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Title:
Recent developments in assessment methodology reveal that the Baltic Sea eutrophication problem is expanding

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ABSTRACT

This study follows up on a previous assessment of eutrophication status in the Baltic Sea, which covered the period 2001-2006. The updated assessment is based on new eutrophication targets, an improved eutrophication assessment tool (HEAT 3.0) as well as monitoring data for the period 2007-2011. Based on classifications of eutrophication status in all Baltic Sea sub-basins, we reveal that during the assessment period 2007-2011, the entire open Baltic Sea was affected by eutrophication. This is a different conclusion compared to earlier assessments and studies. Whilst the confidence of the assessment was high or moderate in most basins, there were indications of declining confidence in some assessment units and improved confidence in others. The problems in confidence were mainly related to scarcity of *in situ* monitoring data on chlorophyll-*a* and Secchi depth. The potential implications of our results, e.g. the expansion of the eutrophic zone and declining confidence in the classifications of eutrophication status, are discussed in relation to the existing Baltic Sea-wide nutrient management strategy as well as future assessment activities.

KEYWORDS

Baltic Sea; nutrients; chlorophyll *a*; Secchi depth; oxygen; eutrophication; HEAT 3.0

ABBREVIATIONS

Chl-*a* = Chlorophyll-*a*

DIN = Dissolved inorganic nitrogen (NO_X+NH_4-N)

DIP = Dissolved inorganic phosphorus (PO_4-P)

ES = Indicator-specific state, based on monitoring data from the assessment period

ET = Indicator-specific target / boundary determining lower limit of GES

ER = Eutrophication ratio, derived from ET and ES

EQR = Ecological quality ratio, derived from ES and reference condition (not used in present assessment)

ES-Score = Confidence of ES estimate

ET-Score = Confidence of ET

FCR = Final quality rating of the assessment

GES = Good environmental status, referring to an acceptable level of eutrophication

GES-boundary = Boundary between GES and Sub-GES

HEAT = HELCOM Eutrophication Assessment Tool

MSFD = Marine Strategy Framework Directive of the European Union (Anonymous 2008)

Sub-GES = Unacceptable level of eutrophication, not meeting the requirements of GES

1. INTRODUCTION

The Baltic Sea is a brackish water body encompassed by the Scandinavian peninsula and the mainland of northern Europe. Bordering states are Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Russia and Sweden. The environment of the Baltic Sea is affected by intensive use of the sea itself and anthropogenic activities in its catchment area (HELCOM 2010). The main environmental problems faced by the Baltic Sea are related to excess inputs of nutrients and hazardous substances as well as fishing and other offshore activities, resulting in an impaired status of the marine ecosystem in regard to eutrophication, hazardous substances and biodiversity (HELCOM 2010, Korpinen et al. 2012) . Hence, the Baltic Sea states have agreed on an Action Plan, based on the ecosystem approach, to manage human activities which has the overarching aim of attaining a healthy Baltic Sea environment by 2021 (HELCOM 2007). This implies an ecosystem with diverse biological components, functioning in balance, supporting a wide range of sustainable human economic and social activities (Backer et al. 2010), including a Baltic Sea unaffected by eutrophication.

In the present study, we assessed eutrophication status in open sea basins of the Baltic Sea for the years 2007-2011, following up on an earlier eutrophication assessment for the period 2001-2006 (HELCOM 2009; Andersen et al. 2010; Andersen et al. 2011). Both assessments relied on joint efforts of the Baltic Sea states for monitoring, reporting data as well as agreeing on common eutrophication targets and assessment principles. The aim of the eutrophication assessment is to follow the progress towards reaching the ecological quality objectives for eutrophication of the Baltic Sea Action Plan (HELCOM 2007), which also supports the implementation of the Marine Strategy Framework Directive of the European Union (MSFD, Anon. 2008) in the Baltic Sea region.

The study is more than an update using latest available data. Firstly, we base the assessment on new and recently agreed eutrophication targets which were set through a documented, scientifically-based process (HELCOM 2013a). Secondly, we base the study on the application of HEAT 3.0, which is a revised version of the HELCOM Eutrophication Assessment Tool (HELCOM 2014). Thirdly, the study is a fully harmonised and integrated assessment of 17 open sea basins of the Baltic Sea using monitoring data from 2007-2011, provided by all the Baltic Sea states for joint and coordinated assessment of the Baltic Sea.

2. METHODS

The Baltic Sea was subdivided into 17 open sea basins, referred to as assessment units, characterised by differences in hydromorphology and physical, chemical, and biological conditions (Fig. 1, Table 1). The division took into account the physical and chemical characteristics of the water masses (Feistel et al. 2008, Leppäranta and Myrberg 2009), aiming at maintaining homogeneity within basins while keeping the number of assessment units low.

2.1 Data sources

A total of five indicators, representing nutrient levels as well as direct and indirect effects of eutrophication (see Anon. 2010) were used to produce the assessment (Fig. 2). Nutrient level indicators were dissolved inorganic nitrogen (or DIN, average NO_X+NH_4-N concentration at 0-10 m depth between December and February) and dissolved inorganic phosphorus (or DIP, average PO_4-P concentration at 0-10 m depth between December and February). Chlorophyll-*a* (or Chl-*a*, average chlorophyll-*a* concentration at 0-10 m depth between June and September) and Secchi depth (average Secchi depth between June and September) were used as indicators representing direct effects of eutrophication. Indirect effects of eutrophication were represented by an oxygen debt indicator (annual oxygen debt below halocline).

In order to evaluate the level of eutrophication, targets for good eutrophication status (ET) were set for each indicator (Table 2). Separate targets were set for each assessment unit, taking into account the regional differences between the basins. These targets, representing the boundary between good and less-than-good eutrophication status (or good environmental status (GES) boundary),were set in a two-step procedure: (1) scientific estimation of target levels (HELCOM 2013a; Carstensen et al. 2014) and (2) finalising targets through expert group work (HELCOM 2012). The scientific approach employed in the first phase of the target setting was based on identifying thresholds of ecosystem change by means of data mining and ensemble modelling. Although this approach differed from the earlier approach used for setting targets, where tentative targets were set through reference conditions and acceptable deviations (HELCOM 2006; HELCOM 2009), the targets resulting from the two approaches were compatible in that they both aimed to describe the boundary between an acceptable and unacceptable eutrophication status. During the second phase, a group of eutrophication experts from the Baltic Sea region convened to review the scientifically estimated targets for each basin, with the objective to achieve harmonised targets between open sea basins and coastal-open water interfaces. The proposed targets were compared between adjacent open-sea basins and EU Water Framework Directive, WFD,

targets (Anon. 2000), with coastal water bodies as well as information from relevant literature and reports (HELCOM 2012). Following this review process, each of the proposed targets was either approved or rejected. In cases of rejection, the tentative targets used in the previous eutrophication assessment (HELCOM 2009) were confirmed and applied.

The state of each indicator in an assessment unit (ES) for the assessment period 2007-2011 was estimated using monitoring data provided by the Baltic Sea states. Data from the HELCOM COMBINE database, hosted by ICES (www.ICES.dk), and the Baltic Environment Database, hosted by the Baltic Nest Institute (http://www.balticnest.org), were combined. Representatives of the Baltic Sea states were given an opportunity to review the data and to supply any missing monitoring observations in order to achieve a complete dataset. For observations on DIN, DIP and oxygen concentrations, General Linear Models (GLM) and Generalized Additive Models (GAM) were used to account for interannual, seasonal and spatial variations in the monitoring data. Spatial and seasonal variations were extracted to produce yearly means not biased by the heterogeneous sampling in time and space (HELCOM 2013a; Carstensen et al. 2006).

2.2 Primary assessment: Eutrophication status

The updated classifications of overall eutrophication were made with a new version of the HELCOM Eutrophication Assessment Tool (HEAT 3.0), which was modified from HEAT 1.0 and 2.0 (Andersen et al. 2010; Andersen et al. 2011) with the aim of adapting to the criteria defined in the MSFD (Anon. 2008; Anon. 2010). The assessment was carried out according to the steps listed below (Fig. 2) and repeated separately for each assessment unit.

Step 1 – Indicators. Calculation of Eutrophication Ratio (ER), which is a function of the indicator status (ES) and indicator target (ET): The indicators DIN, DIP and Chl-*a* show a numerically positive response (+ve) to eutrophication and hence, ER for these indicators was calculated as: ER = ES / ET. Secchi depth and oxygen debt indicators show a numerically negative response to eutrophication (-ve), hence for these ER was calculated as: ER = ET / ES. By calculating the ER for each indicator, eutrophication response or signal was translated into a number, either below (0–1.00) or above (> 1.00) the target (ET). ER values for different indicators could subsequently be combined (see steps 2 and 3).

Step 2 – Aggregation. Aggregation of indicators according to criteria and classifying criteria-specific eutrophication: The indicators were aggregated under the following criteria: (1) Nutrient levels, (2) Direct effects of eutrophication and (3) Indirect effects of eutrophication. The criteria were chosen in order to assess eutrophication status in accordance with the MSFD (Anon. 2008; Anon. 2010). The criteria-specific eutrophication ratio was determined using a weighted average of ER values within a criteria. The value 1.00 represented the level of criteria-specific eutrophication at the boundary between acceptable and unacceptable status. Hence, values ≤ 1.00 represented acceptable levels of criteria-specific eutrophication (GES) , while values > 1.00 reflected impaired and unacceptable levels of criteria-specific eutrophication (Sub-GES).

Step 3 – Assessment. Integrated assessment describing overall eutrophication status: The classifications made for the criteria were subsequently combined into an integrated assessment of eutrophication status using the 'one-out-all-out' principle (Anon. 2000; Andersen et al. 2011). This implies that the criterion most sensitive to human activities, i.e. scoring lowest, defined the overall status of eutrophication within an assessment unit.

2.3 Secondary assessment: Confidence

The primary assessment of overall eutrophication status was supplemented by a secondary assessment of confidence. The method was based on Andersen et al. (2010) and estimated a Final Confidence Rating (FCR) for each assessment unit, by scoring the adequacy of the data used for estimating ET and ES (Fig. 2).

The method scored the quality of the indicator targets (ET-Score), as they are an important element of the eutrophication status classification of a given assessment unit. The ET-Score was rated based on the uncertainty of the target setting procedure. It was determined *high* if the target was based on numerous observations made earlier than the 1950's, possibly in combination with hindcast modelling, *moderate* if the target was based on observations made earlier than the 1980's and/or hindcast modelling and *low* if the target was set through expert judgement and/or information from reference sites and/or observations made during or after the 1980's.

The indicator status confidence (ES-Score) is a scoring based on the number of observations (*in situ* monitoring), as well as their spatial and temporal coverage, used for the assessment. The ES-Score was determined *high* if the status was calculated on more than 15 annual observations with an adequate spatial spread (i.e. no distinctive spatial bias),

moderate if the status was calculated on between 5 and 15 annual observations, and *low* if the status was calculated on less than 5 annual observations. FCR was calculated in three steps: 1) ET-Score and ES-Score were combined by averaging the scores to determine the confidence of each indicator. This is done by assigning a value from 0 to 100% such that a *high* confidence score is assigned a value of 100%, *moderate* 50% and *low* 0%. The average of the values for ES and ET then gives the indicator confidence. 2) criteria-specific confidence was calculated by taking the weighted arithmetic mean of the confidences of the indicators within the criteria, and 3) the FCR for an assessment unit was then obtained from the arithmetic mean of the criteria-specific confidences. In calculating the FCR, the criteria were weighted equally, and those not having any indicators were ignored.

To ensure at least moderate confidence of the overall eutrophication assessment, the classification had to be based on at least two, but preferably three criteria, with ideally no less than two indicators per criterion (Andersen et al. 2011). This was taken into account in the confidence assessment in two ways: (1) A criterion with only one indicator had its criteria-specific confidence reduced by 25%, and (2) if the assessment was based on only a single criterion, FCR was reduced by 50%. It was not necessary to apply the latter deduction in confidence to any of the assessment units in this study. FCR could range between 100 % and 0 % and was grouped into three confidence classes: *high* (100-75%), *moderate* (74-50%) and *low* (<50%), with *low* indicating a problem related to the quality of the input parameters.

3. RESULTS

Eutrophication status was found to be unacceptable in all 17 open sea assessment units (Table 3 and the Electronic Supplementary Material, which includes all 17 basin-specific classifications of eutrophication status). Given that classification as sub-GES does not provide detailed information on degree of impairment, we ranked the assessment units based on the single criteria having the highest criteria-specific eutrophication (Step 2 of the primary assessment). The order of the sub-basins in relation to degree of eutrophication was (highest to lowest): Western Gotland Basin (1.91), Gulf of Finland (1.76), Bornholm Sea (1.67), Åland Sea (1.65), Northern Baltic Proper (1.64), Eastern Gotland Basin (1.59), Gdansk Basin (1.54), Arkona Sea (1.50), Great Belt (1.47), The Sound (1.43), Bothnian Sea (1.42), Bay of Mecklenburg (1.40), Gulf of Riga (1.34), Kiel Bay (1.24), The Quark (1.16), Bothnian Bay (1.14) and Kattegat (1.12). For most assessment units (n = 15), each criteria-specific eutrophication resulted in the same classification as the overall

eutrophication status (Fig. 3). For the Bothnian Bay and Kattegat, the overall eutrophication status was a result of a single criteria being more affected or sensitive to nutrient enrichment than others.

In most of the basin-specific assessments, FCR was high (8 assessment units) or moderate (8 assessment units, Fig. 4 and Table 4). All of the assessment units with high FCR were located in the Sound area or the Baltic Proper. The only assessment unit classified with low FCR was the Gulf of Riga. No confidence problems in regard to Criteria 1 (nutrient levels) and Criteria 3 (indirect effects, i.e. oxygen debt) were identified. However, low confidences were estimated for criteria 2 (Direct effects, i.e. Ch-*a* and Secchi depth) in several northern basins, i.e. Gulf of Riga, Gulf of Finland, Åland Sea, Bothnian Sea, Quark and Bothnian Bay.

4. DISCUSSION

We consider the eutrophication assessment reported in this short communication a significant step forward in producing an integrated indicator-based eutrophication assessment, as it presents 1) newly derived, commonly agreed, science-based eutrophication target values, 2) the HEAT 3.0 tool which complies with the assessment requirements of the MSFD (Anon. 2008) in regard to eutrophication, and 3) recent monitoring data from the period 2007-2011. The results of the study show that the eutrophication status of the 17 offshore Baltic Sea assessment units were generally in line with previous reports (Bonsdorff et al. 1997; Wasmund et al. 2001; Ærtebjerg et al. 2003; HELCOM 2006; HELCOM 2009).

In two assessment units, the Kattegat and Bothnian Bay, the classification was based on divergent information, where one criterion indicated unacceptable status and another criterion indicated acceptable status. In Kattegat, nutrient levels did not meet the target of acceptable criteria-specific eutrophication, while the target for direct effects, i.e. Chl-*a*, was met. In the Bothnian Bay, the criteria-specific eutrophication ratio for direct effects was slightly below the GES-boundary. This was due to the combined effect of Chl-*a* status being worse than the target, and Secchi depth exactly at the target (Fig. 3). In the previous assessment for 2001-2006, the even stricter tentative target for Chl-*a* (1.95 µg L^{-1}) was met, leading to good overall eutrophication status (HELCOM 2009). During the assessment period 2007-2011, on the other hand, the slightly elevated average summer Chl-*a* estimate lead to an unacceptable eutrophication status. A closer look at the data reveals year-to-year variation, and that the target was met during part of the assessment period (in

2008 and 2009) but not all years (2007, 2010 and 2011), and not overall (Fig. 5a and 5b). Furthermore, though the FCR for Bothnian Bay was moderate, the status confidence (ES-Score) for criteria 2 (direct effects) and especially Chl-*a* was low, indicating a need for more monitoring data (Carstensen 2014).

A direct one-to-one comparison between the eutrophication status assessments for periods 2001-2006 (Andersen et al. 2011) and 2007-2011 (this study) was not possible because of methodological differences which are discussed below.

In the current assessment, new eutrophication targets were implemented. For some basins, the DIN, DIP, Chl-*a* or Secchi depth targets changed substantially from those used in previous assessments. Seventeen basin-specific targets out of 73 increased considerably in level of ambition (taking that an increase or decrease of 15% reflects considerable change) while only 11 targets decreased. Although adapting new target levels caused changes in the status of single indicators, it affected the status at criteria-level only in the Gulf of Riga (direct effects) and Kattegat (nutrient levels and direct effects). Overall, it did not affect eutrophication status in any sub-basin.

The commonly agreed GES targets used in the present assessment are directly comparable to the boundaries between good and moderate status used in the previous 2001-2006 assessment, calculated based on acceptable deviations from reference conditions (HELCOM 2009). The 2001-2006 assessment allowed for more refined classification of status where GES could be subdivided into *good* or *high*, and sub-GES into *moderate*, *poor* or *bad*. Given that all assessment units were determined as having an unacceptable eutrophication status in the 2007-2011 assessment, developing and agreeing on additional class boundaries would provide a useful tool for measuring distance to target.

The aggregation principles are fundamental for determining overall eutrophication, especially when using the 'one-out-all-out' approach in the integrated assessment. In the previous assessment (HELCOM 2009), the indicators were aggregated into four quality elements (as in the EU WFD), while in the present assessment they were aggregated into three criteria to suit the requirements of MSFD (Anon. 2008; Anon. 2010). The overall eutrophication status was, however, not affected by the recent changes in aggregation principles in any sub-basin.

In the current assessment, the two first criteria (nutrient levels and direct effects) were evaluated using more than one indicator, while in five sub-basins (Western and Eastern Gotland Basin, Bornholm Sea, Northern Baltic Proper and Gulf of Finland) criterion 3 (indirect effects) was evaluated using a single indicator, oxygen debt. In such instances, poor

status in oxygen debt might potentially dominate the overall eutrophication assessment. However, this was not the case in any of the sub-basins.

A comparison of confidence of this assessment with the previous one revealed that there was decrease in the number of indicators included in the assessments without any general reduction of the FCR (Table 4). The 2007-2011 assessment did not include any indicators representing benthic invertebrates, partly to ensure compatibility with the MSFD (Anon. 2008, Anon. 2010), where invertebrates are not included in the eutrophication descriptor. The choice of appropriate indicators is paramount to determining the quality of the assessment. The invertebrates in the Baltic Sea had been documented to be significantly affected by hypoxia (HELCOM 2009; Villnäs and Norkko 2011) and the Invertebrate Benthic Fauna indicator, which was applied in nine out of 13 open sea assessment units in the 2001-2006 assessment, had lower EQR than other indicators in three assessment units, and was thus an important factor in decreasing the overall eutrophication status. Nevertheless, adding the bottom inverterbrate indicator to the present assessment would not have changed the end result as sub-GES status was determined in all sub-basins through nutrient levels and/or direct effects.

The use of the combined GLM-GAM models to extract spatial and seasonal variation from the data on DIN, DIP and oxygen debt status allowed the use of observations outside the assessment season and hence increased data availability. This methodological improvement had positive effects on the confidence of the assessment, and was undoubtedly one of the reasons why the DIN, DIP and oxygen debt indicators showed better confidence than Chl-*a* and Secchi depth. It also partly explains the increase of confidence in many of the assessment units since the 2001-2006 assessment (HELCOM 2009).

The method applied for estimation of confidence may be criticised for being simple and indirect. The method can, despite this, be used for identifying shortcomings in current monitoring activities, e.g. in those areas where criteria-specific confidence is low (< 50%, Fig. 4). The present assessment demonstrates, for example, that the data available for assessing direct effects of eutrophication (Chl-*a* and Secchi depth) was not sufficient to reliably assess eutrophication in the northern basins - Gulf of Riga, Gulf of Finland, Åland Sea, Bothnian Sea, Quark and Bothnian Bay (Fig. 4). Increasing monitoring or including new monitoring platforms, such as ships-of-opportunity or remote sensing, would significantly increase the overall quality of the assessment.

From a scientific point of view, it is worrying to see declining confidence in assessment results caused by a decrease in the availability of monitoring data in some areas. Our results indicate a mismatch between continued political focus on abatement of eutrophication and the lack of efforts to design and implement science-based monitoring programs. A consequence of inadequate monitoring networks could be a limited ability to document any changes in eutrophication status resulting from investments to reduce nutrient inputs to the sea. This tendency has also been reported elsewhere (Borja et al. 2013, Carstensen 2014).

5. CONCLUSIONS

The open waters of the Baltic Sea are classified as having unacceptable eutrophication status. These results are in general in accordance with previous integrated indicator-based assessments (HELCOM 2009; HELCOM 2010), and independent of recent changes in the assessment methodology.

An increase in the spatial extent of the eutrophication problem is revealed, as the Bothnian Bay is now classified as being affected by eutrophication. This finding is contradictory to current nutrient management strategy for the Baltic Sea (HELCOM 2013b), according to which no nutrient reductions are required to the Bothnian Bay or the Bothnian Sea. That strategy was based on eutrophication targets and nutrient inputs during 1997-2003. We suggest that future revisions of the strategy should better take into account the present status in an adaptive manner. In light of the latest assessment results, anthropogenic nutrient inputs to all basins of the Baltic Sea should be reduced.

The confidence of the overall assessments of the open sea basins of the Baltic Sea has improved since the previous assessment. However, low confidence at the criteria level was met in several sub-basins, caused by scarcity of *in situ* data on Chl-*a* concentrations and/or Secchi depth. The assessment confidence would benefit from applying data from alternative platforms, such as remote sensing and ships-of-opportunity.

The presented assessment methodology provides a step forward in indicator-based eutrophication assessment and the application of criteria for the implementation of the Marine Strategy Framework Directive. The methodology developed and the lessons learned may serve also other marine regions, ultimately leading to the production of a pan-European indicator-based assessment of eutrophication status.

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Figure captions

Figure 1. The Baltic Sea and the subdivision used in this study. Full names of the assessment units (basins): KAT = Kattegat, SND = The Sound, GRB = Great Belt, KIB = Kiel Bay, MEB = Bay of Mecklenburg, ARK = Arkona Sea, BOR = Bornholm Sea, GDK = Gdansk Basin, EGB = Eastern Gotland Basin, WGB = Western Gotland Basin, NBP = Northern Baltic Proper, GOR = Gulf of Riga, GOF = Gulf of Finland, ÅS = Åland Sea, BS = Bothnian Sea, QU = The Quark, BB = Bothnian Bay.

Figure 2. Schematic visualization of how the eutrophication status assessment (or primary assessment, in black) and the confidence assessment (or secondary assessment, in red italics) are produced using HEAT 3.0. The assessments are carried out separately for each assessment unit. Steps 1-3 are described in detail in the Material and methods section. Abbreviations: DIN = Dissolved inorganic nitrogen; DIP = Dissolved inorganic phosphorus; Chl-*a* = chlorophyll-*a*; Secchi = Secchi depth; ES = Indicator-specific state, based on monitoring data from the assessment period; ET = Indicator-specific target (boundary determining lower limit of GES); ER = Eutrophication ratio derived from ET and ES; ES-Score = Confidence of ES estimate; ET-Score = Confidence of ET; FCR = Final quality rating of the assessment; GES = Good environmental status, referring to an acceptable level of eutrophication.

Figure 3. Distance of criteria-specific eutrophication to target, calculated for criteria 1-3 for each of the assessment units. Please note that a negative value indicates the criteria-specific target has been met. Abbreviations for assessment units as in Fig. 1.

Figure 4. Assessment of criteria-specific confidence for criterion 1-3 as well as the final confidence rating (FCR) of the integrated assessment of eutrophication. The horizontal black bars represent the Final Confidence Rating per assessment unit. Abbreviations for assessment units as in Fig. 1.

Figure 5. a) Eutrophication Targets (ET) and Eutrophication Status (ES) for summer (June-September) chlorophyll-*a* concentrations (μg L^{-1} ± SD) for the different assessment units and b) summer (June-September) chlorophyll-*a* concentrations (μg L^{-1} ± SD) in the Bothnian Bay during the period 2007-2011.

Table captions

Table 1. Characteristics of the 17 assessment units used in the study: Surface area (calculated using GIS); maximum bottom depth (Leppäranta and Myrberg, 2009); typical level of salinity at the surface (Leppäranta and Myrberg, 2009); approximate depth of permanent halocline, if present (HELCOM, 2013a); typical surface temperature in July (Leppäranta and Myrberg, 2009); major rivers flowing into the sub-basin (Kulinski and Pempkowiak, 2009; HELCOM, 2013c) as well as average (2008-2010) annual inputs of total nitrogen and total phosphorus to the basin, including adjacent coastal areas (HELCOM, 2013c). Nutrient inputs are calculated using different basin subdivisions and have therefore been combined for some assessment units.

Table 2. Indicator targets used in the eutrophication assessment. DIN = average NO_X+NH_4-N concentration at 0-10 m depth between December and February (μM), DIP = average PO_4-P concentration at 0-10 m depth between December and February (μM), Chl-*a* = average chlorophyll-*a* concentration at 0-10 m depth between June and September (μg L^{-1}), Secchi = average Secchi depth between June and September (m), and Oxyge n = annual average oxygen debt below halocline (mg L^{-1}).

Table 3. Integrated assessments of eutrophication status in the open sea basins of the Baltic Sea during the period 2007-2011. The assessment criteria are: C1 = Nutrient levels; C2 = Direct effects; and C3 = Indirect effects. Numbers indicate criteria-specific eutrophication. Values > 1 indicate unacceptable eutrophication status, while values < 1 indicate acceptable eutrophication status. Status = overall eutrophication status (GES = acceptable / at good environmental status, Sub-GES = unacceptable / below good environmental status). Confidence = Confidence classification (*high*, *moderate* or *low*).

Table 4. Comparison of the number of indicators used (No. of indicators) and the Final Confidence Rating (FCR) in the eutrophication assessments for the periods 2001-2006 and 2007-2011, for all assessment units and in average. For the Kattegat, the period 2001-2006 is represented by the unit "Kattegat, central parts". *ni* = no information available.

Electronic supplementary material

Excel sheets presenting the HEAT 3.0 assessment tool for 17 assessment units representing the open sea basins of the Baltic Sea. C1-3 = Criteria 1-3. RefCond = Reference condition (optional, can be given instead of target together with associated acceptable deviation). AcDev = Acceptable deviation (see previous comment). ET = Indicator target. Unit = Unit of indicator value. Resp = Response to increasing eutrophication (+ for positive, – for negative). ET-Score = Confidence of indicator target (H for high, M for moderate, L for low). ES = Indicator status. ES-Score = Confidence of indicator status (H for high, M for moderate, L for low). ER = Eutrophication Ratio. Ind_Conf = Indicator confidence (%). Weight = Weight of indicator within criteria (%). C1_ER = Criteria-specific eutrophication. C1_ES = Criteria-specific eutrophication status (GES = acceptable / at good environmental status, Sub GES = unacceptable / below good environmental status). Final eutrophication status: GES = acceptable / at good environmental status, or Sub GES = unacceptable / below good environmental status. Final confidence rating (FCR): high, moderate or low.

Figure 1

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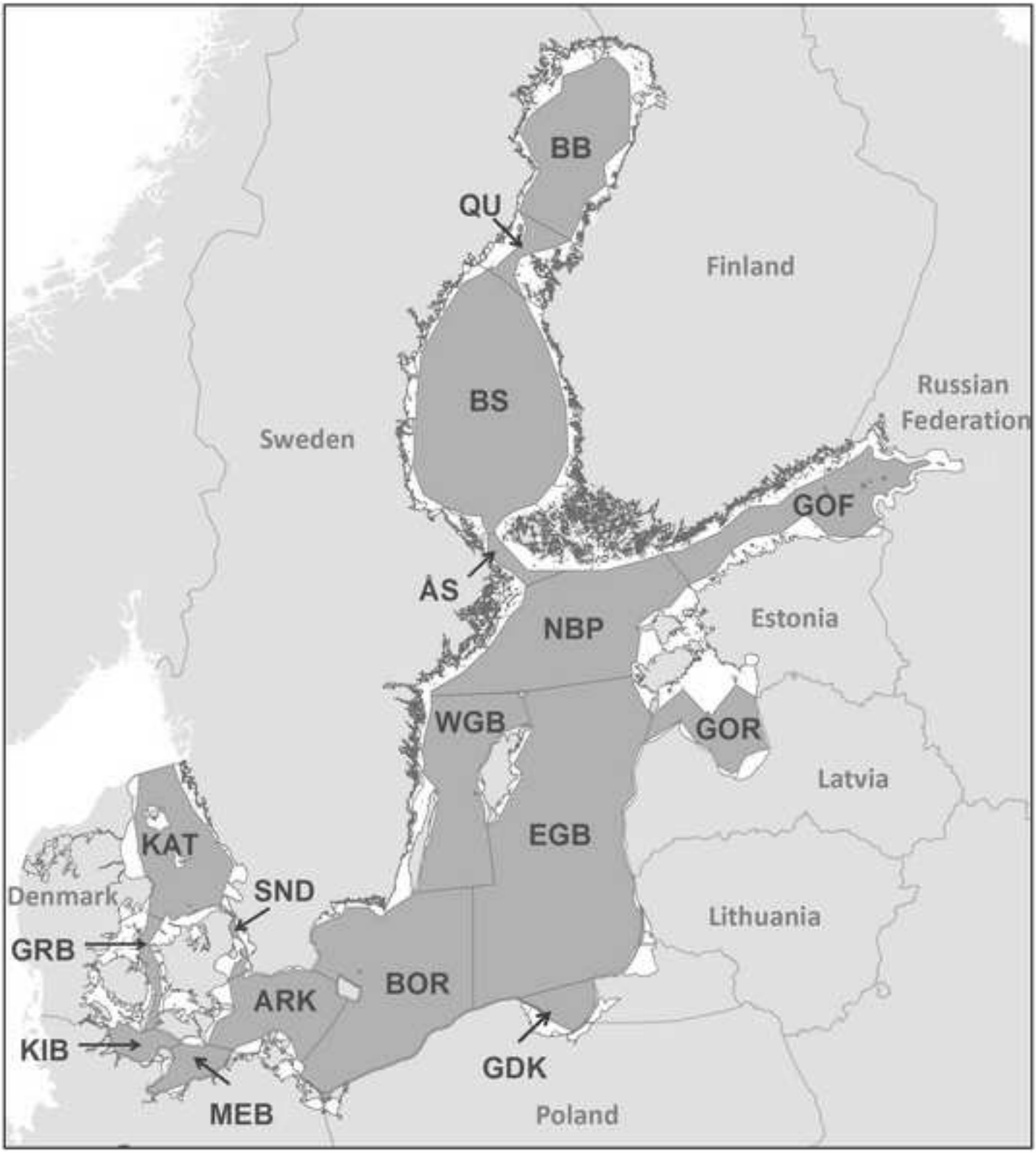

Figure 2

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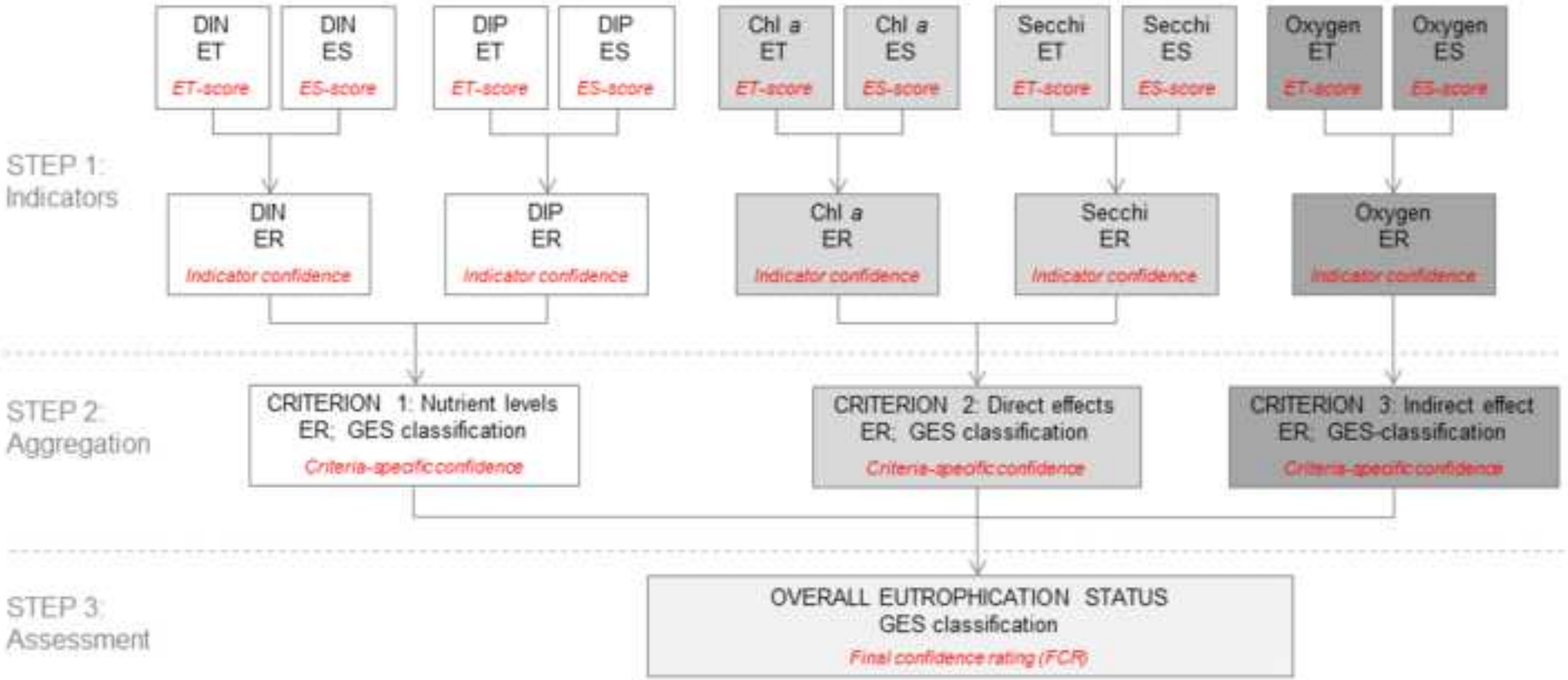

Figure 3

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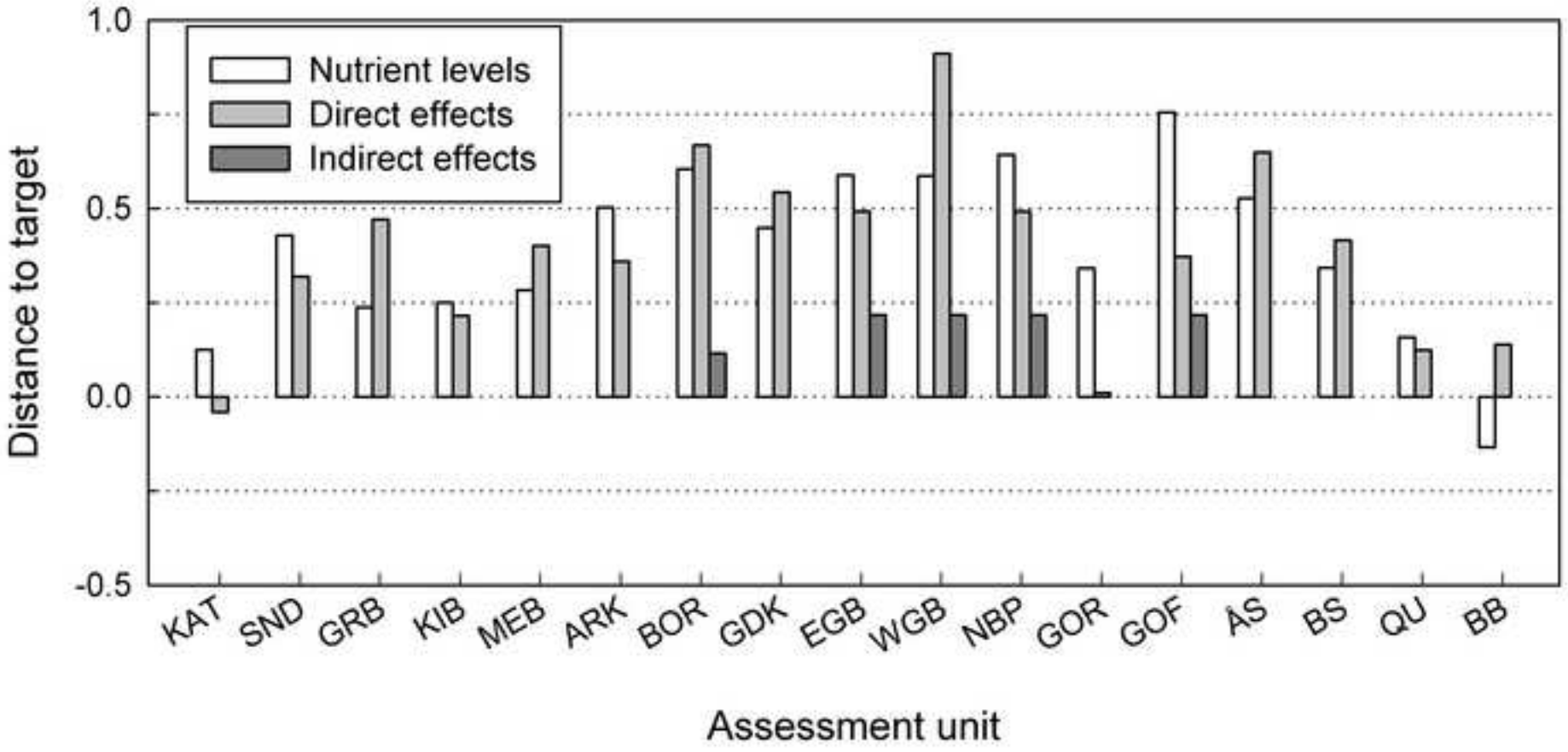

Figure 4

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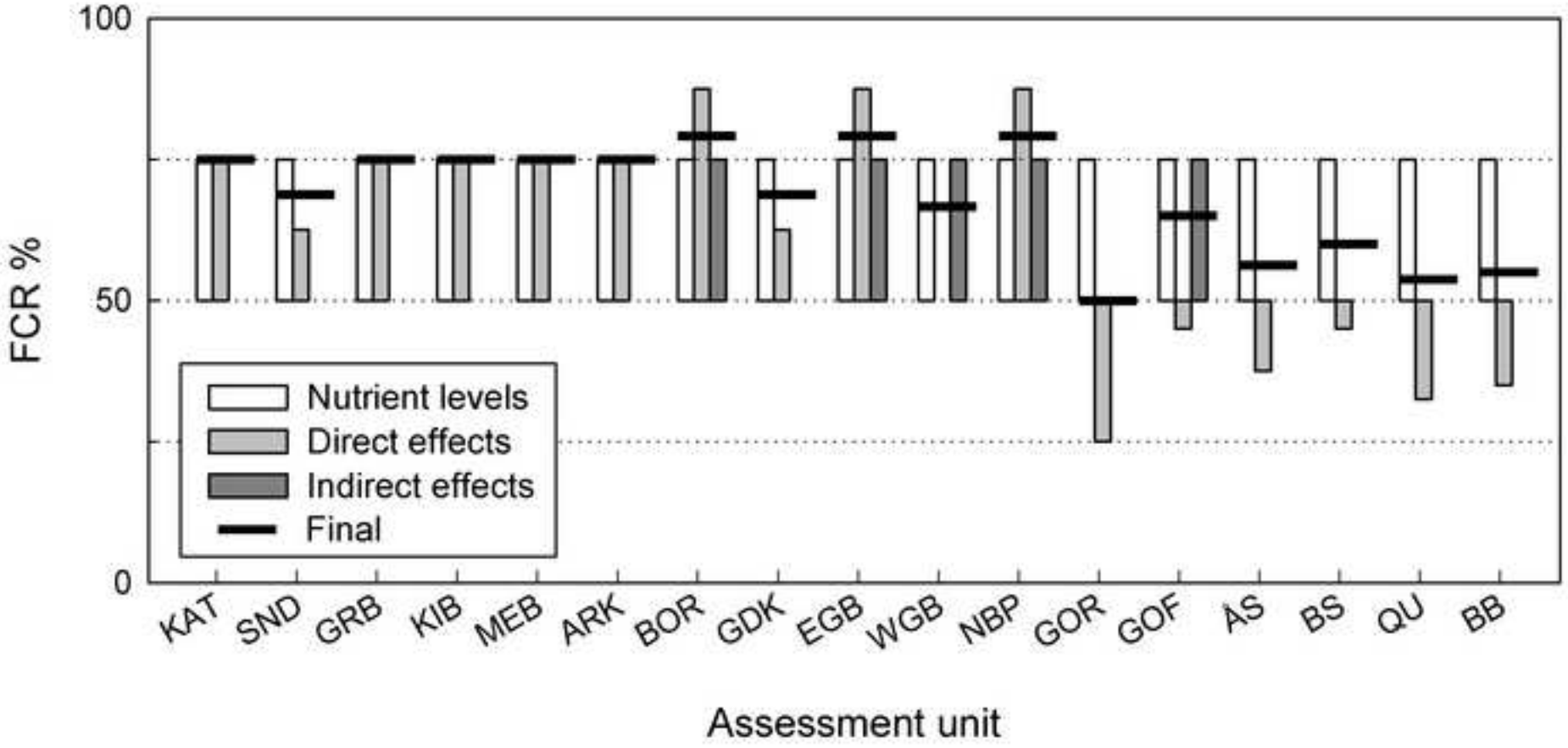

Figure 5

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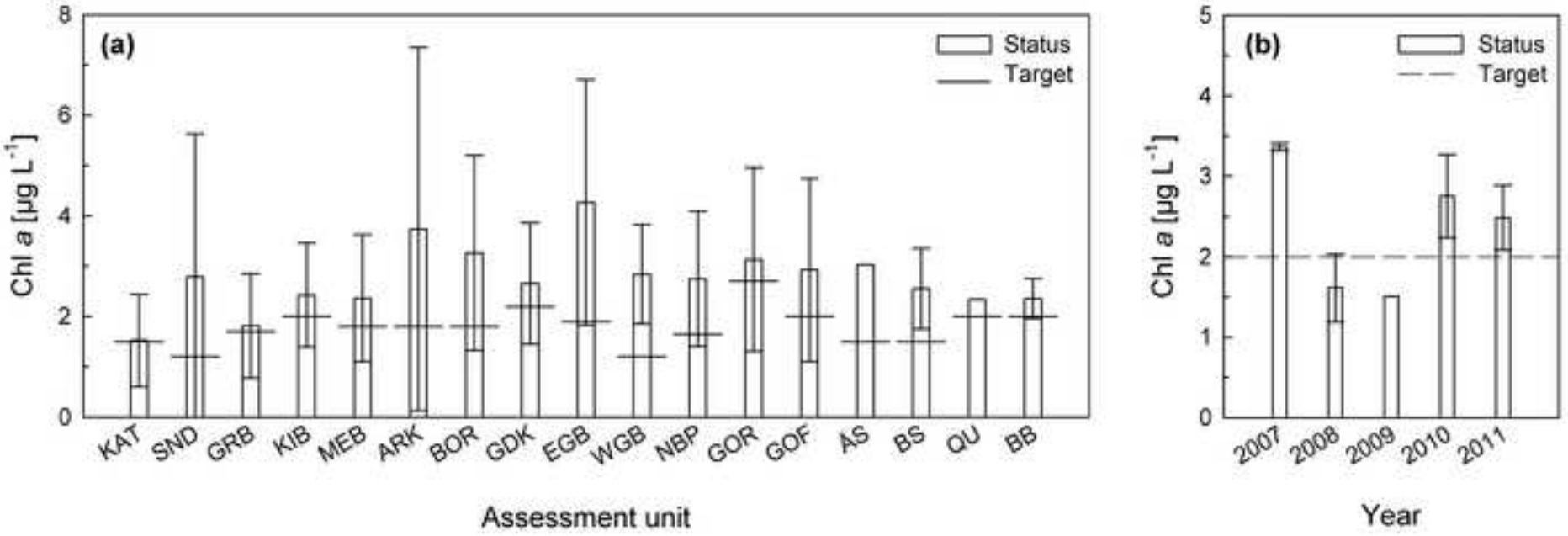

Table 1

Assessment unit	Surface area (km^2)	Depth, max (m)	Salinity, typical surface	Permanent halocline depth, approx. (m)	Temperature, typical surface summer (°C)	Major rivers flowing to area	N input, avg 2008-2010 ($t\ y^{-1}$)	P input, avg 2008-2010 ($t\ y^{-1}$)
Kattegat	15 670	130	18 - 26	10 - 20	16 - 17	Göta Älv	69 170	1 550
The Sound	600	53	9 - 16	10 - 15	16 - 17	*(no major rivers)*	53 970	1 470
Great Belt	1 940	81	8 - 24	15 - 20	16 - 17	*(no major rivers)*		
Kiel Bay	2 760	20	7 - 8	15 - 20	16 - 18	*(no major rivers)*		
Bay of Mecklenburg	3 480	20	9 - 14	15 - 20	16 - 18	*(no major rivers)*		
Arkona Sea	13 110	53	7.3 - 8.5	25 - 35	16 - 17	*(no major rivers)*	413 680	16 510
Bornholm Sea	38 840	105	7.3 - 8.5	55 - 60	16 - 17	Oder		
Gdansk Basin	3 650	114	5.0 - 7.3	70 - 75	18 - 22	Vistula		
Eastern Gotland Basin	70 750	249	6.5 - 7.5	70 - 80	15 - 17	Nemunas		
Western Gotland Basin	21 930	459	6.5 - 7.5	65 - 75	15 - 17	*(no major rivers)*		
Northern Baltic Proper	31 570	150	5 - 7	65 - 75	16 - 17	*(no major rivers)*		
Gulf of Riga	8 670	51	4.5 - 6	*(not present)*	17 - 18	Daugava	89 060	2 810
Gulf of Finland	16 590	123	0 - 6	45 - 65	15 - 18	Neva, Narva	125 050	6 810
Åland Sea	1 900	301	5 - 6	50 - 60	13 - 15	*(no major rivers)*	74 530	2 660
Bothnian Sea	49 580	293	4 - 6	45 - 60	13 - 15	Ångerman, Indal		
The Quark	2 870	40	3.5 - 6	*(not present)*	13 - 15	Ume	55 780	2 580
Bothnian Bay	21 350	146	2 - 4	40 - 55	13 - 15	Lule, Torne, Kemijoki		

Table 2

Assessment unit	DIN	DIP	Chl-*a*	Secchi	Oxygen
Kattegat	5.0	0.49	1.5	7.6	-
The Sound	3.3	0.42	1.2	8.2	-
Great Belt	5.0	0.59	1.7	8.5	-
Kiel Bay	5.5	0.57	2.0	7.4	-
Bay of Mecklenburg	4.3	0.49	1.8	7.1	-
Arkona Sea	2.9	0.36	1.8	7.2	-
Bornholm Sea	2.5	0.30	1.8	7.1	6.4
Gdansk Basin	4.2	0.36	2.2	6.5	8.7
Eastern Gotland Basin	2.6	0.29	1.9	7.6	8.7
Western Gotland Basin	2.0	0.33	1.2	8.4	8.7
Northern Baltic Proper	2.9	0.25	1.7	7.1	8.7
Gulf of Riga	5.2	0.41	2.7	5.0	-
Gulf of Finland	3.8	0.59	2.0	5.5	8.7
Åland Sea	2.7	0.21	1.5	6.9	-
Bothnian Sea	2.8	0.19	1.5	6.8	-
The Quark	3.7	0.10	2.0	6.0	-
Bothnian Bay	5.2	0.07	2.0	5.8	-

Table 3

Assessment unit	Assessment criteria			Status	Confidence
	C1	C2	C2		
Kattegat	1.12	0.96	-	*Sub-GES*	*High*
The Sound	1.43	1.32	-	*Sub-GES*	*Moderate*
Great Belt	1.24	1.47	-	*Sub-GES*	*High*
Kiel Bay	1.24	1.22	-	*Sub-GES*	*High*
Bay of Mecklenburg	1.28	1.4	-	*Sub-GES*	*High*
Arkona Sea	1.5	1.36	-	*Sub-GES*	*High*
Bornholm Sea	1.61	1.67	1.12	*Sub-GES*	*High*
Gdansk Basin	1.45	1.54	-	*Sub-GES*	*Moderate*
Eastern Gotland Basin	1.59	1.49	1.22	*Sub-GES*	*High*
Western Gotland Basin	1.59	1.91	1.22	*Sub-GES*	*Moderate*
Northern Baltic Proper	1.64	1.49	1.22	*Sub-GES*	*High*
Gulf of Riga	1.34	1.01	-	*Sub-GES*	*Low*
Gulf of Finland	1.76	1.37	1.22	*Sub-GES*	*Moderate*
Åland Sea	1.53	1.65	-	*Sub-GES*	*Moderate*
Bothnian Sea	1.34	1.42	-	*Sub-GES*	*Moderate*
The Quark	1.16	1.12	-	*Sub-GES*	*Moderate*
Bothnian Bay	0.87	1.14	-	*Sub-GES*	*Moderate*

Table 4

Assessment unit	No. of indicators		FCR (%)	
	2001-2006	2007-2011	2001-2006	2007-2011
Kattegat	8	4	62	75
The Sound	8	4	79	69
Great Belt	7	4	72	75
Kiel Bay	7	4	67	75
Bay of Mecklenburg	3	4	67	75
Arkona Sea	5	4	54	75
Bornholm Sea	5	5	53	79
Gdansk Basin	7	4	60	69
Eastern Gotland Basin	5	5	63	79
Western Gotland Basin	4	5	80	67
Northern Baltic Proper	5	5	62	79
Gulf of Riga	4	4	50	50
Gulf of Finland	5	5	65	65
Åland Sea	*ni*	4	*ni*	56
Bothnian Sea	5	4	62	60
The Quark	5	4	47	54
Bothnian Bay	5	4	66	55
AVERAGE	6	4	63	68

Supplementary Material

The HELCOM Eutrophication Assessment Tool 3.0

Sub-division/basin/water body/station: **Åland Sea**

Coordinates: ...enter the coordinates in WGS 1984

C1: Nutrient levels	RefCon	AcDev	ET	Unit	Resp	ET_Score			ES	ES_Score			ER	Ind_ Conf	Weight	C1_ER	C1_ES	C1_ Conf	C1_ Weight
DIN (Dec-Feb)			2.70	µM	+	H	M	L	3.54	H	M	L	1.310	75%	50%				
DIP (Dec-Feb)			0.21	µM	+	H	M	L	0.37	H	M	L	1.743	75%	50%				
Add new indicator …																			
															100%	1.527	Sub GES	75%	50%

C2: Direct effects	RefCon	AcDev	ET	Unit	Resp	ET_Score			EUT_status	ES_Score			ER	Ind_ Conf	Weight	C2_ER	C2_ES	C2_ Conf	C2_ Weight
Chlorophyll a (June-Sept)			1.50	µg/l	+	H	M	L	3.03	H	M	L	2.020	25%	50%				
Secchi depth (June-Sept)			6.90	m	-	H	M	L	5.40	H	M	L	1.278	50%	50%				
Add new indicator …																			
															100%	1.649	Sub GES	38%	50%

C3: Indirect effects	RefCon	AcDev	ET	Unit	Resp	ET_Score			EUT_status	ES_Score			ER	Ind_ Conf	Weight	C3_ER	C3_ES	C3_ Conf	C3_ Weight
Oxygen debt				mg/l	+	H	M	L		H	M	L			xx				
Add new indicator …																			
															100%				xx
																			100%

63% 50%

IMPORT data from XML

EXPORT data to XML

Final eutrophication status: **Sub GES**

version 20140313

56.25%

Final confidence rating: **Moderate**

Glossary:			
	C1-3	=	Criteria 1 to 3
	RefCon	=	Reference condition (optional, can be given instead of target together with associated acceptable deviation)
	AcDev	=	Acceptable deviation.
	ET	=	Indicator target
	Resp.	=	Response to increasing eutrophication (+ for positive, – for negative)
	ET_Score	=	H for high, M for moderate, L for low
	ES	=	Indicator status
	ES_Score	=	H for high, M for moderate, L for low
	ER	=	Eutrophication Ratio
	Ind_Conf	=	Indicator confidence (%)
	C1_ER	=	Criteria-specific eutrophication.
	C1_ES	=	Eutrophication Status for Criteria 1
	C1_Conf	=	Confidence (weighted) for Criteria 1
	C1_Weight	=	Weight factor assigned to Criteria 1 (100; 50 or 33%; pending the number of criteria covered)

The HELCOM Eutrophication Assessment Tool 3.0

Sub-division/basin/water body/station: **Western Gotland Basin**

Coordinates: ...enter the coordinates in WGS 1984

C1: Nutrient levels	RefCon	AcDev	ET	Unit	Resp	ET_Score	ES	ES_Score	ER	Ind_ Conf	Weight	C1_ER	C1_ES	C1_ Conf	C1_ Weight
DIN (Dec-Feb)			2.00	µM	+	H M L	2.82	H M L	1.412	75%	50%				
DIP (Dec-Feb)			0.33	µM	+	H M L	0.58	H M L	1.761	75%	50%				
Add new indicator …															
											100%	1.586	Sub GES	75%	33%

C2: Direct effects	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C2_ER	C2_ES	C2_ Conf	C2_ Weight
Chlorophyll a (June-Sept)			1.20	µg/l	+	H M L	2.82	H M L	2.348	50%	50%				
Secchi depth (June-Sept)			8.40	m	-	H M L	5.70	H M L	1.474	50%	50%				
Add new indicator …															
											100%	1.911	Sub GES	50%	33%

C3: Indirect effects	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C3_ER	C3_ES	C3_ Conf	C3_ Weight
Oxygen debt			8.66	mg/l	+	H M L	10.54	H M L	1.217	100%	100%				
Add new indicator …															
											100%	1.217	Sub GES	75%	33%
															100%

70% 70%

IMPORT data from XML

EXPORT data to XML

Final eutrophication status: **Sub GES**

version 20140313

66.67% Final confidence rating: **Moderate**

Glossary:

C1-3	=	Criteria 1 to 3
RefCon	=	Reference condition (optional, can be given instead of target together with associated acceptable deviation)
AcDev	=	Acceptable deviation.
ET	=	Indicator target
Resp.	=	Response to increasing eutrophication (+ for positive, – for negative)
ET_Score	=	H for high, M for moderate, L for low
ES	=	Indicator status
ES_Score	=	H for high, M for moderate, L for low
ER	=	Eutrophication Ratio
Ind_Conf	=	Indicator confidence (%)
C1_ER	=	Criteria-specific eutrophication.
C1_ES	=	Eutrophication Status for Criteria 1
C1_Conf	=	Confidence (weighted) for Criteria 1
C1_Weight	=	Weight factor assigned to Criteria 1 (100; 50 or 33%; pending the number of criteria covered)

The HELCOM Eutrophication Assessment Tool 3.0

Sub-division/basin/water body/station: **The Sound**

Coordinates: ...enter the coordinates in WGS 1984

C1: Nutrient levels	RefCon	AcDev	ET	Unit	Resp	ET_Score	ES	ES_Score	ER	Ind_ Conf	Weight	C1_ER	C1_ES	C1_ Conf	C1_ Weight
DIN (Dec-Feb)			3.30	µM	+	H M L	4.42	H M L	1.339	75%	50%				
DIP (Dec-Feb)			0.42	µM	+	H M L	0.64	H M L	1.519	75%	50%				
Add new indicator …											100%	1.429	Sub GES	75%	50%

C2: Direct effects	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C2_ER	C2_ES	C2_ Conf	C2_ Weight
Chlorophyll a (June-Sept)			1.20	µg/l	+	H M L	1.82	H M L	1.515	25%	50%				
Secchi depth (June-Sept)			8.20	m	-	H M L	7.30	H M L	1.123	100%	50%				
Add new indicator …											100%	1.319	Sub GES	63%	50%

C3: Indirect effects	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C3_ER	C3_ES	C3_ Conf	C3_ Weight
Oxygen debt			2.00	mg/l	+	H M L		H M L			100%				
Add new indicator …											100%				xx
															100%

50% 75%

IMPORT data from XML

EXPORT data to XML

Final eutrophication status: **Sub GES**

version 20140313

68.75%

Final confidence rating: **Moderate**

Glossary:

C1-3	=	Criteria 1 to 3
RefCon	=	Reference condition (optional, can be given instead of target together with associated acceptable deviation)
AcDev	=	Acceptable deviation.
ET	=	Indicator target
Resp.	=	Response to increasing eutrophication (+ for positive, – for negative)
ET_Score	=	H for high, M for moderate, L for low
ES	=	Indicator status
ES_Score	=	H for high, M for moderate, L for low
ER	=	Eutrophication Ratio
Ind_Conf	=	Indicator confidence (%)
C1_ER	=	Criteria-specific eutrophication.
C1_ES	=	Eutrophication Status for Criteria 1
C1_Conf	=	Confidence (weighted) for Criteria 1
C1_Weight	=	Weight factor assigned to Criteria 1 (100; 50 or 33%; pending the number of criteria covered)

The HELCOM Eutrophication Assessment Tool 3.0

Sub-division/basin/water body/station: **The Quark**

Coordinates: ...enter the coordinates in WGS 1984

C1: Nutrient levels

	RefCon	AcDev	ET	Unit	Resp	ET_Score	ES	ES_Score	ER	Ind_ Conf	Weight	C1_ER	C1_ES	C1_ Conf	C1_ Weight
DIN (Dec-Feb)			3.70	µM	+	H M L	5.28	H M L	1.427	75%	50%				
DIP (Dec-Feb)			0.10	µM	+	H M L	0.09	H M L	0.890	75%	50%				
Add new indicator …											100%	1.158	Sub GES	75%	50%

C2: Direct effects

	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C2_ER	C2_ES	C2_ Conf	C2_ Weight
Chlorophyll a (June-Sept)			2.00	µg/l	+	H M L	2.34	H M L	1.170	25%	70%				
Secchi depth (June-Sept)			6.00	m	-	H M L	5.90	H M L	1.017	50%	30%				
Add new indicator …											100%	1.124	Sub GES	33%	50%

C3: Indirect effects

	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C3_ER	C3_ES	C3_ Conf	C3_ Weight
Oxygen debt				mg/l	+	H M L		H M L			xx				
Add new indicator …											100%				xx
															100%

63% 50%

IMPORT data from XML

EXPORT data to XML

Final eutrophication status: **Sub GES**

version 20140313

53.75%

Final confidence rating: **Moderate**

Glossary:

C1-3	=	Criteria 1 to 3
RefCon	=	Reference condition (optional, can be given instead of target together with associated acceptable deviation)
AcDev	=	Acceptable deviation.
ET	=	Indicator target
Resp.	=	Response to increasing eutrophication (+ for positive, – for negative)
ET_Score	=	H for high, M for moderate, L for low
ES	=	Indicator status
ES_Score	=	H for high, M for moderate, L for low
ER	=	Eutrophication Ratio
Ind_Conf	=	Indicator confidence (%)
C1_ER	=	Criteria-specific eutrophication.
C1_ES	=	Eutrophication Status for Criteria 1
C1_Conf	=	Confidence (weighted) for Criteria 1
C1_Weight	=	Weight factor assigned to Criteria 1 (100; 50 or 33%; pending the number of criteria covered)

The HELCOM Eutrophication Assessment Tool 3.0

Sub-division/basin/water body/station: **Gdansk Basin**

Coordinates: ...enter the coordinates in WGS 1984

C1: Nutrient levels	RefCon	AcDev	ET	Unit	Resp	ET_Score	ES	ES_Score	ER	Ind_ Conf	Weight	C1_ER	C1_ES	C1_ Conf	C1_ Weight
DIN (Dec-Feb)			4.20	µM	+	H M L	5.01	H M L	1.192	75%	50%				
DIP (Dec-Feb)			0.36	µM	+	H M L	0.61	H M L	1.706	75%	50%				
Add new indicator …															
											100%	1.449	Sub GES	75%	50%

C2: Direct effects	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C2_ER	C2_ES	C2_ Conf	C2_ Weight
Chlorophyll a (June-Sept)			2.20	µg/l	+	H M L	4.04	H M L	1.836	50%	50%				
Secchi depth (June-Sept)			6.50	m	-	H M L	5.20	H M L	1.250	75%	50%				
Add new indicator …															
											100%	1.543	Sub GES	63%	50%

C3: Indirect effects	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C3_ER	C3_ES	C3_ Conf	C3_ Weight
Oxygen debt			8.66	mg/l	+	H M L		H M L			100%				
Add new indicator …															
											100%				xx
															100%

70% 75%

IMPORT data from XML

EXPORT data to XML

Final eutrophication status: **Sub GES**

version 20140313

68.75%

Final confidence rating: **Moderate**

Glossary:

C1-3	=	Criteria 1 to 3
RefCon	=	Reference condition (optional, can be given instead of target together with associated acceptable deviation)
AcDev	=	Acceptable deviation.
ET	=	Indicator target
Resp.	=	Response to increasing eutrophication (+ for positive, – for negative)
ET_Score	=	H for high, M for moderate, L for low
ES	=	Indicator status
ES_Score	=	H for high, M for moderate, L for low
ER	=	Eutrophication Ratio
Ind_Conf	=	Indicator confidence (%)
C1_ER	=	Criteria-specific eutrophication.
C1_ES	=	Eutrophication Status for Criteria 1
C1_Conf	=	Confidence (weighted) for Criteria 1
C1_Weight	=	Weight factor assigned to Criteria 1 (100; 50 or 33%; pending the number of criteria covered)

The HELCOM Eutrophication Assessment Tool 3.0

Sub-division/basin/water body/station: **Northern Baltic Proper**

Coordinates: ...enter the coordinates in WGS 1984

C1: Nutrient levels	RefCon	AcDev	ET	Unit	Resp	ET_Score	ES	ES_Score	ER	Ind_ Conf	Weight	C1_ER	C1_ES	C1_ Conf	C1_ Weight
DIN (Dec-Feb)			2.90	µM	+	H M L	3.75	H M L	1.293	75%	50%				
DIP (Dec-Feb)			0.25	µM	+	H M L	0.50	H M L	1.992	75%	50%				
Add new indicator …															
											100%	1.643	Sub GES	75%	33%

C2: Direct effects	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C2_ER	C2_ES	C2_ Conf	C2_ Weight
Chlorophyll a (June-Sept)			1.65	µg/l	+	H M L	2.79	H M L	1.692	75%	50%				
Secchi depth (June-Sept)			7.10	m	-	H M L	5.50	H M L	1.291	100%	50%				
Add new indicator …															
											100%	1.492	Sub GES	88%	33%

C3: Indirect effects	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C3_ER	C3_ES	C3_ Conf	C3_ Weight
Oxygen debt			8.66	mg/l	+	H M L	10.54	H M L	1.217	100%	100%				
Add new indicator …															
											100%	1.217	Sub GES	75%	33%

				100%
		70%	100%	

IMPORT data from XML

EXPORT data to XML

version 20140313

79.17%

Final eutrophication status: **Sub GES**

Final confidence rating: **High**

Glossary:

C1-3	=	Criteria 1 to 3
RefCon	=	Reference condition (optional, can be given instead of target together with associated acceptable deviation)
AcDev	=	Acceptable deviation.
ET	=	Indicator target
Resp.	=	Response to increasing eutrophication (+ for positive, – for negative)
ET_Score	=	H for high, M for moderate, L for low
ES	=	Indicator status
ES_Score	=	H for high, M for moderate, L for low
ER	=	Eutrophication Ratio
Ind_Conf	=	Indicator confidence (%)
C1_ER	=	Criteria-specific eutrophication.
C1_ES	=	Eutrophication Status for Criteria 1
C1_Conf	=	Confidence (weighted) for Criteria 1
C1_Weight	=	Weight factor assigned to Criteria 1 (100; 50 or 33%; pending the number of criteria covered)

The HELCOM Eutrophication Assessment Tool 3.0

Sub-division/basin/water body/station: **Kiel Bay**

Coordinates: ...enter the coordinates in WGS 1984

C1: Nutrient levels	RefCon	AcDev	ET	Unit	Resp	ET_Score	ES	ES_Score	ER	Ind_ Conf	Weight	C1_ER	C1_ES	C1_ Conf	C1_ Weight
DIN (Dec-Feb)			5.50	µM	+	H M L	6.93	H M L	1.259	75%	50%				
DIP (Dec-Feb)			0.57	µM	+	H M L	0.70	H M L	1.226	75%	50%				
Add new indicator …											100%	1.243	Sub GES	75%	50%

C2: Direct effects	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C2_ER	C2_ES	C2_ Conf	C2_ Weight
Chlorophyll a (June-Sept)			2.00	µg/l	+	H M L	2.35	H M L	1.175	50%	50%				
Secchi depth (June-Sept)			7.40	m	-	H M L	5.90	H M L	1.254	100%	50%				
Add new indicator …											100%	1.215	Sub GES	75%	50%

C3: Indirect effects	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C3_ER	C3_ES	C3_ Conf	C3_ Weight
Oxygen debt			2.00	mg/l	+	H M L		H M L			100%				
Add new indicator …											100%				xx
															100%

50% 88%

IMPORT data from XML

EXPORT data to XML

Final eutrophication status: **Sub GES**

version 20140313

75.00% Final confidence rating: **High**

Glossary:

C1-3	=	Criteria 1 to 3
RefCon	=	Reference condition (optional, can be given instead of target together with associated acceptable deviation)
AcDev	=	Acceptable deviation.
ET	=	Indicator target
Resp.	=	Response to increasing eutrophication (+ for positive, – for negative)
ET_Score	=	H for high, M for moderate, L for low
ES	=	Indicator status
ES_Score	=	H for high, M for moderate, L for low
ER	=	Eutrophication Ratio
Ind_Conf	=	Indicator confidence (%)
C1_ER	=	Criteria-specific eutrophication.
C1_ES	=	Eutrophication Status for Criteria 1
C1_Conf	=	Confidence (weighted) for Criteria 1
C1_Weight	=	Weight factor assigned to Criteria 1 (100; 50 or 33%; pending the number of criteria covered)

The HELCOM Eutrophication Assessment Tool 3.0

Sub-division/basin/water body/station: **Arkona Sea**

Coordinates: ...enter the coordinates in WGS 1984

C1: Nutrient levels	RefCon	AcDev	ET	Unit	Resp	ET_Score	ES	ES_Score	ER	Ind_ Conf	Weight	C1_ER	C1_ES	C1_ Conf	C1_ Weight
DIN (Dec-Feb)			2.90	µM	+	H M L	3.73	H M L	1.286	75%	50%				
DIP (Dec-Feb)			0.36	µM	+	H M L	0.62	H M L	1.719	75%	50%				
Add new indicator …											100%	1.502	Sub GES	75%	50%

C2: Direct effects	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C2_ER	C2_ES	C2_ Conf	C2_ Weight
Chlorophyll a (June-Sept)			1.80	µg/l	+	H M L	2.66	H M L	1.478	75%	50%				
Secchi depth (June-Sept)			7.20	m	-	H M L	5.80	H M L	1.241	75%	50%				
Add new indicator …											100%	1.359	Sub GES	75%	50%

C3: Indirect effects	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C3_ER	C3_ES	C3_ Conf	C3_ Weight
Oxygen debt				mg/l	+	H M L		H M L			xx				
Add new indicator …											100%				xx
							63%		88%						100%

IMPORT data from XML

EXPORT data to XML

version 20140313

75.00%

Final eutrophication status: **Sub GES**

Final confidence rating: **High**

Glossary:

C1-3	=	Criteria 1 to 3
RefCon	=	Reference condition (optional, can be given instead of target together with associated acceptable deviation)
AcDev	=	Acceptable deviation.
ET	=	Indicator target
Resp.	=	Response to increasing eutrophication (+ for positive, – for negative)
ET_Score	=	H for high, M for moderate, L for low
ES	=	Indicator status
ES_Score	=	H for high, M for moderate, L for low
ER	=	Eutrophication Ratio
Ind_Conf	=	Indicator confidence (%)
C1_ER	=	Criteria-specific eutrophication.
C1_ES	=	Eutrophication Status for Criteria 1
C1_Conf	=	Confidence (weighted) for Criteria 1
C1_Weight	=	Weight factor assigned to Criteria 1 (100; 50 or 33%; pending the number of criteria covered)

The HELCOM Eutrophication Assessment Tool 3.0

Sub-division/basin/water body/station: **Bay of Mecklenburg**

Coordinates: ...enter the coordinates in WGS 1984

C1: Nutrient levels	RefCon	AcDev	ET	Unit	Resp	ET_Score	ES	ES_Score	ER	Ind_ Conf	Weight	C1_ER	C1_ES	C1_ Conf	C1_ Weight
DIN (Dec-Feb)			4.30	µM	+	H M L	5.67	H M L	1.320	75%	50%				
DIP (Dec-Feb)			0.49	µM	+	H M L	0.61	H M L	1.247	75%	50%				
Add new indicator …											100%	1.283	Sub GES	75%	50%

C2: Direct effects	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C2_ER	C2_ES	C2_ Conf	C2_ Weight
Chlorophyll a (June-Sept)			1.80	µg/l	+	H M L	2.44	H M L	1.353	75%	50%				
Secchi depth (June-Sept)			7.10	m	-	H M L	4.90	H M L	1.449	75%	50%				
Add new indicator …											100%	1.401	Sub GES	75%	50%

C3: Indirect effects	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C3_ER	C3_ES	C3_ Conf	C3_ Weight
Oxygen debt				mg/l	+	H M L		H M L			xx				
Add new indicator …											100%				xx
															100%

50% 88%

IMPORT data from XML

EXPORT data to XML

Final eutrophication status: **Sub GES**

version 20140313

75.00% Final confidence rating: **High**

Glossary:

C1-3	=	Criteria 1 to 3
RefCon	=	Reference condition (optional, can be given instead of target together with associated acceptable deviation)
AcDev	=	Acceptable deviation.
ET	=	Indicator target
Resp.	=	Response to increasing eutrophication (+ for positive, – for negative)
ET_Score	=	H for high, M for moderate, L for low
ES	=	Indicator status
ES_Score	=	H for high, M for moderate, L for low
ER	=	Eutrophication Ratio
Ind_Conf	=	Indicator confidence (%)
C1_ER	=	Criteria-specific eutrophication.
C1_ES	=	Eutrophication Status for Criteria 1
C1_Conf	=	Confidence (weighted) for Criteria 1
C1_Weight	=	Weight factor assigned to Criteria 1 (100; 50 or 33%; pending the number of criteria covered)

The HELCOM Eutrophication Assessment Tool 3.0

Sub-division/basin/water body/station: **Bornholm Sea**

Coordinates: ...enter the coordinates in WGS 1984

C1: Nutrient levels	RefCon	AcDev	ET	Unit	Resp	ET_Score	ES	ES_Score	ER	Ind_ Conf	Weight	C1_ER	C1_ES	C1_ Conf	C1_ Weight
DIN (Dec-Feb)			2.50	µM	+	H M L	2.97	H M L	1.186	75%	50%				
DIP (Dec-Feb)			0.30	µM	+	H M L	0.61	H M L	2.023	75%	50%				
Add new indicator …															
											100%	1.605	Sub GES	75%	33%

C2: Direct effects	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C2_ER	C2_ES	C2_ Conf	C2_ Weight
Chlorophyll a (June-Sept)			1.80	µg/l	+	H M L	3.72	H M L	2.067	75%	50%				
Secchi depth (June-Sept)			7.10	m	-	H M L	5.60	H M L	1.268	100%	50%				
Add new indicator …															
											100%	1.667	Sub GES	88%	33%

C3: Indirect effects	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C3_ER	C3_ES	C3_ Conf	C3_ Weight
Oxygen debt			6.37	mg/l	+	H M L	7.10	H M L	1.115	100%	100%				
Add new indicator …															
											100%	1.115	Sub GES	75%	33%

			100%
	70%	100%	

IMPORT data from XML

EXPORT data to XML

Final eutrophication status: **Sub GES**

version 20140313

79.17%

Final confidence rating: **High**

Glossary:

C1-3	=	Criteria 1 to 3
RefCon	=	Reference condition (optional, can be given instead of target together with associated acceptable deviation)
AcDev	=	Acceptable deviation.
ET	=	Indicator target
Resp.	=	Response to increasing eutrophication (+ for positive, – for negative)
ET_Score	=	H for high, M for moderate, L for low
ES	=	Indicator status
ES_Score	=	H for high, M for moderate, L for low
ER	=	Eutrophication Ratio
Ind_Conf	=	Indicator confidence (%)
C1_ER	=	Criteria-specific eutrophication.
C1_ES	=	Eutrophication Status for Criteria 1
C1_Conf	=	Confidence (weighted) for Criteria 1
C1_Weight	=	Weight factor assigned to Criteria 1 (100; 50 or 33%; pending the number of criteria covered)

The HELCOM Eutrophication Assessment Tool 3.0

Sub-division/basin/water body/station: **Bothnian Bay**

Coordinates: ...enter the coordinates in WGS 1984

C1: Nutrient levels	RefCon	AcDev	ET	Unit	Resp	ET_Score	ES	ES_Score	ER	Ind_ Conf	Weight	C1_ER	C1_ES	C1_ Conf	C1_ Weight
DIN (Dec-Feb)			5.20	µM	+	H M L	6.83	H M L	1.313	75%	33%				
DIP (Dec-Feb)			0.07	µM	+	H M L	0.05	H M L	0.643	75%	67%				
Add new indicator …											100%	0.866	GES	75%	50%

C2: Direct effects	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C2_ER	C2_ES	C2_ Conf	C2_ Weight
Chlorophyll a (June-Sept)			2.00	µg/l	+	H M L	2.35	H M L	1.173	25%	80%				
Secchi depth (June-Sept)			5.80	m	-	H M L	5.80	H M L	1.000	75%	20%				
Add new indicator …											100%	1.138	Sub GES	35%	50%

C3: Indirect effects	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C3_ER	C3_ES	C3_ Conf	C3_ Weight
Oxygen debt				mg/l	+	H M L		H M L			xx				
Add new indicator …											100%				xx
							63%		63%						100%

IMPORT data from XML

EXPORT data to XML

Final eutrophication status: **Sub GES**

version 20140313

55.00%

Final confidence rating: **Moderate**

Glossary:

C1-3	=	Criteria 1 to 3
RefCon	=	Reference condition (optional, can be given instead of target together with associated acceptable deviation)
AcDev	=	Acceptable deviation.
ET	=	Indicator target
Resp.	=	Response to increasing eutrophication (+ for positive, – for negative)
ET_Score	=	H for high, M for moderate, L for low
ES	=	Indicator status
ES_Score	=	H for high, M for moderate, L for low
ER	=	Eutrophication Ratio
Ind_Conf	=	Indicator confidence (%)
C1_ER	=	Criteria-specific eutrophication.
C1_ES	=	Eutrophication Status for Criteria 1
C1_Conf	=	Confidence (weighted) for Criteria 1
C1_Weight	=	Weight factor assigned to Criteria 1 (100; 50 or 33%; pending the number of criteria covered)

The HELCOM Eutrophication Assessment Tool 3.0

Sub-division/basin/water body/station: **Bothnian Sea**

Coordinates: ...enter the coordinates in WGS 1984

C1: Nutrient levels	RefCon	AcDev	ET	Unit	Resp	ET_Score	ES	ES_Score	ER	Ind_ Conf	Weight	C1_ER	C1_ES	C1_ Conf	C1_ Weight
DIN (Dec-Feb)			2.80	µM	+	H M L	3.67	H M L	1.311	75%	50%				
DIP (Dec-Feb)			0.19	µM	+	H M L	0.26	H M L	1.374	75%	50%				
Add new indicator …											100%	1.342	Sub GES	75%	50%

C2: Direct effects	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C2_ER	C2_ES	C2_ Conf	C2_ Weight
Chlorophyll a (June-Sept)			1.50	µg/l	+	H M L	2.49	H M L	1.662	25%	60%				
Secchi depth (June-Sept)			6.80	m	-	H M L	6.50	H M L	1.046	75%	40%				
Add new indicator …											100%	1.415	Sub GES	45%	50%

C3: Indirect effects	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C3_ER	C3_ES	C3_ Conf	C3_ Weight
Oxygen debt				mg/l	+	H M L		H M L			xx				
Add new indicator …											100%				xx
															100%

63% 63%

IMPORT data from XML

EXPORT data to XML

Final eutrophication status: **Sub GES**

version 20140313

60.00% Final confidence rating: **Moderate**

Glossary:

C1-3	=	Criteria 1 to 3
RefCon	=	Reference condition (optional, can be given instead of target together with associated acceptable deviation)
AcDev	=	Acceptable deviation.
ET	=	Indicator target
Resp.	=	Response to increasing eutrophication (+ for positive, – for negative)
ET_Score	=	H for high, M for moderate, L for low
ES	=	Indicator status
ES_Score	=	H for high, M for moderate, L for low
ER	=	Eutrophication Ratio
Ind_Conf	=	Indicator confidence (%)
C1_ER	=	Criteria-specific eutrophication.
C1_ES	=	Eutrophication Status for Criteria 1
C1_Conf	=	Confidence (weighted) for Criteria 1
C1_Weight	=	Weight factor assigned to Criteria 1 (100; 50 or 33%; pending the number of criteria covered)

The HELCOM Eutrophication Assessment Tool 3.0

Sub-division/basin/water body/station: **Eastern Gotland Basin**

Coordinates: ...enter the coordinates in WGS 1984

C1: Nutrient levels	RefCon	AcDev	ET	Unit	Resp	ET_Score	ES	ES_Score	ER	Ind_ Conf	Weight	C1_ER	C1_ES	C1_ Conf	C1_ Weight
DIN (Dec-Feb)			2.60	µM	+	H M L	3.44	H M L	1.321	75%	50%				
DIP (Dec-Feb)			0.29	µM	+	H M L	0.54	H M L	1.855	75%	50%				
Add new indicator …															
											100%	1.588	Sub GES	75%	33%

C2: Direct effects	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C2_ER	C2_ES	C2_ Conf	C2_ Weight
Chlorophyll a (June-Sept)			1.90	µg/l	+	H M L	3.26	H M L	1.717	75%	50%				
Secchi depth (June-Sept)			7.60	m	-	H M L	6.00	H M L	1.267	100%	50%				
Add new indicator …															
											100%	1.492	Sub GES	88%	33%

C3: Indirect effects	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C3_ER	C3_ES	C3_ Conf	C3_ Weight
Oxygen debt			8.66	mg/l	+	H M L	10.54	H M L	1.217	100%	100%				
Add new indicator …															
											100%	1.217	Sub GES	75%	33%

				100%
		70%	100%	

IMPORT data from XML

EXPORT data to XML

version 20140313

79.17%

Final eutrophication status: **Sub GES**

Final confidence rating: **High**

Glossary:

C1-3	=	Criteria 1 to 3
RefCon	=	Reference condition (optional, can be given instead of target together with associated acceptable deviation)
AcDev	=	Acceptable deviation.
ET	=	Indicator target
Resp.	=	Response to increasing eutrophication (+ for positive, – for negative)
ET_Score	=	H for high, M for moderate, L for low
ES	=	Indicator status
ES_Score	=	H for high, M for moderate, L for low
ER	=	Eutrophication Ratio
Ind_Conf	=	Indicator confidence (%)
C1_ER	=	Criteria-specific eutrophication.
C1_ES	=	Eutrophication Status for Criteria 1
C1_Conf	=	Confidence (weighted) for Criteria 1
C1_Weight	=	Weight factor assigned to Criteria 1 (100; 50 or 33%; pending the number of criteria covered)

The HELCOM Eutrophication Assessment Tool 3.0

Sub-division/basin/water body/station: **Great Belt**

Coordinates: ...enter the coordinates in WGS 1984

C1: Nutrient levels

	RefCon	AcDev	ET	Unit	Resp	ET_Score	ES	ES_Score	ER	Ind_ Conf	Weight	C1_ER	C1_ES	C1_ Conf	C1_ Weight
DIN (Dec-Feb)			5.00	µM	+	H M L	6.48	H M L	1.297	75%	50%				
DIP (Dec-Feb)			0.59	µM	+	H M L	0.70	H M L	1.178	75%	50%				
Add new indicator …															
											100%	1.237	Sub GES	75%	50%

C2: Direct effects

	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C2_ER	C2_ES	C2_ Conf	C2_ Weight
Chlorophyll a (June-Sept)			1.70	µg/l	+	H M L	2.74	H M L	1.613	50%	50%				
Secchi depth (June-Sept)			8.50	m	-	H M L	6.40	H M L	1.328	100%	50%				
Add new indicator …															
											100%	1.470	Sub GES	75%	50%

C3: Indirect effects

	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C3_ER	C3_ES	C3_ Conf	C3_ Weight
Oxygen debt			2.00	mg/l	+	H M L		H M L			100%				
Add new indicator …															
											100%				xx
															100%

50% 88%

IMPORT data from XML

EXPORT data to XML

Final eutrophication status: **Sub GES**

version 20140313

75.00%

Final confidence rating: **High**

Glossary:

C1-3	=	Criteria 1 to 3
RefCon	=	Reference condition (optional, can be given instead of target together with associated acceptable deviation)
AcDev	=	Acceptable deviation.
ET	=	Indicator target
Resp.	=	Response to increasing eutrophication (+ for positive, – for negative)
ET_Score	=	H for high, M for moderate, L for low
ES	=	Indicator status
ES_Score	=	H for high, M for moderate, L for low
ER	=	Eutrophication Ratio
Ind_Conf	=	Indicator confidence (%)
C1_ER	=	Criteria-specific eutrophication.
C1_ES	=	Eutrophication Status for Criteria 1
C1_Conf	=	Confidence (weighted) for Criteria 1
C1_Weight	=	Weight factor assigned to Criteria 1 (100; 50 or 33%; pending the number of criteria covered)

The HELCOM Eutrophication Assessment Tool 3.0

Sub-division/basin/water body/station: **Gulf of Finland**

Coordinates: ...enter the coordinates in WGS 1984

C1: Nutrient levels	RefCon	AcDev	ET	Unit	Resp	ET_Score	ES	ES_Score	ER	Ind_ Conf	Weight	C1_ER	C1_ES	C1_ Conf	C1_ Weight
DIN (Dec-Feb)			3.80	µM	+	H M L	7.87	H M L	2.072	75%	50%				
DIP (Dec-Feb)			0.59	µM	+	H M L	0.85	H M L	1.439	75%	50%				
Add new indicator …											100%	1.755	Sub GES	75%	33%

C2: Direct effects	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C2_ER	C2_ES	C2_ Conf	C2_ Weight
Chlorophyll a (June-Sept)			2.00	µg/l	+	H M L	3.05	H M L	1.523	25%	60%				
Secchi depth (June-Sept)			5.50	m	-	H M L	4.80	H M L	1.146	75%	40%				
Add new indicator …											100%	1.372	Sub GES	45%	33%

C3: Indirect effects	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C3_ER	C3_ES	C3_ Conf	C3_ Weight
Oxygen debt			8.66	mg/l	+	H M L	10.54	H M L	1.217	100%	100%				
Add new indicator …											100%	1.217	Sub GES	75%	33%
															100%

70% 70%

IMPORT data from XML

EXPORT data to XML

Final eutrophication status: **Sub GES**

version 20140313

65.00% Final confidence rating: **Moderate**

Glossary:

C1-3	=	Criteria 1 to 3
RefCon	=	Reference condition (optional, can be given instead of target together with associated acceptable deviation)
AcDev	=	Acceptable deviation.
ET	=	Indicator target
Resp.	=	Response to increasing eutrophication (+ for positive, – for negative)
ET_Score	=	H for high, M for moderate, L for low
ES	=	Indicator status
ES_Score	=	H for high, M for moderate, L for low
ER	=	Eutrophication Ratio
Ind_Conf	=	Indicator confidence (%)
C1_ER	=	Criteria-specific eutrophication.
C1_ES	=	Eutrophication Status for Criteria 1
C1_Conf	=	Confidence (weighted) for Criteria 1
C1_Weight	=	Weight factor assigned to Criteria 1 (100; 50 or 33%; pending the number of criteria covered)

The HELCOM Eutrophication Assessment Tool 3.0

Sub-division/basin/water body/station: **Gulf of Riga**

Coordinates: ...enter the coordinates in WGS 1984

C1: Nutrient levels	RefCon	AcDev	ET	Unit	Resp	ET_Score	ES	ES_Score	ER	Ind_ Conf	Weight	C1_ER	C1_ES	C1_ Conf	C1_ Weight
DIN (Dec-Feb)			5.20	µM	+	H M L	4.86	H M L	0.934	75%	33%				
DIP (Dec-Feb)			0.41	µM	+	H M L	0.63	H M L	1.544	75%	67%				
Add new indicator …											100%	1.341	Sub GES	75%	50%

C2: Direct effects	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C2_ER	C2_ES	C2_ Conf	C2_ Weight
Chlorophyll a (June-Sept)			2.70	µg/l	+	H M L	2.45	H M L	0.908	25%	70%				
Secchi depth (June-Sept)			5.00	m	-	H M L	4.00	H M L	1.250	25%	30%				
Add new indicator …											100%	1.010	Sub GES	25%	50%

C3: Indirect effects	RefCon	AcDev	ET	Unit	Resp	ET_Score	EUT_status	ES_Score	ER	Ind_ Conf	Weight	C3_ER	C3_ES	C3_ Conf	C3_ Weight
Oxygen debt				mg/l	+	H M L		H M L			xx				
Add new indicator …											100%				xx
															100%

50% 50%

IMPORT data from XML

EXPORT data to XML

Final eutrophication status: **Sub GES**

version 20140313

50.00%

Final confidence rating: **Low**

Glossary:			
	C1-3	=	Criteria 1 to 3
	RefCon	=	Reference condition (optional, can be given instead of target together with associated acceptable deviation)
	AcDev	=	Acceptable deviation.
	ET	=	Indicator target
	Resp.	=	Response to increasing eutrophication (+ for positive, – for negative)
	ET_Score	=	H for high, M for moderate, L for low
	ES	=	Indicator status
	ES_Score	=	H for high, M for moderate, L for low
	ER	=	Eutrophication Ratio
	Ind_Conf	=	Indicator confidence (%)
	C1_ER	=	Criteria-specific eutrophication.
	C1_ES	=	Eutrophication Status for Criteria 1
	C1_Conf	=	Confidence (weighted) for Criteria 1
	C1_Weight	=	Weight factor assigned to Criteria 1 (100; 50 or 33%; pending the number of criteria covered)

The HELCOM Eutrophication Assessment Tool 3.0

Sub-division/basin/water body/station: **Kattegat**

Coordinates: ...enter the coordinates in WGS 1984

C1: Nutrient levels

	RefCon	AcDev	ET	Unit	Resp	ET_Score			ES	ES_Score			ER	Ind_ Conf	Weight	C1_ER	C1_ES	C1_ Conf	C1_ Weight
DIN (Dec-Feb)			5.00	µM	+	H	M	L	5.72	H	M	L	1.145	75%	50%				
DIP (Dec-Feb)			0.49	µM	+	H	M	L	0.54	H	M	L	1.104	75%	50%				
Add new indicator …																			
															100%	1.124	Sub GES	75%	50%

C2: Direct effects

	RefCon	AcDev	ET	Unit	Resp	ET_Score			EUT_status	ES_Score			ER	Ind_ Conf	Weight	C2_ER	C2_ES	C2_ Conf	C2_ Weight
Chlorophyll a (June-Sept)			1.50	µg/l	+	H	M	L	1.43	H	M	L	0.956	50%	50%				
Secchi depth (June-Sept)			7.60	m	-	H	M	L	7.90	H	M	L	0.962	100%	50%				
Add new indicator …																			
															100%	0.959	GES	75%	50%

C3: Indirect effects

	RefCon	AcDev	ET	Unit	Resp	ET_Score			EUT_status	ES_Score			ER	Ind_ Conf	Weight	C3_ER	C3_ES	C3_ Conf	C3_ Weight
Oxygen debt			2.00	mg/l	+	H	M	L		H	M	L			100%				
Add new indicator …																			
															100%				xx
																			100%

40% 100%

IMPORT data from XML

EXPORT data to XML

Final eutrophication status: **Sub GES**

version 20140313

75.00%

Final confidence rating: **High**

Glossary:

C1-3	=	Criteria 1 to 3
RefCon	=	Reference condition (optional, can be given instead of target together with associated acceptable deviation)
AcDev	=	Acceptable deviation.
ET	=	Indicator target
Resp.	=	Response to increasing eutrophication (+ for positive, – for negative)
ET_Score	=	H for high, M for moderate, L for low
ES	=	Indicator status
ES_Score	=	H for high, M for moderate, L for low
ER	=	Eutrophication Ratio
Ind_Conf	=	Indicator confidence (%)
C1_ER	=	Criteria-specific eutrophication.
C1_ES	=	Eutrophication Status for Criteria 1
C1_Conf	=	Confidence (weighted) for Criteria 1
C1_Weight	=	Weight factor assigned to Criteria 1 (100; 50 or 33%; pending the number of criteria covered)