



Document title	Indicator calculations for the integrated assessment of contamination status in the 'State of the Baltic Sea' report
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Background

State & Conservation 5-2016 endorsed to use the OSPAR assessment approach ('MIME R-script') as the assessment protocol for the hazardous substances concentration core indicators (para 4J-24). Remaining study reservation to the use of the script was lifted at HOD 51-2016 (para 6.15). HOD 51-2016 agreed to use the CHASE integration tool for the purposes of assessing contamination status in the HOLAS II project (para 6.33).

For calculation of core indicator results, the HELCOM Expert Network on Hazardous Substances (EN-HZ) has developed an 'extraction table' defining the correct matrix, basis and other metadata needed for normalization of the measurements for the core indicators. Only HELCOM COMBINE data that fits the specifications of the 'extraction table' are included in the core indicator evaluations. The core indicator assessment protocol (MIME R-script) fits a model to the data points in the first step, based on which an upper 95th percentile confidence value is identified. In the second step the values are aggregated to a single value per assessment unit. To fit the model a minimum of 3 years of data is required. If the model cannot be fitted, then the median value for measurements in 1-2 years of data can be compared to the threshold value, however this is considered to be a statistically less robust approach with risk of false negatives/positives and is therefore referred to as 'initial status assessment' data. The 'initial status assessment' data are not included in the second step of the script and are thus not included in the core indicator results which have been agreed to be calculated on assessment unit scale 4 to be comparable with WFD assessments.

For assessing contamination status using CHASE; the SPICE HZ WS 1-2017 workshop was of the opinion that the spatial coverage is too poor when only including the core indicator results on assessment unit scale 4. The workshop recommended to include also the 'initial status assessment' data in the assessment of contamination status and to aggregate the results for the coastal areas to assessment unit scale 3. The workshop noted that the CHASE integration tool Concentration Ratios (CR) can technically be calculated using the upper 95th confidence interval value of the 'full' indicator data and also using the mean value of the 'initial status assessment' data. The workshop supported this approach of mixing the two types of values in the integrated assessment.

The integrated contamination status was recalculated based on the recommendations from the workshop and presented to HOLAS II 7-2017 in the draft chapter on hazardous substances. The Meeting "supported to continue the development of the integrated hazardous substance assessment based on the inclusion of data from the 'initial status assessment', noting that Denmark was not in a position to give a final view on the approach" (para 5.10). The meeting further noted that data points were missing from the Gdansk Basin, and asked to the Secretariat to clarify the issue. It was found that some initial status assessment data points had been omitted from the integration, and the points are now included in the re-calculated results.

The results of integrated contamination status presented in the chapter on hazardous substances in the first version of the 'State of the Baltic Sea' report (see document 4J-14) are based on using both the full core indicator result data and the 'initial status assessment' data as recommended by the HELCOM SPICE workshop and supported by HOLAS II 7-2017.

Note that the core indicators have been agreed to be calculated on assessment unit level 4 using the MIME R-script. No change has been made to this decision, thus the core indicator key message maps do not include the 'initial status assessment' data. Although the 'initial status assessment data' is not included in the key message result of the core indicators, the data are reflected in the more detailed section on 'Results' in the core indicator reports.

Action requested

The Meeting is invited to take note of the proposed use of data and indicator calculations for the integrated assessment of contamination status and endorse the approach for use in the HOLAS II project.