

Swedish update of the Programme of Measures according to the Marine Strategy Framework Directive

Summary in English of the Swedish report *Marin strategi för Nordsjön och Östersjön, åtgärdsprogram för havsmiljön i Nordsjön och Östersjön 2022-2027 enligt havsmiljöförordningen*



Swedish Agency
for Marine and
Water Management

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Disclaimer:

This is an unofficial translation of the summary of the Swedish update of the Programme of Measures according to the Marine Strategy Framework Directive. It concerns an update of the first Programme of Measures established in 2015. It builds on the Swedish Marine Environmental Ordinance SFS 2010:1341, which is the Swedish implementation of the Marine Strategy Framework Directive 2008/56/EC.

The Programme of Measures has been formulated in Swedish. The version in Swedish is to be regarded as the formal document. Should there be inconsistencies between the Swedish version and the English version, the Swedish version will apply.

The full version in Swedish could be found here [Marin strategi för Nordsjön och Östersjön - Åtgärdsprogram för havsmiljön 2022-2027 enligt havsmiljöförordningen](#)

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1 Introduction

The Swedish Agency for Marine and Water Management (SwAM) is a governmental environment agency working to implement a coherent marine and water policy on behalf of the Swedish Government. The agency works for issues related to the conservation, restoration and sustainable use of lakes, watercourses, marine waters and fish resources in collaboration with other actors in Swedish society, the EU and globally.

Based on a knowledge-based and coordinated management, we work from source to sea using an ecosystem-based approach, which means that all management tools shall work together to strengthen the ecosystems and their services. We actively involve actors in society who have an interest in a healthy marine environment. Sweden's national policies emphasise responsibility for the future in accordance with Agenda 2030. This means implementing substantial and effective efforts to achieve clean seas, lakes and streams.

The sea is a common resource which we share across borders with our neighbours regionally and internationally. The sea's resources and societal values must be managed jointly at several levels in order to achieve the UN Sustainable Development Goal SDG 14: *Life Below Water* and our national environmental quality objective *A Balanced Marine Environment, Flourishing Coastal Areas and Archipelagos*. SwAM's work to achieve these objectives for the sea includes our global work, our regional work within the EU on the Marine Strategy Framework Directive (MSFD), the national implementation of the directive and other national actions for the sea.

In 2018, SwAM made an assessment of the environmental state of the Swedish parts of the Baltic Sea and the North Sea, which concluded that the status of the marine environment must be improved to deliver the ecosystem services on which society depends. A part of this work to improve the status of the marine environment is to develop a programme of measures for the marine environment. This Programme of Measures contains new measures, for example in the form of regulations, as well as guidance to aid compliance with existing rules that affect the condition of the sea. Practical experience has shown that well-designed regulation can lead to innovation and improved forms of collaboration that benefit societal development as well as regional growth. Additional types of measures included in the Programme of Measures include measures for coordination, communication and awareness raising, as well as economic incentives to create the conditions for innovation and development of partnerships.

The role of SwAM in this work is to prescribe, guide and collaborate with other authorities in the implementation and follow-up of both existing measures under other regulatory frameworks and the new measures in this programme. Achieving an improvement in the marine environment requires close collaboration with other authorities that contribute to marine management, such as the Swedish Environmental Protection Agency, the Swedish Board of Agriculture, the Swedish Transport Agency and the Swedish Chemicals Agency, as well as the county administrative boards. These authorities have responsibility for key issues such as shipping, hazardous substances and eutrophication. The measures in this programme of measures reflect this. The realisation of a *source to sea* approach to marine protection also requires that the Water District Authorities develop effective programmes of measures as required under the Water Framework Directive, and that these are implemented. Regional and local implementation of measures and practical supervisory work by the county administrative boards and municipalities is also essential for progress towards a healthy marine environment.

SwAM's role is also to ensure that our own mandate within the Marine Strategy Framework Directive, the Common Fisheries Policy, Marine Spatial Planning, Water Framework Directive (WFD) and work on species and habitats is coordinated and that we use all these instruments for the benefit of achieving good environmental status combined with sustainable development. This Programme of Measures complements these instruments by presenting analyses to identify management gaps that need to be addressed for a number of thematic areas. These include fisheries, shipping, hazardous substances and eutrophication, as well as the development of measures in collaboration with the other authorities.

In support of this work, funding and new regulatory instruments are needed. Measures can be financed through SwAM's grants for the Marine and Aquatic Environment and through LOVA (local water management projects) support. Funding opportunities are also available in the EU system where important tools are the European Maritime Fisheries and Aquaculture Fund (EMFAF) and the Rural Development Programme under the Common Agricultural Policy (CAP). For innovation and growth, there are specific funding opportunities within the framework of the EU Regional Development Funds, as well as from Vinnova (Sweden's innovation agency) and from the Swedish Environmental Protection Agency. SwAM can be a partner and recipient of measures and actions supported under these financial instruments. This can strengthen efforts for change for the benefit of marine ecosystem services within Sweden, the EU and globally. It can also help to achieve the national environmental objective of *a balanced marine environment, Flourishing Coastal Areas and Archipelagos*.

The Marine Strategy



Figure 1. The figure shows the programme of measures in a broader context in the light of the SwAM's broader work to achieve good environmental status.

Figure 1 illustrates the context of the programme of measures in the light of the Agency's broader efforts to achieve a good environmental status in the marine environment. SwAM is also given specific government assignments to investigate new legal instruments that can lead to innovations which contribute to sustainable use of the marine environment. Examples are an assignment to investigate the possibility of a trading scheme for emission rights for nutrients, which are a cause of eutrophication. SwAM has also completed assignments on producer responsibility for fishing equipment and on stricter requirements for scrubber water emissions from ships to reduce emissions of hazardous substances into the marine environment (conducted

in collaboration with the Swedish Transport Agency). New regulatory instruments and longer-term innovations are expected results from an assignment on a strategy for the Future of Fisheries, which will also contribute to Sweden's Food Strategy (conducted in collaboration with the Swedish Board of Agriculture). There is also an important contribution from the international work carried out within the regional sea conventions, HELCOM in the Baltic Sea and OSPAR in the North-east Atlantic Ocean. Sweden works in the regional action plans and strategies of these organisations to harmonise our national measures with other Contracting Parties (States) This work includes the measures within the framework of this Programme of Measures, but also measures in other EU and international regulations, for example, on marine protected areas, shipping and hazardous substances.

SwAM have updated the first MSFD Programme of Measures for the North Sea and the Baltic Sea decided in 2015. The update is in accordance with the Marine Environment Ordinance (SFS 2010:1341), which is the Swedish legal instrument for implementation of the Marine Strategy Framework Directive. The Programme of Measures sets out the measures needed to meet the environmental quality standards (targets according to article 10 of the MSFD) laid down by Sweden to guide progress towards achieving or maintain good environmental status. The Programme of measures complies with Chapter 5 of the Swedish Environmental Code. The work follows an ecosystem-based approach with the aim to achieve a sustainable use of the sea and marine ecosystems that does not compromise their long-term survival and ensures that further deterioration shall be prevented.

1.1 Achieving A Balanced Marine Environment, Flourishing Coastal and Archipelagos

Achieving good environmental status in coastal and marine waters in accordance with the Marine Environment Ordinance is one of the specifications of the Swedish environmental quality objective *A Balanced Marine Environment, Flourishing Coastal Areas and Archipelagos* which has been agreed by the Swedish Parliament. Implementing the Marine Environment Ordinance is an important part of achieving this and other Environmental Quality Objectives. It also links the politically-agreed objectives for Swedish marine waters with legally-binding environmental quality standards (EQS) set out in SwAM's regulations (HVMFS 2012:18). There are also links to global goals and Agenda 2030 as the environmental objectives adopted by the Parliament reflect the environmental dimension of the agenda.

The basis for measures - environmental quality standards for the marine environment

In the Swedish Marine Environment Ordinance the Targets according to article 10 of the MSFD are implemented as Environmental Quality Standards (EQS). The EQS are, like the programme of measures, based on Chapter 5 of the Swedish Environmental Code. This is the case both for the standard for Good Environmental Status under section 17 of the Marine Environment Ordinance and the EQS with associated indicators (Targets with indicators according to article 10 MSFD) under section 19 of the ordinance. The standards are laid down by SwAM in the agency regulations HVMFS 2012:18. Where it is necessary to meet an EQS, the government, or the authorities or municipalities instructed by the government, shall propose a programme of measures. The Marine Environment Ordinance instructs SwAM to develop programmes of measures to enable the EQS to be met. Once a programme of measures has been established, authorities and municipalities shall take the necessary measures within their respective areas of responsibility.

Environmental quality standards with associated indicators shall guide progress towards achieving good environmental status. These standards aim to reduce the different pressures from human activities that adversely impact the marine environment. In addition to standards focused on specific pressures, there are also measures targeted at the overall standard for good environmental status. These include biodiversity measures and various restoration measures which do not directly link to a specific EQS under section 19 of the Marine Environment Ordinance, but which contribute to achieving the overall objective of good environmental status.

1.2 We propose a further 14 measures

The additional measures in the 2021 Programme of Measures are based on a variety of analyses and assessments. These contribute to an understanding of why certain environmental quality standards (EQS) are unachievable with ongoing measures, and whether there is a need for additional measures to reduce pressures so that the EQS can be met. Based on the results of these analyses, additional measures were decided, in cases where they are available and technically feasible as well as being cost-effective and sustainable.

Our recent assessments of the EQS show that the majority of them are not being met. Therefore, we were looking at the need for additional new measures in the update of the programme of measures. The pressures that SwAM considers to have the greatest overall impact on the Swedish marine environment are the input of nutrients, the extraction of living resources through fishing and the input of hazardous substances. These pressures limit on an overall level the possibility to meet EQS, and to achieve good environmental status in relation to biodiversity.

SwAM have decided a further 14 new measures. In addition, nine measures from the first programme of measures established in 2015 have been modified while 21 measures continue unchanged. Two measures are withdrawn. One since it's fully implemented and one because the content is covered by the programme of measures under the Water Framework Directive. These changes will strengthen the possibility to meet the EQS and to achieve good environmental status in the marine environment. It is important to emphasise that all measures aimed at reducing pressures also contribute to strengthening marine biodiversity. An authority responsible for the implementation of each measure is indicated. In many cases several authorities are involved in implementation.

1.3 Many factors affect the possibility of achieving a good environmental status

The additional measures in this update of the programme of measures will not in isolation contribute to the meeting the environmental quality standards (EQS). Instead, they complement all the measures already in place under the first programme of measures, together with the other relevant programmes and legislation that contributes to a better marine environment. However, our opinion is that many existing measures are not sufficiently implemented and are not always used to meet the EQS designated for the marine environment. There is therefore a deficit in implementation in relation to what is needed in the marine environment.

To ensure that EQS can be met we depend on the contribution of tools in other processes. This is particularly true for the following areas:

- The reduction of inputs of nutrients and hazardous substances must be primarily achieved through land-based measures managed within the Programmes of Measures of the Water Framework Directive. Implementation of these measures is very important in achieving

objectives for the marine environment. In addition, the MSFD Programme of Measures and the programmes under WFD overlap geographically in coastal waters. Thus, there is coordination between SwAM and the five Water District Authorities,

- management of the extraction of living resources (commercially exploited fish and shellfish) under the EU's Common Fisheries Policy needs to contribute to the achievement of EQS for biodiversity and sea bed integrity.

SwAM therefore intends to include in the implementation and follow-up of the programme of measures processes for strengthening collaboration on those existing measures that have been identified as having great significance for meeting the EQS.

The measures in this updated Programme of Measures reflect the current state of knowledge on the need for measures for the marine environment. In a number of areas, it is difficult to assess the scope or type of measures needed, and to predict what costs and impacts they may entail. However, SwAM does not see this as a reason to avoid taking measures to prevent environmental degradation. The Programme of Measures is a national programme for the entirety of Swedish marine waters and aims to deliver changes in the environment through measures, aimed at authorities and municipalities. Examples of instruments deemed necessary to reduce current pressures are changes in national, EU or international regulations, guidelines, investigations, information and grants. When implemented the measures are expected to lead, indirectly or directly, to a reduction in adverse impacts on the marine environment.

1.4 The programme of measures does not provide all the answers

When SwAM reports this programme of measures to the European Commission, we will report that we do not expect to achieve good environmental status in 2020 for all descriptors. SwAM therefore propose, and give justification for, exceptions from achieving good environmental status for certain descriptors or parts of descriptors in 2020. In most cases, an exception provides for a good environmental status being achieved over a longer period, but does not affect the environmental quality standards relating to specific pressures. Despite exceptions to achieving good environmental status, measures shall always be developed and implemented so as to get as close as possible to good environmental status.

Exceptions from achieving good environmental status by 2020 were identified in 2015 for the input of nutrients (eutrophication) and hazardous substances. These remain and are now specified further. In addition, exceptions are now proposed for certain aspects of biodiversity, commercially exploited fish and shellfish and marine litter.

There are two different reasons for exemptions, which can be applied either individually or in combination. The most common reason is that natural conditions and processes, such as long turnover time, mean that it will take a long time to achieve good environmental status even if the pressures decrease sufficiently, i.e. good environmental status can only be reached later than 2020. The second reason is that measures are required, for which Sweden is not the solely responsible state. Such measures require collaboration within the EU or internationally to succeed.

1.5 Financing

The administrative costs required to implement a measure (e.g. personnel costs for the drafting of a guidance or a regulatory amendment) are to be financed by the authorities and municipalities to which the measure is addressed. Most of these costs fall within the remit and appropriations of

the respective state authorities and municipalities, often administrative appropriations. The other costs of measures are financed either through application of the polluter-pays principle or through state funding. The polluter pays principle means that the costs of addressing any environmental impacts are paid by operator. State funding may involve national grants for measures, which for some measures can be complemented with funding from targeted funds such as the European Maritime, Fisheries and Aquaculture Fund (EMFAF).

1.6 The Programme of Measures is a good environmental investment

The results of analysis of the socio-economic consequences of the programme of measures show that the new measures are likely to be a good socio-economic investment. However, it is important to point out that the quantifiable costs are subject to uncertainty and the quantified benefits are highly uncertain. Costs have been estimated at SEK 0.53 (0.18 – 0.87) billion for the period 2022 - 2040. The benefits of the increased availability of ecosystem services have been estimated at SEK 7.26 (0.96 – 12.50) billion. The surplus in benefit, the difference between quantified costs and the quantified benefits of the proposed measures, is estimated at SEK 6.65 (0.75 - 11.60) billion.

1.7 Transboundary collaboration to reduce pressures

In some cases, collaboration with other countries is required to address a pressure or problem. That is why we are working with our neighbouring countries on measures in the marine environment. These include bilateral collaboration, collaboration within the regional sea conventions, OSPAR and HELCOM, and engagement at EU and international level.

1.8 Public consultation on the proposed Programme of Measures

Public consultation on the proposed programme of measures took place between 1 November 2020 and 30 April 2021.

The programme of measures was established in December 2021 and reported to the European Commission in early 2022. From 2022, the implementation of measures will begin together with an evaluation of the progress of implementation.

2 Measures included in the updated Programme of Measures

The programme of measures includes both existing and new measures. The existing regulatory framework (national, regional, international) and the tools they offer already contribute to the protection of the marine environment. *New measures* are included in the programme of measures as necessary to meet environmental quality standards (EQS) and, in the longer term, achieve good environmental status, given that existing measures are not considered sufficient for this. Most of the 32 measures from the first PoM continue unchanged, but nine of them are now modified. Fourteen additional new measures are now included. All measures are presented in Table 1. The measures are addressed to national authorities, county administrative boards and municipalities. The numbering of measures is in series and does not represent any order of priority.

Further information on the measures can be found in the fact sheets for each measure (only in Swedish). These show the justification for each measure, how they can be implemented, information on how they are linked to other frameworks and legislation affecting the marine environment, as well as other background information.

Table 1. Measures in the updated MSFD Programme of Measures. Responsible authorities showed after the number of the measure. The table consists of measures decided by the Swedish Agency for Marine and Water Management in 2015 that are included in the updated programme of measures (marked with (*)), measures decided 2015 and modified in 2021 (marked with (**)) and additional measures decided in 2021. All factsheet are presented in Swedish in Appendix 3 of the main report and at the website <https://www.havochvatten.se/planering-forvaltning-och-samverkan/havsmiljoforvaltning/atgardsprogram-for-havsmiljon-i-nordsjon-och-ostersjon.html>

Theme area	Measure	Factsheet
Non-indigenous species	ÅPH 1, Swedish Agency for Marine and Water Management: to design a pilot project to develop methods for the control and local combating of invasive non-indigenous species.*	Factsheet 1
	ÅPH 3, Swedish Agency for Marine and Water Management: to develop a national warning and response system for early detection of new invasive non-indigenous species including handling and contingency plans for these.*	Factsheet 3
	ÅPH 33, Swedish Agency for Marine and Water Management: Guidelines for recognising and managing the risk of invasive non-indigenous species in decisions/management plans/conservation plans for marine protected areas.	Factsheet 33
Fish and shellfish affected by fishing	ÅPH 4, Swedish Agency for Marine and Water Management: to introduce new fishing regulations to protect particularly endangered coastal spawning stocks within the trawling limit in the Skagerrak, Kattegat and Baltic Sea.*	Factsheet 4
	ÅPH 5, Swedish Agency for Marine and Water Management: to introduce new fishing rules aimed at more species-selective fishing within the trawling limit in the Skagerrak, Kattegat and Baltic Sea.*	Factsheet 5
	ÅPH 6, Swedish Agency for Marine and Water Management: to introduce fishing rules aimed at reducing fishing pressure on coastal stocks, which need enhanced protection but which can be fished to some extent, within the trawling limit in the Skagerrak, Kattegat and Baltic Sea.*	Factsheet 6
	ÅPH 7, Swedish Agency for Marine and Water Management: to investigate where additional protected areas for fish should be established in coastal areas, and to establish such areas. ÅPH 7, County Administrative Boards: to assist the Swedish Agency for Marine and Water Management in investigating where additional protected areas for fish should be introduced in coastal areas. Applies to coastal County Administrative Boards. *	Factsheet 7
	ÅPH 8, Swedish Agency for Marine and Water Management: to investigate for which species and during which time of year general fishing closures should be introduced for coastal fish, and to establish such areas.*	Factsheet 8

¹ Please note: ÅPH 2 from the first Programme of measures is fully implemented completed and ÅPH 18 is withdrawn since the content is covered by the WFD Programme of Measures.

Theme area	Measure	Factsheet
Fish and shellfish affected by fishing	ÅPH 9, Swedish Agency for Marine and Water Management: to adapt the capacity of the fishing fleet to the available fishing opportunities in certain fleet segments.*	Factsheet 9
	ÅPH 34, Swedish Agency for Marine and Water Management: Strengthened enforcement and improved regulation of recreational fishing gears.	Factsheet 34
	ÅPH 35, Swedish Agency for Marine and Water Management: Promote a sustainable size distribution of coastal fish communities to retain important ecological functions in the food web.	Factsheet 35
	ÅPH 36, Swedish Agency for Marine and Water Management: Reduce the trawl swept area, promote the use of selective and low impact gears and compile a summary of trawling impact on coastal fish stocks.	Factsheet 36
Eutrophication (input of nutrients)	ÅPH 10, Swedish Agency for Marine and Water Management: Measures against the internal load of phosphorus in the Baltic Sea.*	Factsheet 10
	ÅPH 11, Swedish Board of Agriculture: to examine the possibility of financially compensating net removals of nitrogen and phosphorus from the aquatic environment through the cultivation and harvesting of blue catch crops where possible in marine areas that do not achieve good environmental status, as well as to stimulate techniques for the cultivation and processing of blue catch crops.*	Factsheet 11
	ÅPH 12, Swedish Board of Agriculture: to stimulate aquaculture techniques, which provides no net load in marine areas not achieving good environmental status.*	Factsheet 12
Physical disturbance	See ÅPH 36 under theme <i>Fish and shellfish affected by fishing</i> .	Factsheet 36
Permanent alteration of hydrographical conditions	ÅPH 13, Swedish Agency for Marine and Water Management: to develop a guidance on how changing hydrographic conditions affect biodiversity and ecosystems.*	Factsheet 13
	ÅPH 14, National Board of Housing, Building and Planning: Follow up and develop support and guidance for municipal marine and coastal planning in accordance with the Planning and Building Act.**	Factsheet 14
Hazardous substances	ÅPH 15, Swedish Environmental Protection Agency: Develop guidance aimed at authorities and commercial operations for the disposal of contaminants and fouling in the cleaning of ship hulls.**	Factsheet 15
	ÅPH 16, Swedish Environmental Protection Agency: Improved management of contaminated sediments.**	Factsheet 16
	ÅPH 17, Swedish Environmental Protection Agency and Swedish Transport Agency: Reduce the spread of contaminants from recreational craft.**	Factsheet 17
	ÅPH 37, Swedish Agency for Marine and Water Management: Countering the dispersal of contaminants in marine areas with dumped ammunition and chemical warfare agents.	Factsheet 37
	ÅPH 38, Swedish Transport Agency: Minimize the environmental impact from shipping in the marine environment.	Factsheet 38
	ÅPH 39, Swedish Agency for Marine and Water Management, Swedish Civil Contingencies Agency and Swedish Environmental Protection Agency: Expert support for oil pollution protection.	Factsheet 39
	ÅPH 40, Swedish Chemicals Agency: Reduce the use of biocide containing anti-fouling paints on leisure boats.	Factsheet 40
	ÅPH 41, Swedish Transport Agency: Active phase-out of two-stroke engines with carburettors on leisure boats.	Factsheet 41
Marine litter	ÅPH 19, Swedish Agency for Marine and Water Management: Promote the efficient and sustainable collection and reception of lost fishing gear and prevent further losses of fishing gear to the marine environment.**	Factsheet 19
	ÅPH 20, Swedish Agency for Marine and Water Management: in collaboration with the Swedish Environmental Protection Agency, to develop a targeted national information campaign to the public and consumers on common types of litter in the marine environment, its negative impact on the environment and the link to consumer behaviour.*	Factsheet 20
	ÅPH 21, Swedish Agency for Marine and Water Management: to support initiatives that promote, organise and implement beach cleaning in particularly affected areas.*	Factsheet 21
	ÅPH 22, Swedish Environmental Protection Agency: to conduct strategic work through the inclusion of marine litter in relevant waste management plans and programmes, including municipal waste plans, highlighting the significance of waste management in the generation of marine litter. Priority needs to be given to plastic material streams and instruments need to be investigated in order to reduce the occurrence of plastic objects as litter in the marine environment.*	Factsheet 22

Theme area	Measure	Factsheet
Marine litter	ÁPH 23, Municipalities: when revising municipal waste plans, identify and highlight how waste management can help reduce the occurrence of marine litter and set targets for such work.*	Factsheet 23
	ÁPH 42, Swedish Agency for Marine and Water Management: Product, material and marking developments regarding fishing gear.	Factsheet 42
Underwater noise	ÁPH 43 Swedish Agency for Marine and Water Management: Guidelines for minimising the risk of adverse effects to marine mammals from seismic surveys.	Factsheet 43
Biodiversity	ÁPH 24, Swedish Agency for Marine and Water Management: to develop a comprehensive framework for national action plans for marine endangered species and to coordinate work nationally.*	Factsheet 24
	ÁPH 25, Swedish Agency for Marine and Water Management: to develop a programme for knowledge building about marine endangered species and habitats and to coordinate the work nationally.*	Factsheet 25
	ÁPH 44, Swedish Agency for Marine and Water Management: Develop guidance for the implementation of ecosystem based marine management at sea basin level.	Factsheet 44
Biodiversity (protected areas)	ÁPH 26, Swedish Agency for Marine and Water Management: to develop guidance on the content in management documents for marine protected areas.*	Factsheet 26
	ÁPH 27, County Administrative Boards and Swedish Agency for Marine and Water Management: Establish new marine protected areas and other area-based conservation measures to a sufficient extent to support achievement of good environmental status**	Factsheet 27
	ÁPH 28, County Administrative Boards: to introduce management measures in marine protected areas (existing/new, where they do not exist today).*	Factsheet 28
	ÁPH 45, Swedish Agency for Marine and Water Management: Establishment of management councils for protected areas and other spatial management measures in Swedish marine areas.	Factsheet 45
Biodiversity (restoration)	ÁPH 29, Swedish Agency for Marine and Water Management: To develop, in consultation with stakeholders, a coordinated strategy of measures to address physical impacts and biological restoration in the coastal water environment.**	Factsheet 29
	ÁPH 30, Swedish Agency for Marine and Water Management: to develop methods for ecological compensation and restoration in the marine environment, with the assistance of the County Administrative Boards.*	Factsheet 30
	ÁPH 31, County Administrative Boards: in collaboration with the Swedish Agency for Marine and Water Management and the municipalities concerned, to carry out restoration measures for eel grass in the Skagerrak and Kattegat.*	Factsheet 31
Marine food webs	ÁPH 46, Swedish Agency for Marine and Water Management: Needs based, area-specific predator control; grey seal in the Baltic Sea, harbour seal in the North Sea and cormorant, to support measures to restore local, coastal fish communities.	Factsheet 46
Progress tracking	ÁPH 32 Authorities and municipalities: Authorities and municipalities working on the MSFD Programme of Measures need to report on the measures implemented.**	Factsheet 32

3 Summary of measures by thematic area

The following section provides a summary of each thematic area of the MSFD Programme of Measures (PoM). The thematic areas are linked to relevant environmental quality standards (EQS). A specific section also describes the work on biodiversity conservation or restoration measures.

Background information on the additional new measures to meet the EQS and to achieve good environmental status is briefly summarised below. The section also indicates the measures from the first programme of measures which have been modified. As noted above, the measures in this updated programme of measures, together with the measures from the first programme of measures, cannot alone ensure that EQS are met. Instead, they complement the wide range of measures already in place and implemented under other relevant legislation and agreements, which contribute to a better marine environment. These measures contribute to a better marine environment but are not always sufficiently implemented. The following section therefore outlines the areas in which there is a need for strengthened (national) implementation of measures, but also the needs arising within European Union and international processes where Sweden is not the sole actor.

3.1 Non-indigenous species

Environmental quality standard (HVMFS 2012:18)	Assessment
C.1. The marine environment shall be free of newly-released or newly-translocated non-indigenous species, strains, and non-indigenous species otherwise introduced through human activities, which may adversely affect genetic or biological diversity or the ecosystem functioning.	The EQS is not being met.

Significant pressures preventing the environmental quality standard from being met:

Fouling on ship hulls is the key dispersion route. Leisure boats may also be a source of secondary distribution of non-indigenous species (via hull growth or spill water).

New measure 2021	ÅPH 33 Guidelines for recognising and managing the risk of invasive non-indigenous species in decisions/management plans/conservation plans for marine protected areas.
Modified measures from the first PoM	<p>ÅPH 15 Develop guidance aimed at authorities and commercial operations for the disposal of contaminants and fouling in the cleaning of ship hulls.</p> <p>ÅPH 17 Reduce the spread of contaminants from recreational craft.</p> <p><i>The measures contribute to the meeting EQS for non-indigenous species (C.1) and for concentrations and effects of hazardous substances (B.1 and B.2).</i></p>
Continued implementation of measures (national)	From the first PoM (ÅPH 1 and ÅPH 3), work is underway to develop methods for control and local eradication and to develop national alert and response systems including management and contingency plans for these.
Needs in other processes	Commercial shipping regulations exist within the international maritime organisation (IMO).

3.2 Fish and shellfish affected by fishing

Environmental quality standard (HVMFS 2012:18)	Assessment
C.3 The populations of all naturally occurring fish species and shellfish affected by fishing have an age and size structure, as well as a stock size, that guarantee their long-term sustainability.	The EQS is not being met.

Significant pressures preventing the environmental quality standard from being met: Fishing, eutrophication and habitat loss are considered to be significant pressures in both the Swedish part of the North Sea and the Baltic Sea. Climate change is also a significant pressure².

New measure 2021	<p>ÅPH 34 Strengthened enforcement and improved regulation of recreational fishing gears</p> <p>ÅPH 35 Promote a sustainable size distribution of coastal fish communities to retain important ecological functions in the food web.</p> <p>ÅPH 36 Reduce the trawl swept area, promote the use of selective and low impact gears and compile a summary of trawling impact on coastal fish stocks.</p> <p><i>New measures presented in the 'Marine Food Webs' and 'Biodiversity' sections also contribute to improving the condition of the fish community.</i></p>
Modified measures from the first PoM	-
Continued implementation of measures (national)	<p>Continued implementation of measures linked to national fisheries management, including measures in the first Programme of Measures (ÅPH 4-9).</p> <p>Restoration and enhanced protection in the coastal zone are also important areas for action, including continued work on the measures from the first Programme of Measures (ÅPH 29-31).</p> <p>In addition, continued efforts against eutrophication are important and the implementation of eutrophication measures within the Programmes of Measures under the Water Framework Directive is of great importance.</p>
Needs in other processes	<p>Management of commercially exploited fish species under the Common Fisheries Policy (CFP). In this area, potential for improvement in a number of areas has been identified: that the total allowable catch (TAC) shall be set in line with the objectives set under management strategies, management plans and ICES advice, that exemptions from the landing obligation of minor significance must be deducted from fishing quotas, and gradually phased out. Additional areas include the regulation of fishing in marine protected areas, multiannual plans and technical conservation measures, as well as effective fisheries control.</p>

² In determining the characteristics of good environmental status and thus in assessing the state of the environment, climate factors and the effects of climate change (e.g. pH) shall be monitored. The programme of measures does not include specific measures to reduce climate impact. However, the ongoing measures to combat climate impact also benefit the marine environment and the measures improving the marine environment could mitigate climate impact. The measures required to deal with climate-impacting activities are handled in Swedish climate and energy policy.

3.3 Input of nutrients and organic material

Environmental quality standard (HVMFS 2012:18)	Assessment
A.1 Input of nutrients from human activities shall decrease until it does not cause concentrations of nitrogen and phosphorus in the marine environment that prevent good environmental status to be achieved.	The EQS is not being met.

Significant pressures preventing the environmental quality standard from being met: The most significant sources of nutrients are land-based activities. Nutrient losses from agricultural land and food production have become the main sources of nutrient input to the marine environment. Agriculture and industry also contribute nutrients via emissions to air. The input of nutrients in the form of emissions from marine-based activities and operations also occurs, for example in connection with boating and shipping.

New measure 2021	<p>ÅPH 38, which mainly is motivated by other EQS contribute to decrease in nutrient load and this thematic area.</p> <p><i>This includes the input of substances causing eutrophication, among other things, from washing water from vessels using open flue gas scrubber systems, which reduces the quantities of nitrates from this source. The measure also aims to limit the discharge of cargo residues, which may be an additional source of nutrients through nutrient input from ships carrying fertilisers or components of fertilisers.</i></p>
Modified measures from the first PoM	ÅPH 10 Measures against the internal load of phosphorus in the Baltic Sea.
Continued implementation of measures (national)	<p>Continued efforts to counter land-based sources of the input of nutrients are important and the implementation of eutrophication measures within the Programmes of Measures under the Water Framework Directive is decisive.</p> <p>Continued implementation of the ÅPH 11 measures on blue catch crops and ÅPH 12 to reduce direct aquaculture inputs from the first programme of measures, which are aimed at reducing the amount of nutrients in the sea. Measures to regenerate habitat loss (such as eelgrass meadows) are also considered to have a positive effect on eutrophication. This includes the implementation of ÅPH 29-31 from the first programme of measures.</p>
Needs in other processes	Continued work in international conventions (atmospheric deposition) and work in regional sea conventions (common targets within HELCOM and accompanying national ceilings).

3.4 Physical disturbance and loss of seabed

Environmental quality standard (HVMFS 2012:18)	Assessment
D.1 The seabed area unaffected by human activities shall have an extent that provide conditions for maintaining the structure and functioning of the habitat types.	The EQS is not being met.
D.2 The area of biogenic substrates must be maintained or increase.	Assessment not possible.

Significant pressures preventing the environmental quality standard from being met: In the Swedish part of the North Sea (not The Sound), fishing with bottom trawl is the most significant source of physical disturbance to the seabed. In the Swedish part of the Baltic Sea, fishing with bottom trawls is less common and activities leading to physical disturbance are less widespread. Offshore, marine-based energy generation and infrastructure are considered to be the activities causing physical loss of the seabed, especially on sandbanks. Physical loss occurs locally offshore but to an extremely small extent, mainly under the footprint of the concrete foundations of wind turbines. Overall, current legislation and measures are expected to deal with the most significant activities linked to physical disturbance and physical loss offshore.

New measure 2021	<p>ÅPH 36 Reduce the trawl swept area, promote the use of selective and low impact gears and compile a summary of trawling impact on coastal fish stocks.</p> <p><i>The measure contributes to meeting both the EQS for the loss and disturbance of the sea floor (D.1 and D.2) and fish and shellfish affected by fishing and marine food webs (C.3 and C.4).</i></p>
Modified measures from the first PoM	-
Continued implementation of measures (national)	<p>Strengthening of the work and management of marine protected areas (including current measures in the first Programme of Measures, ÅPH 26-28).</p> <p>Restoration and enhanced protection in the coastal zone (including current measures in the first Programme of Measures, ÅPH 29-31).</p>
Needs in other processes	Reduce physical disturbance on the seaward side of the line where trawling is not allowed (CFP).

3.5 Lasting changes in hydrographical conditions

Environmental quality standard (HVMFS 2012:18)	Assessment
D.3 Permanent alterations in hydrographic conditions owing to large-scale activities, either individual or collaborative, may not negatively affect biological diversity and ecosystems.	The EQS is met.

Significant pressures affecting the environmental quality standard: The effects of climate change pose a significant risk to efforts to achieve EQS D.3 with the potential effects including changes in precipitation patterns, changes in the distribution and presence of sea ice, changing wind and current conditions, changing water levels and increased temperature. All these pressures have the potential to affect hydrographic conditions in the long term but they are not addressed in this programme of measures because the effects of climate change are not primarily addressed under the Marine Environment Ordinance. Large-scale infrastructure and operations may also affect hydrographic conditions, but no further measures are expected to be required as current legislation (the operations need permits according to the Environmental Code), including proposals for marine spatial plans, are considered sufficient to prevent permanent alteration in hydrographic conditions.

New measure 2021	-
Modified measures from the first PoM	ÅPH 14 Follow up and develop support and guidance for municipal marine and coastal planning in accordance with the Planning and Building Act.
Continued implementation of measures (national)	The first Programme of Measures includes one measures (ÅPH 13) aimed at strengthening the possibility of maintaining the status of hydrographic conditions.
Needs in other processes	-

3.6 Concentration and effects of hazardous substances

Environmental quality standard (HVMFS 2012:18)	Assessment
B.1 Input of hazardous substances from human activities shall decrease until it does not cause concentrations of hazardous substances that prevent good environmental status to be achieved.	The EQS is not being met.
B.2 Hazardous substances in the marine environment introduced through human activities shall not cause adverse effects on biological diversity and ecosystems.	The EQS is not being met.

Significant pressures preventing the environmental quality standard from being met: Most of the sources of the hazardous substances currently found in the marine environment to be land-based (both within and outside Sweden), but emissions from marine-based activities and operations also occur, for example in connection with boating and shipping. The redispersion of hazardous substances from contaminated areas both on land and at sea is probably also a significant source of current pressure on the marine environment.

New measure 2021	<p>ÅPH 37 Countering the dispersal of contaminants in marine areas with dumped ammunition and chemical warfare agents.</p> <p>ÅPH 38 Minimise the environmental impact from shipping in the marine environment.</p> <p>ÅPH 39 Expert support for oil pollution protection.</p> <p>ÅPH 40 Reduce the use of biocide containing anti-fouling paints on leisure boats.</p> <p>ÅPH 41 Active phase-out of two-stroke engines with carburettors on leisure boats.</p>
Modified measures from the first PoM	<p>ÅPH 15 Develop guidance aimed at authorities and commercial operations for the disposal of contaminants and fouling in the cleaning of ship hull.</p> <p>ÅPH 17 Transport Agency: Reduce the spread of contaminants from recreational craft.</p> <p><i>The measures contribute to meeting both EQS for non-indigenous species (C.1) and concentrations and effects of hazardous substances (B.1 and B.2).</i></p>
Continued implementation of measures (national)	<p>Continued action against land-based emissions is of great importance and a prerequisite for achieving or maintaining good environmental status in the marine environment. National efforts include, for example, the Programmes of Measures under the Water Framework Directive.</p> <p>Contaminated sediments are addressed by ÅPH 16 from the first programme of measures. At present, further activities under ÅPH 16 are needed as the problem with contaminated sediments is extensive.</p>
Needs in other processes	<p>Limiting the spread of hazardous substances is also regulated in international law. Continued action to reduce emissions within these rules is also a prerequisite for achieving or maintaining good environmental status in the marine environment. Examples include work within the framework of EU chemicals legislation, the Stockholm Convention, the Minamata Convention, the International Maritime Organisation (IMO) and the regional sea conventions HELCOM and OSPAR.</p>

3.7 Marine litter

Environmental quality standard (HVMFS 2012:18)	Assessment
E.1 The marine environment shall, as far as possible, be free from litter.	The EQS is not being met.

Significant pressures preventing the environmental quality standard from being met: Land-based sources mainly consist of consumer-related litter from urban areas, recreation and tourism, as well as lack of waste management and deficiencies in the management of waste water and storm water. Overall, existing measures are considered potentially sufficient to prevent the littering by the general public, but their implementation needs to be strengthened in order to meet the EQS. Maritime sources of marine litter consist mainly of commercial shipping (passenger and cargo vessels), fishing (both commercial and recreational) and leisure boats. For fisheries-related litter, there are no existing measures to reduce such inputs of litter.

New measure 2021	ÅPH 42 Product, material and marking developments regarding fishing gear.
Modified measures from the first PoM	ÅPH 19 Promote the efficient and sustainable collection and reception of lost fishing gear and prevent further losses of fishing gear to the marine environment.
Continued implementation of measures (national)	Work on measures related to littering, including the continued implementation of measures in the first Programme of Measures, ÅPH 20-23.
Needs in other processes	Reduce the input of litter from other countries through the work on the sea conventions OSPAR (North-East Atlantic) and HELCOM (Baltic Sea) where regional action plans are developed to prevent and reduce marine litter.

3.8 Underwater noise

Environmental quality standard (HVMFS 2012:18)	Assessment
E.2 Human activities should not cause harmful impulse noise in the distribution areas for marine mammals during periods when the animals are sensitive to disturbance.	Assessment not possible.

Significant pressures affecting the environmental quality standard: The greatest risk of impact on marine mammals is at present linked to impulsive underwater noise during the construction of infrastructure. Almost all construction activity in the marine environment generates impulsive noise. Other sources of impulsive noise are military exercises and seismological surveys. Overall, there are a number of existing measures which together provide good conditions for limiting impulsive noise in the construction phase of offshore wind power. Seismic surveys are not covered by existing instruments.

New measure 2021	ÅPH 43 Guidelines for minimising the risk of adverse effects to marine mammals from seismic surveys.
Modified measures from the first PoM	-
Continued implementation of measures (national)	-
Needs in other processes	-

3.9 Biodiversity

Sweden currently has no specific environmental quality standards (EQS) and associated indicators according to Annex 3 of regulation HVMFS 2012:18 with regard to biodiversity. In order to assess the need for new measures, analysis was based on the description of biodiversity in the overall EQS for good environmental status specified in Annex 2 of regulation HVMFS 2012:18.

The overall objective of the Marine Environment Ordinance is to achieve good environmental status which is defined, among other things, as through preserving biodiversity. Thus, all EQS and associated indicators set out in Annex 3 of HVMFS 2012:18 help to benefit biodiversity.

The Marine Strategy Framework Directive also specifically states that the programme of measures shall include spatial protection measures (Article 13.4) and that the marine strategy shall include the restoration of marine ecosystems where practicable (Article 1.2 a). Good environmental status for most assessed species groups and habitat types will not be achieved in 2020, either in the Baltic Sea or in the North Sea.

Identified significant pressures on biodiversity: Since biodiversity comprises all species and habitats in an ecosystem, the description and quantification of impacts is complex. The different pressure can have a cumulative effect which may increase or decrease the stress to which a species or habitat is exposed. Eutrophication, hazardous substances, marine litter, noise, physical loss and physical disturbance of habitats, fishing including bycatch and non-indigenous species are all relevant pressures or activities, which are being added to by pressures from climate change³.

New measure 2021	<p>ÅPH 44 Develop guidance for the implementation of ecosystem based marine management at sea basin level.</p> <p>ÅPH 45 Establishment of management councils for protected areas and other spatial management measures in Swedish marine areas.</p>
Modified measures from the first PoM	<p>ÅPH 27 Establish new marine protected areas and other effective area-based conservation measures to a sufficient extent and with appropriate levels of protection to support achievement of good environmental status</p> <p>ÅPH 29 With the assistance of the County Administrative Boards, the Swedish Environmental Protection Agency, the Swedish National Board of Housing, Building and Planning and the National Heritage Board, to develop a coordinated strategy against physical impact and for biological restoration in the coastal water environment</p>
Continued implementation of measures (national)	<p>Since good environmental status is not assessed to be achieved in relation to biodiversity, it is important that ongoing measures aimed at establishing protected areas, developing specific action plan for endangered species and habitats and active restoration continue and are strengthened. This includes measures in the Programme of Measures (ÅPH 24-26, 28 and 30-31).</p> <p>Existing rules and measures in other thematic areas aimed at reducing pressure also help to benefit biodiversity.</p>
Needs in other processes	<p>Many species and habitats extend over an area larger than the Swedish EEZ. The objectives agreed in HELCOM in the update of the Baltic Sea Action Plan (BSAP) and in OSPAR in the update of North East Atlantic Environment Strategy (NEAES) are crucial for improving conditions for both species and habitats in Swedish marine waters.</p>

³ In determining the characteristics of good environmental status and thus in assessing the state of the environment, climate factors and the effects of climate change (e.g. pH) shall be monitored. The programme of measures does not include specific measures to reduce climate impact. However, the ongoing measures to combat climate impact also benefit the marine environment and the measures improving the marine environment could mitigate climate impact. The measures required to deal with climate-impacting activities are handled in Swedish climate and energy policy

3.10 Marine food webs

Environmental quality standard (HVMFS 2012:18)	Assessment
C.4 Presence, species composition of species, and size distribution in the fish community must make it possible to maintain important functions in the food web.	The EQS is not being met.

Significant pressures preventing the environmental quality standard from being met: The removal of species by fishing, including bycatch, directly affects the food web through selective mortality of individuals of certain species with a specific size spectrum. Fishing, especially offshore, is one of the key causes of EQS C.4 not being met, as well as unfavourable conditions for growth in certain populations, for example due to lack of oxygen in spawning grounds, habitat loss and effects of climate change. In coastal areas, the impact of fishing is less and other pressures such as eutrophication, habitat loss and climate change are the most significant pressures on the size structure of the coastal fish community⁴. Natural predation can also contribute to the lack of improvement in size structure (i.e. continued absence of larger individuals) of the coastal fish community.

New measure 2021	<p>ÅPH 46 Needs based, area-specific predator control; grey seal in the Baltic Sea, harbour seal in the North Sea and cormorant, to support measures to restore local, coastal fish communities.</p> <p><i>New measures presented in the section 'Fish and shellfish affected by fishing' aim in particular at reducing the impact of fishing on the food web, while the new measure presented here aims to reduce natural predation of fish.</i></p>
Modified measures from the first PoM	-
Continued implementation of measures (national)	Since the main pressure on marine food webs, C.4, is considered to be fishing, it is mainly the measures described in the section 'Fish and shellfish affected by fishing' that are of great importance for food webs. Existing regulations and measures helping to limit eutrophication, hazardous substances, physical disturbance and to strengthen area protection described in relevant thematic areas also benefit marine food webs.
Needs in other processes	Management of commercially exploited fish species under the Common Fisheries Policy (CFP) since the main pressure on marine food webs, C.4, is considered extraction of living resources by fishing activity.

⁴ In determining the characteristics of good environmental status and thus in assessing the state of the environment, climate factors and the effects of climate change (e.g. pH) shall be monitored. The programme of measures does not include specific measures to reduce climate impact. However, the ongoing measures to combat climate impact also benefit the marine environment and the measures improving the marine environment could mitigate climate impact. The measures required to deal with climate-impacting activities are handled in Swedish climate and energy policy

4 Summary of environmental impact assessment for the MSFD Programme of Measures

The environmental impact assessment describes the most significant environmental impacts that are expected to result from the implementation of the MSFD Programme of Measures. This description forms a basis for the decision of the Swedish Agency for Marine and Water Management on the Programme of Measures that is to be made by December 2021 at the latest.

The Programme of Measures is of a general nature, which is why the environmental impact assessment is also at an overall level. A more detailed description of the environmental consequences of when implementing specific measures resulting from the programme of measures will, if needed, be developed by the respective executing bodies, for example in connection with environmental impact assessment.

The overall aim of the updated Programme of Measures is to contribute to an improved environment. At the same time, the programme of measures focuses on a specific part (marine environment) of what falls within the concept of the environment. This means that there may be other parts of the environment that may be affected negatively or positively, by the implementation of the proposed measures. In this analysis, the assessment criteria for the environmental impact assessment have been based on the environmental quality objectives. The environmental assessment of this type of programme can be largely likened to a goal conflict analysis where different objectives are evaluated against each other. That is to say, a measure that is positive for the marine environment can at the same time have a negative impact on an aspect such as management of another natural resource. The analysis thus provides guidance on those aspects where it is necessary to see whether a measure can be adjusted in order to reduce any unintended negative impacts. Relevant proposals have been presented where it is already possible to identify any adjustments.

Considering the updated programme of measures as a whole, the assessment is that it mainly contributes to meeting the underlying environmental quality objectives and underlying standards for each environmental characteristic. Only one measures (ÅPH 41) are considered to contradict in some way achievement of the underlying objectives of the natural resource management aspect.

4.1 Cross-border environmental impact

The measures proposed in the update of the Programme of Measures are generally of a cross-border nature, as the sea areas concerned are shared with sea basins of neighbouring states. The countries deemed to be affected will therefore be formally informed and given the opportunity for consultation, according to chapter 6 section 13 of the Environmental Code and the Convention on Environmental Impact Assessment in a Transboundary Context (the Espoo Convention), as part of the environmental assessment.

Some cross-border environmental impacts are expected to arise from the updated Programme of Measures. However, the consequences are mainly considered to be positive and are not considered to be great. Positive effects are expected to be achieved however if equivalent measures are also taken by other countries bordering the Swedish sea areas. In such cases, there needs to be coordination with other countries concerned, as far as is possible, in order to prevent contradictory effects.

Swedish update of the Programme of Measures according to the Marine Strategy Framework Directive

The Swedish Agency for Marine and Water Management has developed an updated Programme of Measures for the marine environment for the North Sea and the Baltic Sea. This Programme of Measures is the second adopted under the Swedish Marine Environment Ordinance, which is the Swedish implementation of the EU Marine Strategy Framework Directive, and is an update and complement of the first Programme of Measures decided in 2015. The Programme of Measures sets out the measures needed to comply with the Swedish environmental quality standards for the sea. The overall objective is to maintain or achieve good environmental status.

We work for flourishing seas, lakes and streams for the benefit and enjoyment of all.

The Swedish Agency for Marine and Water Management, SwAM, is the responsible Government agency tasked to protect, restore and ensure sustainable use of freshwater resources and seas including fisheries management.

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