



Document title	Draft Analysis of the European Commission Decision on GES criteria
Code	3-2
Category	INF
Agenda Item	3- Coordination and information related to the implementation of the ecosystem approach and related policies
Submission date	15.11.2016
Submitted by	Secretariat
Reference	

Background

The document includes a draft analysis on how the HELCOM indicators, assessment scales and integrated assessment approaches match the latest version of the Commission Decision on GES criteria for which the Marine Strategy Regulatory Committee gave a positive vote on 10 November (GES Decision_v10.11.2016). Details are provided in the associated excel-files.

Overall the draft analysis shows a good agreement between HELCOM indicators, assessment scales and tools compared to GES Decision_v10.11.2016. All primary criteria will however not be covered by HELCOM core indicators in this assessment cycle.

Action required

The Meeting is invited to:

- take note of the information,
- consider if the attached initial analysis reflects well the current alignment between the GES Decision_v10.11.2016 and HELCOM indicators, assessment scales and tools,
- in the light of the GES Decision_v10.11.2016, discuss any issues that require attention in future work.

Draft analysis of the proposed revision of the Commission Decision on GES criteria

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Initial analysis of HELCOM indicators and proposed criteria

For details see **Attachment 1**.

In general the HELCOM indicators are well linked to the proposed criteria of the draft Commission Decision on GES criteria for which the Marine Strategy Regulatory Committee gave a positive vote on 10 November (hereafter 'GES Decision_v10.11.2016'). For descriptors 2 and 5 no gaps against primary criteria are found. For descriptor 10 and 11 the HELCOM core indicators on marine litter under development match the criteria, however are not foreseen to be ready for use in HOLAS II. Descriptor 3 is to be covered using indicators and assessments provided by ICES, noting that ICES has informed that a gap will exist for D3C3 (age and distribution of individuals in the population).

For descriptors 1, 4, 5, 6 and 8 some issues of mismatch between HELCOM indicators and the proposed criteria have been identified and are summarized below.

For descriptors 7 and 9 no specified HELCOM core indicators have been developed, and the descriptors are not discussed further in this context.

Descriptor 1 species groups

Incidental by-catch

The criteria D1C1 (incidental by-catch) can be assessed using the available core indicator 'Number of drowned mammals and waterbirds in fishing gear', however the indicator is not fully operational as no target value has been agreed. It could be noted that the indicator has been developed as a pressure indicator in HELCOM, however that at State and Conservation 5-2016 it was proposed to include the indicator under D1 (para 4J-57). It could further be noted that the D1C1 assessment element 'non-commercially-exploited species of fish' is relevant for the Baltic Sea, however no indicator is available to assess it.

Birds

The available bird core indicators cover the proposed primary criterion D1C2 (abundance). The two available core indicators are not designed for assessments per species, however they can be calculated to assess the listed species groups and information can also be presented per species.

Mammals

A gap exists for the species group 'small toothed cetaceans' as the HELCOM candidate indicator on 'Harbour porpoise distribution and abundance' will not be operational for use in HOLAS II. As Harbour porpoise is listed in Annex II of Directive 92/43/EEC, gaps arise against criteria D1C2 (abundance), D1C4 (distribution), D1C5 (extent and condition of habitat for the species).

The species group 'seals' lacks a HELCOM core indicator to cover criterion D1C5 (extent and condition of habitat for the species) which is primary for the species that are listed in Annex II, IV or V of Directive 92/43/EEC.

Fish

All three species groups relevant for the Baltic Sea are covered by core indicators.

Further consideration may be needed to determine if the core indicator 'Proportion of large fish in the offshore community' (LFI) is most suitable to be used for assessment of D1C3 (population demographics) or D4C2 (size distribution within guilds), or both. If the indicator is only to be used under D4, a gap against primary criteria D1C3 for commercially exploited fish species will arise. It should be noted that State and Conservation 5-2016 were not in a position to endorse the proposed trend-based GES boundary approach. Experts developing the indicator have identified that a standardized pelagic dataset could be used for HOLAS II purposes in 2017 and that this could be assessed using a trend based approach. Demersal data is not considered sufficiently standardized to allow for use at this time, and is anticipated to require substantial standardization efforts.

Descriptor 5

Note that this analysis was made vs the GES Decision version of 14.09.2016. The consequence of potential changes to the final version has not been addressed in this section.

The present set of HELCOM core indicators of eutrophication, together with the proposed and tentative core indicators, fit well within the criteria proposed by EU (Table 1). Two of the proposed 3 primary Criteria (*Nutrient concentration* and *Chlorophyll a concentration*) as well as one secondary Criteria is covered by an operational core indicator in all open-sea assessment units. Furthermore, the third primary Criteria (*Concentration of dissolved oxygen*) is covered by a core indicator in half of the open-sea assessment units, and by a proposed core indicator in the remaining ones. Indicators are also proposed for additional secondary Criteria (*Number, extent and duration of harmful algal blooms*; possibly also *species composition and abundance of macrofauna*).

Table 1. The eutrophication indicators agreed, proposed or potentially proposed to be applied in HOLAS II, listed according to the criteria presented in the Proposal for a Commission Decision on GES Criteria. The table shows the proposed new criteria, whether it is primary or secondary (i.e. compulsory or non-compulsory), whether the indicator is aimed to be applied in HOLAS II, name of the indicator and information on whether it is suitable for coastal or open-sea areas. Note that in coastal areas, the national indicators will be applied, and thus each of the coastal indicators listed here will not necessarily apply for all coastal assessment units.

New criteria	Criteria description	Primary / Secondary criteria	Element	HOLAS II: YES- available, proposed, NO- not available	Indicator name	Coastal / Open-sea
D5C1	Nutrient concentration	Primary	Dissolved Inorganic Nitrogen	YES	Average DIN concentration in surface (0-10 m) during winter	Open
			Dissolved Inorganic Nitrogen	YES (WFD)	WFD indicators on DIN collated in EUTRO-OPER	Coastal
			Total Nitrogen	proposed	Total nitrogen concentration (pre-core)	Open
			Total Nitrogen	YES (WFD)	WFD indicators on TN collated in EUTRO-OPER	Coastal
			Dissolved Inorganic Phosphorous	YES	Average DIP concentration in surface (0-10 m) during winter	Open
			Dissolved Inorganic Phosphorous	YES (WFD)	WFD indicators on DIP collated in EUTRO-OPER	Coastal
			Total Phosphorous	proposed	Total phosphorous concentration (pre-core)	Open
D5C2	Chlorophyll a concentration	Primary	Chlorophyll a	YES	Average chlorophyll-a concentration in the surface (1-10 m) during summer	Open
			Chlorophyll a	YES (WFD)	WFD indicators on chlorophyll or biovolume collated in EUTRO-OPER	Coastal
D5C3	Number, extent and duration of HAB	Secondary	Harmful algal blooms	proposed	Cyanobacterial surface accumulations (pre-core)	Open
D5C4	Photic limit / water transparency	Secondary	Transparency of water	YES	Average secchi depth during summer	Open
			Transparency of water	YES (WFD)	WFD indicators on water clarity or turbidity collated in EUTRO-OPER	Coastal
D5C5	Concentration of dissolved oxygen	Primary	Dissolved oxygen	YES	Oxygen debt (below halocline)	Open
			Dissolved oxygen	proposed	Shallow water bottom oxygen (candidate)	Open
			Dissolved oxygen	YES (WFD)	WFD indicators on oxygen concentration or hypoxia collated in EUTRO-OPER	Coastal
D5C6	Abundance of opportunistic macroalgae	Secondary	Opportunistic macrophytes	YES (WFD)	WFD indicators on macrophytes collated in EUTRO-OPER	Coastal
D5C7	Macrophyte communities	Secondary	Perennial macrophytes	YES (WFD)	WFD indicators on macrofauna collated in EUTRO-OPER	Coastal
D5C8	Species composition and abundance of macrofauna	Secondary	Macrofaunal communities	YES (WFD)	WFD indicators on macrofauna collated in EUTRO-OPER	Coastal
			Macrofaunal communities	tentative	BQI	Open

Descriptor 6 seafloor integrity and benthic habitats

At State and Conservation 5-2016 the approach for fulfilling D6C1, D6C2 and D6C3 was agreed, however D6C3 will for HOLAS II not be a quantitative assessment. The components that will be available for the first version of HOLAS II in mid-2017 still require some further work, and it does not seem likely that a fully quantitative assessment will be available.

No indicator is developed for primary criterion D6C4 and here a clear gap is identified in relation to HOLAS II assessments.

The pre-core indicator 'Cumulative impact on benthic biotopes' is of relevance for assessing primary criterion D6C3. State and Conservation 5-2016 endorsed the shift to core indicator, recognizing that no GES boundary

has been proposed and also that it is not foreseen that the needed input data for the indicator would be available.

The pre-core indicator 'Condition of benthic habitats' (previously 'Distribution, pattern and extent of benthic biotopes') is relevant for assessing primary criterion D6C5. State and Conservation 5-2016 acknowledged that the indicator requires further work before it can be shifted to core, however that habitats should be represented in the HOLAS II report and that the indicator concept provides a good framework for assessing habitats. The indicator proposes using Habitats Directive assessments and thresholds whenever available.

Due to the gaps and substantial additional work required in order to operationalize the benthic habitat indicator a pragmatic approach to developing an assessment for HOLAS II by mid-2017 was endorsed by State and Conservation 5-2016 (see [details in meeting document 4J-21](#)). The approach meets fully the requirements to assess primary criteria D6C1 and D6C2 and partly the requirements for primary criterion D6C3. The approach is based on using relevant components of the BSII assessment. The relevant components are;

- D6C1: 'physical loss' spatial pressure layer,
- D6C2: 'physical disturbance' spatial pressure layer,
- D6C3: 'broad scale habitat' spatial status layer, habitat sensitivity values of relevance, 'physical loss' and 'physical disturbance' spatial pressure layers.

The spatial layers needed for the approach have been developed in the HELCOM TAPAS project and do not require extensive additional work to analyse in a benthic assessment relevant context. The relevant sensitivity values for the habitats to the pressures have also been developed in the HELCOM TAPAS project. The BSII approach contains no GES boundary evaluations and is to be considered a qualitative assessment approach.

Descriptor 1 pelagic habitats

Criterion D1C5 is the only primary criterion for pelagic habitats and concerns the condition of the habitat type, including its biotic (...) and abiotic structure, and its functions, is not adversely affected.

The assessment is proposed to be based on the plankton core indicators 'Zooplankton mean size and total stock', 'Seasonal succession of functional phytoplankton groups', 'Phytoplankton community composition as a foodweb indicator' and 'Diatom/dinoflagellate index' noting that the indicators have been developed to assess the quality of the biological element of the pelagic habitats and may not provide a full assessment related to the broad habitat types 'coastal' and 'shelf' (e.g. chemical or hydrological conditions). It could further be noted that the indicators have also been listed as potential indicators to be used in the assessment of Descriptor 4.

No indicators are currently available to assess the abiotic component of the broad pelagic habitat types' structure and function.

Descriptor 4

For descriptor 4 the linkages of available HELCOM indicators to the proposed criteria have not been discussed in the HELCOM expert community. At the online meeting of HOLAS II core team 17 June, it was agreed that further clarity is needed on whether the same indicators as used for other descriptors that represent suitable guilds can also be used for descriptor 4. This proposal was briefly discussed and it was agreed that options for assessing D4 using existing core indicators should be further explored as this seems to be a feasible option.

As an initial step the Secretariat has identified 11 indicators that *could* be considered for assessments of the food web criteria (see **Attachment 1**). Note that these indicators are also proposed to be used under other descriptors. Indicators that explore species diversity from a community perspective have been identified as

potentially relevant for D4C1 and indicators used to evaluate diversity of species have been listed under D4C2. No attempt has yet been made to identify indicators for the secondary criteria.

The draft GES decision states that a minimum of three guilds should be assessed per criteria of which two are to be non-fish. The guilds should take into account the ICES list of trophic guilds (Table 2). The HELCOM expert community needs to consider if the listed core indicators can adequately be used to assess the relevant guilds.

Table 2. ICES list of trophic guilds. X denotes where the taxonomic groups contribute significantly to each guild. Nekton includes bony fish, elasmobranchs, and squids. (Reproduced from; ICES Advice (2015) Book 1, ICES special request advice, published 20 March)

Guild/Taxonomic groups	Phyto-plankton	Zooplankton	Benthos	Nekton excl. warm blooded	Seabirds	Marine mammals
Primary producers	X					
Secondary producers		X				
Filter-feeders			X			
Deposit-feeders			X			
Planktivores			X	X	X	X
Sub-apex pelagic predators				X	X	X
Sub-apex demersal predators			X	X	X	X
Apex predators				X	X	X

Descriptor 8

Element 1a(i) (coastal- and territorial water priority substances) and element 1a(ii) (coastal water river basin specific pollutants) related to primary criterion D8C1 a) and D8C1 b) respectively, is proposed to be assessed based on the national assessments made for the second cycle of the EU WFD. The Secretariat compiled the information submitted by Contracting Parties to a [HELCOM BalticBOOST workshop as a meeting document](#), and at HOLAS II 6-2016 Finland, Latvia and Poland agreed to submit the information lacking at that time.

The HELCOM core indicators are placed in the primary criterion D8C1 based both on the substance of concern and the type of GES boundary applied. The HELCOM core indicators for hazardous substances mainly using measurements from biota matrices, and to a lesser extent sediment - and an even lesser extent water matrices. For example, the core indicator 'Metals' is proposed to use a GES boundary based on EU EQS for water matrix placing it under D8C1(a), but also to have secondary GES boundary values for other matrices placing it simultaneously under D8C1(b). It should be noted that the final assessment of the coastal- and territorial waters would contain information for the same substance stemming from a WFD assessment and a HELCOM core indicator assessment. In areas beyond the territorial waters, i.e. the second part of criteria D8C1, the assessment would only contain core indicator based information.

Primary criterion D8C3 (significant acute pollution events) is proposed to be assessed using the HELCOM core indicator 'Operational oil-spills from ships' noting a possible different intention of the GES criterion ('significant' 'acute') compared with detection of illegal oil spills as in the HELCOM indicators.

Assessment scales and Integration rules / Use of criteria

Integrated assessments are planned in HOLAS II for assessing eutrophication (D5), hazardous substances (D8) and biodiversity (D1, 3, 4, 6). The "Scale of assessment" and "Use of criteria" in the 'GES Decision_v10.11.2016' are compared with the planned assessment under HOLAS II. Text in italics stems from the 'GES Decision_v10.11.2016'.

Descriptor 5

Scale of assessment:

- *within coastal waters, as used under Directive 2000/60/EC,*
- *beyond coastal waters, subdivisions of the region or subregion, divided where needed by national boundaries.*

This proposal is in line with the scale of assessment for eutrophication in HELCOM HEAT.

Use of criteria:

The extent to which good environmental status has been achieved shall be expressed for each area assessed as follows:

- (a) the values achieved for each criterion used, and an estimate of the extent of the assessment area over which the threshold values set have been achieved;*
- (a) in coastal waters, the criteria shall be used in accordance with the requirements of Directive 2000/60/EC to conclude on whether the water body is subject to eutrophication¹;*
- (b) beyond coastal waters, an estimate of the extent of the area (as a proportion (percentage)) that is not subject to eutrophication (as indicated by the results of all criteria used, integrated in a manner agreed where possible at Union level, but at least at regional or subregional level).*

Beyond coastal waters, the use of the secondary criteria shall be agreed at regional or subregional level.

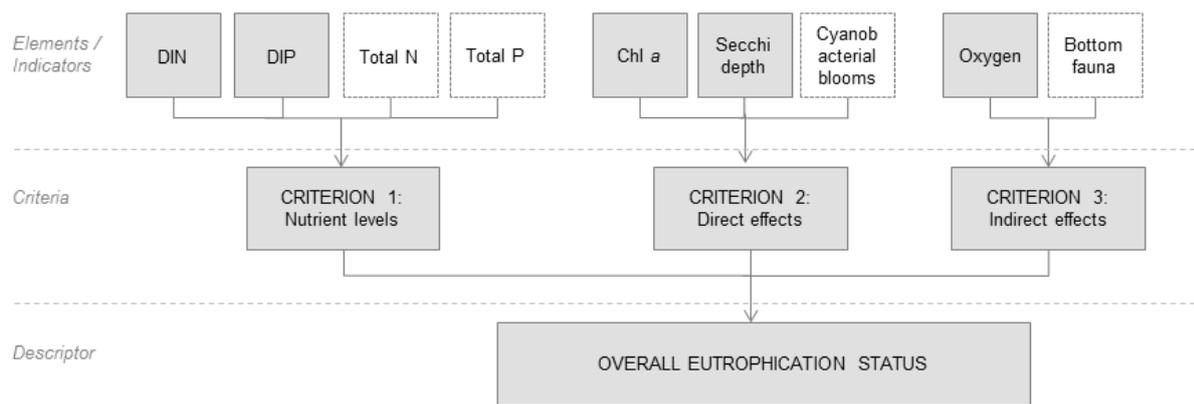
Certain changes in the HELCOM eutrophication assessment methodology may be called for in order for the Contracting Parties being EU Member States to be able to use the results of the HOLAS II project in the 2018 MSFD reporting. Briefly, the proposed revision include the following changes:

- the elements/indicators are not grouped into three, but instead into 3-8 Criteria, depending on the number of elements/indicators used; most of the Criteria would consist of only one element/indicator,
- in open-sea assessment units, an estimate of the extent of the area (as a proportion) that is not subject to eutrophication shall be given,
- in coastal assessment units, the requirements of the Water Framework Directive (2000/60/EC) indicators shall be taken into account when making the assessment of eutrophication.

Fitting the existing, proposed and tentative core indicators into the criteria framework for the 'GES Decision_v10.11.2016' would call for substantial changes in the grouping of the elements/indicators (Figure 1). The number of Criteria would increase, and subsequently, each criteria would consist of less elements/indicators; most of them would include only one element/indicator.

¹ Guidance documents published in the context of the Common Implementation Strategy for Directive 2000/60/EC may be relevant in this assessment (e.g. "N° 13 - Overall Approach to the Classification of Ecological Status and Ecological Potential" and "N° 23 - Eutrophication Assessment in the Context of European Water Policies")

a)



b)

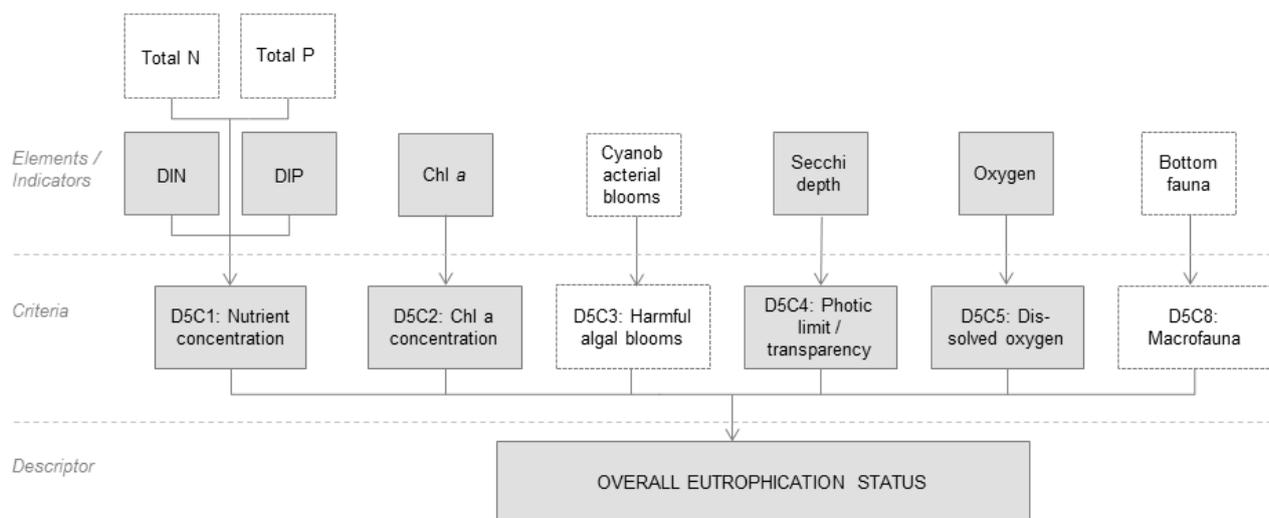


Figure 1. A comparison of a) the aggregation of elements/indicators into criteria according to the present methodological standards (2010/477/EU), applied by HEAT 3.0, and b) the aggregation according to the proposed methodological standards. The present CORE indicators are shaded gray, whereas the elements/indicators (and subsequent criteria) not yet agreed upon are signaled by dashed lines and no shading. See Table 1 for closer description of elements/indicators and criteria.

Introducing new criteria consisting of only one element/indicator calls for a discussion on the aggregation approach. If the one-out-all-out principle is applied between Criteria, as is done in HEAT 3.0, each element/indicator (except those of Criteria 1 – *nutrient concentration*) determined below GES would have the potential of dominating the outcome of the status assessment. As the elements/indicators are often sensitive also to non-anthropogenic or non-eutrophication-related variation, this might cause false conclusions.

It should be noted that State and Conservation 5-2016 made the following conclusion as regards the structure of HEAT: “The Meeting considered the proposed adjustments to the HELCOM Eutrophication Assessment Tool (HEAT 3.0) for use in HOLAS II (document 4J-4), in the event that the proposed revision to the European Commission Decision on GES criteria is agreed. The Meeting was of the view that the HEAT tool in its present structure is well established and is satisfying for use in the first version of the 2nd holistic assessment, however, proposed that the proposal should be discussed at the next meeting of the HELCOM IN Eutrophication, taking into account the outcome of the Commission Decision” (para 4J.79).

Estimating the proportion of eutrophicated area

The presented proposal for methodological standards requires an estimate of the proportion of the open-sea areas (in percentage) not affected by eutrophication. The present indicator methodology specifies GES-targets as an average over assessment units, and adequate and unbiased but not necessarily spatially intense monitoring within these areas. Neither the indicator approach nor the monitoring allows accurate calculations of such spatial estimates within assessment units.

Instead, robust estimates could be calculated at the regional sea level. This is proposed to be done through by calculating a weighted average of the element/indicator-, Criteria- or overall eutrophication status, basing the weighting on the spatial proportion of each assessment unit of the entire Baltic Sea.

Descriptor 8

Scale of assessment:

Proposal of the Commission Decision

- *within coastal and territorial waters, as used under Directive 2000/60/EC;*
- *beyond territorial waters, subdivisions of the region or subregion, divided where needed by national boundaries.*

This proposal is not in line with proposed assessment scale for the indicators on hazardous substances and also not in line with the assessment units defined in the HELCOM Monitoring and Assessment Strategy Annex 4. HELCOM sub-divisions of coastal and offshores waters are delimited by 1 nautical mile seaward from the baseline. The boundary of territorial waters is not used.

Use of Criteria:

Proposal of the Commission Decision for D8C1 and D8C2

The extent to which good environmental status has been achieved shall be expressed for each area assessed as follows:

- a) for each contaminant under criterion D8C1, its concentration, the matrix used (water, sediment, biota), whether the threshold values set have been achieved, and the proportion of contaminants assessed which have achieved the threshold values, including indicating separately substances behaving like ubiquitous persistent, bioaccumulative and toxic substances (uPBTs) as referred to in Article 8a(1)(a) of Directive 2008/105/EC;*
- b) for each species assessed under criterion D8C2, an estimate of the abundance of its population in the assessment area that is adversely affected;*
- c) for each habitat assessed under criterion D8C2, an estimate of the extent in the assessment area that is adversely affected.*

The use of the criterion D8C2 in the overall assessment of good environmental status for Descriptor 8 shall be agreed at regional or subregional level.

The outcomes of the assessment of criterion D8C2 shall contribute to assessments under Descriptors 1 and 6, where appropriate.

The use of criteria requires information to be displayed per assessment unit, but it does not require an integration of the substances within the assessment unit. By displaying the thresholds and indicator evaluation results for each core indicator, the requirements can be met.

State and Conservation 5-2016 was of the view that the assessment can be used for an overall assessment of contamination status in the Baltic Sea but not for assessing whether good environmental status (GES) has been reached or not.

State and Conservation 5-2016 agreed that the indicators of relevance to D8C2 should not be included in any integrations of the indicators of relevance to D8C1.

Descriptor 1 - Biodiversity

This analysis is based on the agreement to adjust the BEAT tool as an outcome of State and Conservation 5-2016 (paras 4J.70-74).

Species

The proposed 'GES Decision_v10.11.2016' states that *"The status of each species shall be assessed individually, on the basis of the criteria selected for use, and these shall be used to express the extent to which good environmental status has been achieved for each species group for each area assessed"*.

The relevant ecosystem components to consider for the Baltic Sea are mammals, birds, and fish. For mammals the relevant species groups are 'seals' and 'small toothed cetaceans'. For birds, the current core indicators are based on a multispecies approach not differentiating the species groups. However, according to the latest indicator report (document 4J-10 to STATE & CONSERVATION 5-2016) the indicator can be differentiated to the following species groups: 'surface feeders', 'water column feeders', 'benthic feeders' and 'grazing feeders' and assessed per species group or species. For fish, the commercially-exploited species are to be assessed according to D3 and used also under D1. Under D1 fish should be assessed according to the following species groups relevant to the Baltic Sea: 'coastal fish', 'pelagic shelf fish' and 'demersal shelf fish'. The assessment of fish can potentially be based on the current core indicators according to species groups, but the list of species included need to be evaluated.

Scale of assessment:

"Ecologically-relevant scales for each species group shall be used, as follows [including only selected information relevant for the Baltic Sea]:

- *for small toothed cetaceans, seals, birds, pelagic and demersal shelf fish: region or subdivisions for Baltic Sea*
- *for coastal fish: subdivision of region or subregion*
- *for commercially-exploited fish: as used under Descriptor 3.*

It could be noted that under the Habitat Directive countries in the Baltic Sea region have developed national approaches for assessing species under this directive, and that the approaches do not meet the 'scale of assessment' requirement which states that for seals 'region of subdivision for Baltic Sea' should be assessed and furthermore that the 'scale of assessment' should be ecologically relevant. The HD approaches are generally developed to assess animals within the concerned countries borders, i.e. not on an ecologically relevant scale for the species which could be for example a sub-basin. Thus, the regionally developed HELCOM core indicators for seals are well suited for meeting the requirements of the Commission Decision. An upcoming report on the BalticBOOST work will clarify the consistency between the HD and HELCOM assessments.

Use of Criteria:

The Commission Decision furthermore states that:

- (a) *the assessments shall express the value(s) for each criterion used per species and whether these achieve the threshold values set;*
- (b) *the overall status of species covered by Directive 92/43/EEC shall be derived using the method provided under that Directive. The overall status for commercially-exploited species shall be as assessed*

under Descriptor 3. For other species, the overall status shall be derived using a method agreed at Union level, taking into account regional or subregional specificities;

(c) the overall status of the species group, using a method agreed at Union level, taking into account regional or subregional specificities.

These points will be covered in HOLAS II as follows:

a) The assessment of mammals will in HELCOM be made by assessing firstly the status of each core indicator per species. In the case of birds, two core indicators are used. At present they are assessing the ecosystem component, but potentially species group or species can be assessed. In the case of fish, the species group 'coastal fish' is assessed using key species and key functional groups. 'Pelagic shelf fish' and 'demersal shelf fish' are primarily assessed under D3 by species.

b) Using the HD Directive method for overall status per species indicates the use of the OOAO approach between the criteria to arrive at the status per species. In HOLAS II this will only be relevant for mammals, as there are no core indicators for other species included in the HD annexes. BEAT will use the OOAO approach for mammals, whereas the results of indicators for fish and birds are weighted and averaged for the species/species groups.

c) In BEAT it is proposed that the overall status of the species group is based on weighted averaging. For species covered by the Habitat Directives the approach for assessing status of the species group still needs further consideration (at Union level).

Habitats

Habitats are according to the 'GES Decision_v10.11.2016' to be assessed based on broad habitat types. Pelagic broad habitats have not been defined for the Baltic Sea, but the pelagic broad habitat types relevant to the Baltic Sea are only 'coastal' and 'shelf' (potentially also 'variable salinity'). 'Coastal' is not limited to the defined coastal areas in the WFD, but should be understood on the basis of physical, hydrological and ecological parameters. The benthic broad habitat types relevant in the Baltic Sea are the 'infralittoral' and 'circalittoral' habitat types.

Scale of assessment:

Subdivision of region or subregion, reflecting biogeographic differences in species composition of the broad habitat type.

The HELCOM assessment scale follows the division of sub-basins into coastal and open sea areas, where coastal follows the WFD definition and is further divided into water types/bodies. This subdivision can reflect the biogeographical differences in species composition of broad habitat types quite well, but a more precise analysis of differences in species composition within broad habitat types and HELCOM assessment sub-units is needed to define the appropriate subdivision.

Use of criteria:

Pelagic habitats, D1C6:

The extent to which good environmental status has been achieved shall be expressed for each area assessed as:

(a) an estimate of the proportion and extent of each habitat type assessed that has achieved the threshold value set;

(b) a list of broad habitat types in the assessment area that were not assessed.

Units of measurement for the criteria:

– *D1C6: extent of habitat adversely affected in square kilometres (km²) per habitat type and as a proportion (percentage) of the total extent of the habitat type*

Benthic habitats, D6C4 and D6C5:

A single assessment per habitat type, using criteria D6C4 and D6C5, shall serve the purpose of assessments of both benthic habitats under Descriptor 1 and sea-floor integrity under Descriptor 6.

The extent to which good environmental status has been achieved shall be expressed for each area assessed as:

(a) for D6C4, an estimate of the proportion and extent of loss per habitat type and whether this has achieved the extent value set;

(b) for D6C5, an estimate of the proportion and extent of adverse effects, including the proportion lost from point (a), per habitat type and whether this has achieved the extent value set;

(c) overall status of the habitat type, using a method agreed at Union level based on points (a) and (b), and a list of broad habitat types in the assessment area that were not assessed.

Units of measurement for the criteria:

– *D6C4: extent of habitat loss in square kilometres (km²) and as a proportion (percentage) of the total extent of the habitat type*

– *D6C5: extent of habitat adversely affected in square kilometres (km²) and as a proportion (percentage) of the total extent of the habitat type*

For both pelagic and benthic indicators the HELCOM assessment is done at the assessment unit scale, i.e. one indicator value for the whole assessment unit. Currently, none of the indicators used in HOLAS II apply an area based approach with GES boundaries for proportion of adversely affected area. Thus, at present the proportion of adversely affected habitat type thus would need to be done using the areas of assessment units, i.e. proportion of assessment units adversely affected. For pelagic habitats, only plankton-based indicators are anticipated to be used in HOLAS II. For benthic habitats, only the *State of soft-bottom macrofauna community* indicator is anticipated to be operational with associated GES boundary for use in HOLAS II. However, this indicator is at present not suited for an area based assessment. D6C4 will not be covered in HOLAS II.

General observation on BEAT versus ‘GES Decision_v10.11.2016’

- BEAT uses the same ecosystem component structure as defined in the draft ‘GES Decision_v10.11.2016’. HD requires an OOA approach between the parameters assessed for each species. In BEAT this will only be applied for mammals, whereas birds and fish will apply weighted averaging. The method for overall status assessment of species groups and benthic broad habitats types is not set in the draft GES decision.
- BEAT utilizes the HELCOM assessment units, whereas the draft GES decision defines the assessment scales per species group and broad habitat types. These are not necessarily in contradiction to each other, but the need to reflect the proportion of adversely affected habitat types is not currently feasible as no indicator currently applies an area based approach.
- BEAT does not differentiate between primary and secondary criteria.

- 'Coastal' as used in the draft GES decision is not restricted to the WFD definition, but should take into account physical, hydrographical and ecological characteristics.
- BEAT allows integrated assessment results at higher ecosystem component levels (ecosystem components and biodiversity) as well as spatial scales (sub-basins, whole Baltic Sea) which is not required in the draft GES decision, but can be useful in the HELCOM context. This possibility will, however, not be utilized in HOLAS II where the ecosystem components will be assessed separately at the relevant scale of each ecosystem component.

General comment to assessment scales

In general, assessment scales for HELCOM indicators are identical to or adjustable to the proposal of the 'GES Decision_v10.11.2016' for descriptors 1, 2 and 5. The assessment scale for HELCOM indicators related to descriptors 4, 6, 7, 10 and 11 as well as habitats under descriptor 1 have not been agreed yet and are thus still adjustable.

For descriptor 8 there are inconsistencies compared to Commission Decision as described in the section above. The reference to "national boundaries" and "national part" for descriptors 2, 5, 8 and 10 is reflected below. Details on the comparison of assessment scales are provide in **Attachment 2**.

Reference to use of national boundaries and national part of subdivisions

Proposal of the draft 'GES Decision_v10.11.2016':

- For descriptors 5 and 8 the assessment scale in offshore waters is described as "*beyond coastal waters (or territorial waters for D8), subdivisions of the region or subregion, **divided where needed by national boundaries***".
- For descriptors 2 and 10 the assessment scale is described as "*Subdivisions of the region or subregion, **divided where needed by national boundaries***".

Evaluation of HELCOM indicators that are applied in offshore waters or sub-basins is based on pooling/aggregating data for the relevant assessment scale i.e. the 17 offshore sub-basins.

Regional species and habitat lists

The list is presented in Attachment 3.

HELCOM core indicators on biodiversity are based on the selection of species that are considered to be regionally relevant and suitable as indicator species. Similarly, suitable indicator biotopes have been selected, however as the scale of detail needed to suitably assess biotopes/habitats have not yet been agreed the level of detail on which the biotopes/habitats should be listed may be subjected to changes.

The species and biotopes used as a basis for HELCOM biodiversity indicators are listed in **Attachment 3**. Species relevant for assessments of other themes, e.g. related to D2C1 or D8C2, have not been included in the current version of the list.

The Commission Decision on GES criteria specifies criteria as being primary or secondary. In some instances the specification is based on whether the assessed species is included in other directives, such as Directive 92/43/EEC or Directive 2009/147/EC. The draft regional species and habitats list shows which indicator species are included in other relevant legislation, and furthermore if the species was identified as threatened in the 2013 HELCOM Red List (i.e. categories CR-VU).