

Strategic Environmental Assessment of the marine spatial plan proposals for the Gulf of Bothnia, the Baltic Sea and the Skagerrak and Kattegat

ENGLISH SUMMARY

Strategic environmental assessment within the framework of Swedish marine spatial planning

The Swedish Agency for Marine and Water Management (SwAM) has been commissioned by the Government of Sweden to draw up marine spatial plans for the Gulf of Bothnia, the Baltic Sea and the Skagerrak and Kattegat. This report presents the results of the strategic environmental assessment of the three marine spatial plans, and is an integral part of the proposal put out for public review between 14 March and 15 June, 2019, together with the proposals for marine spatial plans produced by SwAM. Under chapter 6, section 1 of the Environmental Code, the purpose of a strategic environmental assessment is to integrate environmental considerations into planning and decision-making in order to promote sustainable development.

Marine spatial planning in Sweden

Marine spatial planning consists of a number of processes for analysing and organising activities at sea, on and above the surface, and on and in the seabed, in a way that supports the attainment of economic, social and environmental policy objectives. Marine spatial plans are intended to provide guidance for government agencies and municipalities in planning and in examining claims regarding the use of marine space. Marine spatial plans comprise Sweden's exclusive economic zone and territorial waters from one nautical mile beyond the baseline. Municipalities have planning responsibility for the part of the sea that lies within their boundaries, which includes the territorial sea. This means that municipal and state marine spatial planning responsibilities overlap in a zone of 11 nautical miles in territorial waters.

Marine spatial plans contain guidance in written and planning map form. The uses indicated on the planning map have been assessed as most

appropriate uses and take precedence over other uses. All other uses within areas subject to planning must therefore adapt to the needs and conditions of the specified uses. Planning maps also show areas where particular consideration to high nature values or cultural landscape values, or the interests of total defence needs to be observed.

Method

The marine spatial plan proposals are assessed with respect to the following environmental aspects, in accordance to chapter 6 of the Environmental Code:

- population and human health,
- animal and plant species protected under Ch 8, and biological diversity in general,
- land, soil, water, air, climate, landscape, and built and cultural environment,
- management of land, water and the physical environment in general,
- management of resources, raw materials and energy,
- other elements of the environment.

The environmental assessment was based on Symphony, analyses by experts (referenced in the text) and deliberations within the assessment group at SwAM. Symphony is an assessment method developed for Swedish marine spatial planning. Its purpose is to show, at an overall level, the geographical distribution of environmental effects and how these are affected by the marine spatial plans.

The environmental assessment was constrained by uncertainties at three levels: limited knowledge of marine ecosystems, assumptions and limitations in Symphony, and assumptions concerning the future of the sectors and of policy and management.

Assessment of the marine spatial plan proposal for the Gulf of Bothnia

The main effects of the plan proposal

The main negative environmental effect of the proposed marine spatial plan for the Gulf of Bothnia is estimated to result from the extensive areas for energy production in the Southern Bothnian Sea, which is believed to have negative effects on wintering seabirds. Other negative effects are associated with the proposed sand extraction in the Bothnian Bay.

The main positive environmental effect of the proposed plan is associated with the designation of extensive areas for wind energy, which have a

positive effect for climate. Moving shipping from sensitive shallow areas to deeper surrounding areas, as well as the designation of areas with particular consideration to high nature values, is also expected to have positive effects for the environment.

The most affected environmental aspects

Seabirds wintering around the Finngrunden banks are expected to experience moderate negative effects. The negative effect on mammals and landscapes are assumed to be small. The assessment is that the plan will have a positive effect for climate.

Significance of the effects

The risk of a negative effect on wintering seabirds is the most significant effect, and alternatives for limiting such an effect should be explored. The designation in the plan of areas with special consideration to high nature values and cultural landscape values could potentially contribute to the development of ecosystem services and sustainable regional development.

Proposed planning measure

According to chapter 6 of the Environmental Code, a strategic environmental assessment must include proposals for avoiding, halting, countering or remedying the negative environmental effects expected to result from the implementation of the plan. Such measures have been defined for each of the three plan proposals. For the proposal for the marine spatial plan for the Gulf of Bothnia, it is proposed that offshore energy production be excluded from the eastern part of the West Finngrunden bank.

Assessment of the marine spatial plan proposal for the Baltic Sea

The main effects of the plan proposal

The main negative environmental effects of the proposed marine spatial plan for the Baltic Sea result from the areas designated for energy extraction in the Southern Midsjöbank and from sand extraction in the south Öresund. Other negative effects are estimated to result from the current shipping routes crossing the Hoburg Bank if unaltered.

The main positive environmental effects in the Baltic Sea plan proposal arise from the designation in the plan of 'nature use' and from the guidance regarding particular consideration to high nature values, which are considered to provide conditions for sustainable coexistence between uses and long term securing of ecosystem services.

The most affected environmental aspects

Wintering seabirds may suffer significant negative effects from the implementation of the proposed plan. There will be a small positive effect on climate, as well as on landscapes.

Significance of the effects

Offshore wind power development as proposed in the plan is expected to have moderate negative effects of international significance on migrating and wintering seabirds. Sand extraction in sites in the southern and south-western Baltic Sea will have negative environmental effects of local/regional significance. The positive effect on ecosystem services arising mostly from the designation of areas of particular consideration to high nature values and cultural landscape values may contribute to regional development.

Proposed planning measures

Specific measures to address the negative environmental effects assumed to arise from the implementation of the proposal for marine spatial plan for the Baltic Sea include:

- Examine the conditions for and consequences of shifting shipping routes around Gotland in order to minimise negative effects including leakage of oil in the area of the Hoburg Bank and the Northern and Southern Midsjöbanks, in particular on seabirds, harbour porpoise and benthic environments.
- Assess the effects of offshore wind power installations on birds in the entire Southern Midsjöbank, including the Polish side.

Assessment of the marine spatial plan proposal for the Skagerrak and Kattegat

The main effects of the plan proposal

The main negative environmental effects estimated to arise from the implementation of the proposed marine spatial plan for the Skagerrak and Kattegat are associated with the continued conditions for negative environmental effects from commercial fishing. A negative effect on landscape is assumed to result from the designation of areas for offshore energy production in the Kattegat.

The main positive environmental effect associated with the plan proposal for the Skagerrak and Kattegat is expected to arise from the designation of areas with particular consideration to high nature values.

The most affected environmental aspects

A small negative effect on landscape is expected as a consequence of the designation of areas for offshore wind energy production. A small positive

effect on fish and fishing areas, seabed environments, as well as on human population and health is expected mostly as a result of the designation of areas with particular consideration to high nature values.

Significance of the effects

Significant effects on sustainable development in the longer term through the development of ecosystem services, including provisioning services. The porpoise population in the Kattegat is not estimated to be affected in the long term.

Proposed planning measures

The measures proposed to reduce the negative environmental effects associated with the implementation of the proposal for marine spatial planning for the Skagerrak and Kattegat include:

- Reduce the area assigned to commercial fishing as preferred use and increase the share of areas with particular consideration to high nature values.
- Examine possibilities of designating additional areas for offshore wind energy production between the offshore banks in the Kattegat.

Summary of cross-border effects

Several of the environmental effects assumed to result from the implementation of the marine spatial plan proposals are likely to be transboundary, i.e. affect several countries. The transboundary nature of these effects is the result of the high mobility of several ecosystem components. A large number of populations of migratory marine species are not just shared with Sweden's neighbouring countries, but also with countries beyond Sweden's immediate surroundings. These species include ringed seal (Sweden-Finland), grey seal (several Baltic Sea countries), several bird species (Northern Europe and the Arctic), plankton and fish populations (Baltic and North Sea countries).

The negative effects estimated to arise from the establishment of wind power in the Baltic Sea are relevant also for countries beyond the Baltic region. Some of the areas designated for offshore energy production are important feeding and resting grounds for several bird species that spend winter in Swedish waters or pass through Sweden on their migrations. The positive effects on seabirds and porpoises that could result from redirecting shipping around Gotland also have cross-border significance, not just from an environmental point of view, but also for shipping utilising the Baltic Sea.

In the Skagerrak and Kattegat, the estimated effects of the marine spatial plan proposals occur mostly as a result of assumptions about the reduced effect from trawl fishing on the seabed. Positive effects on plankton and fish

populations and on food webs in general extend across borders, benefitting above all Denmark and Norway, with which Sweden shares the Skagerrak and Kattegat ecosystem.

Contribution to the achievement of Sweden's environmental quality objectives

The proposed marine spatial plans are estimated to have an effect on the attainment of the objectives for reduced climate impact, clean air, a non-toxic environment, a balanced marine environment and flourishing coastal areas and archipelagos, and a rich diversity of plant and animal life. According to the assessment, the proposed marine spatial plans are expected to:

- have a small positive effect of international significance on the objective for reduced climate impact, by creating the conditions for a substantial expansion of offshore wind power;
- have no effect, or a marginally negative one, of local significance on the objective for clean air, since they do not affect the largest sources of emissions at sea;
- have no effect, or a marginally negative one, of local significance on the objective for a non-toxic environment, connected with risks of environmental toxins being released from sediment, and with marginally higher operative emissions from service and recreational boats;
- imply a small positive effect of international significance on the objective for a balanced marine environment and flourishing coastal areas and archipelagos, particularly through guidance regarding areas with particular consideration to high nature values and cultural landscape values.
- have a marginal or small positive effect of international significance on the objective for a rich diversity of plant and animal life, through guidance about protection of valuable areas and the adaptation of maritime activities, and by providing guidance for the protection of cultural and recreational areas.

Assessment of effects on ecosystem services

A positive effect on regulating ecosystem services is assumed to occur for the service *Maintenance of nursery areas*, through the designation in the plans of areas with particular consideration to high nature values. The positive effect of renewable offshore wind power is also considered a regulating ecosystem service, as it contributes to reducing greenhouse gas emissions and thereby reduces the pressure on the carbon dioxide-

regulating ecosystem service *Regulation of atmospheric chemical composition.*

Food from wild animals is a provisioning ecosystem service that is influenced by how commercial and recreational fisheries are carried out and how fish stocks are managed. The guidance in the plan proposals relative to areas with particular consideration to high nature values may contribute to the long term reinforcement of this ecosystem service. In the shorter term it may have a slight negative effect on the profitability of commercial fishing, though.

In the marine spatial plan proposals, it is mainly the designation of energy production areas that risk having a negative effect on cultural ecosystem services. Through the designation of areas with preferential use 'culture' and areas with particular consideration to high cultural landscape values, the plans may also contribute to securing cultural ecosystem services. Particular consideration to high nature values may also contribute to strengthening social environmental conditions, and thus cultural ecosystem services.

Offshore energy production may affect supporting ecosystem services, not least during the construction phase, through temporary negative effects on e.g. marine mammals and benthic environments. Guidance on particular consideration to high nature values is estimated to have to positive effects on supporting ecosystem services, such as *High species diversity, genetic diversity within species*. Effects on wintering birds are also an example of a potential negative effect on these ecosystem services.

Mitigation, evaluation and monitoring

A monitoring programme will be produced with the final versions of the marine spatial plans that describes how evaluations are to be carried out and what parameters are to be evaluated. This monitoring programme will be coordinated with other existing environmental evaluation in order to ensure effective implementation of the marine spatial plans.

Based on the results of the environmental assessment, the last chapter of the strategic environmental assessment report includes measures aimed at preventing, halting, mitigating or remedying significant negative environmental effects:

- Sector-specific measures to evaluate and deal with potential environmental effects, determined mainly during subsequent licensing examinations, including Natura 2000 appraisals.
- Overall analysis and coordination needs: cumulative effects of offshore wind power on seabirds; occurrence and migration patterns of bats at sea, and effects from wind power; investigation of alternative offshore energy production areas; analysis and needs assessment of area-specific measures in areas with particular

consideration to high nature values and cultural landscape values; redirection of shipping in the South Bothnian Sea; and spatial data on ecosystem services.

- Concrete proposals for alternative planning considerations in order to promote the achievement of good environmental status.