

State and Conservation 15-2021

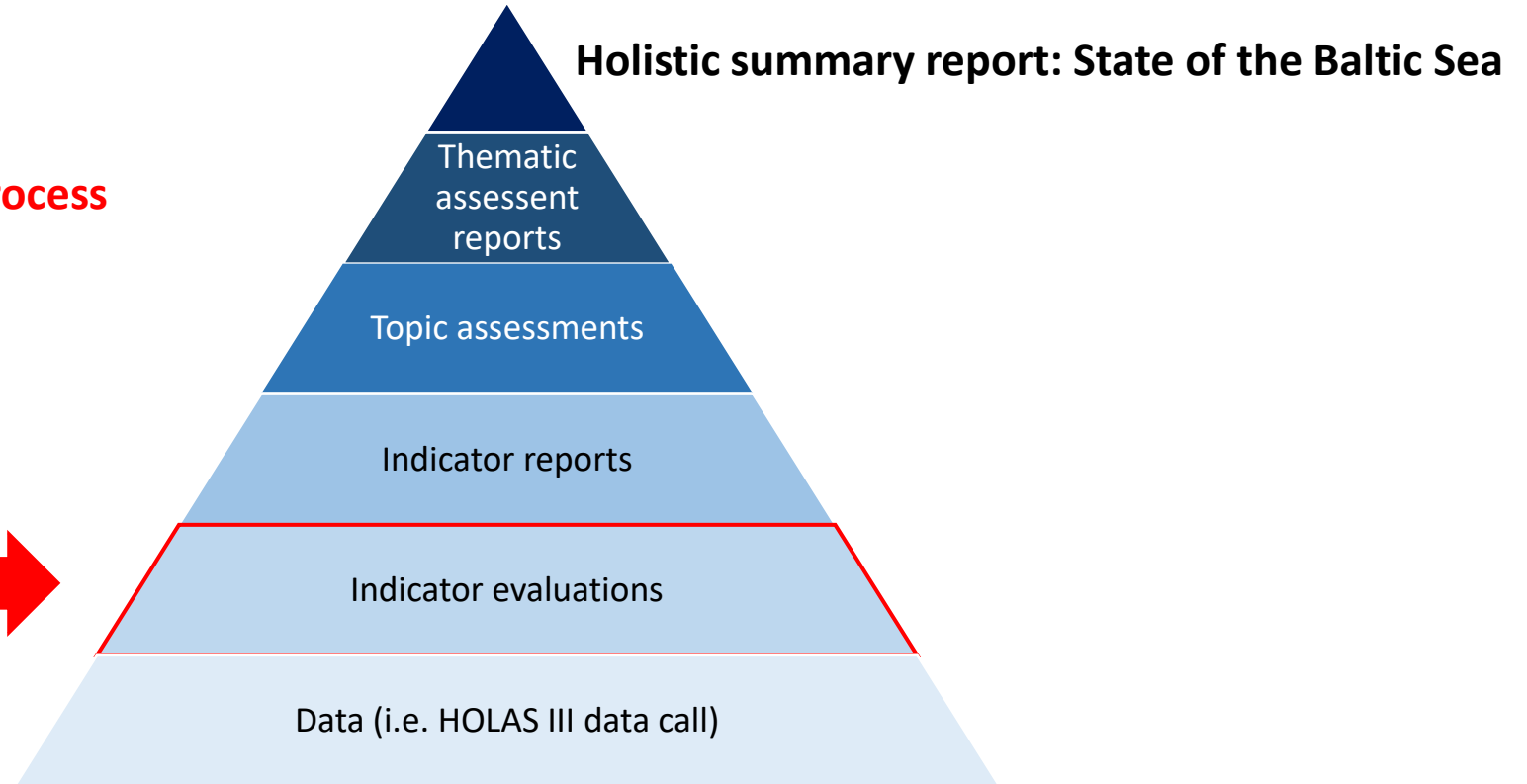
Indicators and assessments towards HOLAS III



Conceptual overview of the HOLAS III assessment structure and the progressive integration of results.

***also sent to HOD for threshold value process**

Red outline will show where in the scheme the current slide is addressing – e.g. ‘indicator evaluations’.

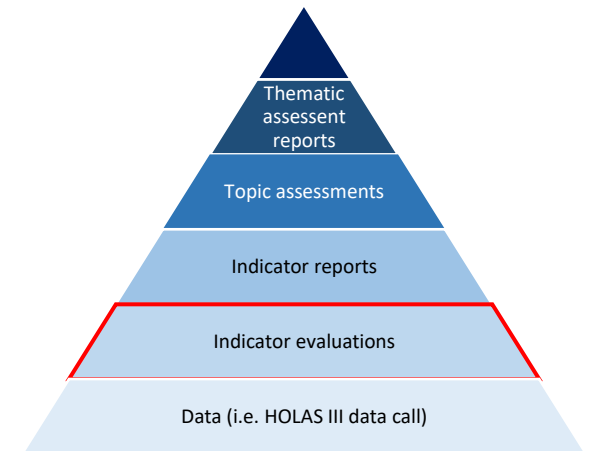


Eutrophication



Threshold values for Pomeranian Bay and Bornholm Basin – Document 3J-87*

- New threshold value proposals for the Pomeranian Bay and Bornholm Basin to address recent division of the previous assessment unit.
- New threshold values proposed to address DIN, DIP, TN, TP and Chl-a.
- Information provided on the methodologies used to derive the new threshold value proposals.
- National modelling approaches carried out in Germany (MONERIS and ERGOM-MOM).
- New threshold values proposed – next slide



		Summer Chl-a [µg/l]	Winter DIN [µmol/l]	Winter DIP [µmol/l]
Present threshold	Arkona Sea	1.8	2.9	0.36
	Bornholm Basin (BB)	1.8	2.5	0.30
Proposed threshold value for HOLAS III	Pomeranian Bay (PB)	2.86	5.53	0.40
	Remaining part of BB	1.55	1.80	0.28

← Proposed threshold values

	Arkona Sea	Bornholm Basin	New proposal for Pomeranian Bay based on	New proposal for Remaining part of BB based on
Total Nitrogen concentration [µmol/l] – annually averaged				
TARGREV target (<=) <u>without/with German data</u>	17.39/17.25	16.05/16.05	21.2	14.8
German threshold proposal	19.5	18.0	23.8	16.7
Polish threshold proposal		14.4	19.1	13.3
Total Phosphorus concentration [µmol/l] – annually averaged				
TARGREV target (<) <u>without/with German data</u>	0.67/0.66	0.54/0.55	0.68/0.69	0.51/0.52
German threshold proposal	0.48	0.59	0.74	0.55
Polish threshold proposal		0.61	0.77	0.57

↑ Proposed threshold values

Open issue for ‘remaining part of Bornholm Basin’

- TARGREV threshold values (yellow)
- Rescaled threshold values based on the German approach (green)
- Rescaled values based on the TARGREV approach (blue)

State and Conservation - Action requested

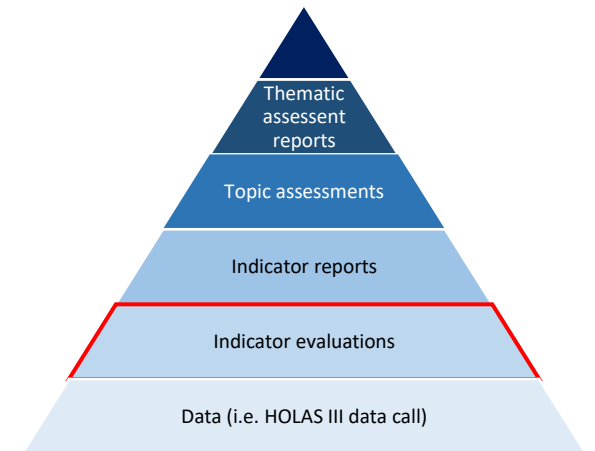
The Meeting is invited to:

- further discuss suitable threshold values for Pomeranian Bay and Bornholm Basin, endorse threshold values for use in HOLAS III and agree on a way forward.



Proposal for targets for the Gulf of Finland units SEA-013A and SEA-013B – Document 3J.91*

- New threshold value proposals for the Gulf of Finland divisions 013A and 013B to address recent division of the previous assessment unit.
- New threshold values proposed to address DIN, DIP, TN, TP, Chl-a, Water clarity and CBI.
- Information provided on the methodologies used to derive the new threshold value proposals.
- New proposals based on a re-scaling of previously applied threshold values.
- New threshold values also applied to maintain a high level of ambition.
- Clarification and justification provided in the document.
- New threshold values proposed – next slide



Threshold value proposals

Indicator	Assessment unit	Proposed threshold value
Chl-a	SEA-013A	1.9
	SEA_013B	2.3
DIN	SEA-013A	3.3
	SEA_013B	4.3
DIP	SEA-013A	0.5
	SEA_013B	0.68
TN	SEA-013A	18.7
	SEA_013B	22.3
TP	SEA-013A	0.54
	SEA_013B	0.56
Water Clarity	SEA-013A	5.9
	SEA_013B	5.3

Indicator	Assessment unit	Proposed threshold value
CBI	SEA-013A	0.88
	SEA_013B	0.91
Oxygen debt	SEA-013A	8.66 mg/l*
	SEA_013B	X

*same threshold value as applied in previous SEA-013



State and Conservation - Action requested

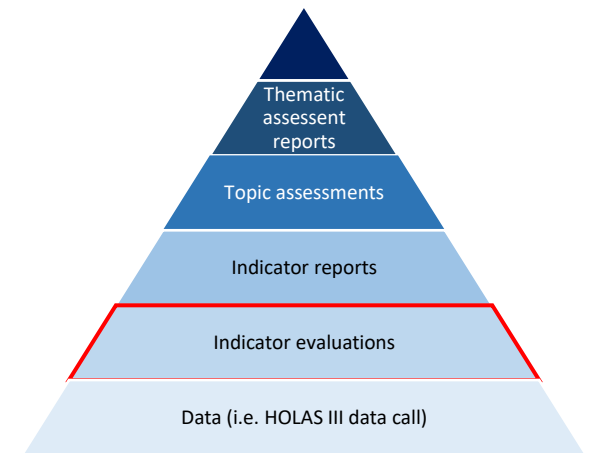
The Meeting is invited to:

- consider and endorse the proposed thresholds for SEA-013A and SEA-013B for the eutrophication indicators
 - All listed parameters.
- endorse the oxygen debt threshold value of SEA-013 for SEA-013A.



Total nitrogen indicator – proposal of new threshold values for the Western Baltic Sea – Document 3J.49*

- Indicator assessed at scale 4, as in HOLAS II.
- Also addresses the new eutrophication related assessment unit divisions.
- Spatial coverage extent could increase based on implementation in these units.
- No methodological changes. In general threshold values based on TAGREV.
- National modelling approaches carried out in Germany (MONERIS and ERGOM-MOM).
- Target values were derived and a 50% deviation from reference conditions assumed.
- New divisions (Pomeranian Bay and Bornholm Basin) were also addressed using this approach.
- New threshold values proposed – next slide



Proposed threshold values

	Area code	Mean 2016-2021 in $\mu\text{M/l}$	Target values proposed for HOLAS III	TARGREV target values	Eutrophication Ratio based on target values proposed for HOLAS III	Eutrophication Ratio based on TARGREV target values
Kiel Bay	SEA-004	18.3	16.4	<22.2	1.11	0.82
Bay of Mecklenburg	SEA-005	19.8	16.7	<21.7	1.19	0.91
Arkona Basin	SEA-006	21.1	19.5	<17.4	1.08	1.22
Bornholm Basin	SEA-007	Not yet assessed	16.7*	<14.8*		
Pomeranian Bay	SEA-007B	Not yet assessed	23.8*	<21.2*		

* Rescaled target values based on the methodology as reported in the document titled 'Setting new threshold values for Pomeranian Bay and Bornholm Basin for the eutrophication assessment in HOLAS III' (3J-87)

State and Conservation - Action requested

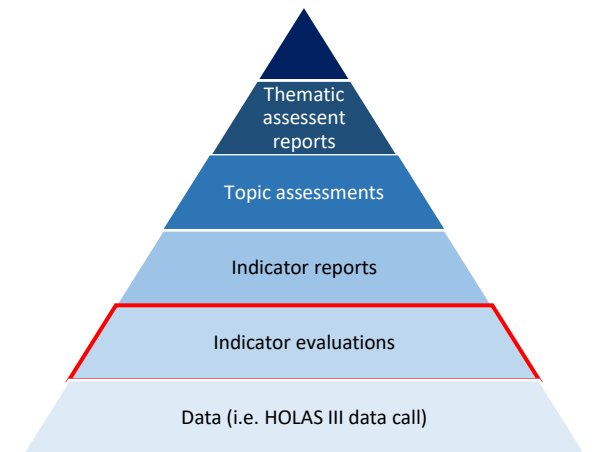
The Meeting is invited to:

- consider and endorse the proposed approach for use in HOLAS III, specifically the new threshold levels.



Total phosphorus indicator – proposal of new threshold values for the Western Baltic Sea – Document 3J.50*

- Indicator assessed at scale 4, as in HOLAS II.
- Also addresses the new eutrophication related assessment unit divisions.
- Spatial coverage extent could increase based on implementation in these units.
- No methodological changes. In general threshold values based on TAGREV.
- Not possible to agree on threshold value for the Eastern Gotland Basin.
- National modelling approaches carried out in Germany (MONERIS and ERGOM-MOM).
- New divisions (Pomeranian Bay and Bornholm Basin) were also addressed using this approach.
- New threshold values proposed – next slide



Proposed threshold values

	Area code	Mean 2016-2021 in $\mu\text{M/l}$	Target values proposed for HOLAS III	TARGREV target values	Eutrophication Ratio based on target values proposed for HOLAS III	Eutrophication Ratio based on TARGREV target values
Kiel Bay	SEA-004	0.71	0.41	<0.96	1.74	0.74
Bay of Mecklenburg	SEA-005	0.75	0.45	<0.98	1.67	0.77
Arkona Basin	SEA-006	0.85	0.48	<0.67	1.77	1.27
Bornholm Basin	SEA-007A	Not yet assessed	0.55*	<0.68*		
Pomeranian Bay	SEA-007B	Not yet assessed	0.74*	<0.51*		

* Rescaled target values based on the methodology as reported in the document titled 'Setting new threshold values for Pomeranian Bay and Bornholm Basin for the eutrophication assessment in HOLAS III' (3J-87)

State and Conservation - Action requested

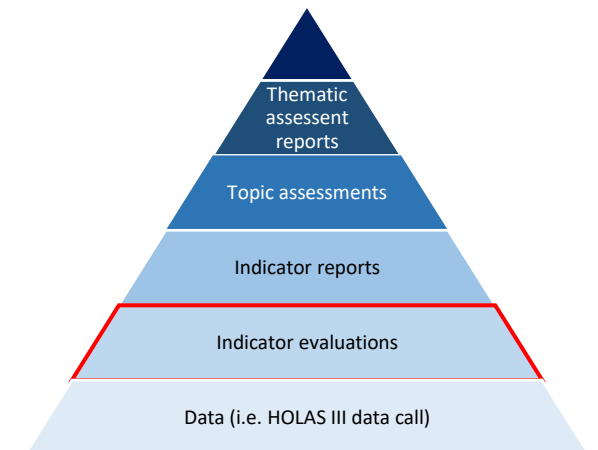
The Meeting is invited to:

- consider and endorse the proposed approach, specifically the new threshold levels, for use in the HOLAS III assessment.



Chlorophyll a – Document 3J.51

- Indicator assessed at scale 4, as in HOLAS II.
- Spatial extent as in HOLAS II.
- In HOLAS II, the indicator used three monitoring methodologies: in-situ (all assessment units), EO (all open-sea assessment units) and Ferrybox (as test-parameter, in open-sea assessment units SEA-005...008, SEA-010...011, SEA-013).
- Ferrybox-data to be included for HOLAS III in the open-sea assessment units where available: SEA-005...008, SEA-010...011, SEA-013 (specifically in SEA-013A).
- Methodology described in Monitoring manual.
- Data flows included in eutrophication assessment protocol.
- Threshold values unchanged from HOLAS II.



State and Conservation - Action requested

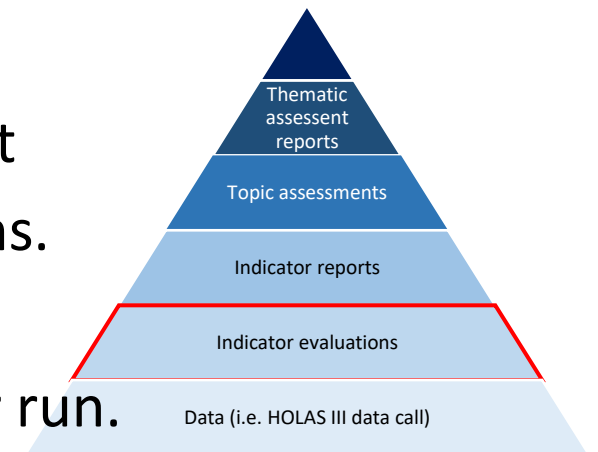
The Meeting is invited to:

- provide further technical guidance to the indicator leads and experts, including specific requests defined within the document;
- consider and endorse the proposed developments of the indicator for use in the HOLAS III assessment.



Chlorophyll a spring bloom – Document 3J.52*

- Scale of assessment will be aligned with other eutrophication indicators, scale 4.
- Spatial extent will focus on assessment units SEA-007 to SEA-017.
- Further development to include SEA-001 to SEA-006 can be investigated.
- Aim of indicator is to describe phytoplankton biomass in the spring bloom.
- Extent and duration addressed.
- Threshold value setting underway. Exploring options for hindcast modelling and in relation to (function of) nutrient concentrations.
- Data flows in place and being improved under Baltic Data Flows.
- Threshold values possible to develop prior to HOLAS III indicator run.
- Proposed as a pre-core indicator for HOLAS III.



State and Conservation - Action requested

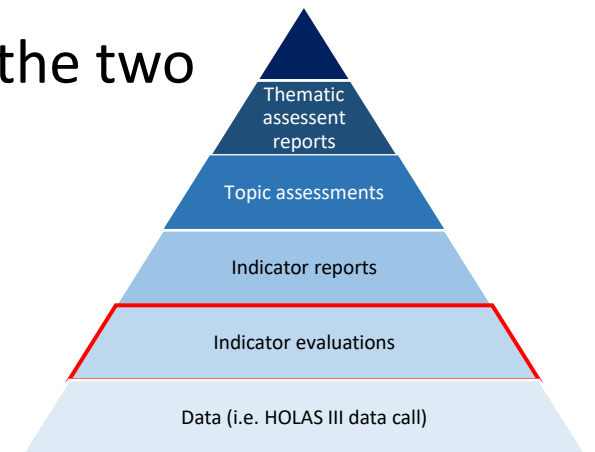
The Meeting is invited to:

- provide further technical guidance to the indicator leads and experts, including specific requests defined within the document;
 - Pre-core indicator.
- consider and endorse the proposed developments of the indicator for use in the HOLAS III assessment.



Cyanobacterial Bloom Index – Document 3J.53

- Scale of assessment as in HOLAS II.
- Spatial extent as in HOLAS II.
- Indicator describes one aspect of eutrophication that is closely linked to ecosystem services (and relevant in causal frameworks).
- Further long term development also discussed with PEG (see document annex).
- Issues related to earlier study reservations have been addressed.
- Assessment-unit-specific weighted averaging will be applied for the two indicator parameters.
- Threshold value description in the report will be improved.
- Methodology and threshold values as applied in HOLAS II.
- Proposed as a full core indicator for HOLAS III.



State and Conservation - Action requested

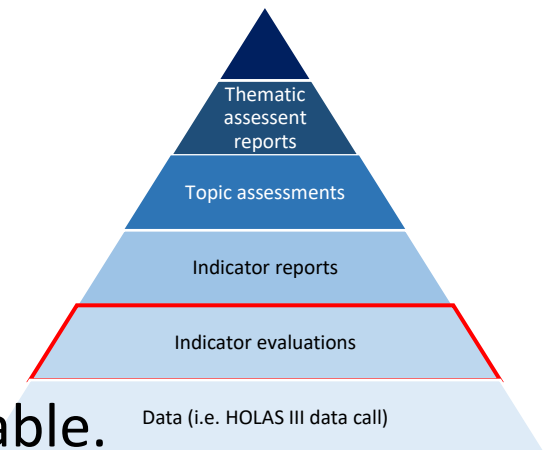
The Meeting is invited to:

- provide further technical guidance to the indicator leads and experts, including specific requests defined within the document;
 - Proposed as full core indicator.
- consider and endorse the proposed developments of the indicator for use in the HOLAS III assessment.



Shallow water near-bottom oxygen – Document 3J.54*

- Scale 4 proposed.
- Not assessed in HOLAS II due to lack of agreed indicator concept.
- Spatial coverage expected to include SEA-001 to 006, 007B, 011, 013B, and 015 to 017.
- Builds on national approaches and has been a focus under IN Eutrophication.
- combined oxygen indicator concept proposed - to include an oxygen minima-based approach a number of days with volume and areas below certain threshold value.
- Individual or joint application dependent on assessment area factors.
- Threshold value setting based on scientific published information related to oxygen requirements of benthic species.
- Threshold values anticipated prior to HOLAS III but currently not available.
- Significance of the topic, including for policy aspects (e.g. MSFD) noted.



State and Conservation - Action requested

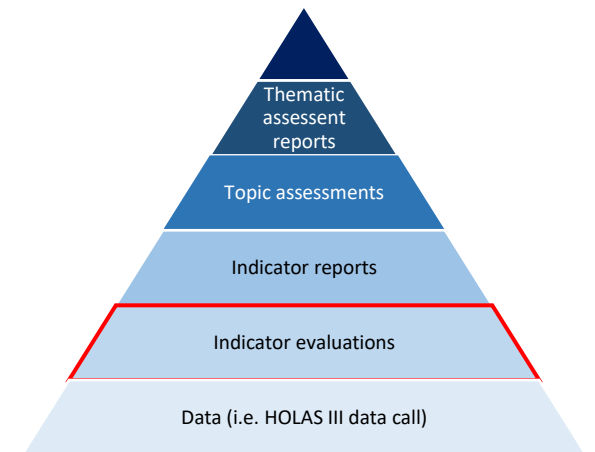
The Meeting is invited to:

- consider and endorse the pre-core indicator on shallow-water near-bottom oxygen to be tested in the HOLAS III assessment.



Oxygen debt – Document 3J.55

- A lead for the indicator has been identified – Estonia has offered to lead the indicator.
- The indicator is also reflected in processes for HOD due to threshold value proposals where assessment units have been divided.



State and Conservation - Action requested

The Meeting is invited to:

- provide technical guidance to the indicator leads and experts, if required;
- take note that a lead for the indicator has been identified.

