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Working Group on the State of the Environment and Nature
Conservation

STATE & CONSERVATION
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Background

The strategic plan for the update of the BSAP includes the step to review and adjust the overall structure the BSAP (activity 2.2) to reflect current work in HELCOM. A review of the existing HELCOM ecological objectives and management objectives is to be carried out by HELCOM Working Groups and Expert Groups as part of this activity. The aim of the review of existing objectives is to ensure that they are up to date and reflect the current topics and approach of addressing environmental status and pressures in HELCOM. It was also agreed by HOD 55-2018 to develop new objectives for marine litter, underwater noise, and loss and disturbance of the seabed. The aim is to prepare initial proposals of new and revised objectives for consideration by HOD in June 2019 and finalize and agree on an updated set of objectives by end of 2019.

The review of ecological objectives under the existing BSAP segment on Biodiversity will in a first step be considered by State and Conservation Working Group. The State and Conservation Working Group is also invited to consider the proposals from Pressure 10-2019 on revised ecological objectives for eutrophication and hazardous substances and new ecological objectives for marine litter, underwater noise and loss and disturbance to the seabed (Att.1).

Under the Maritime segment the HELCOM objectives are called 'management objectives' and are related to management measures or aspired target levels of pressure from shipping and offshore installations. To support the development of the updated BSAP, management objectives will also be identified for other pressures (outcome of GEAR 19-2018, para 3.13). Proposals on management objectives for eutrophication, hazardous substances and new topics (marine litter, underwater noise, loss and disturbance of the seabed) will in a first step be proposed by the Pressure Working Group followed by further consideration by the Fish Group (loss and disturbance to the seabed from fisheries) and Maritime group (impact from shipping activities). The State and Conservation Working Group is invited to propose management objectives(s) related to the protection and conservation of biodiversity and to provide comments to the draft proposals on management objectives for pressures as discussed by Pressure 10-2019 (as can be found in Att.1).

Relevant HELCOM expert groups are expected to be involved upon request by the Working Groups.

GEAR 19-2018 provided initial guidance to the review process that has been further elaborated by the Secretariat and Chairs of State and Conservation and Pressure Working Groups as contained in this document. The document also provides discussion points to support the task and the operational indicators that were used or tested in HOLAS II are listed in relation to the existing objectives. At upcoming meetings of the Working Groups it is proposed that interlinkages between HELCOM objectives will be considered as well as to identify which objectives that will be primarily influenced by climate change.

Action requested

The Meeting is invited to:

- review existing ecological objectives for biodiversity and propose revisions or new ecological objectives as relevant,
- propose new management objectives related to the conservation and protection of biodiversity,
- consider the proposals by the Pressure Working Group on new ecological objectives for marine litter, underwater noise, and loss and disturbance of the seabed, noting that these objectives will also be further considered by the Fish and Maritime Groups, respectively.
- consider the review and initial proposals by the Pressure on ecological objectives for eutrophication and hazardous substances,
- consider the proposals by the Pressure Working Group on new management objectives for eutrophication, hazardous substances marine litter, underwater noise and loss and disturbance to the seabed.

1) Review, revision and development of new HELCOM objectives

1.1 Background

Development of the first set of ecological objectives was based on work initiated in HELCOM in 2003, further developed through the HELCOM EcoQo project, financed by the EU, and culminating in 2006 with the adoption of a HELCOM Vision, Strategic Goals and Ecological Objectives ([HELCOM 27-2006, para 2.1](#), Figure 1). The Vision describes the overall ambition, whereas Strategic Goals describe the major threats¹ to the Baltic Sea as defined at that time, and Ecological Objectives describe central characteristics of a healthy sea in a generalised way. Through the development and implementation of HELCOM actions and agreements, the goals and objectives are to be met. This also requires the establishment of links to the activities, sources, and societal drivers that are contributing to the current state of the environment.

The ecological objectives were developed with the explicit aim to provide a link to environmental monitoring, assessments, research and management. When they were adopted, development of indicators with associated threshold values and targets was already outlined as a next major step for HELCOM. The HELCOM ecological objectives were thus developed as a “seed” for the next step in the process. In hindsight it can be concluded that the achievement of many of HELCOM ecological objectives can to date be assessed by HELCOM core indicators and associated threshold values. For the Maritime segment, representing shipping and offshore installations, management objectives were formulated.

With regard to the formulation of these objectives, the aim was to communicate HELCOM’s ambition with a wider stakeholder community ranging from scientists and politicians to the general public. The HELCOM ecological objectives thus reflect the aspired state of the environment in broad terms, while it is the HELCOM core indicators and pressure targets that describes good environmental status.

In the current BSAP structure the ecological objectives are described separately under the four strategic goals. The interlinkages between the goals were outlined when the first system was adopted, clarifying that there are many horizontal links between different ecological objectives.

1.2 Adjustment to the BSAP structure

The ‘BSAP structure’ refers to the strategic goals and objectives of the Baltic Sea Action Plan. As part of the BSAP update process, HOD 55-2018 considered an adjustment to the BSAP structure with the aim to better reflect the topics that are currently addressed in HELCOM. HOD 55-2018 also requested HELCOM Working Groups to initiate the development of ecological or management objectives for the topics marine litter, underwater noise, and loss and disturbance of the seabed and also endorsed the guidance from GEAR 19-2018 with regard to the planned review of existing HELCOM objectives. The meeting provisionally agreed to maintain the original segments for the updated BSAP with the following preliminary adjustments:

- to address marine litter under the segment on Hazardous substances and to consider changing the name to ‘Hazardous substances and marine litter’;
- to include under the Maritime segment a broader set of sea-based activities, e.g. construction work, dredging, extraction of mineral resources, fishing, and consider changing the name of the segment to ‘Sea-based activities’. The topics underwater noise and loss and disturbance of the seabed are tentatively assigned to this segment.

The detailed content to be covered by the segments is however still to be further defined and linkages between the segments will need to be clarified. An agreement on the updated BSAP structure is aimed at for HOD in December 2019. To support the further work on adjusting the structure the Secretariat is currently

¹ For biodiversity described as loss of biodiversity caused by eutrophication, hazardous substances and maritime activities.

mapping HELCOM agreements, targets for pressures and core indicators to the main activities and pressures in the Baltic Sea region (HELCOM 40-2019, [document 2-4](#)). The proposal by working Groups on new and revised ecological objectives will additionally support the adjustment of the BSAP structure and the update of the Baltic Sea Action Plan.

VISION:

A healthy Baltic Sea environment, with diverse biological components functioning in balance, resulting in good environmental/ecological status and supporting a wide range of sustainable human economic and social activities

GOALS:

Baltic Sea unaffected
by eutrophication

Baltic Sea undisturbed
by hazardous substances

Environmentally friendly
maritime activities

Favourable status of
Baltic Sea biodiversity

OBJECTIVES:

- Concentrations of nutrients close to natural levels
- Clear water
- Natural level of algal blooms
- Natural distribution and occurrence of plants and animals
- Natural oxygen levels

- Concentrations of hazardous substances close to natural levels
- All fish are safe to eat
- Healthy wildlife
- Radioactivity at the pre-Chernobyl level

- Enforcement of international regulations – no illegal discharges
- Safe maritime traffic without accidental pollution
- Efficient emergency and response capabilities
- Minimum sewage pollution from ships
- No introductions of alien species from ships
- Minimum air pollution from ships
- Zero discharges from offshore platforms
- Minimum threats from offshore installations

- Natural marine and coastal landscapes
- Thriving and balanced communities of plants and animals
- Viable populations of species

Figure 1. Current HELCOM system with a vision, strategic goals, ecological objectives and management objectives (under Maritime goal). The further delineation of this system, including indicators and associated threshold values and pressure targets, which have been developed post-2007 are listed in Tables 1-3.

In addition to the above listed objectives for biodiversity (which were originally lifted from the CBD), in order to reach favorable conservation status of biodiversity the current BSAP highlights the following specification on topics for the Ecological Objectives:

- restoring and maintaining sea floor integrity at a level that safeguards the functions of the ecosystems;
- that habitats, including associated species, show a distribution, abundance and quality in line with prevailing physiographic, geographic and climatic conditions; and
- a water quality that enables the integrity, structure and functioning of the ecosystem to be maintained or recovered.

1) Guidance for the review of existing objectives

GEAR 19-2018 provided initial guidance to the review process that has been further elaborated by the Secretariat and Chairs of State and Conservation and Pressure Working Groups.

2.1 Ecological objectives

The ecological objectives of the current BSAP reflect the aspired state of the environment and have been formulated as a tool to communicate the aim of the action plan to a broad audience in general terms.

The ecological objectives are furthermore closely linked to how HELCOM assessments are carried out, for example, the ecological objectives under eutrophication and hazardous substances reflect to a large extent the aspects that are covered by core indicators in HELCOM assessments. For biodiversity however, the ecological objectives represent a structure that has been partly abandoned in HELCOM. While the current BSAP reflects landscapes, communities, and species, the current HELCOM assessment structure is carried out by ecosystem components; birds, fish, mammals, benthic habitats, and pelagic habitats.

GEAR 19-2018 proposed to closely follow the current approach also for the updated BSAP and gave the following general guidance with regard to ecological objectives:

- maintain the formulation of ecological objectives to reflect the desired state,
- maintain the aim that the objectives should be easy to communicate,
- the objectives should not be too many, (but no maximum number was given).

With regard to climate change GEAR was of the view that the topic should be a key component of the updated Baltic Sea Action Plan which has also been corroborated by HOD 55-2018 (para 3.12), but that it is not a directly relevant topic for ecological objectives since it cannot be formulated in terms of desired state nor managed in the same way as other pressures on the Baltic Sea.

2.1.1 Discussion points for review of existing ecological objectives

It can be noted that for biodiversity the ecological objectives of the current BSAP were developed to cover the topics:

- restoring and maintaining sea floor integrity at a level that safeguards the functions of the ecosystems
- that habitats, including associated species, show a distribution, abundance and quality in line with prevailing physiographic, geographic and climatic conditions
- a water quality that enables the integrity, structure and functioning of the ecosystem to be maintained or recovered

The State and Conservation Meeting is invited to consider the following discussion points when **reviewing the existing ecological objectives for biodiversity** and suggest revisions or new ecological objectives if found relevant. The Meeting is also invited to consider the review and initial proposals by the Pressure Working Group on the existing ecological objectives for eutrophication and hazardous substances (Att 1). Information on links between ecological objectives on eutrophication and hazardous substances and existing HELCOM indicators is provided in Annex 1.

With regard to the HELCOM assessment system:

- Are there any ecological objectives missing with respect to new developments since the current BSAP was adopted?
- Are there any existing objectives that are lacking associated indicators? If yes, should such indicators be developed or is it rather the ecological objective that should be revised? Lists of core and pre-core

indicators used in the HOLAS II report are included as support for the meeting (Tables 1 and 2), however, continued development of indicators will be discussed separately in HELCOM.

With regard to the formulation of objectives:

- Are the objective up to date (e.g. are the terms used up to date)?
- Do the objectives meet the aim of being easy to communicate to a wide range of stakeholders, including the general public?

New ecological objectives could for example cover:

- Food webs/Ecosystem: Relative abundance and size distribution of relevant functional groups in the food web are kept within intervals, which ensure the provision of ecosystem, services, needed for a sustainable use of the ecosystem.

Expected output of discussion:

- Clarify which of the existing objectives that are proposed to a) remain as currently worded, b) be revised, c) be deleted
- Clarify if development new objectives for biodiversity should be considered.
- Make an initial proposal on revised or new objectives for biodiversity.
- Consider the outcome of the initial review by Pressure 10-2019 with regard to ecological objectives for eutrophication and hazardous substances and make further elaborations as relevant.

Table 1. Existing ecological objectives biodiversity and associated indicators

Ecological objective	Associated core indicators or pre-core indicators (<i>italics</i>)
Natural marine and coastal landscapes	<p><i>Under development (pre-core):</i></p> <ul style="list-style-type: none"> - <i>Cumulative impacts on benthic biotopes</i> - <i>Condition of benthic habitats</i>
Thriving and balanced communities of plants and animals	<ul style="list-style-type: none"> - Zooplankton mean size and total stock - State of the soft-bottom macrofauna community* - In HOLAS II, national WFD indicators for macrophytes and macrofauna were applied for the assessment of coastal waters <p><i>Under development (pre-core) or not yet operational:</i></p> <ul style="list-style-type: none"> - <i>Diatom / Dinoflagellate index</i> - <i>Seasonal succession of dominating phytoplankton groups</i>
Viable populations of species	<ul style="list-style-type: none"> - Abundance of waterbirds in the breeding season - Abundance of waterbirds in the wintering season - Distribution of Baltic seals - Population trends and abundance of seals - Nutritional status of seals - Reproductive status of seals - Abundance of coastal fish key functional groups - Abundance of key coastal fish species - Abundance of salmon spawners and smolt - Abundance of sea trout spawners and parr

Table 2. How current biodiversity indicators were used in assessments the State of the Baltic Sea report

Ecological objective	Associated core indicators
Birds	<ul style="list-style-type: none"> - Abundance of waterbirds in the breeding season - Abundance of waterbirds in the wintering season
Mammals	<ul style="list-style-type: none"> - Distribution of Baltic seals - Population trends and abundance of seals - Nutritional status of seals - Reproductive status of seals
Fish	<ul style="list-style-type: none"> - Abundance of coastal fish key functional groups - Abundance of key coastal fish species - Abundance of salmon spawners and smolt - Abundance of sea trout spawners and parr - Mortality (F) and spawning stock biomass (SSB) for a number of commercial fish species and proposed by ICES
Pelagic habitats	<ul style="list-style-type: none"> - Zooplankton mean size and total stock - Chlorophyll-a - <i>Cyanobacterial bloom index (pre-core)*</i> <p><i>Under development (pre-core) or not yet operational:</i></p> <ul style="list-style-type: none"> - <i>Diatom / Dinoflagellate index*</i> - Seasonal succession of dominating phytoplankton groups
Benthic habitats	<ul style="list-style-type: none"> - State of the soft-bottom macrofauna community* - Oxygen debt - In HOLAS II, national WFD indicators for macrophytes and macrofauna were applied for the assessment of coastal waters <p><i>Under development (pre-core) but not used in HOLAS II:</i></p> <p><i>Cumulative impacts on benthic biotopes</i></p> <p><i>Condition of benthic habitats</i></p>

*Tested in HOLAS II project

2.1.2 Discussion points for development of ecological objectives for new topics

Pressure 10-2019 initiated a discussion on new **ecological objectives for marine litter, underwater noise, loss and disturbance to the seabed** (Att 1). State and Conservation is invited to further iterate the proposals keeping in mind that:

- that the ecological objectives should be focused on the state elements of these topics or on their impacts on the environment e.g. on the concentration, amounts or extent of litter/noise/disturbance to seabeds, or properties of the ecosystem that should be maintained or not harmed. Examples of ecological objectives for these topics could be:

Core, pre-core and candidate indicators development are listed to support the discussion (Table 3).

Expected output of discussion:

- Further elaboration of proposal on new ecological objectives for marine litter, underwater noise and loss and disturbance to the seabed.
- Consider how to engage HELCOM expert networks.

Table 3. Existing pre-core and candidate indicators associated to the development of new objectives

Topics for new ecological objectives	Indicators under development
Marine litter	<ul style="list-style-type: none"> - Beach litter (pre-core) - Litter on the seafloor (pre-core) - Microlitter in the water column (candidate)
Underwater noise	<ul style="list-style-type: none"> - Continuous low frequency anthropogenic sound (pre-core) - Distribution in time and space of loud low- and mid-frequency impulsive sound (pre-core)
Loss and disturbance to the seabed*	<ul style="list-style-type: none"> Cumulative impacts on benthic biotopes (pre-core) Condition of benthic habitats (pre-core) State of the soft-bottom macrofauna community (core)

* NB there are a number of additional indicators related to benthic communities under consideration in HELCOM, e.g. 'Population structure of long-lived macrozoobenthic species' (core) and 'State of hard-bottom communities' (candidate), but they have however not been worked on for several years.

2.2 Management objectives

Management objectives have so far only been formulated for the Maritime segment (shipping, offshore installations) of the Baltic Sea Action Plan (Table 4). They are to be developed also for other activities and/or pressures addressed by HELCOM.

2.2.1 Discussion points for development of management objectives

The State and Conservation Meeting is invited to consider the following discussion points **when proposing management objectives for biodiversity**. The Meeting is also invited to consider the initial proposals by Pressure 10-2019 with regard to management objectives for eutrophication, hazardous substances, marine litter, underwater noise and loss and disturbance to the seabed (Att 1).

- The follow-up of management objectives should in principle be done using indicators and associated targets for conservation and protection measures (compare to pressure targets for management objectives related to pressures) aimed at reaching the desired state as defined by indicators on the biodiversity components. Currently, 'conservation targets' that can be measured in terms of implementation already exist to some degree in HELCOM Recommendations and Actions from the current BSAP and HELCOM Ministerial Declarations, for example:
 - o Reach the target set by the HELCOM 2010 Moscow Ministerial Declaration that at least 10% of the marine area in all sub-basins of the Baltic Sea, including the EEZ areas beyond territorial waters, is covered by MPAs, where scientifically justified
 - o Implementation of national management plans for ringed seals
 - o Reintroduce native salmon in at least four potential salmon rivers (BSAP)
- Examples of how management objectives for conservation and protection of biodiversity could be formulated:
 - o Long-term viability and resilience of species and biotopes
 - o An ecologically coherent network of MPA
 - o Reduce the loss, degradation and fragmentation of habitats
 - o Halt the loss of red listed species
- One could envision that additional quantitative conservation and protection targets could be developed in the future to support the assessment of achievement of management objectives.

Expected output of discussion:

- Make initial proposal on tentative new management objectives for biodiversity.

- Consider the proposals by the Pressure Working Group on new management objectives for eutrophication, hazardous substances marine litter, underwater noise and loss and disturbance to the seabed (Att 1).
- Consider how to engage HELCOM expert networks.

Table 4. Current management objectives for the Maritime segments

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|---|
| <ul style="list-style-type: none">- Enforcement of international regulations – no illegal discharges- Safe maritime traffic without accidental pollution- Efficient emergency and response capabilities- Minimum sewage pollution from ships- No introductions of alien species from ships- Minimum air pollution from ships- Zero discharges from offshore platforms- Minimum threats from offshore installations |
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Annex 1. Links between existing ecological objectives for eutrophication and hazardous substances and HELCOM indicators

Table A1. Existing ecological objectives Eutrophication

Ecological objective	Associated core indicators
Concentrations of nutrients close to natural levels	<ul style="list-style-type: none"> - Nitrogen (DIN) - Phosphorous (DIP) - Total nitrogen (TN) - Total phosphorous (TP)
Clear water	<ul style="list-style-type: none"> - Water clarity - Chlorophyll-a
Natural level of algal blooms	- <i>Cyanobacterial bloom index (pre-core)*</i>
Natural distribution and occurrence of plants and animals	<ul style="list-style-type: none"> - State of the soft-bottom macrofauna community* <p>In HOLAS II, national WFD indicators for macrophytes and macrofauna were applied for the assessment of coastal waters</p>
Natural oxygen levels	Oxygen debt

*tested in the HOLAS II project.

Table A2 Existing ecological objectives Hazardous substances

Ecological objective	Associated core indicators
Concentrations of hazardous substances close to natural levels	<ul style="list-style-type: none"> - Hexabromocyclododecane (HBCDD) - Metals (Cd, Pb, Hg) - Polybrominated biphenylethers (PBDE) - Perfluorooctane sulphonate (PFOS) - Polyaromatic hydrocarbons (PAH) and their metabolites - Polychlorinated biphenyls (PCB) and dioxins and furan - TBT and imposex* - <i>Diclofenac (pre-core)</i> - Operational oil-spills from ships (also relevant as indicator to follow up management objectives under the Maritime segment).
All fish are safe to eat	Many threshold values set for HELCOM indicators as listed above are derived from European Commission Directive 2013/39/EU which are based on human health aspects (HBCDD, PBDEs, PCBs, PAHs, PFOS).
Healthy wildlife	<ul style="list-style-type: none"> - White-tailed eagle productivity - Reproductive status of seals**
Radioactivity at the pre-Chernobyl level	Radioactive substances

* tested in HOLAS II

** the indicator is in HELCOM used to assess the status of seals as part of the biological diversity, but the indicator was originally developed as indicator to assess impacts of hazardous substances and reflects the health of wildlife.