Partnership for nature and people

Assessment of the Maritime Spatial Plan of Sweden

Alignment of Sweden's Maritime Spatial Plan with EU Environmental Objectives

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BirdLife INTERNATIONAL
EUROPE AND CENTRAL ASIA

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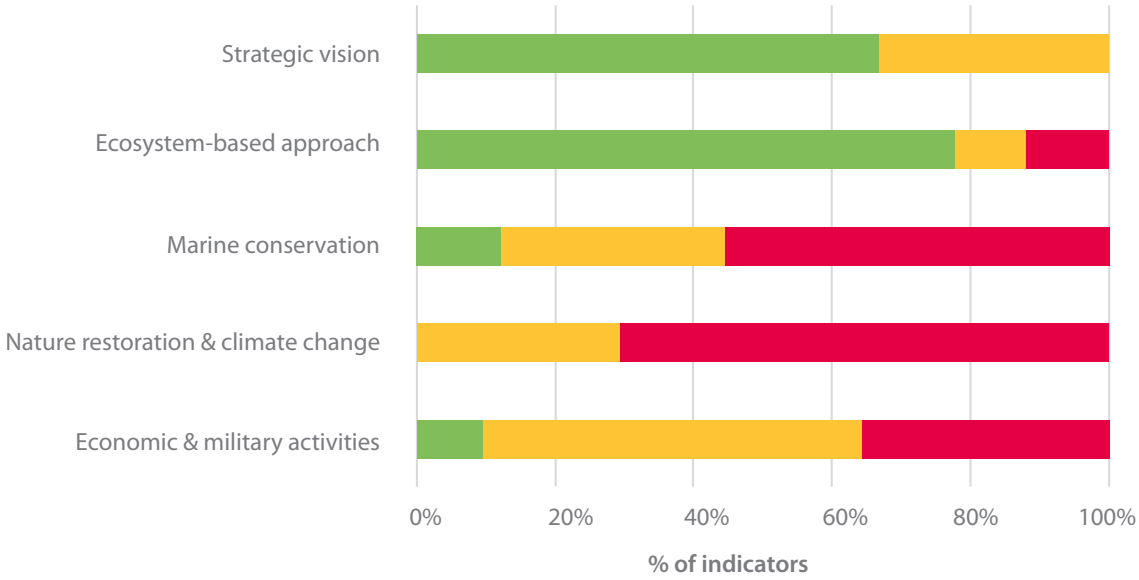
Summary of the assessment

Coastal and maritime activities play an important role in Swedish society and economy. The Swedish maritime spatial plan sets out a vision for the future use of marine space intended to provide a framework to guide decision-making at lower levels. It is substantially informed by a robust, spatially explicit quantitative assessment of cumulative impacts and ecosystem sensitivities. The environmental assessment indicates, however, that both the negotiated plans and an eco-alternative scenario would contribute only marginally to a reduction in overall impact on the ecosystems of the Baltic and North Seas (compared to a business-as-usual alternative with less wind energy generation). This may, in part, be explained by the role of human pressures that are impacted to a limited extent only by maritime spatial planning (e.g., fisheries, eutrophication due to agricultural runoff). It is also possible that changes in the weighting of specific values (pressures, sensitivity) could impact meaningfully on the overall results of the cumulative impacts assessment. The Swedish maritime spatial plan in many respects takes the form of an evidence-based guidance document. Its primary focus is on informing future decision-making. The maritime spatial plan contains few binding commitments. Consequently, its impact will be determined by its success in acting as a basis for decision-making. A number of the key proposals of the maritime spatial plan with potentially significant implications for the protection of the marine environment will require legislative measures for their implementation, including the designation of an expanded and coherent network of marine protected areas.



Percentage of indicators under each area of the assessment that are satisfied/partially satisfied/not satisfied by the Maritime Spatial Plan

About this assessment

This assessment of the alignment of Sweden's Maritime Spatial Plan (MSP) with EU environmental objectives was commissioned by BirdLife Europe and Central Asia (BL ECA) and conducted by Dr Cormac Walsh Research and Consulting (independent consultant). Inputs were received from national experts familiar with the MSP. The assessment follows the methodology detailed in the report *Are EU Member State's Maritime Spatial Plans fit for nature and climate? Technical Report – Approach and Main Findings*. The assessment is indicator-based with each indicator accorded a 'traffic light' score.

Scoring system


Criterion is **satisfied**


Criterion is **partially satisfied**


Criterion is **not satisfied**

Documents[1] included in the assessment

- Havsplaner för Bottniska viken, Östersjön och Västerhavet (Marine Plans for the Gulf of Bothnia, the Baltic Sea and the North Sea, Proposals for Government, December 2019) (translated by the author) (SE_MSP).

- Hammar, L., Molander, S., Pålsson, J., Schmidtbauer Crona, J., Carneiro et al. (2020) Cumulative impact assessment for ecosystem-based marine spatial planning, Science of The Total Environment, 734, 139024. (Hammar et al 2020)[2].

Contact

Daniel Mitchell, European Marine Coordinator, BirdLife Europe & Central Asia
daniel.mitchell@birdlife.org

1. References to these documents in the assessment include the document reference shown above in brackets followed by the page number(s).
2. Peer reviewed journal article detailing the cumulative impact assessment methodology and its application to the Swedish MSP, written by Swedish Agency for Marine and Water Management staff, in collaboration with research partners. A translation of the Swedish.

Detailed Assessment

1. Strategic Vision

1.1 Strategic Vision & Long-term Objectives

Criterion	1.1a Does the MSP set out a future vision with long-term objectives?
Score	**Assessment**
	Yes, the MSP does set out a future vision. It is an aspirational vision of a desired future. *By 2050, we will exploit the sea through competitive, innovative and sustainable maritime industries. The sea has a good environmental status and a rich biodiversity. We preserve and develop the natural and cultural environments of the sea and exploit its ecosystem services. There are plenty of experiential values and opportunities for re-creation. The sea is a joy and a benefit for all. Business and management work together and marine plans provide a holistic, forward-looking and predictable approach. In 2050, we will continue to live in peace and freedom in the Baltic Sea and North Sea region. Climate change has slowed down and we have adapted to changing conditions* (SE_MSP, 32).

Criterion	1.1b Is the time period of the plan (usually 5 or 10 years)[3] positioned within a longer timeframe?
Score	**Assessment**
	Yes, the plan is framed within the context of a vision for 2050 (see above quote).

Criterion	1.1c Does the MSP allow for the future expansion of Marine Protected Areas (MPAs) to meet the targets[4] set out in the EU Biodiversity Strategy for 2030?
Score	**Assessment**
	Reference is made to the establishment of new marine protected areas, supported by MSP. There is no concrete indication of the areas that future MPAs might cover. *Marine plans should contribute to good ecosystems and the development of ecosystem services. They will support the establishment of new Marine Protected Areas in line with national objectives and create the conditions for strengthening and preserving representativeness, functionality and ecological connectivity* (SE_MSP, 34).

3. The time period of the plan refers to the period of validity (before the next revision/update is required). The longer timeframe refers to period of usually multiple decades within which the objectives of the plan may be set out. Not all plans will make reference to longer time frame.

4. Protection of 30% of the sea in the EU with at least one third of protected areas being strictly protected.

2. Ecosystem-based Approach

2.1 Precautionary Principle

Indicator	2.1a Does the MSP make explicit reference to the precautionary principle as the basis of decision-making?
Score	**Assessment**
	Yes, reference is made to the precautionary principle. *According to the precautionary principle, lack of knowledge about environmental effects cannot be used as an argument for permitting an activity. Marine planning therefore draws attention to the need for more in-depth knowledge in certain areas* (SE_MSP, 21).

Indicator	2.1b Has the precautionary principle been applied to relevant MSP provisions?
Score	**Assessment**
	Yes, the precautionary principle is applied. The Swedish MSP places a comparatively strong emphasis on high-resolution monitoring and impact assessment. Where concrete information is lacking, values are interpolated and/or supplemented by expert judgement. Nevertheless, there are some significant gaps in knowledge, such as in relation to feeding areas for seabirds. 'Precaution areas' are indicated, where activities should be planned with 'particular caution and regard for the marine environment' (Hammar et al 2020, 2).

Indicator	2.1c Is there evidence that MSP zoning decisions and/or spatial policies have been substantially informed by the precautionary principle?
Score	**Assessment**
	Yes, the precautionary principle does inform zoning via evidence-based impact assessment and the designation of 'precaution areas'.

2.2 Cumulative Impact Assessment

Indicator	2.2a Was a cumulative impact assessment[5] conducted as part of the preparation of the MSP?
Score	**Assessment**
	Yes, a detailed GIS-based cumulative impact assessment was conducted (Hammar et al 2020).

5. EU MSFD Art. 8.

Indicator	2.2b Is the MSP designed accordingly, recognizing ecological limits and cumulative impacts?
Score	**Assessment**
	Yes, the analysis of cumulative impacts has substantially informed the design of the MSP. Reference is made to ecological limits in relation to specific uses, where the present state of the Baltic Sea is understood to place limits on ecosystem services: *... the current state of the environment severely limits the availability of ecosystem services. Commercial fishing and sea-related tourism and recreation are the economic activities most affected by a degraded marine environment. Marine plans should work to secure the ecosystem services that maritime industries need. Fish spawning and nursery areas are therefore the basis for nature use and for areas with special consideration for high nature values* (SE_MSP, 62).

Indicator	2.2c Is there evidence that MSP zoning decisions and/or spatial policies have been substantially informed by an assessment of cumulative impacts?
Score	**Assessment**
	There is limited evidence of the cumulative impact assessment informing zoning decisions. It is likely to have had an influence alongside other factors, but the rationale for individual zoning policies is not made explicit.

2.3 Ecological Limits

Indicator	2.3a Does the MSP include an explicit calculation of ecological limits or carrying capacity?
Score	**Assessment**
	No, there is no explicit calculation of ecological limits or carrying capacity.

Indicator	2.3b Is there evidence that MSP zoning decisions and/or spatial policies have been substantially informed by an assessment of ecological limits (e.g., safe biological limits for commercially exploited fish and shellfish)?
Score	**Assessment**
	There is no direct evidence of this.

2.4 Ecosystem Services

Indicator	2.4a Does the MSP explicitly identify ecosystem services?
Score	Assessment
	Yes, resource-based and cultural ecosystem services are identified, including reference to fisheries, human well-being and recreation and the attractiveness of coastal areas (SE_MSP, 62). A qualitative analysis of the how the conditions for ecosystem services may change as a result of the MSP was conducted as a component of the impact assessments.
Indicator	**2.4b Is there evidence that MSP zoning decisions and/or spatial policies have been substantially informed by an assessment of ecosystem services?**
Score	**Assessment**
	There is limited evidence of the assessment of ecosystem services informing zoning decisions. It is likely to have had an influence alongside other factors, but the rationale for individual zoning policies is not made explicit.

2.5 Ecosystem Sensitivity Analysis

Indicator	2.5a Does the MSP include an ecosystem sensitivity analysis, assessing in particular sensitivity to human-induced changes or influences?
Score	Assessment
	Yes, an analysis of ecosystem sensitivity[6] (informed by expert judgement) was conducted as part of the cumulative impact assessment (Hammar et al 2020).
Indicator	**2.5b Is there evidence that MSP zoning decisions and/or spatial policies have been substantially informed by an assessment of ecosystem sensitivity?**
Score	**Assessment**
	Zoning decisions have been informed by the ecosystem sensitivity analysis. This is evidenced by the designation of precaution areas.

6. The Symphony model includes an a matrix of 37 human pressures and their impacts on 33 ecosystem components (incl. birds, fish, mammals and habitats) (Hammar et al. 2020, p. 5, Table 2).

2.6 Future Scenarios

Indicator	2.6a Have alternative future scenarios informed the preparation of the MSP?
Score	**Assessment**
	Yes, the MSP has been informed by a detailed, quantitative comparison of three scenarios: Business-as-usual, negotiated plan and eco-alternative (Hammar et al 2020). *Negotiated plans are the marine spatial plan proposals developed after extensive stakeholder dialogue… Eco-alternative plans are closely related versions of the negotiated plans, but with more priority given to the safeguarding of ecological functions and the ambition for achieving good environmental status in accordance with the EU MSFD* (Hammar et al 2020, 5).
Indicator	**2.6b Is there evidence that MSP zoning decisions and/or spatial policies have been substantially informed by an assessment of alternative scenarios?**
Score	**Assessment**
	Yes, zoning decisions have been informed by the assessment of alternative scenarios. Comparison of scenarios made it possible to weigh up the potential impacts of different approaches both at the large scale (e.g., Swedish Baltic Sea) and locally, and allowed planners to get a better sense of the relative environmental impacts of proposed activities.

2.7. Monitoring and Adaptation

Indicator	2.7a Does the MSP make arrangements for ongoing monitoring of marine ecosystems?
Score	**Assessment**
	Yes, ecosystem monitoring is intended to occur on a systematic, ongoing basis.
Indicator	**2.7b Does the MSP make provision for adaptive modification of the MSP in response to identified changes in the marine environment, or new information pertaining to pressures on the marine environment?**
Score	**Assessment**
	Yes, provisions for adaptive modification are included. *Marine planning can be described as a recurring process that takes place in cycles over several years. Through a number of steps, marine planning moves from information gathering and analysis of the current situation to planning where marine plans are the outcome of the planning process. The plans are then implemented and monitored on an ongoing basis… the Swedish Agency for Marine and Water Management must follow up on the adopted plans and produce new proposals for marine plans when the Agency sees a need or at least every eight years. Readiness is required to continuously incorporate, evaluate and use new knowledge in future marine plans* (SE_MSP, 19).

2.8 Good Environmental Status

Indicator	2.8a Does the MSP make explicit reference to the requirements of the Marine Strategy Framework Directive (MSFD)[7] in relation to the achievement of Good Environmental Status (GES)?
Score	**Assessment**
	Yes, there are multiple references to the role of the MSP in contributing to the achievement of Good Environmental Status: *In most cases, good environmental status of the sea is not expected to be achieved by 2020… Human activities give rise to different types of pressures that can affect the environment in a way that leads to a deterioration of its status. These pressures and their impacts are currently assessed to be too high overall. Marine plans should contribute to achieving and maintaining good environmental status. Marine planning is one of several instruments for achieving or maintaining good environmental status* (SE_MSP, 63). The contribution of MSP to achieving GES is further specified, albeit in relatively general terms. This is intended to occur through the adaptation of marine activities in order to reduce pressures, enhanced protection of vulnerable habitats, supporting ecological connectivity and climate change adaptation measures (SE_MSP, 65).

Indicator	2.8b Does the MSP indicate how the MSFD implementation process has informed the MSP?
Score	**Assessment**
	Yes, the MSP preparation has been substantially informed by an assessment of Good Environmental Status that was conducted as part of the national implementation of the EU MSFD[8]. The achievement and maintenance of Good Environmental Status is pursued through the development and implementation of a set of legally binding Environmental Quality Standards, which themselves are informed by knowledge of the vulnerability/robustness of ecosystems to human pressures (SE_MSP, 16).

7. Marine Strategy Framework Directive.
8. SWAM (2018) Marine Strategy for the North Sea and Baltic Sea 2018 - 2023, Environmental Status Assessment and Socio-Economic Analysis.

3. Marine Conservation

3.1 Location of Conservation Areas and Economic Activities

Indicator	3.1a Is the location of protected areas founded on a clear and transparent scientific rationale?
Score	**Assessment**
	Reference is made to opportunities to expand protected area coverage based on the impact and sensitivity assessments that have been conducted. It is unclear, on what basis the locations of existing protected areas (mostly in coastal waters) have been determined. *At the same time, the marine spatial plan opens up the possibility for increased protection of species and habitats in far more and larger areas through the guidance on consideration of high nature values. High Nature Value Assessments have been included in the trade-offs for the most appropriate use, with the result that interfering activities are avoided in the most valuable natural areas. Guidance on the consideration of high nature values also signals to the need for operators and regulators to apply in particular sustainability principles in future activities. Attention is drawn to the importance of these areas for biodiversity, the integrity of ecosystems and resilience in a changing climate. In addition, the use nature in the plans confirms the existing and planned protected areas, fish spawning grounds and areas of national interest in nature conservation* (SE_MSP, Ch. 13).

Indicator	3.1b Do conservation areas explicitly exclude the following from taking place within or adjacent to their boundaries: commercial fishing; wind energy development; shipping; sand and gravel extraction; military use?
Score	**Assessment**
	There is no explicit mention of a categorical exclusion of any of these activities. There is a consideration for multi-use. 'Interfering' activities are to be avoided in high value natural areas. *High Nature Value Assessments have been included in the trade-offs for the most appropriate use, with the result that interfering activities are avoided in the most valuable natural areas. Guidance on the consideration of high nature values also signals to the need for operators and regulators to apply in particular sustainability principles in future activities* (SE_MSP, Ch. 13). *The Government may issue regulations prohibiting or restricting activities or measures within a marine planning area, if this is necessary to achieve the purpose of the plan. Regulations or restrictions on the use of the planned area shall be those which are not covered by existing restriction and prohibition possibilities... Prohibitions and restrictions on certain uses can provide opportunities for other uses of the area. To date, the Agency has not developed any proposals for such regulations* (SE_MSP, 31).

Indicator	3.1c Does the MSP include buffer zones to ensure sufficient distance between protected areas and wind energy zones?
Score	**Assessment**
	There is no mention of buffer zones.

Indicator	3.1d Does the MSP provide a clear and transparent scientific rationale for the colocation (multi-use) of conservation areas and economic activities?
Score	**Assessment**
	The plan does not take an exclusive approach to zoning. Co-existence is considered possible and potentially desirable in some instances. This based on an assessment of appropriate uses and possibilities for co-existence of multiple uses. *The uses shown on the plan map have been assessed in the marine planning process as the most appropriate and these take precedence over other uses. Other uses in the area should be adapted to the conditions and needs of the identified uses in management, planning and permitting. In many cases, multiple uses in the same location are indicated as most appropriate. These then have the same degree of precedence over other uses. Where more than one use is indicated, coexistence is considered possible. Uses that are deemed to be able to co-exist may need to adapt to each other* (SE_MSP, 46).

3.2 Ecological Corridors

Indicator	3.2a Does the MSP provide for protected ecological corridors[9] ensuring connectivity between conservation areas?
Score	**Assessment**
	References are made to ecological connectivity. It is unclear, however, at what scale connectivity might be maintained or restored. Explicit provision for protected corridors is not found within the MSP. *Ecological connectivity: The Marine Plans emphasise the importance of maintaining important ecological connectivity, by applying an ecosystem perspective in the designation of areas for nature use and special consideration of high nature values, which can benefit marine food webs and basic biophysical conditions* (SE_MSP, 86).

9. EU Biodiversity 2030.

Indicator	3.2b Does the MSP take explicit account of the life-cycles[10] of mobile marine species (birds, bats, fish and marine mammals)?
Score	**Assessment**
	In certain areas the plan indicates that measures will contribute to positive effects for fish species and marine mammals at different stages in their respective life-cycles. *For the **Skagerrak/Kattegat**, the environmental impact assessment indicates that the plan contributes to certain positive effects for the marine ecology, including for fish species, nursery areas and bottom environments. In the Skagerrak, this also applies to the North Sea harbour porpoise and harbour seal. The Kattegat is an important area for the Belt Sea harbour porpoise* (SE_MSP, Ch. 13).

Indicator	3.2c Are migratory routes for birds protected by the provisions of the MSP[11]?
Score	**Assessment**
	The MSP does not include concrete measures for the protection of migratory routes for birds. Potential adverse impacts from wind farm construction/operation are noted but migratory routes have not been included in the cumulative impact assessment or sensitivity analysis.

Indicator	3.2d Does the MSP make provisions to minimise the disruption or fragmentation of ecological corridors due to the following activities: shipping; sand and gravel extraction; seismic exploration; offshore wind (and related servicing infrastructure)?
Score	**Assessment**
	There are no explicit measures included in the plan to avoid/mitigate disruption to ecological corridors.

10. E.g. reference to breeding grounds.
11. AEWA Art. 2.1, Annex 3.2.4, CMS Art. 1.

3.3 Protected Species

Indicator	3.3a Does the MSP include explicit measures to ensure the protection of species in accordance with EU legislation and international commitments?
Score	Assessment
	Reference is made to the achievement of favourable conservation status as required by the Birds and Habitats Directives. Explicit measures to ensure the protection of such species are not found within the MSP. *Furthermore, marine planning shall contribute to the maintenance of a favourable conservation status for the species and habitats protected. Favourable conservation status is a term used to describe the conditions needed for the long-term survival of a habitat type, habitat or specific species. It is used for habitats and species identified as particularly valuable in the European Natura 2000 network* (SE_MSP, 40).

4. Nature Restoration and Climate Change

4.1 Nature Restoration

Indicator	4.1a Does the MSP make specific provisions for the restoration of ecosystems[12]?
Score	Assessment
	There is mention of ecosystem restoration but there are no specific provisions in the MSP. *Enhanced protection of valuable habitats: the protection and restoration of valuable marine habitats in an ecologically representative, coherent and functional network of marine protected areas is promoted through marine planning that confirms existing and planned area protection, as well as national interest in nature conservation* (SE_MSP, 86).

Indicator	4.1b Does the MSP explicitly take account of the likely impacts of climate change on the marine ecosystem?
Score	Assessment
	It is noted that climate change is expected to amplify existing pressures on the marine environment. A more detailed assessment is not included. *Climate change is expected to exacerbate the effects of pressures in our marine areas* (SE_MSP, 85).

12. EU Biodiversity 2030.

Indicator	4.1c Does the MSP include specific measures to mitigate the impacts of climate change on the marine ecosystem and allow for adaptation (e.g., migration of species)?
Score	**Assessment**
-/-	There is no mention of concrete measures, other than that adaptation is necessary as measure to ensure the health of a species/ecosystem. There is, however, mention of climate refugia as a potential protection measure and of the need to account for climate change impacts on species distribution. *In addition, there is a need for sustainable management of areas that are particularly important for marine ecosystems in a changing climate, so-called climate refugia... A climate refuge is an area that may need special protection to ensure that important plants and animals are preserved as the climate changes and their distribution decreases.* (SE_MSP, 61-2) *identifying areas that are particularly important for the distribution of a species as the climate changes contributes to the possibility of protecting such areas and species in order to make ecosystems more resilient to climate change. The distribution of species is important for maintaining ecosystem functions.* (SE_MSP, 86)

Razorbill *(Alca torda)*
Photo: Abborren Singo

Indicator	4.1d Does the MSP identify suitable areas for compensation, or does it have relevant provisions to support the implementation of compensation measures in the marine environment (e.g., for infrastructure projects on land or at sea)?
Score	Assessment
✗	The MSP does not contain such provisions.

4.2 Climate Change Mitigation

Indicator	4.2a Does the MSP make reference to the role of marine ecosystems as carbon sinks[13]?
Score	Assessment
-/-	There is a general reference to the potential of marine ecosystems to act as carbon sinks. *Consideration should be given to the potential for increased extraction of finite resources such as sand, gravel and other minerals, as well as carbon storage to combat climate change* (SE_MSP, 42).

Criterion	4.2b Does the MSP quantify the contribution of marine carbon sinks to climate mitigation?
Score	Assessment
✗	No.

Criterion	4.2c Does the MSP include explicit measures to safeguard the contribution of marine carbon sinks?
Score	Assessment
✗	No.

13. EU Biodiversity 2030.

5. Economic and Military Activities

5.1 Shipping

Indicator	5.1a Does the MSP include specific measures to ensure marine ecosystems are not negatively impacted by shipping activity?
Score	Assessment
	No specific measures are mentioned. Shipping is accorded high priority. There are investigations into measures, but they are not used yet. *Trade-offs need to be made on the assumption that the fishing and maritime shipping functions are to be maintained* (SE_MSP, Ch. 12). *Underwater noise would be reduced if maritime traffic passed through a deeper area where a greater proportion of the seabed is soft and thus reflecting noise less. A reduced negative effect would also be achieved if maritime traffic passed areas with lower nature values* (SE_MSP, Ch. 13).

Indicator	5.1b Does the MSP include an assessment of the potential risks posed by shipping accidents (e.g., spillages of hazardous substances) to marine ecosystems?
Score	Assessment
	There is not an assessment for the whole MSP area, but before new uses are permitted there needs to be an assessment for accidents and the potential impacts. *In the subsequent authorisation process, a more detailed project- and site-specific assessment of the use of an area is carried out, for example, to determine whether a development poses a risk of accidents, [...]* (SE_MSP, 29).

Indicator	5.1c Does the MSP include explicit measures to mitigate the risks posed by shipping accidents to marine ecosystems?
Score	Assessment
	There is no mention of explicit measures.

Indicator	5.1d Does the MSP include seasonal restrictions on shipping, such as speed restrictions or re-routing (e.g., during the breeding season of protected and vulnerable species)?
Score	**Assessment**
-/-	There are no concrete restrictions. There are investigations and assessments with recommendations for future action. *As for positive effects, there is guidance on energy extraction generating positive effects related to climate. In addition, investigation areas for shipping are included. The aim with these is to reduce environmental impact from shipping, possibly by rerouting shipping south of the Hoburg bank to the deep-water routes in the Southeast or to the west of the island of Gotland. Such rerouting is assessed to have a positive impact on the marine environment (see section on marine ecology and bottom environments above), but may potentially have negative climate impacts and increase air pollution caused by increased mileage* (SE_MSP, 21). The MSP makes it possible to put restrictions for shipping in high value natural areas. *Special consideration of high nature values may include adapting works to locations and time periods that minimise direct, individual or cumulative damage to nature values. This may include, for example: [...]adjustment of speed, maximum draught or timing of maritime traffic* (SE_MSP, 79).

Black guillemot *(Cepphus grylle)*
Photo: Havringe Oxelosund

5.2 Commercial Fishing

Indicator	5.2a Does the MSP include restrictions on commercial fishing methods (e.g., bottom-trawling) to minimise damage to marine ecosystems?
Score	**Assessment**
	The MSP includes guidance aimed at reducing the adverse impacts of fishing activity (e.g., through a reduction in bottom-trawling). *For the Baltic Sea, the environmental report states that the marine spatial plans' guidance on particular consideration of high nature values is estimated to result in reduced impact from fishing in particular, due to reduced disturbance to the seabed and smaller by-catches... The expected reduction in trawling may also have some positive effects on water quality due to local reductions in turbidity, but the effects are variable and relatively small... One of the reasons for positive effects is the adoption of a reduction in bottom trawling in areas with guidance on particular consideration to high nature values. Trawler fishing that reduces physical disturbance of the seabed can have a positive effect on the ground* (SE_MSP, Ch. 13).

Criterion	5.2b Does the MSP include additional restrictions on commercial fishing activity (e.g., vessel size, seasonal constraints) to minimise damage to protected and vulnerable ecosystems and habitats and to achieve healthy populations of commercial fish species?
Score	**Assessment**
	The MSP makes provision for greater restrictions in areas with high natural values. *Special consideration of high nature values may include adapting works to locations and time periods that minimise direct, individual or cumulative damage to nature values. This may include, for example: [...] fishing regulations relating to areas, gear or time of capture* (SE_MSP, 79).

5.3 Extractive Activities

Indicator	5.3a Does the MSP include restrictions on extractive activities (e.g., oil, gas, deep-sea mining, sediment extraction) to minimise damage to protected and vulnerable ecosystems and habitats?
Score	**Assessment**
	There are no specific restrictions. The MSP does include guidance on avoiding/ reducing adverse impacts of extractive activities at certain locations. *The area must not be too close to the coast as this risks changes in sediment dynamics, which may cause increased coastal erosion.* • *Shallow biologically productive and sensitive areas exposed to sunlight should be avoided.* • *Biodiversity must be preserved and ecosystems in and around the site must not be affected to such an extent that their ability to provide ecosystem services is lost or irreversibly reduced* (SE_MSP, 66). *The marine plans specify coexistence between nature and sand extraction where it is assessed that such coexistence may be possible* (SE_MSP, 78).

5.4 Military activity

Indicator	5.4a Does the MSP include restrictions on military activities (e.g., seasonal, time of day, noise restrictions) to minimise damage to protected and vulnerable ecosystems and habitats?
Score	**Assessment**
	The MSP indicates the potential for conflict between wind energy and military activity and notes that the defence forces may need to adapt their activities to avoid damage to nature values. In general, military-based national security is accorded a very high level of priority. *Defence activities may need to be adapted to avoid damage to nature values. This can be done, for example, by the Armed Forces planning their training activities in the area so as to minimise the impact on nature values* (SE_MSP, 76). *Good conditions for defence and security are reflected in the marine spatial plans partly in that defence and security are given due weight in trade-offs between interests, and partly through defence use, which includes marine exercise areas as well as the influence areas required for facilities on land. Security is a prerequisite of the development of society, for the environment and business as well as social welfare* (SE_MSP, Ch. 12).

5.5 Noise and Light Pollution

Indicator	5.5a Does the MSP include an assessment of the impacts of noise pollution on the marine ecosystem?
Score	Assessment
	There is an assessment of noise pollution in the table of cumulative impacts of different factors in the environmental report (Hammar et al_2020, 4). This includes the noise pollution caused by shipping, energy and recreation. In the MSP the topic is also mentioned. *Installation of offshore wind power at the South Middle Bank is also at risk of disturbing the noise-sensitive and threatened Baltic population of harbour porpoise during the construction phase* (SE_MSP, Ch. 13). *The environmental report presents an assessment of the differences in environmental effects of maritime traffic in the areas around the Hoburg bank and the Salvo reef, with current shipping lanes and rerouted maritime traffic respectively. The impacts analysed here are underwater noise and oil discharges. For rerouted maritime traffic by the Hoburg bank, the analysis indicates positive environmental effects for wintering seabirds and pelagic species. Underwater noise would be reduced if maritime traffic passed through a deeper area where a greater proportion of the seabed is soft and thus reflecting noise less. A reduced negative effect would also be achieved if maritime traffic passed areas with lower nature values. For the Salvo reef, the analysis indicates some positive local effects, primarily for fish and birds* (SE_MSP, Ch. 13).
Indicator	**5.5b Does the MSP include specific and concrete measures to ensure that noise pollution is minimised?**
Score	**Assessment**
	There are no concrete measures, but there are suggestions for minimizing noise pollution: *Underwater noise would be reduced if maritime traffic passed through a deeper area where a greater proportion of the seabed is soft and thus reflecting noise less. A reduced negative effect would also be achieved if maritime traffic passed areas with lower nature values* (SE_MSP, Ch. 13).
Indicator	**5.5c Does the MSP include specific measures to minimise the impact of light pollution (e.g., from shipping and harbour activities)?**
Score	**Assessment**
	Light pollution is not mentioned in the MSP nor in the environmental reports.

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