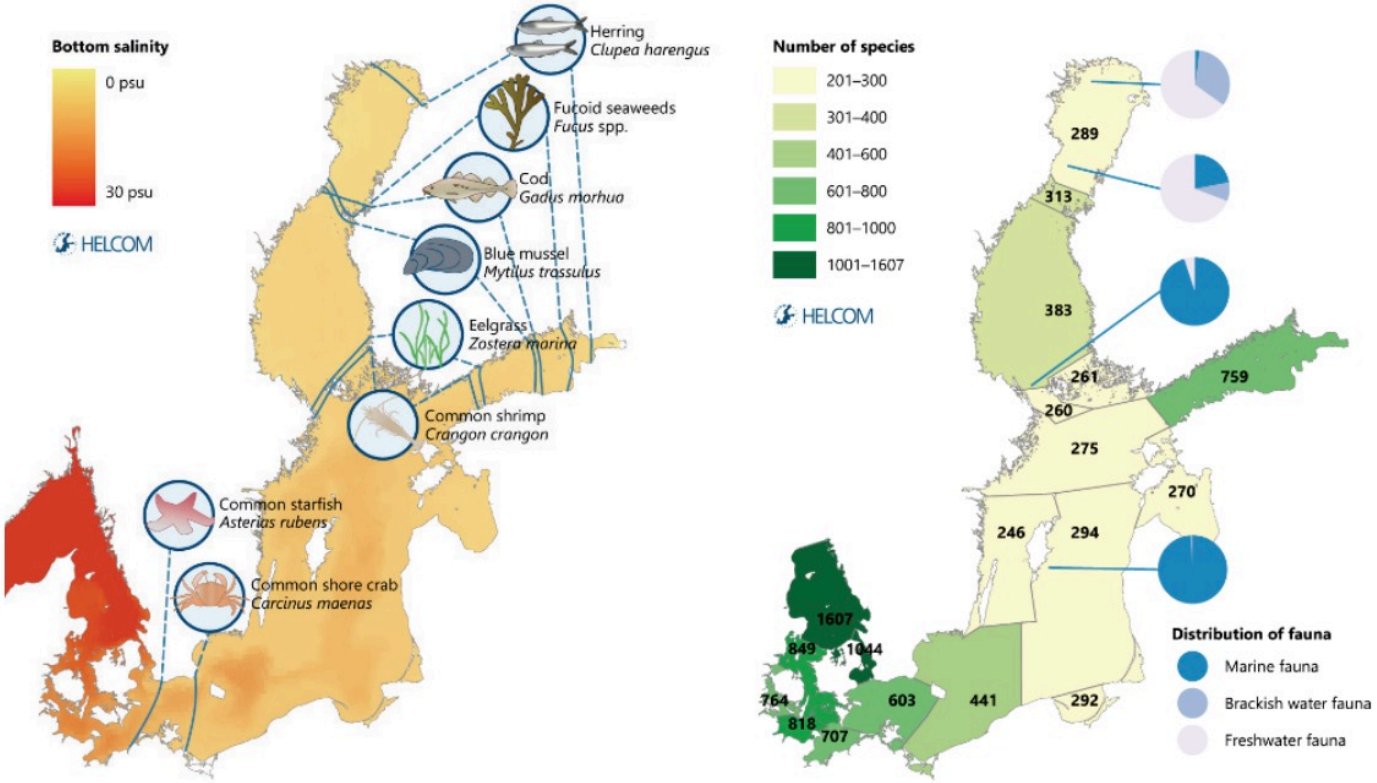
HELCOM Holistic Assessment of the Ecosystem Health of the Baltic Sea (HOLAS II)

Arctic council EA expert group 6th workshop
9-11 Jan 2018, Seattle

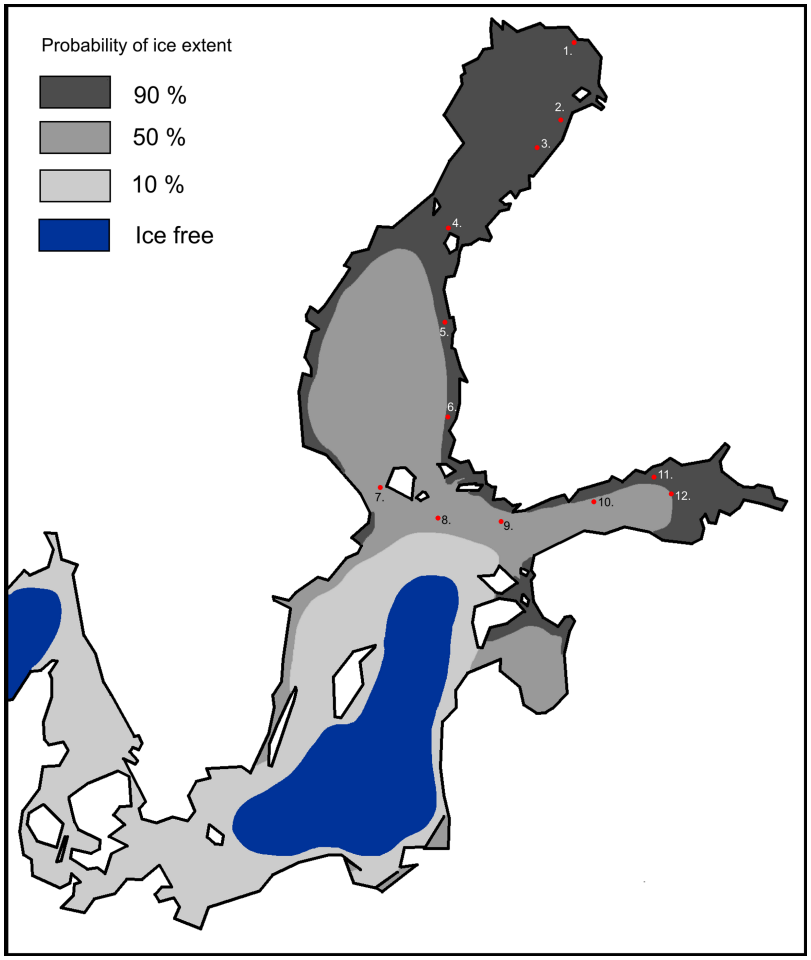
Hermanni Kaartokallio (Finnish Environment Institute)
Lena Bergström (Project coordinator HOLAS II)

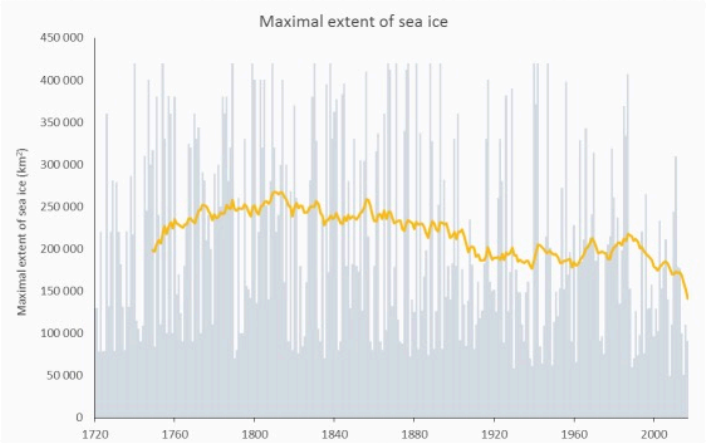
HELCOM

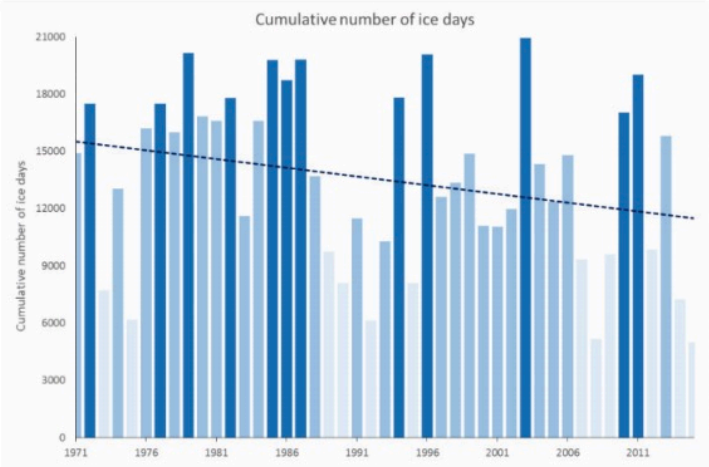
Baltic Sea is a sub-Arctic marginal sea



Sea ice cover is in decline







HELCOM- Environmental protection commission for the Baltic Sea

- *HELCOM is a "soft-law" convention including all nine Baltic Coastal States (SWE, FIN, RUS, EST, LT, LV, PO, GER, DK)*
- *Entering into force in 1974*
- *One of the European regional seas conventions (others OSPAR, MEDPOL, Black Sea convention)*

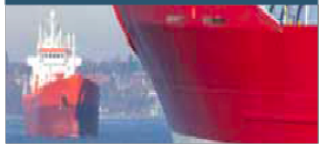
HELCOM system of goals and ecological objectives

Vision

Healthy Baltic Sea environment

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

Goals

Unaffected by eutrophication	Life undisturbed by hazardous substances	Favourable conservation status of biodiversity	Environmental friendly maritime activities
			

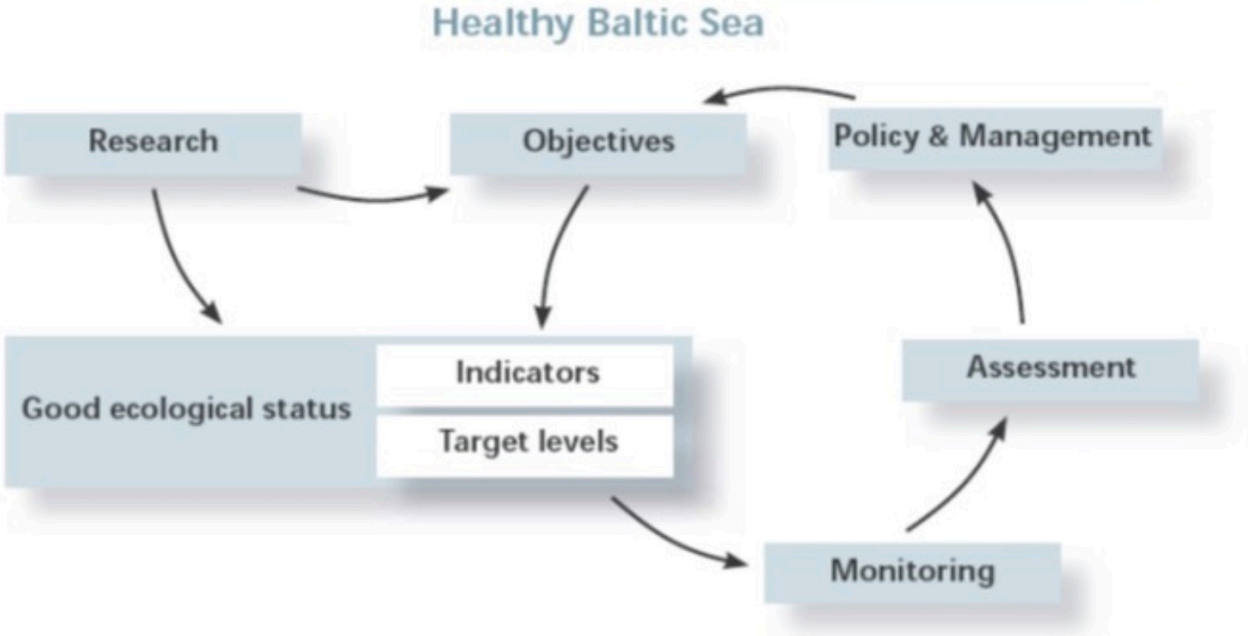
Objectives

Nutrients at natural levels	Hazardous substances a natural levels	Natural landscape and seascape	No illegal pollution
Clear water	Fish safe to eat	Thriving and balanced plants and animals	Safe maritime activities without accidental pollution
Natural levels of algae blooms	Healthy wildlife	Viable population of species	Efficient response capacity
Natural distribution and occurence of plants and animals	Radioactivity at pre-Chernobil levels		Minimun seawage pollution
Natural oxygen levels			No introduction of alien species
			Minimun air pollution
			Zero discharges from offshore platforms
			Minimum threat from offshore installations

HELCOM approach to EA

Ecosystem approach

- HELCOM – OSPAR Ministerial Meeting in 2003
- HELCOM Ministerial meeting 2007
- EU MSFD (2008)



MSFD: Good Environmental Status 2020

Marine waters provide ecologically diverse and dynamic oceans and seas which are clean, healthy and productive (MSFD Article 3)

- Sustainable use of marine resources
- Ecosystem function and resilience
- Protection of biodiversity
- No/limited pollution, energy and noise
- 6-year implementation cycle
- Strong role of regional seas conventions (HELCOM in the Baltic Sea)

www.ec.europa.eu/environment/marine/good-environmental-status

FIRST VERSION OF THE 'STATE OF THE BALTIC SEA' REPORT – JUNE 2017 TO BE UPDATED IN 2018

HELCOM

STATE OF THE BALTIC SEA

– HOLISTIC ASSESSMENT –

First version 2017

Kaartokallio, Bergström, HOLAS II

SPICE Co-funded by the European Union

Baltic BOOST Co-funded by the European Union

TAPAS Co-funded by the European Union

What is in the assessment?

PRESSURE BASED

STATE BASED

- Eutrophication
- Hazardous substances
- Marine litter
- Underwater noise
- Non-indigeneous species
- Species extraction: fishing and hunting
- Habitat loss and disturbance

- Benthic habitats
- Pelagic habitats
- Fish
- Marine mammals
- Waterbirds

Socioeconomic analyses
Cumulative impacts

Publications at different level of detail

SUMMARY REPORT

Summary report with complete overview and key messages

STATE OF THE BALTIC SEA REPORT

Method descriptions and more detailed results

SUPPLEMENTARY REPORTS

- Integrated assessment of biodiversity
- Integrated assessment of eutrophication
- Integrated assessment of hazardous substances
- Cumulative impacts
- Economic and social analyses
- Assessment of cumulative impacts on the seafloor

Other HELCOM assessments supporting HOLAS II

- Maritime activties
- Pollution load compilation
- HELCOM red list
- MPA report
- Etc.

Indicator approaches and assessments, data sources

CORE INDICATOR REPORTS

SPATIAL DATA FACT SHEETS

- human activities
- pressures
- ecosystem components

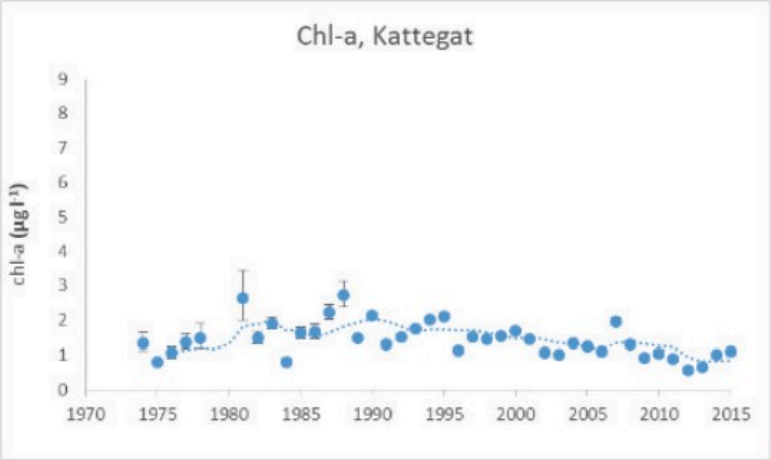
HELCOM

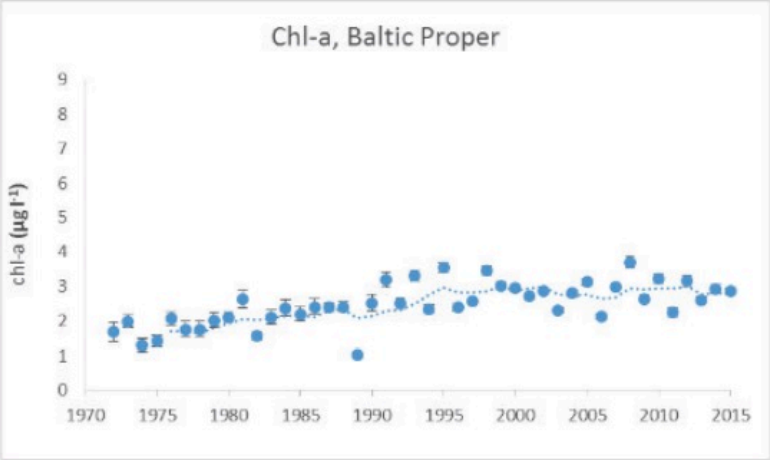
Assessment based on core indicators

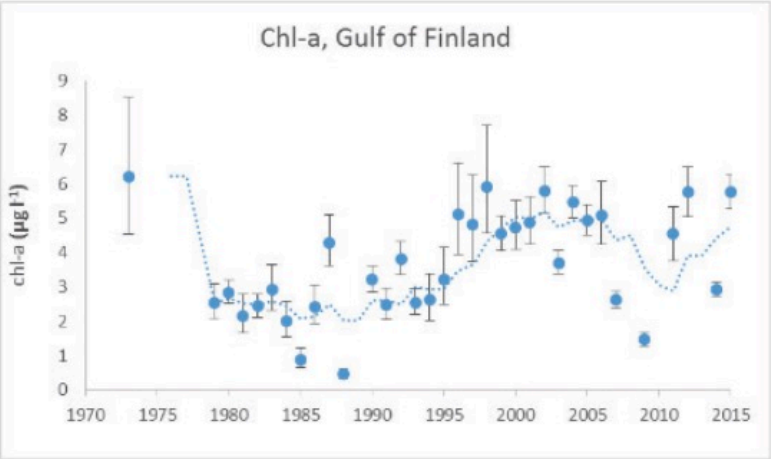
- Threshold values to assess status as good or not good

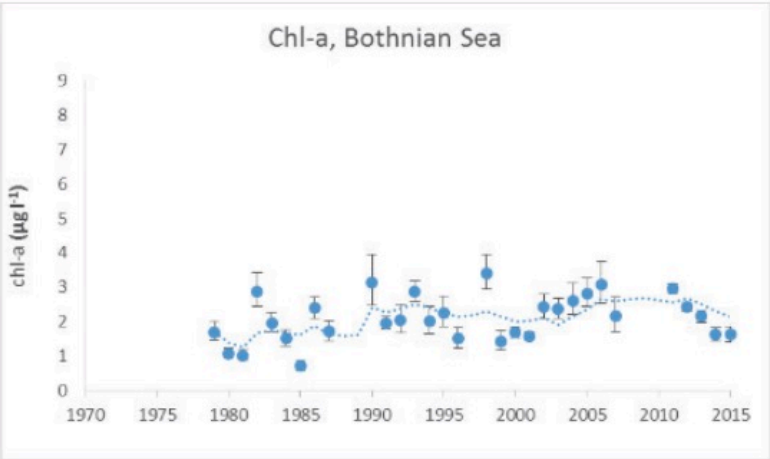
Assessment unit	Integrated status	Nutrient levels				Direct effects			Indirect effects	
		DIN	TN	DIP	TP	Chla	Secchi	Cyano*	O_2	Zoob
Bothnian Bay	Not good									
The Quark	Not good									
Bothnian Sea	Not good									
Åland Sea	Not good									
Gulf of Finland	Not good									
Northern Baltic Proper	Not good									
Gulf of Riga	Not good									
Western Gotland Basin	Not good									
Eastern Gotland Basin	Not good									
Gdansk Basin	Not good									
Bornholm Basin	Not good									
Arkona Basin	Not good									
Bay of Mecklenburg	Not good									
Kiel Bay	Not good									
The Sound	Not good									
Great Belt	Not good									
Kattegat	Not good									

Underlying indicator data example

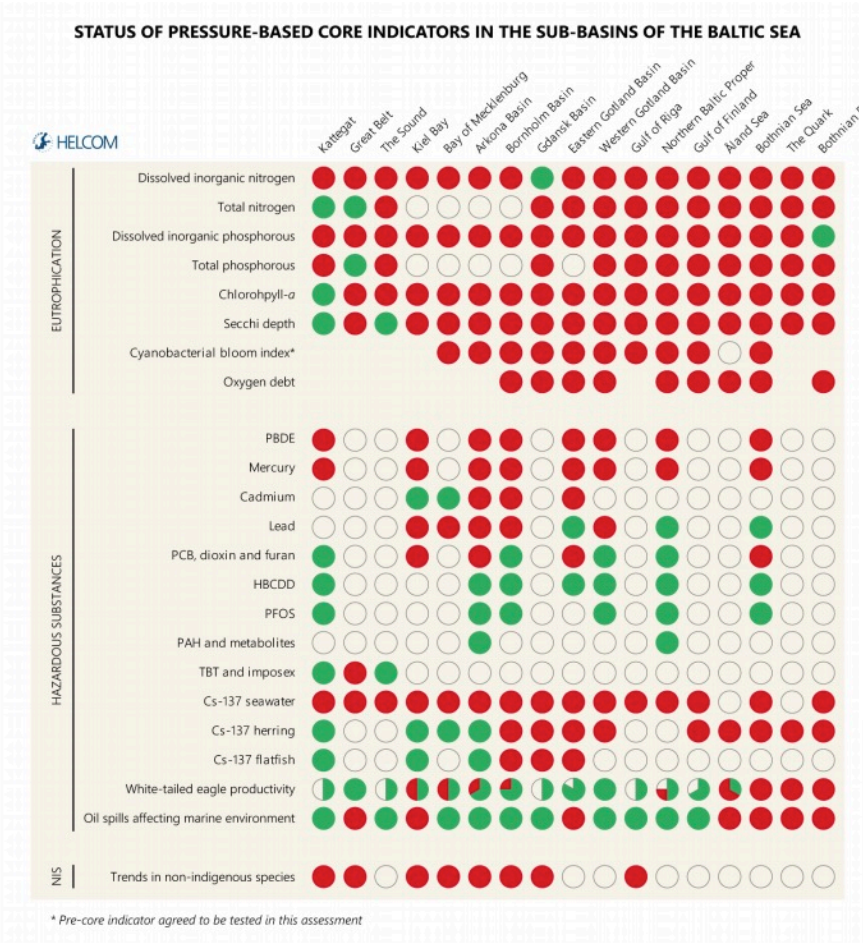


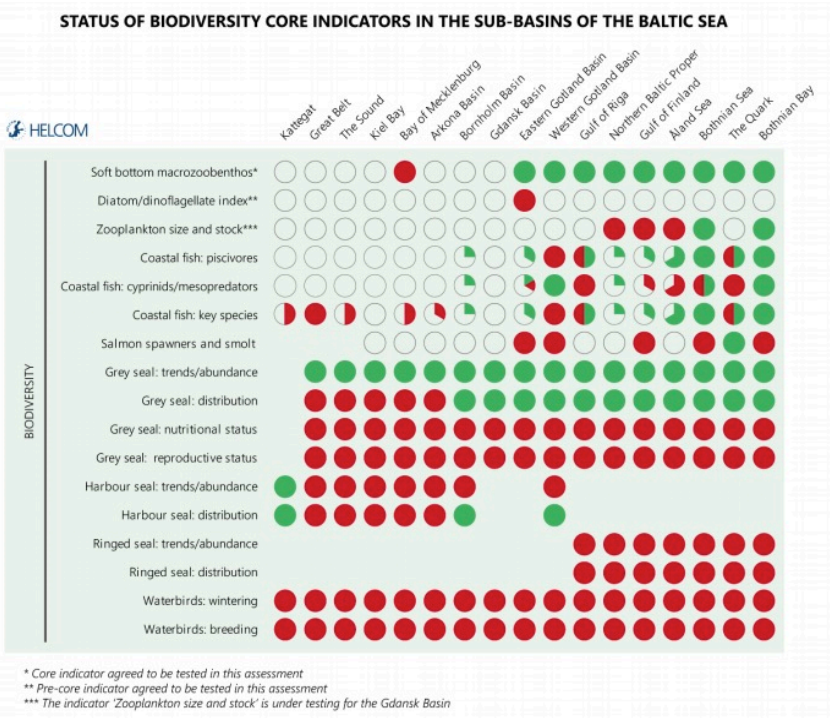






Indicator-based status assessment

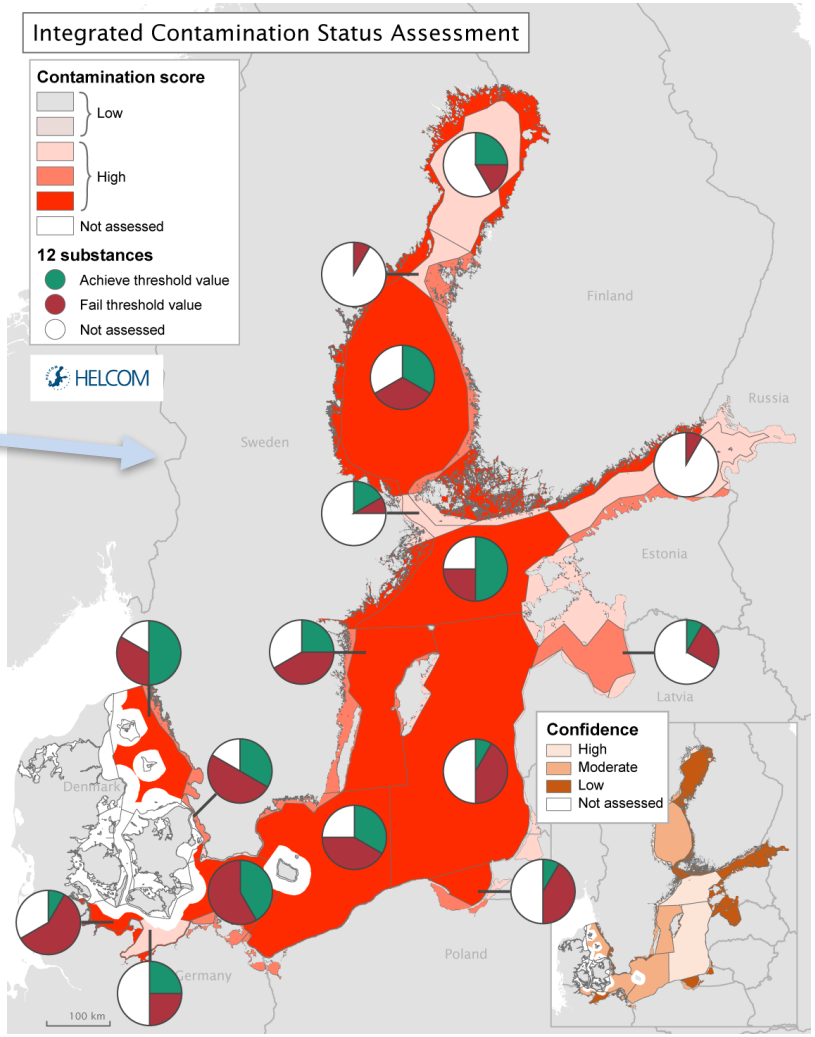




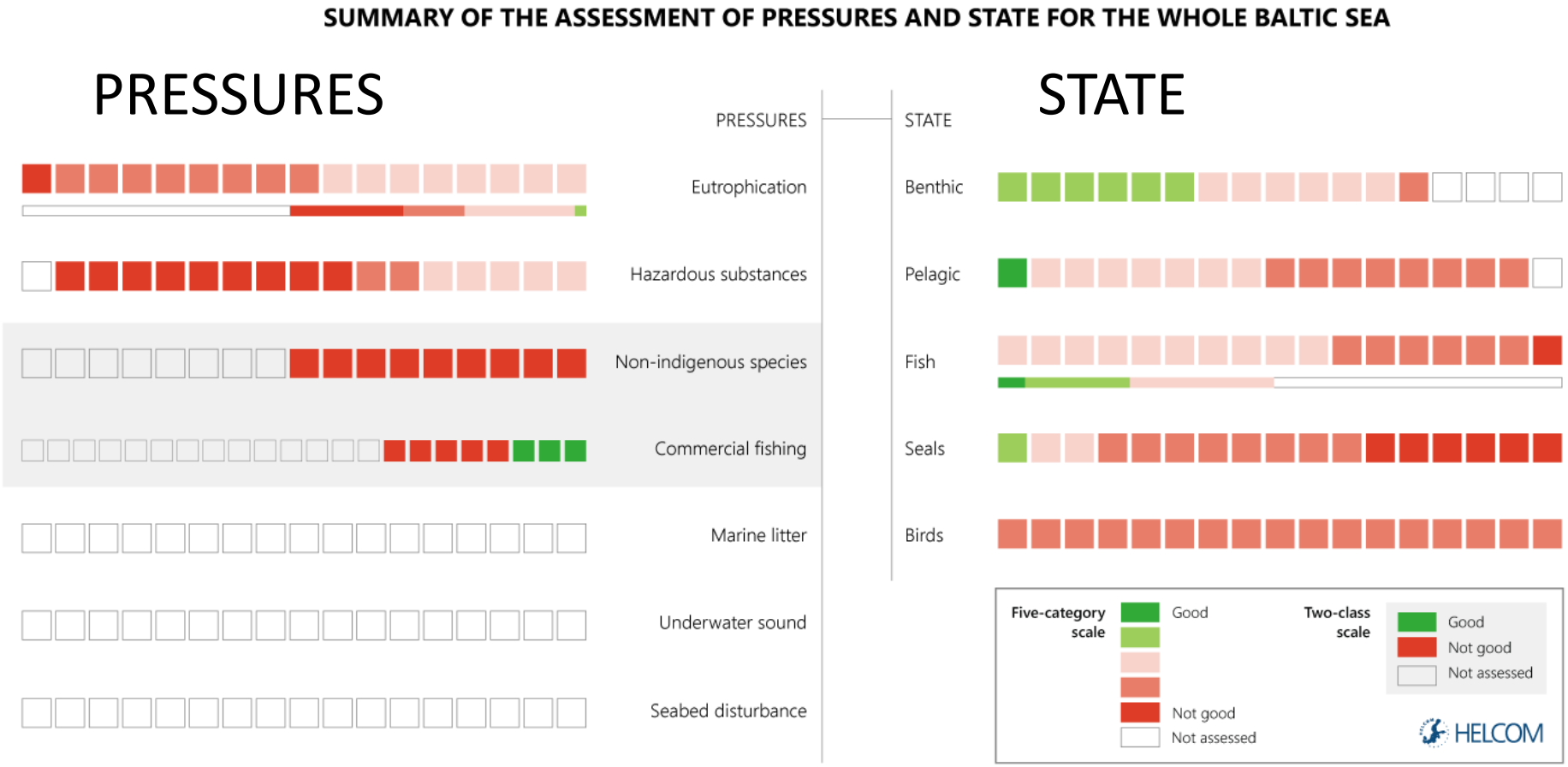
Integrating indicator assessments

Based on assessment tools

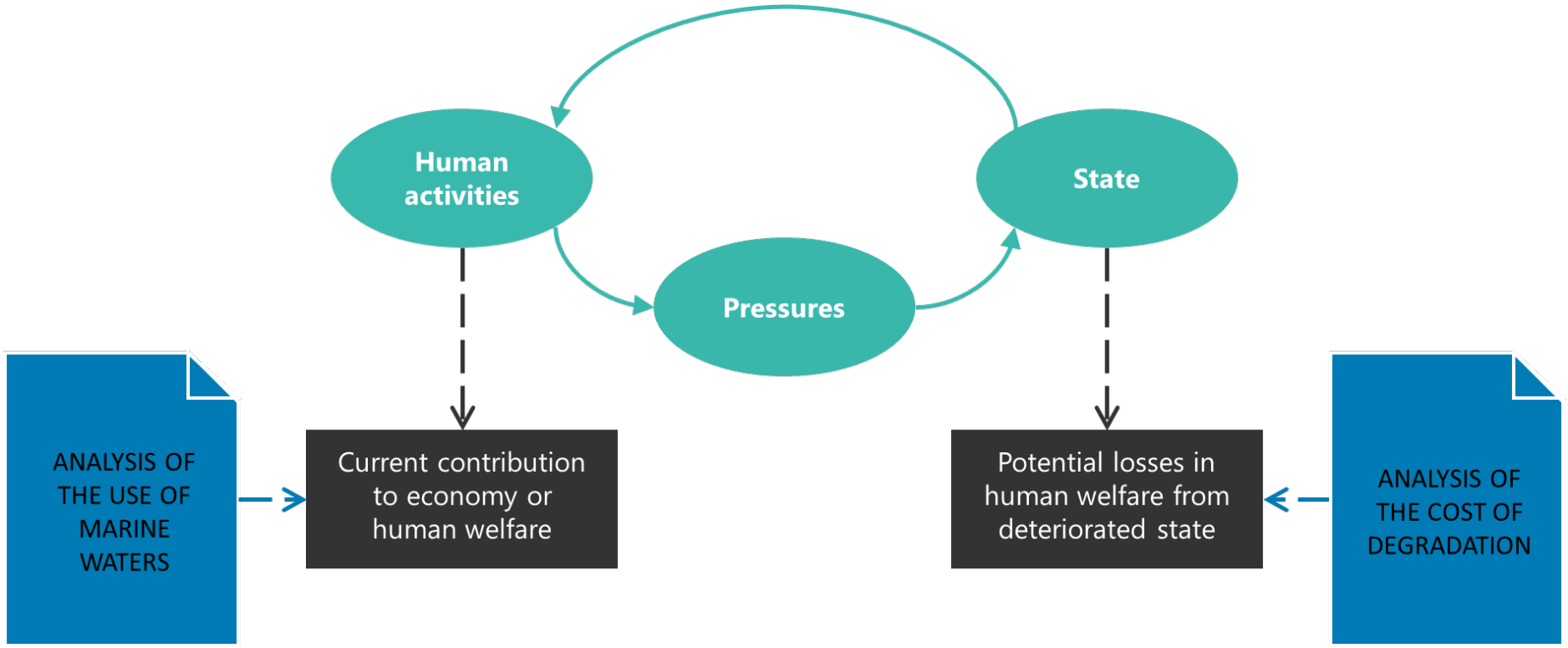
- HEAT=eutrophication
- BEAT= biodiversity
- CHASE= contaminants



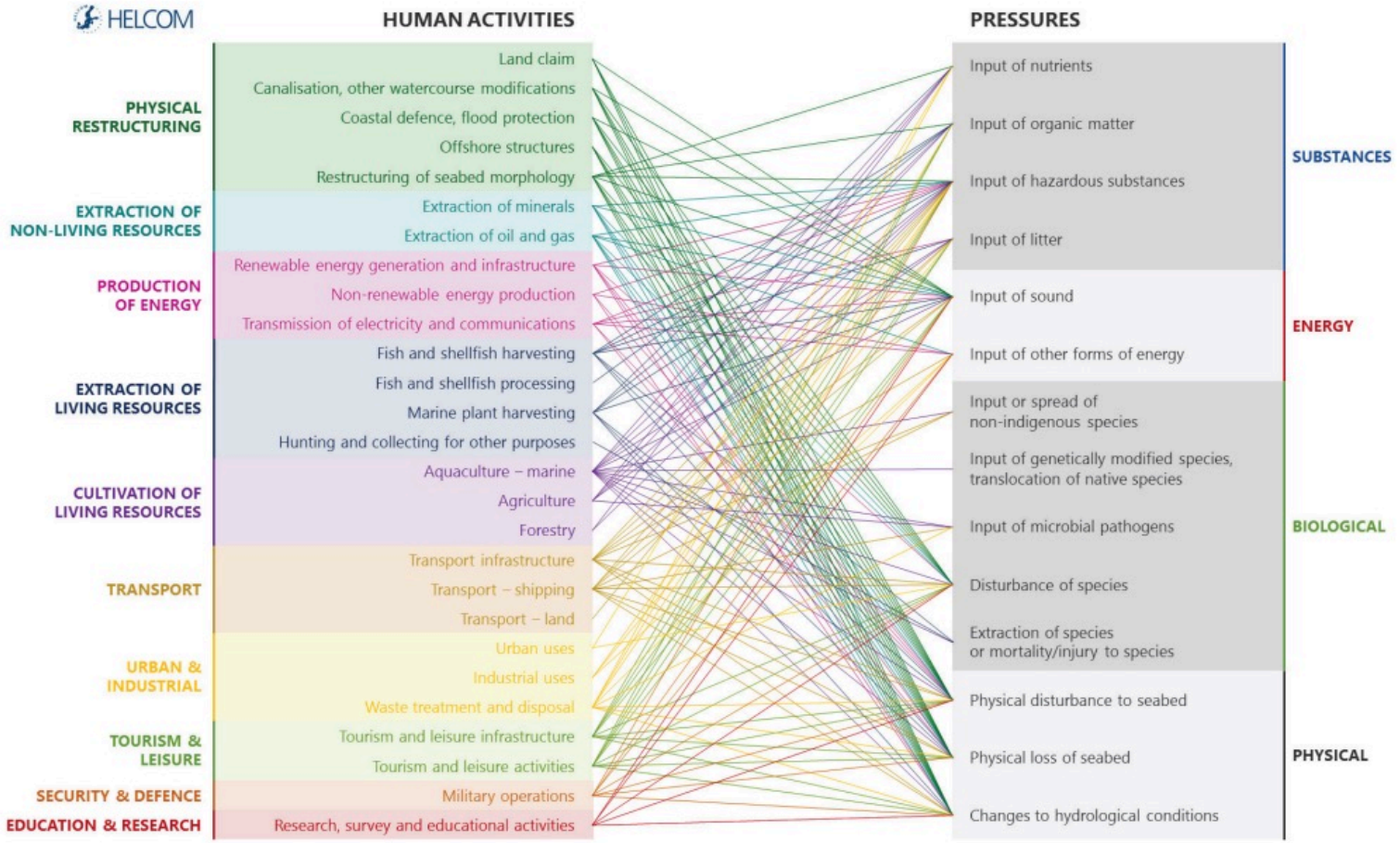
Summarizing overview



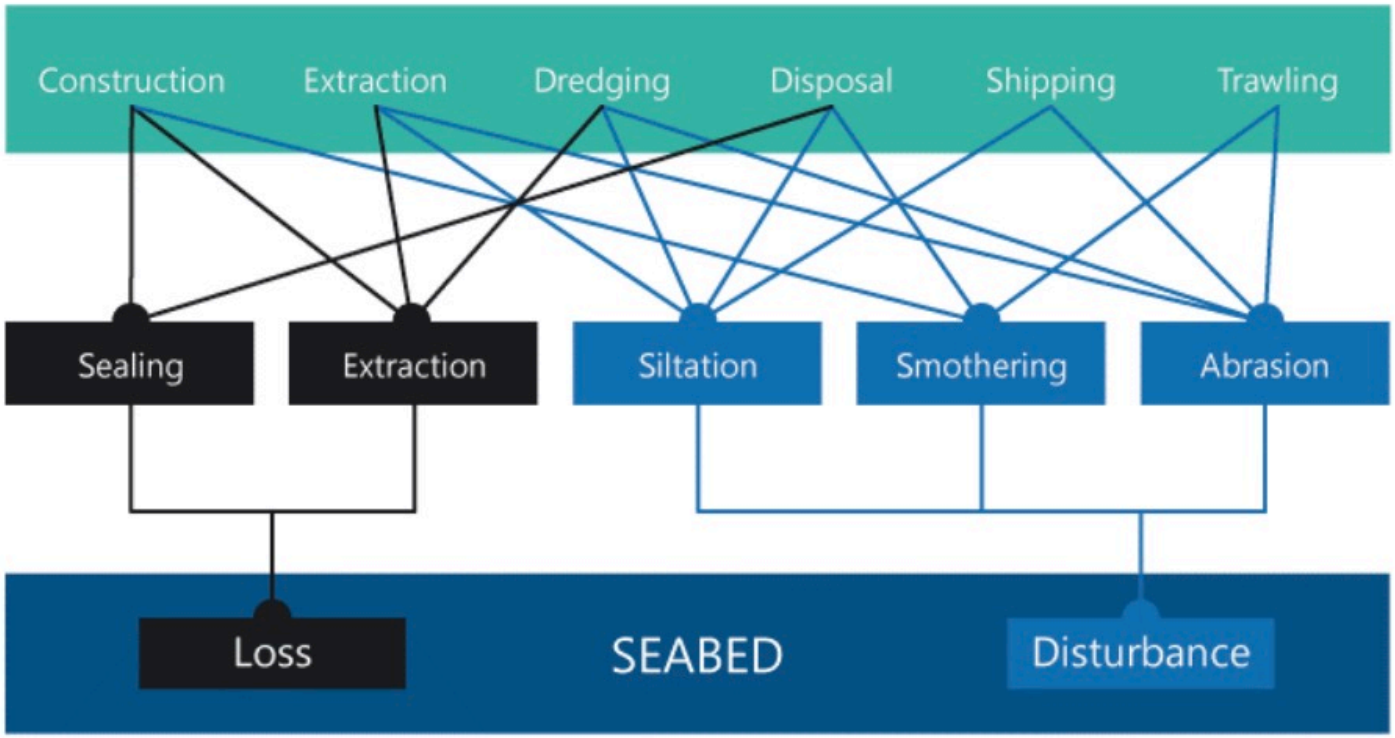
Socioeconomic linkages



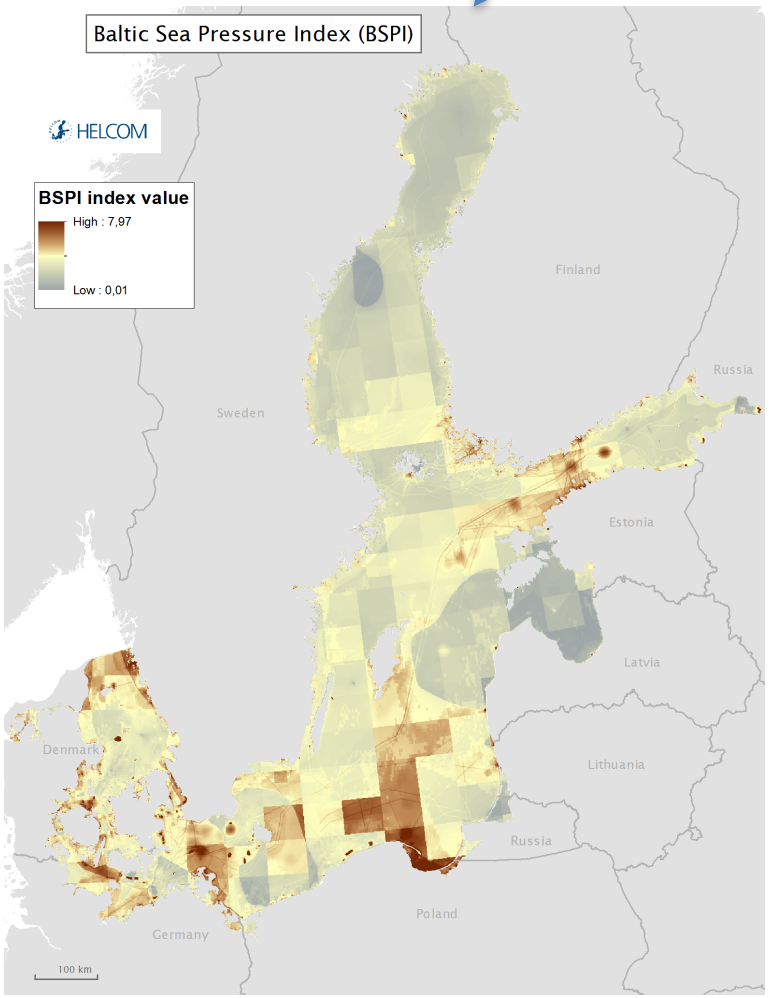
Linkages between human activities and pressures

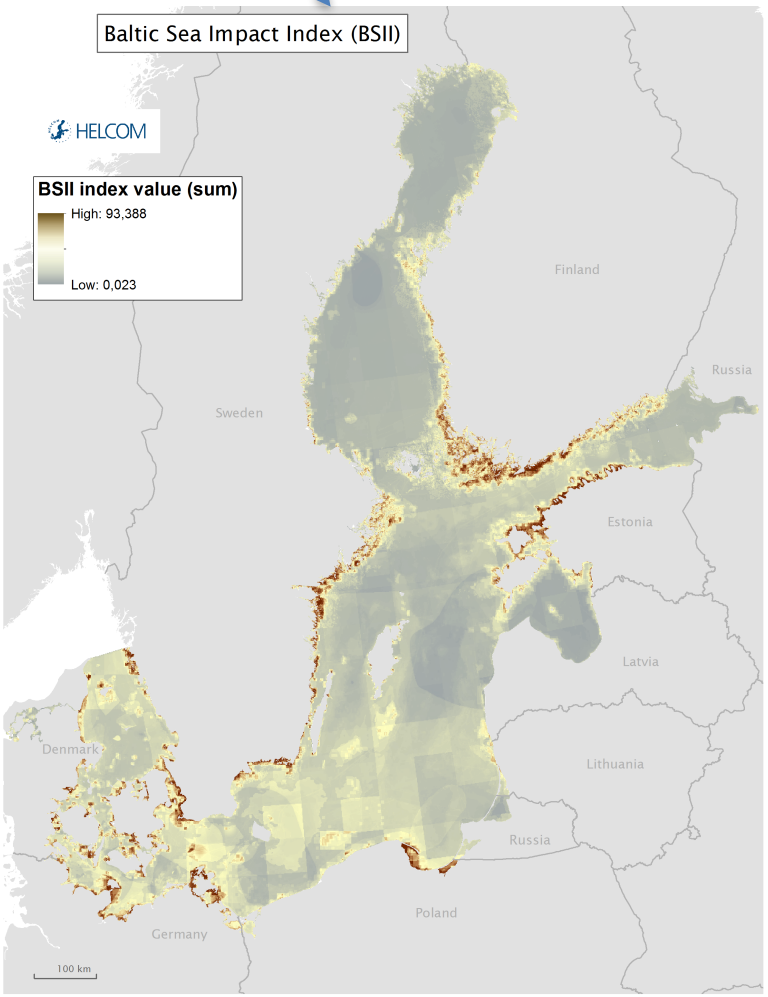


Activitie-Pressures-Impacts in seabed



Cumulative pressures and impacts





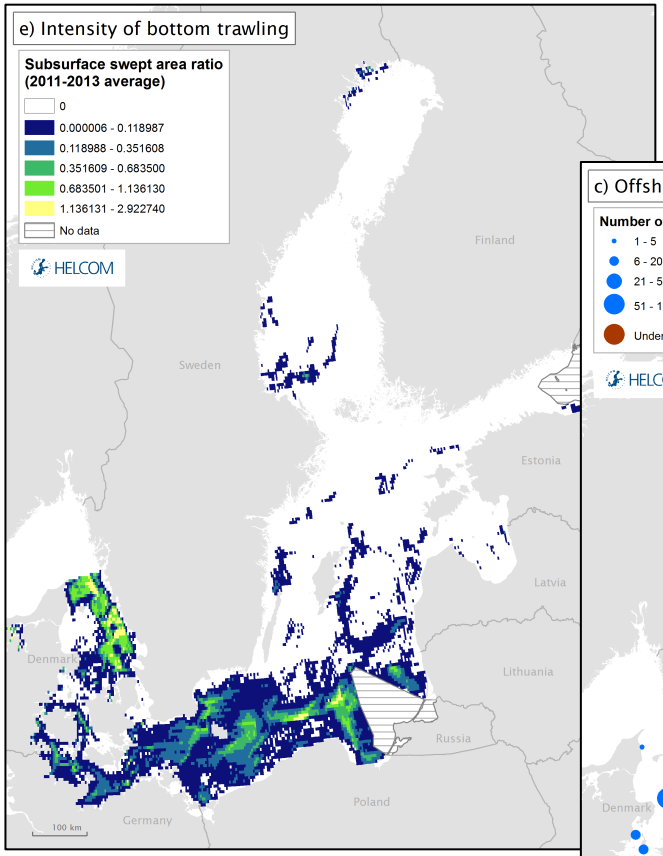
Cumulative impact assesment

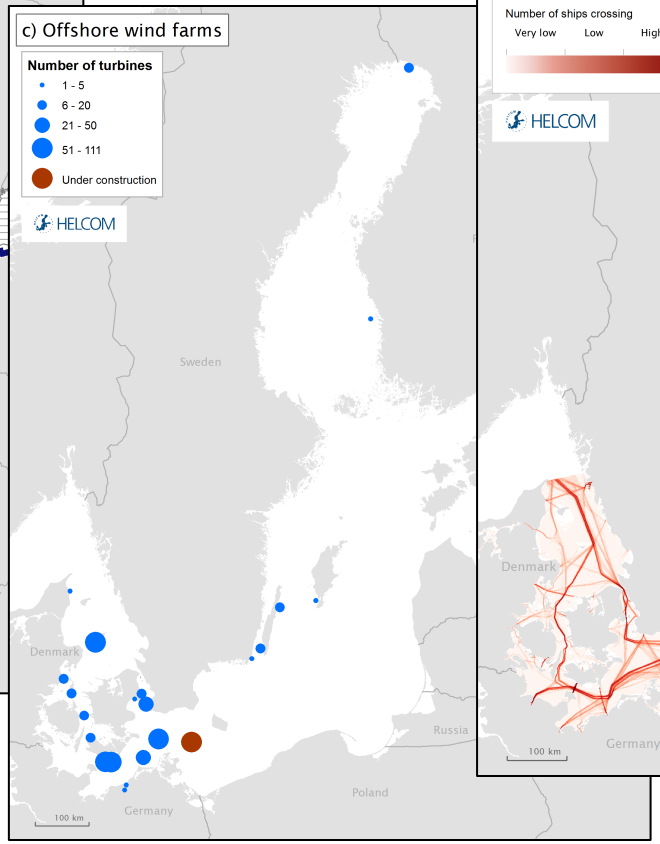
Spatial data sets with regional coverage

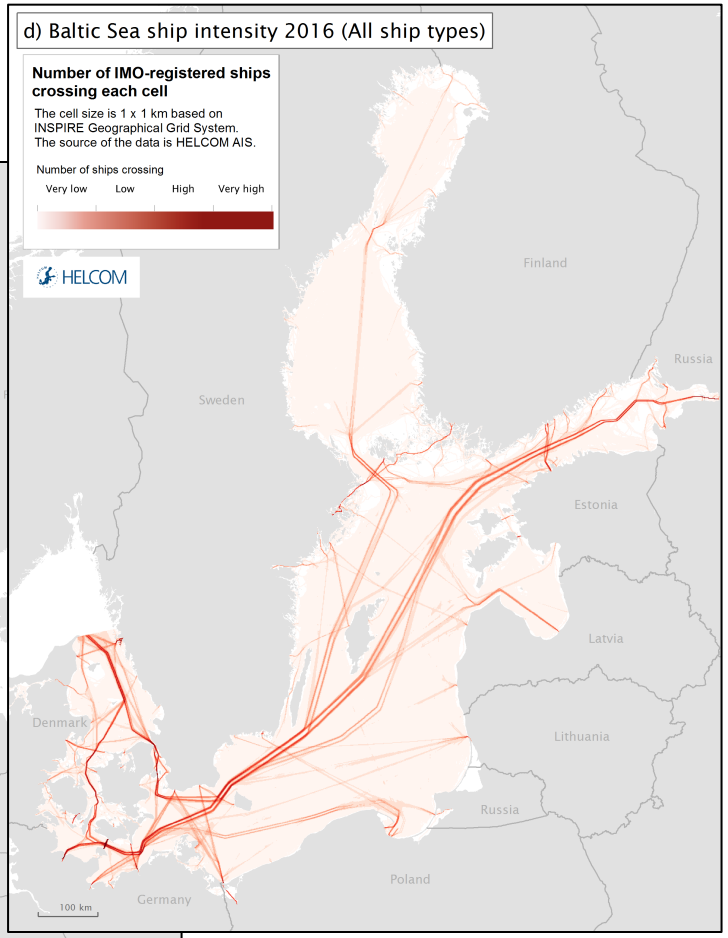
- 19 pressure layers (based on 54 original layers)
- 42 ecosystem component layers

Sensitivity scores (0-3)

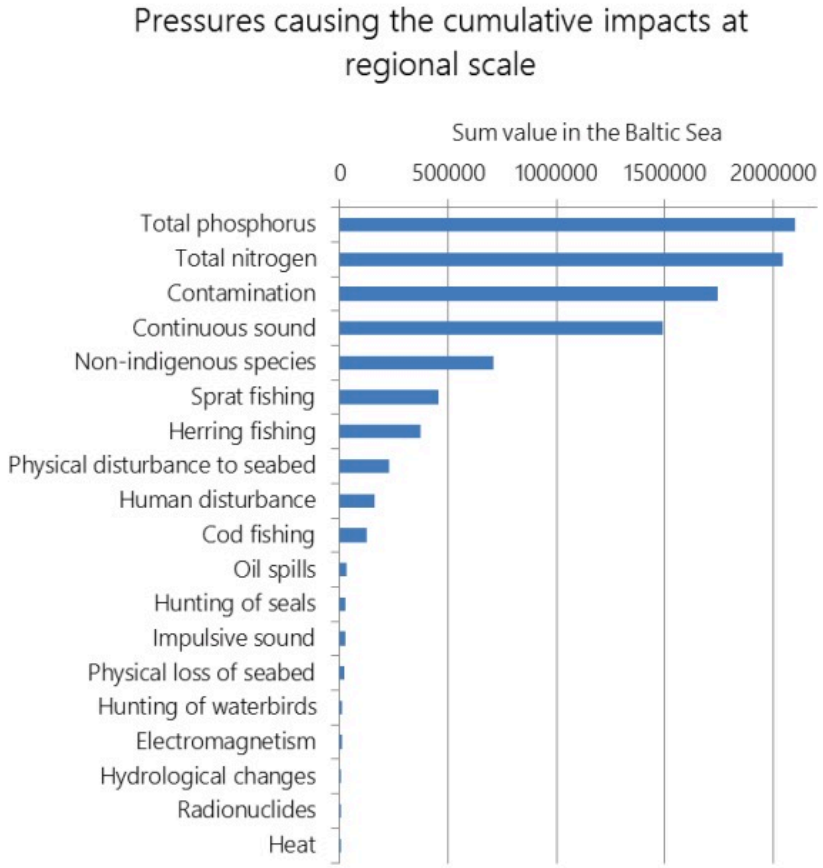
Connections between BSII and MSP

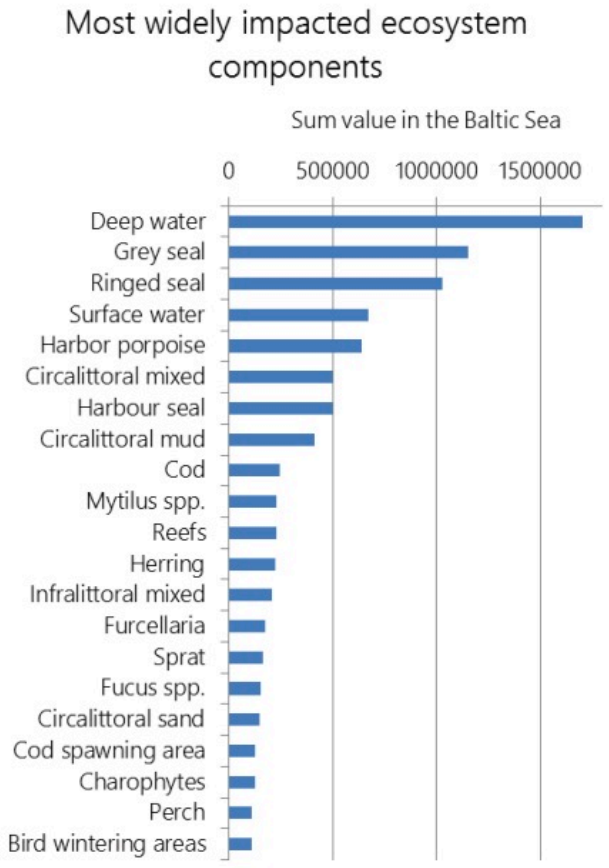




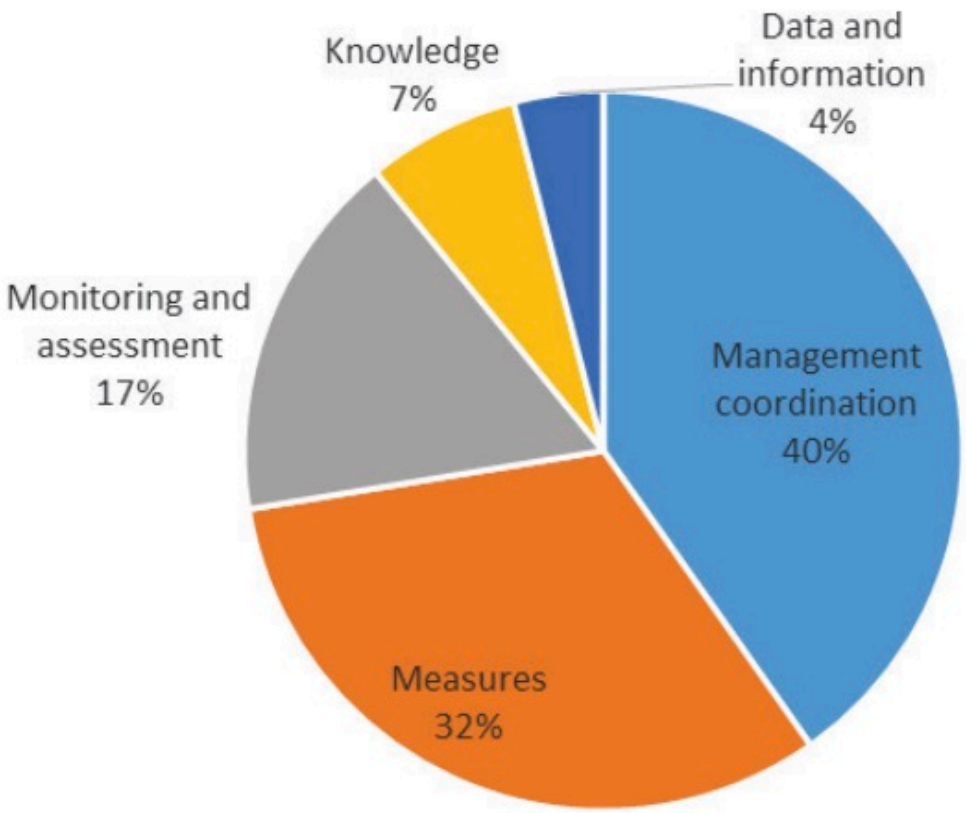


Cumulative impacts overview





Types of HELCOM actions



http://stateofthebalticsea.helcom.fi

Downloads & data | References | Contact

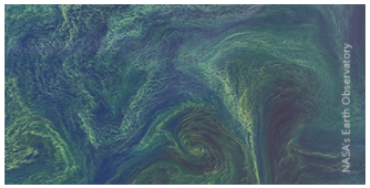
STATE OF THE BALTIC SEA
- HOLISTIC ASSESSMENT -
First version 2017

search

IN BRIEF findings and basics | HUMANS & the ecosystem | PRESSURES & their status | BIODIVERSITY & its status | CUMULATIVE IMPACTS | HELCOM ACTIONS for improvement | ABOUT HELCOM & the assessment

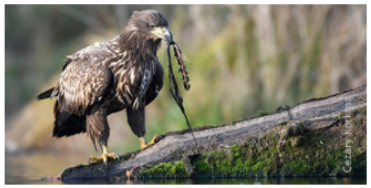
First version of the State of the Baltic sea report – June 2017 – to be updated in 2018

KEY FINDINGS



Nutrient inputs from land have decreased clearly, but effects are not yet reflected in the status of all sub-basins.

Eutrophication status ›



The contamination status is elevated in all of the Baltic Sea, but some improving trends are seen.

Hazardous substances ›

Biodiversity status is inadequate for most assessed species, and continued efforts to support biodiversity are of key importance.

Biodiversity status ›

Summary of findings ›

Download report as PDF (19 MB)

WHAT'S GOING ON?

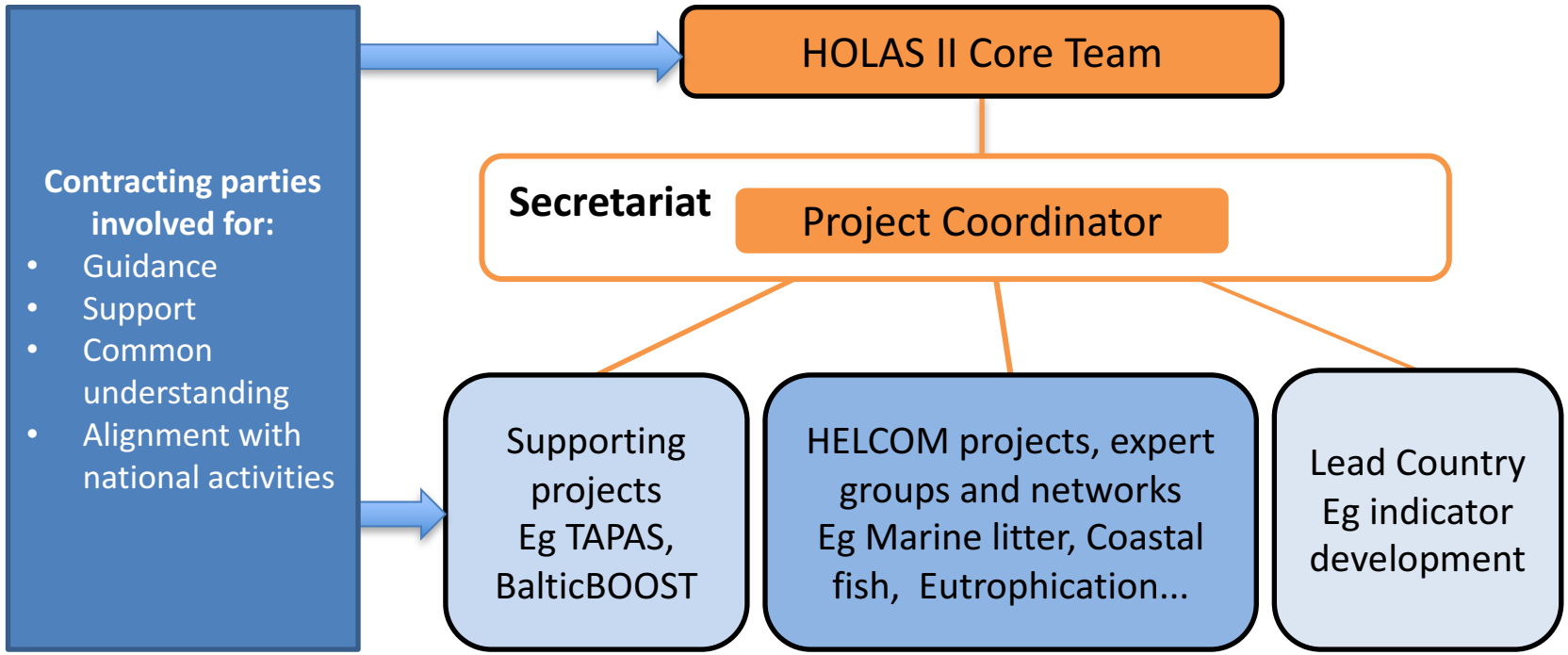
Kaartokallio,
Bergström, HOLAS II

HELCOM

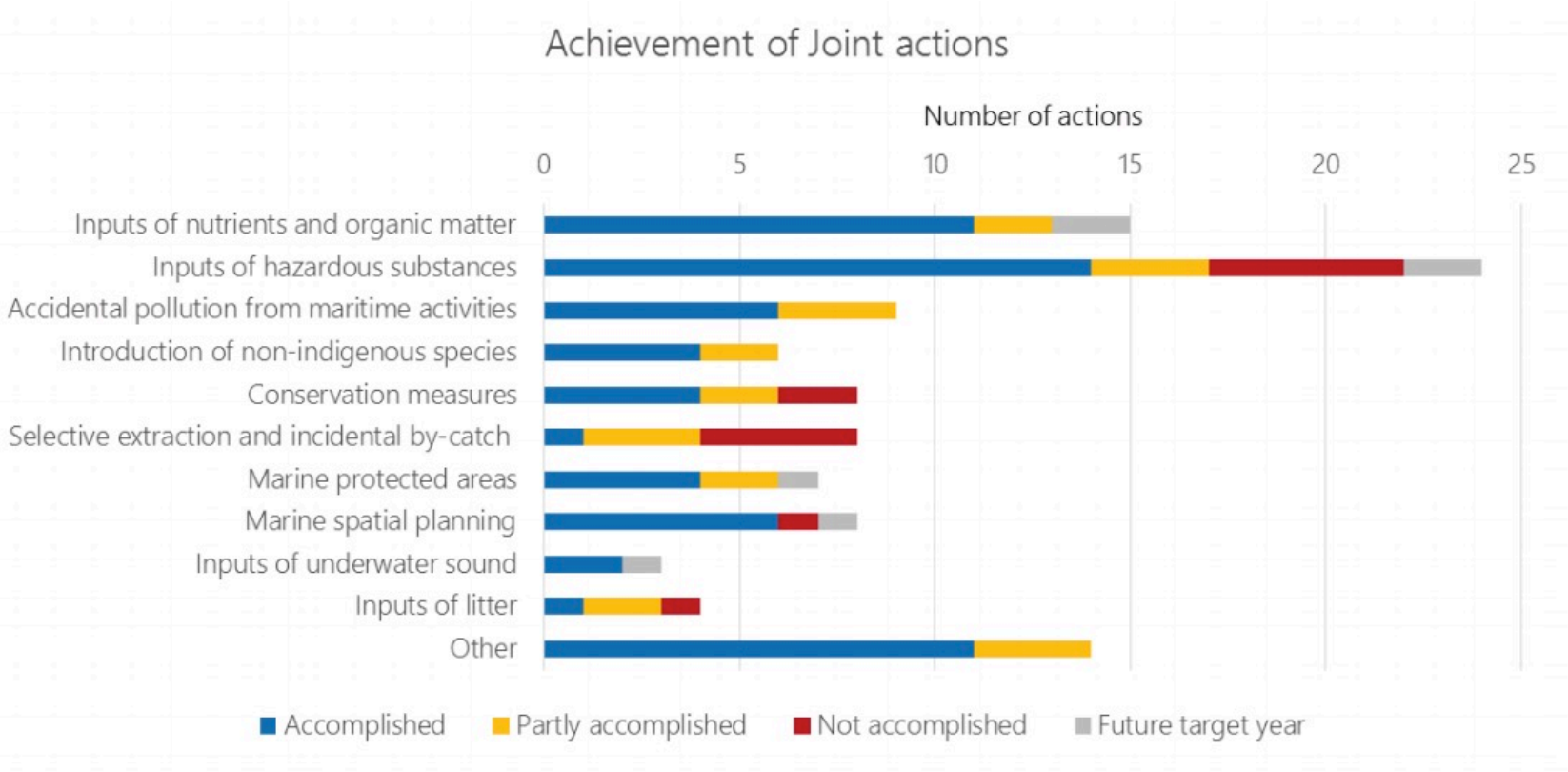
www.helcom.fi

Kaartokallio,
Bergström, HOLAS II

How the assessment was developed



Implementation status of joint actions



HELCOM vision for the Baltic Sea 2021

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

HELCOM 2007

www.helcom.fi/baltic-sea-action-plan