protection area cod*

Figure 22. Cross-border shipping
Concentration of ship movements (AIS) around Sweden and in neighbouring countries

Figure 24. Economic landing values of fishing for cod (trawler or passive equipment) in the Baltic Sea in the period 2003-2015.
Swedish University of Agricultural Sciences. 2018. *Compilation and analysis of the distribution of commercial fisheries*.

Figure 25. Economic landing value of pelagic fishing in the Baltic Sea during the period 2003-2015. Swedish University of Agricultural Sciences. 2018. *Compilation and analysis of the distribution of commercial fisheries*.

Photographs

Chapter 1, Photographer **Kat Singer. Ship off of Visby.**
Swedish Agency for Marine and Water Management image archive.

Chapter 2, **Photographer Maja Kristin Nylander**. Cliffs in the archipelago, Swedish Agency for Marine and Water Management image archive.

Chapter 4. Photographer **Maja Kristin Nylander**. View from Fårö over the Baltic Sea. Swedish Agency for Marine and Water Management image archive.

Chapter 5. Photographer **Maja Kristin Nylander**. A boy who is out sailing, an optimist in the mist. Swedish Agency for Marine and Water Management image archive.

Chapter 6. Photographer **Natalie Greppi**. Swedish Agency for Marine and Water Management
image archive.

Chapter 7. Photographer **Mats Svensson**. Hanöbukten from Baskemölle, Stenshuvud. Swedish Agency for Marine and Water Management image archive.

Chapter 8. Photographer **Maja Kristin Nylander.** Water.
Swedish Agency for Marine and Water Management image archive.

Chapter 9. **Photographer Maja Kristin Nylander**. Sun shining down on the sea. Swedish Agency for Marine and Water Management image archive.

Photo collage, Chapter 3:
Photographer **Kat Singer (***Cruise ship, Ducks in water, Stone beach), Swedish Agency for Marine and Water Management image archive.*

Photographer **Mattias Sköld (***Shrimp trawler), Swedish Agency for Marine and Water Management image archive.*

Photographer **Johannes Jansson**, CC BY 2.5 Wikimedia commons (*Öresund Bridge), Swedish Agency for Marine and Water Management's image archive.*

Illustrator **Vilhelm von Wright,** (*salmon), Swedish Agency for Marine and Water Management image archive.*

Photographer **Maja Kristin Nylander (***Gulls, Sea, Oyster farm buoys, Sign Hanöbukten, Outhouse, Barn - bathing - dock.), Swedish Agency for Marine and Water Management image archive.*

Photographer **Ingvar Lagenfelt (***Wind farm), Swedish Agency for Marine and Water Management image archive.*

Photographer **Hangsna (***Juvenile sea eagle in Ekeby wetlands) /CC BY-SA 4.0 Wikimedia commons*

Photographer **Peter Appelros, (***Coastal surveillance radar) /CC BY 3.0 Wikimedia commons*

Swedish Agency for Marine and Water Management

Proposal on the

Marine Spatial Plan for the Baltic Sea

This is the proposed marine spatial plan (MSP) for the Baltic Sea that we are conducting consultations on. Sweden is preparing three marine spatial plans – one for the Gulf of Bothnia, one for the Baltic Sea, and one for Skagerrak and Kattegat. A marine spatial plan provides guidance on the best use of the sea. The marine spatial plan provides guidance to national authorities, municipalities and courts in future decisions, planning, and permit reviews. Business operators can also find guidance in the plan.

The Swedish Agency for Marine and Water Management (SwAM) is now consulting with you and others to obtain strong and well supported marine spatial plans. We would therefore like you to submit improvement suggestions and tell us about matters that we should know about. This consultation is under way from 15 February until 15 August 2018.

Swedish Agency for Marine and Water Management ref. no. 396-18.

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