



ICES Regional Indicator initiatives

Sebastian Valanko

ICES



Intergovernmental Organisation

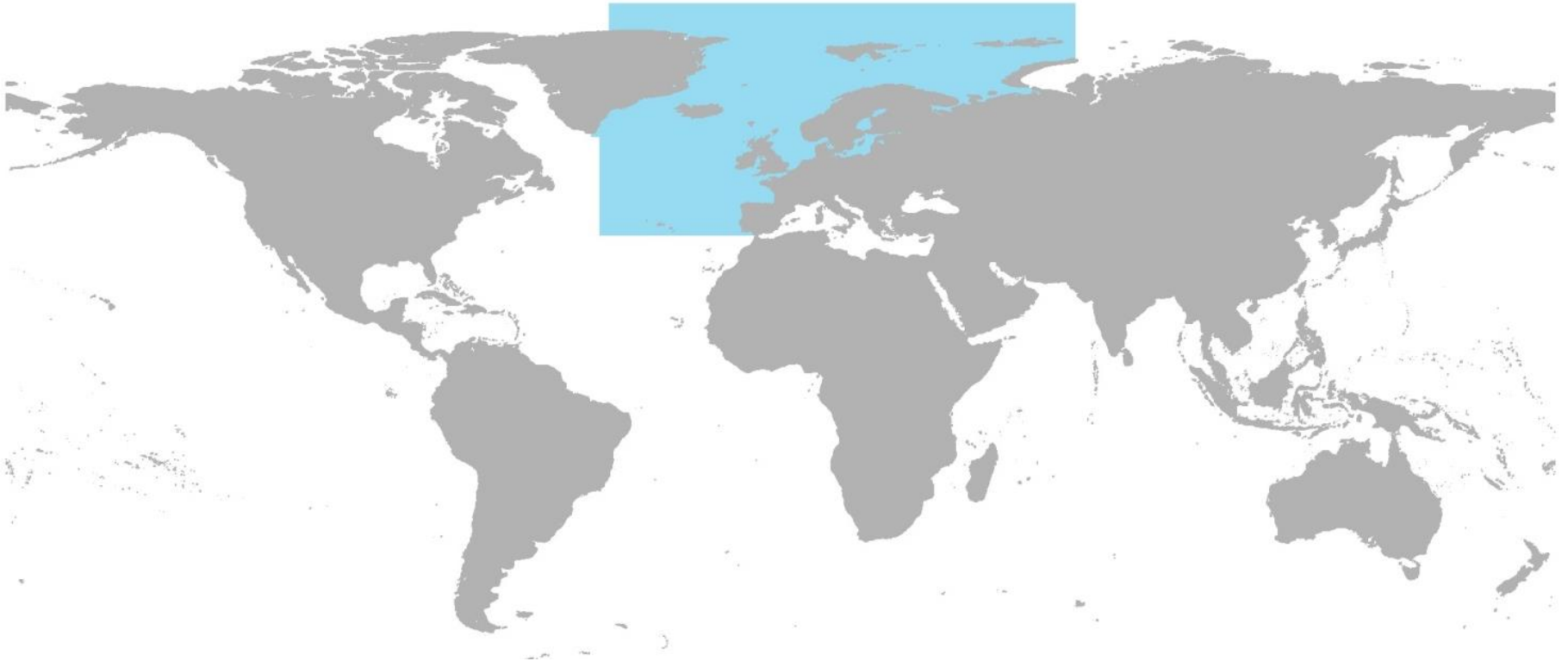
20 member countries

360 institutes-

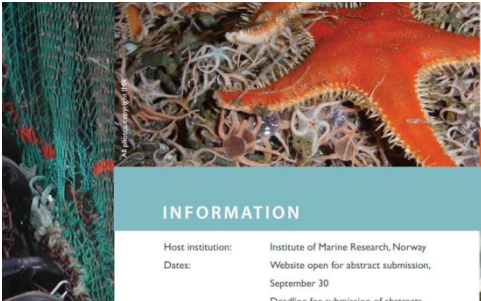
network of 4,000 scientists

Science for Sustainable Seas

International cooperation



International cooperation



 **ICES** International Council for the Exploration of the Sea
CIEM Conseil International pour l'Exploration de la Mer

ICES SYMPOSIUM

INFORMATION

"Effects of fishing on benthic fauna, habitat and ecosystem function"

June 16 – 19, 2014
Tromsø, Norway

Host institution: Institute of Marine Research, Norway
Dates: Website open for abstract submission, September 30
Deadline for submission of abstracts.

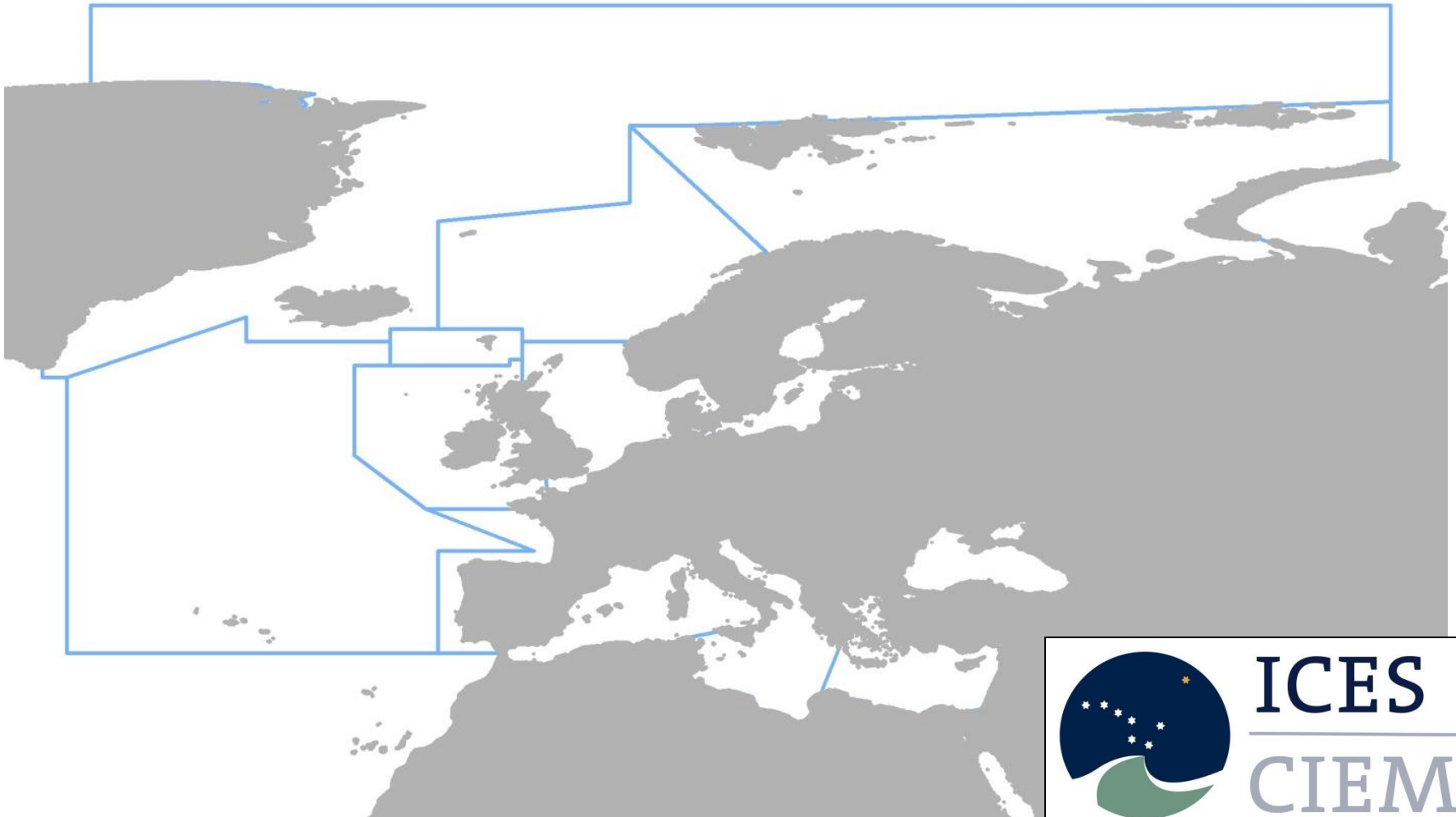


Twinning Workshop Trawling Impact on Benthic Ecosystems
(Australia, New Zealand, EU)
20-21 June, 2014 – Tromsø, Norway

Regional Approach to Local priorities



ICES Ecoregions



Partners in Assessment & Indicator Development



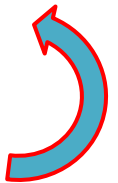
Partners in Assessment & Indicator Development



**COMMISSION
OSPAR**

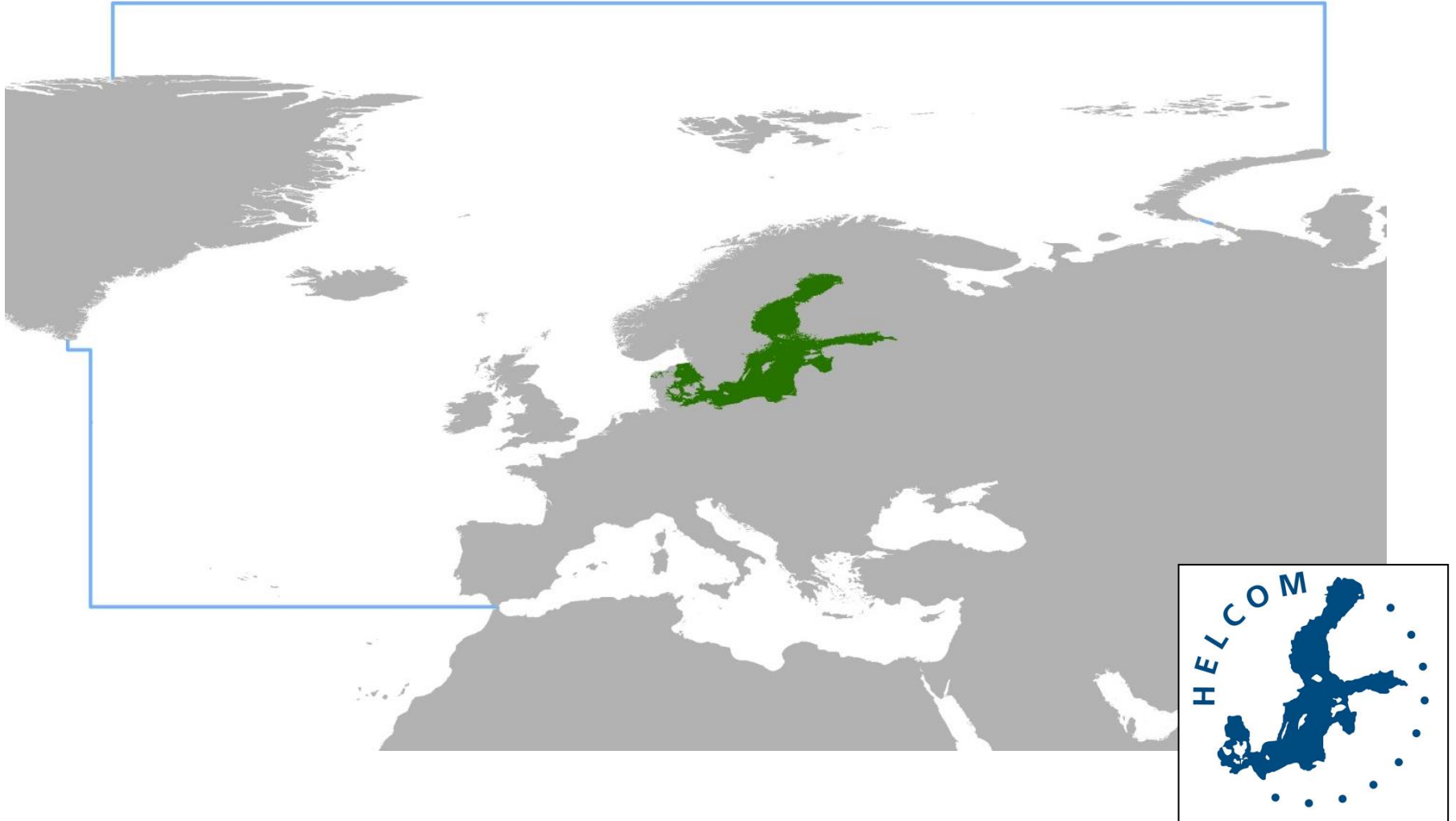
**Intermediate assessment 2017
Next QSR 2021**

OSPAR common indicators



<http://qsr2010.ospar.org/en/index.html>

Partners in Assessment & Indicator Development

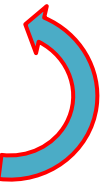


Partners in Assessment & Indicator Development



HOLAS II – 2017 (?)

CORESET indicators



<http://helcom.fi/>

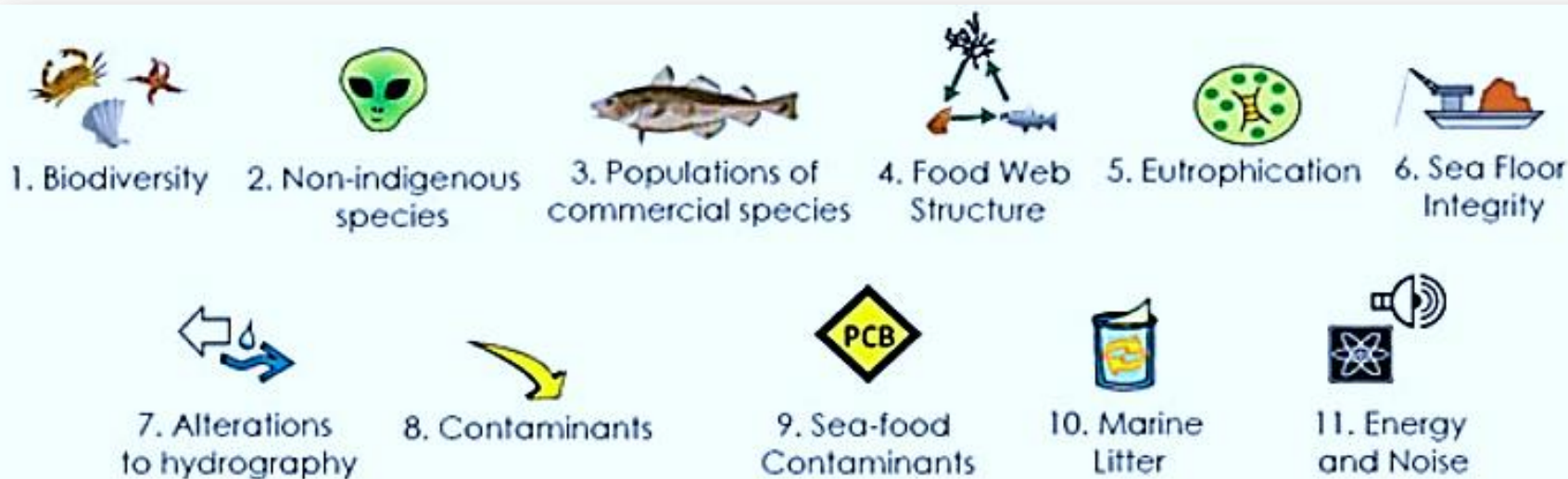
Partners in Assessment & Indicator Development



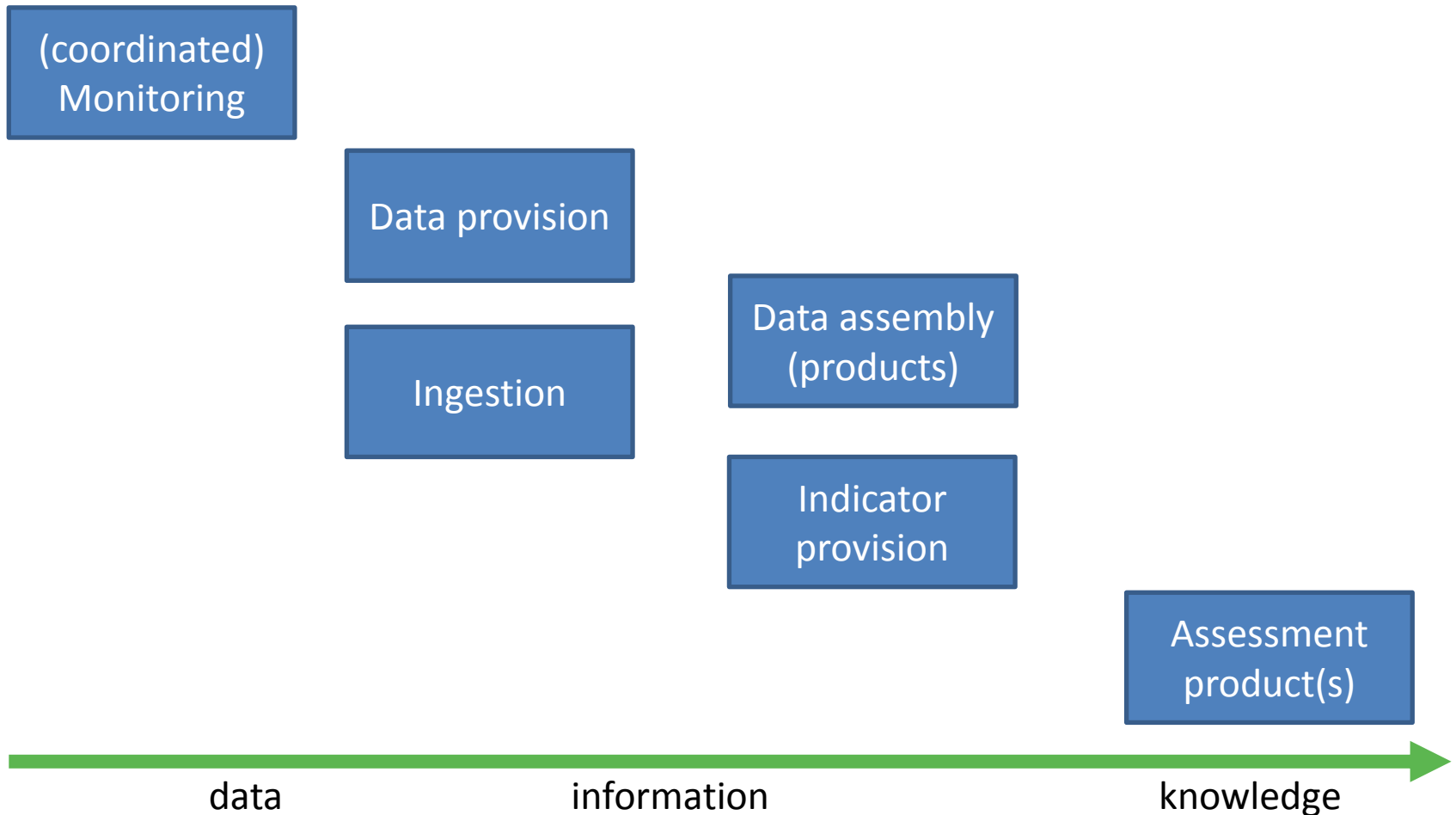
EU Marine Strategy Framework Directive (MSFD)

6 year cycle

HOPE Assessment 2020

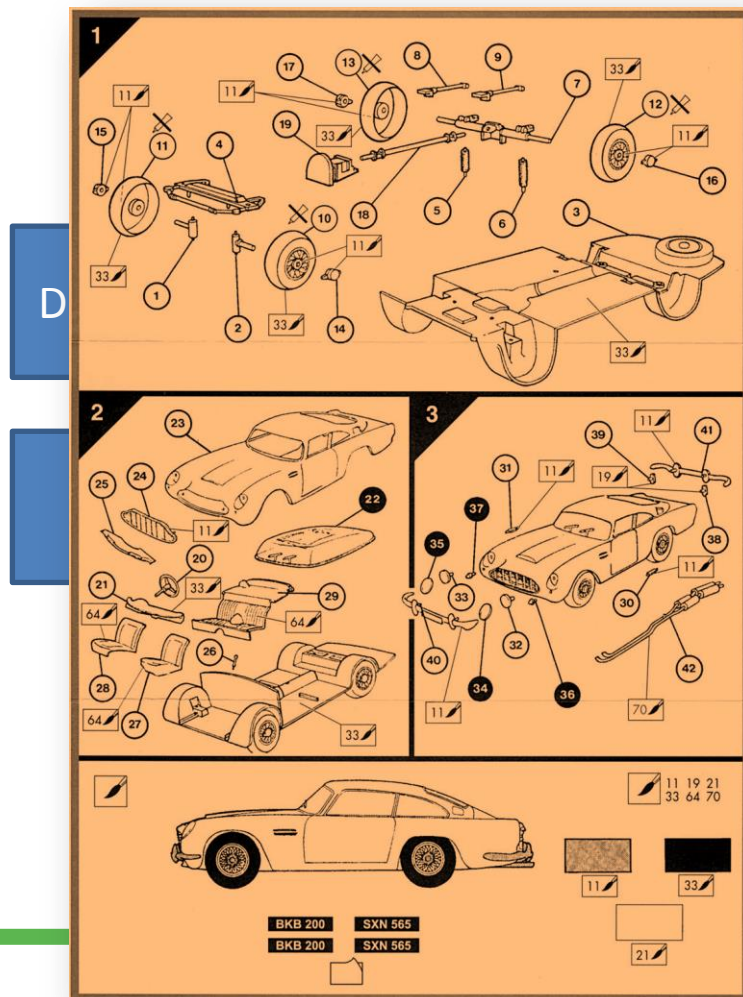


Data → information flow for assesement



Data → information flow for assesement

(coordinated)
Monitoring



Assessment
product(s)

data

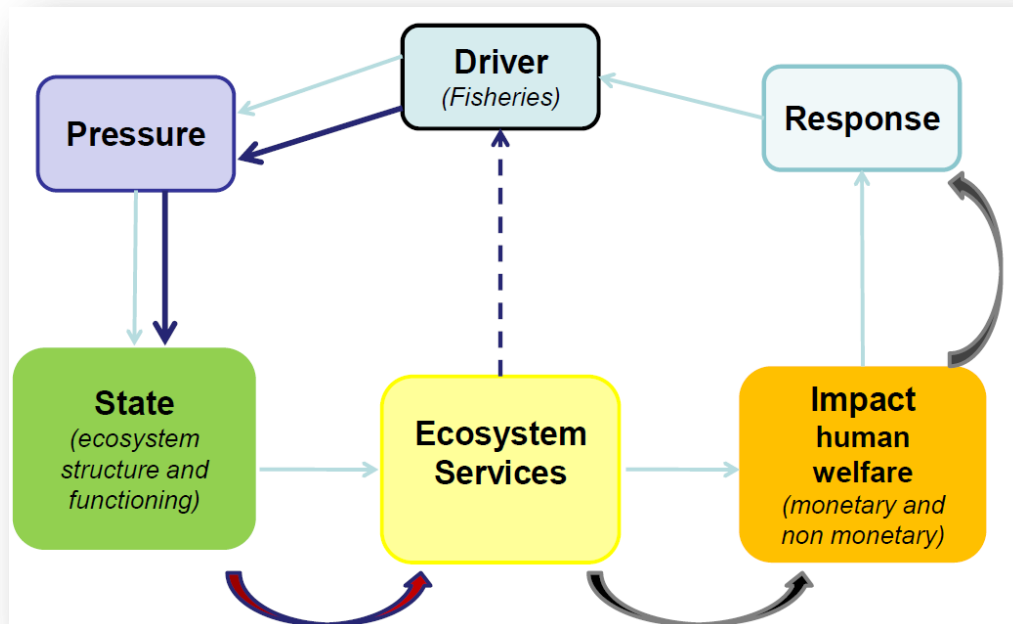
knowledge

ICES data services

Discipline	Type of data
Environmental	Fish predation(Stomach data), Eggs and Larvae, Contaminants, Biological community, Intercalibration results, Marine liter
Oceanographic	High resolution CTD, Hydro-Chemistry data, Underway data, Cruse summary report/ROSCOP(Meta data)
Fishery	Trawl survey(DATRAS), Regional Database Fishframe, Commercial catches and sampling (InterCatch), Preliminary catch statistics, VMS(Restricted)
Interdisciplinary	Accession(audit and trail), Vocabularies

Regional Assessments & ICES role

- Assessment of pressure/state relationships leading to impacts on goods and services
- Underpinning science for the assessment
- Indicator development and operationalising



Linking DPSIR & ecosystem services

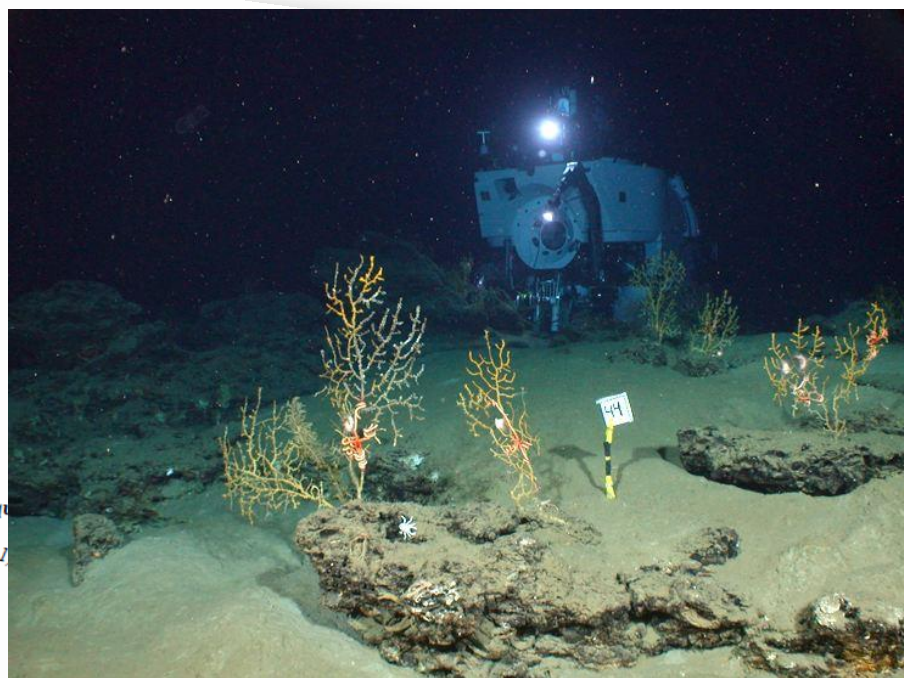
European Environment Agency 2013

Regional Approach to Local priorities



ICES integrating data, knowledge & peer review

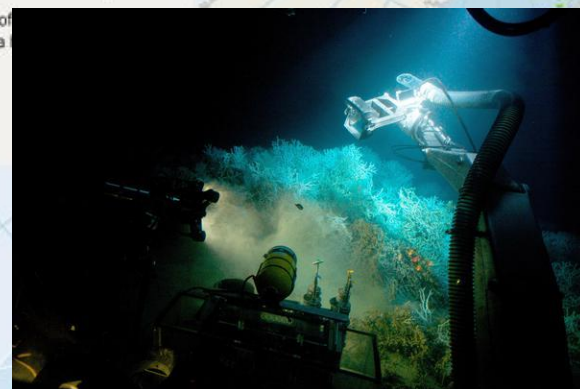
Example: ICES annual advice on VME
North Atlantic & methods & buffer zones
to NEAFC/OSPAR



Fisheries closed areas for protection of cold-water corals and other vulnerable marine ecosystems

Reported information on distribution of threatened and/or declining deep-sea

- *Lophelia pertusa* reefs
- Deep-sea sponge aggregations
- Carbonate mounds
- ▲ Seamounts



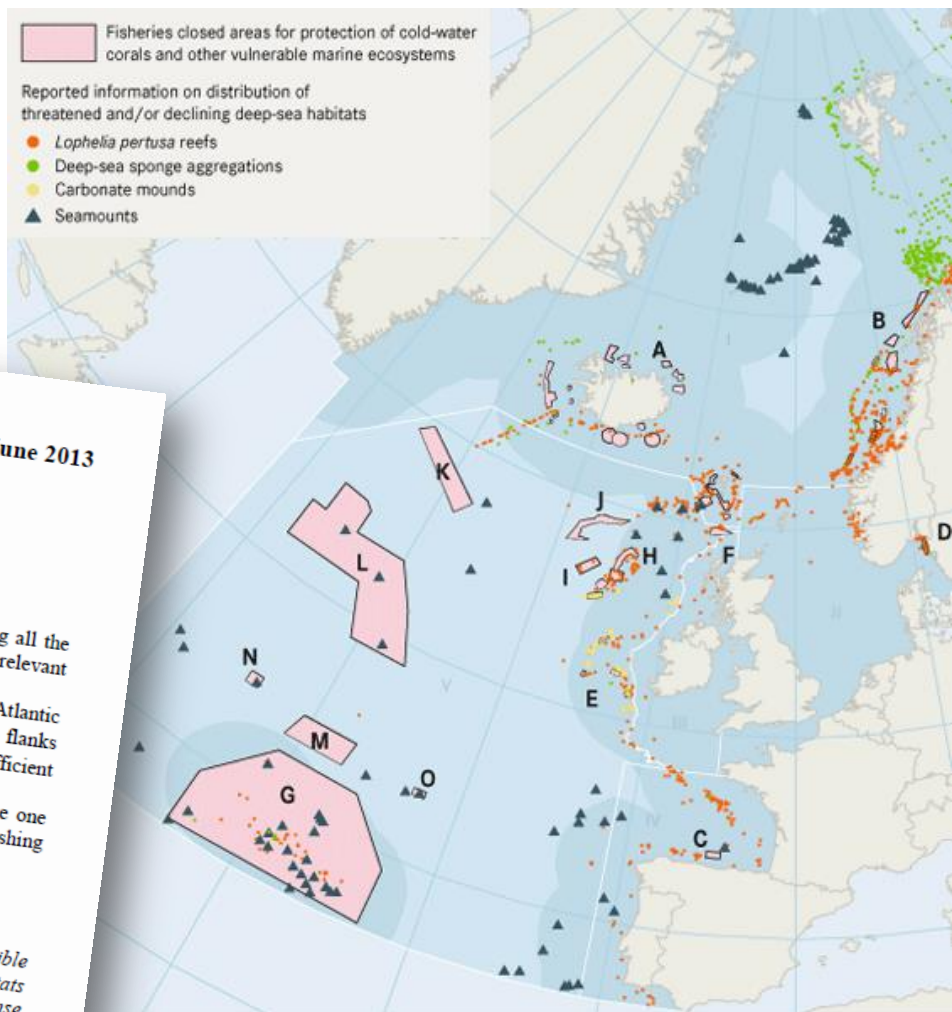
June 2013

sting all the
of relevant
Mid-Atlantic
deep flanks
sufficient
the one
y fishing

beneficial.
revision and to the extent scientifically valid harmonization with NAFO lists would be
2) ICES is furthermore asked to map VME elements (i.e. geomorphological features) that tend to form dense
would include seamounts and knolls at fishable depths.

ICES integrating data, knowledge & peer review

Example: ICES annual advice on VME
North Atlantic & methods & buffer zones
to NEAFC/OSPAR



1.5.5.3

ECOREGION SUBJECT

General advice

Special request, Advice June 2013

Assessment of the list of VME indicator species and elements

Advice summary

- 1) Taxa should be considered by habitat type and/or at the taxonomic level of family rather than listing all the likely species that would be indicators of VMEs in the NEAFC Regulatory Area (RA). A table of relevant families and habitat types is provided.
- 2) Three maps of VME elements in the NEAFC RA at depths less than 2000 m, including the Mid-Atlantic Ridge, the Rockall-Hatton area, and isolated seamounts, are provided. Canyon-like features and steep flanks information to map all knolls.
- 3) There are only five known or inferred vent sites within the NEAFC RA. The vent sites, other than the one inferred site on the Reykjanes Ridge, are below 2000 m depth and are not likely to be impacted by fishing activities. It is advised that the site on the Reykjanes Ridge be closed to bottom-contacting gear.

Request

- 1) ICES is requested to assess whether the list of VME indicator species is exhaustive and suggest possible addition to that list. The basis for the assessment should be the FAO Guidelines specifying taxa and habitats that may be relevant. ICES should focus on taxa (species or assemblages of species) that tend to form dense aggregations of assumed particular functional significance. NAFO SC has in 2012 conducted a similar assessment and revision and to the extent scientifically valid harmonization with NAFO lists would be beneficial.
- 2) ICES is furthermore asked to map VME elements (i.e. geomorphological features) that would include seamounts and knolls at fishable depths.

Pressures – top 5 (based on MSFD)

Baltic Sea

Nutrient Input

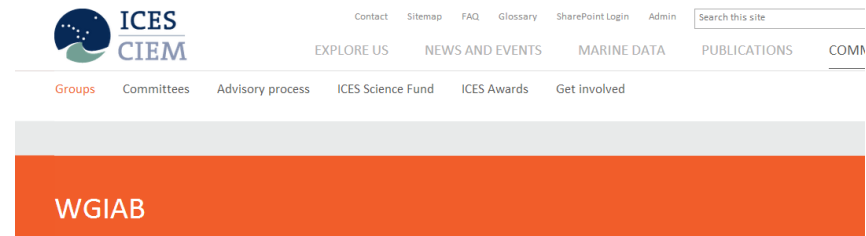
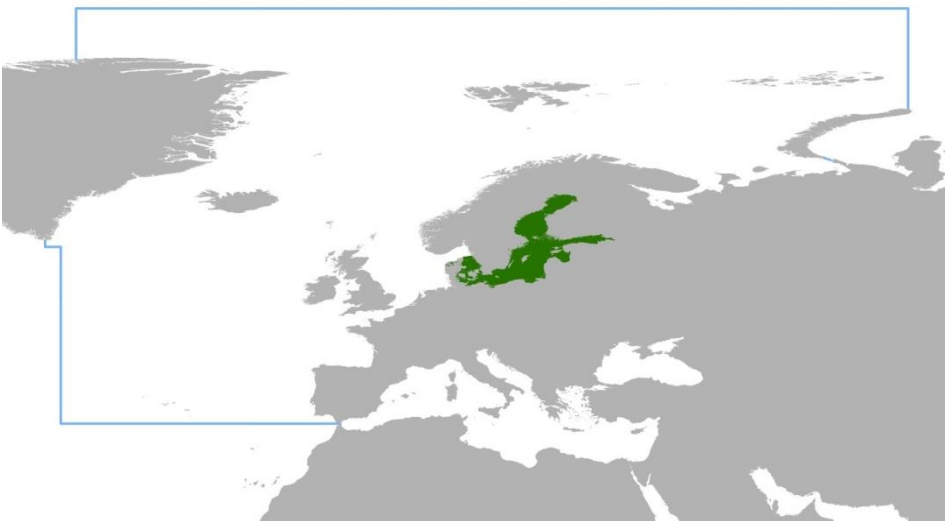
Extraction Species

Contaminants

Substrate Loss

Invasive Species

WGIAB - ICES/HELCOM Working Group on Integrated Assessments of the Baltic Sea



ICES/HELCOM Working Group on Integrated Assessments of the Baltic Sea

Affiliation: SSGRSP

Chair: Christian Möllmann, Laura Uusitalo, Lena Bergström

The Working Group on Integrated Assessments of the Baltic Sea (WGIAB) is a scientific forum that develops and combines ecosystem-based assessments with management efforts for the Baltic Sea.

The overall scope of WGIAB is to produce science that promotes adaptive and holistic marine management strategies in the Baltic Sea.

In the group we develop tools for an integrated ecosystem assessment and management, applied to the biological preconditions of the Baltic Sea but transferable to parallel situations in the other regional seas. Core activities of our group include assessing long-term trends in the ecosystem (Integrated Trend Analyses, ITA) and developing models for scenario-based management strategy evaluation, as part of an adaptive and integrated ecosystem management cycle. Our work builds on case studies to enhance understanding of the Baltic Sea ecosystem, particularly concerning food-web dynamics, management trade-offs, and ecosystem interactions over different temporal and spatial scales and to identify key sectors and measures for sustainability.

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LINKS

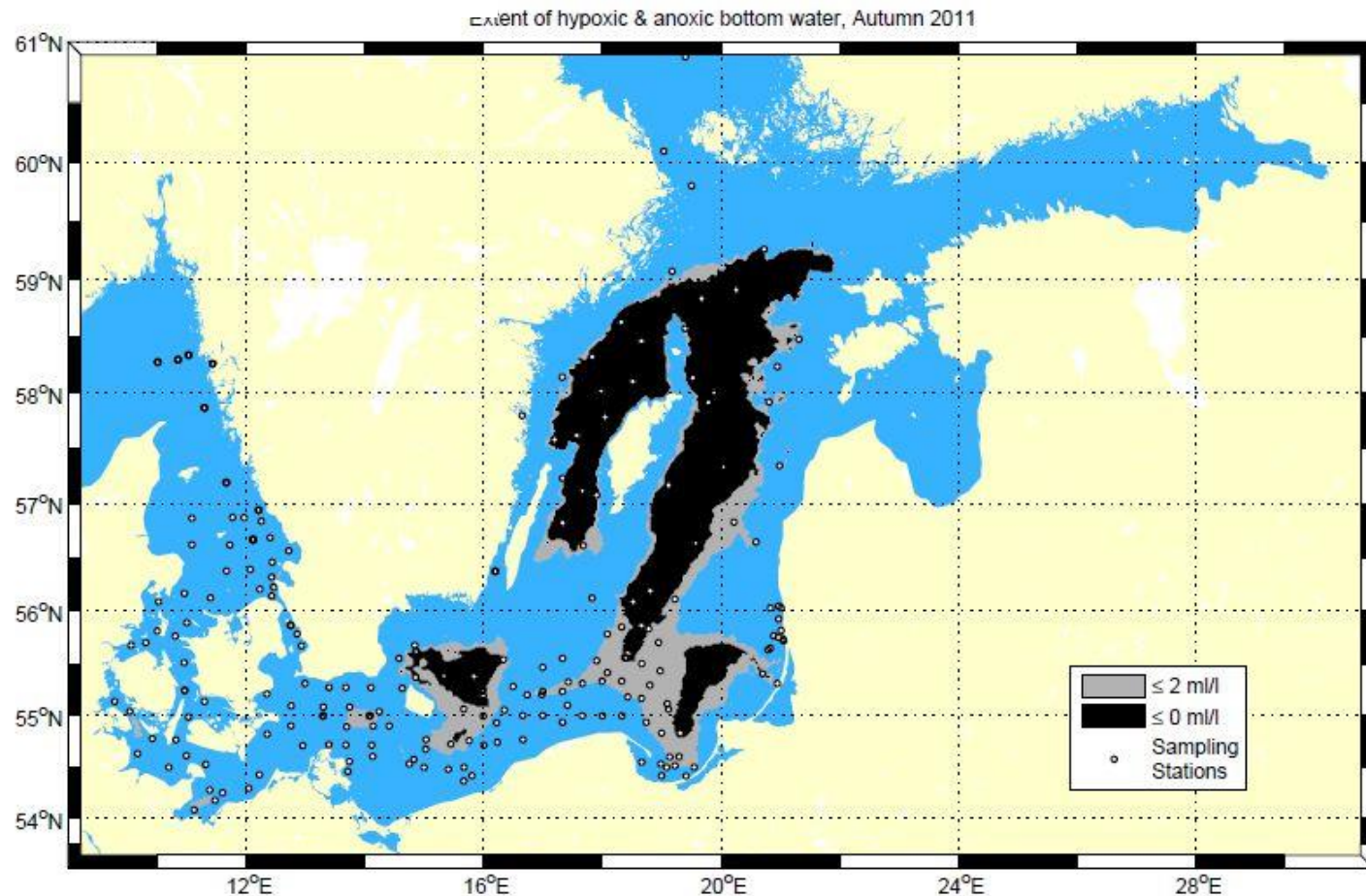
- View all members of this group
- WGIAB Terms of Reference
- View latest WGIAB Report

GO TO SHAREPOINT SITE

Indicator for Impact?

(D6 seafloor integrity)

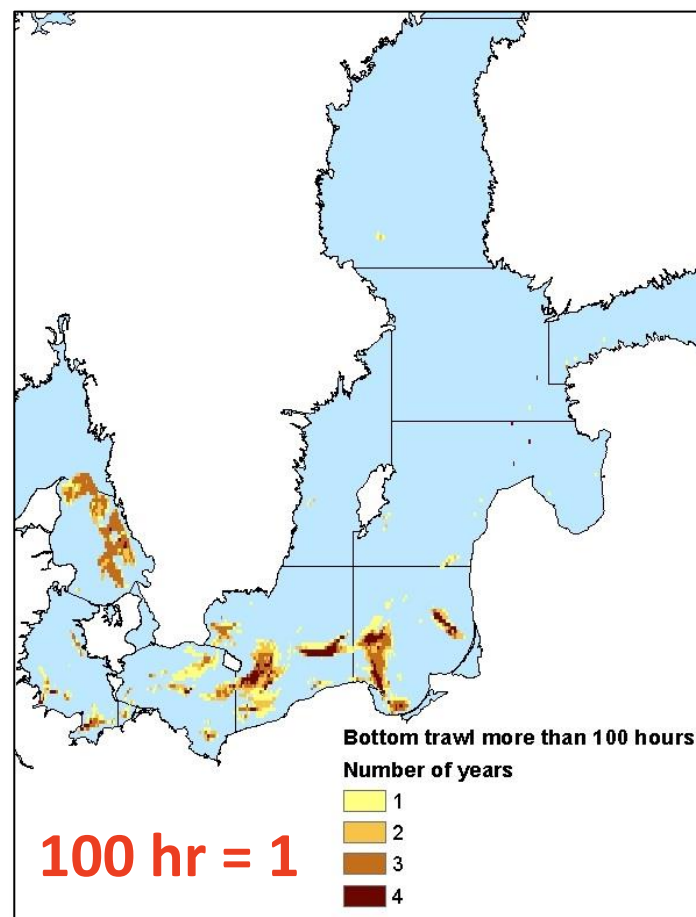
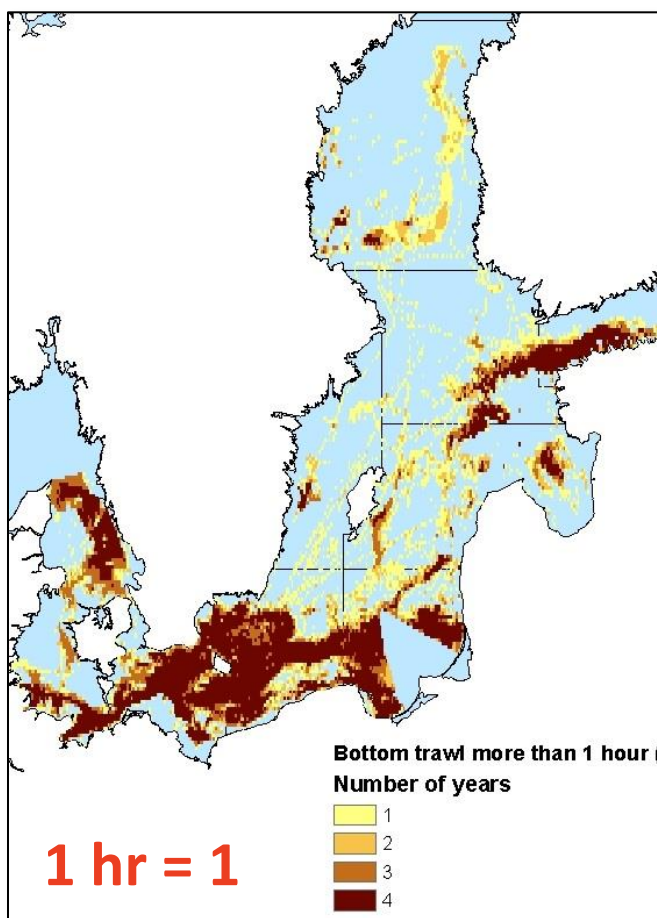
Eutrophication -> Anoxia



Indicator for Impact?

(D6 seafloor integrity)

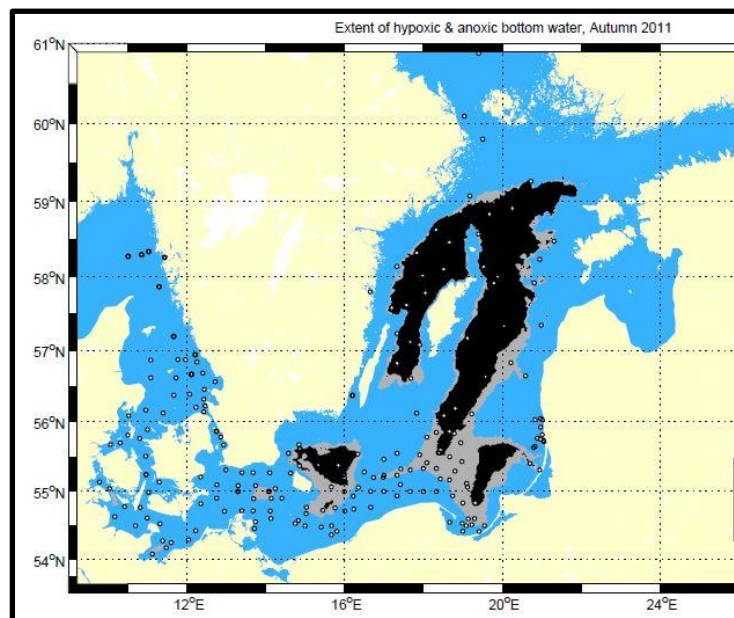
Fisheries -> Bottom trawling



Indicator for Impact?

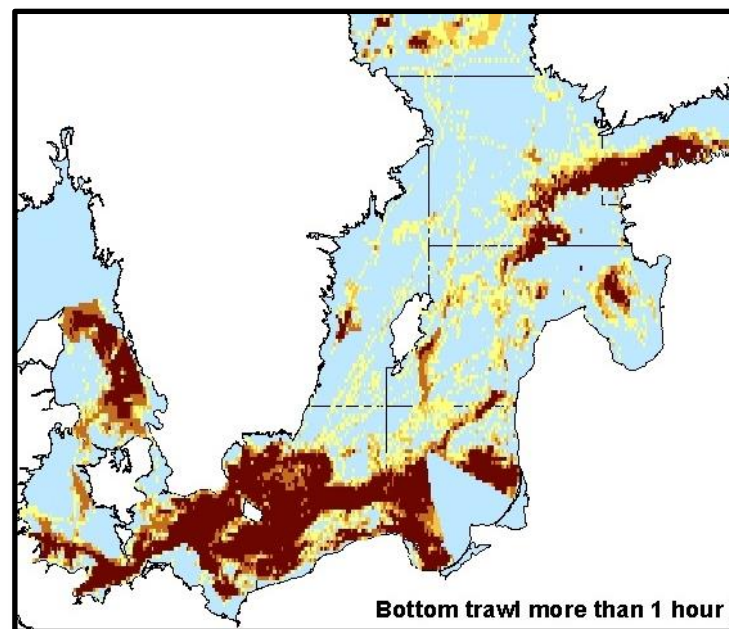
(D6 seafloor integrity)

Eutrophication



X

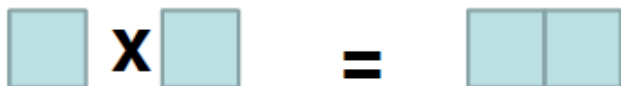
Fisheries



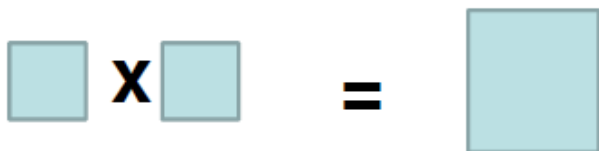
Cumulative Effects

(D6 seafloor integrity)

Stressors combine to have an effect equal to the sum of the component parts



Stressors combine to have an effect greater than the sum of the component parts



Stressors combine to have an effect less than the sum of the component parts



Stressors combine to have the same effect



Stressors combine to have a different effect



e.g. elicitation exercises – expert knowledge Baltic

Fisheries management

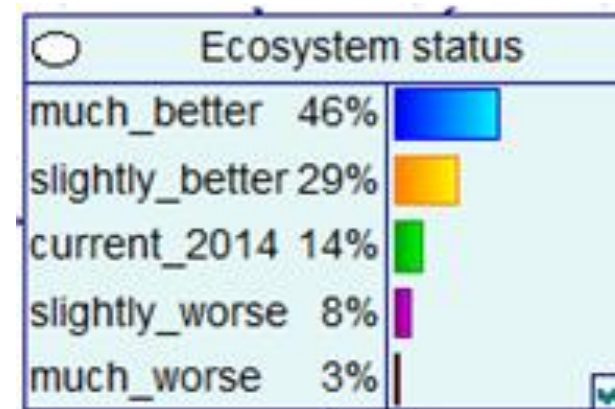
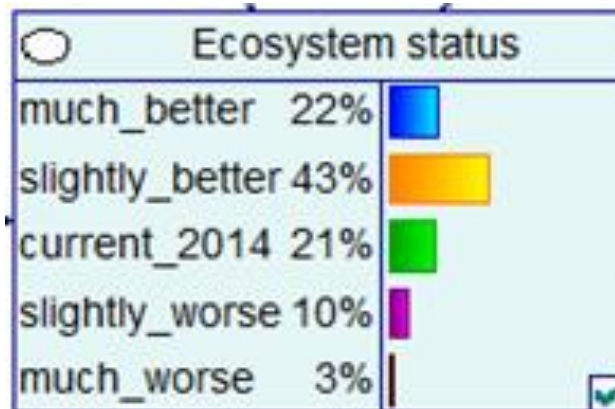
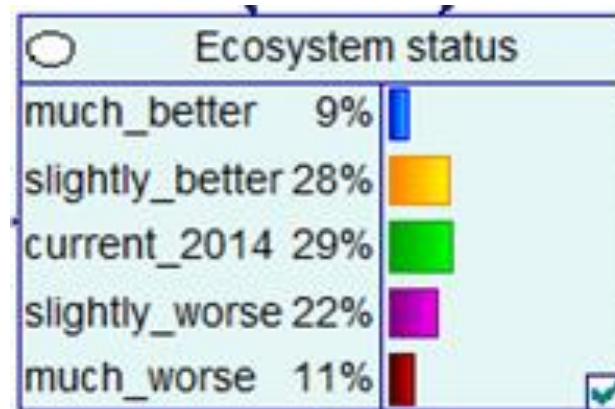
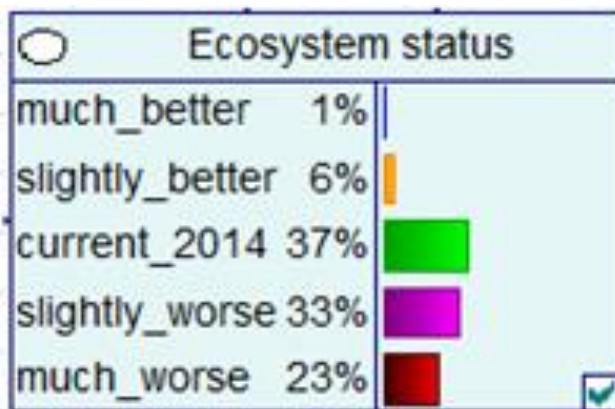
Business as usual



Eutrophication

Business as

usual



Marine Spatial Planning (MSP)

MSFD -> PoMs that balance human activities and a functioning marine ecosystem

MSP -> GES ("realistic" integration), MPAs = tool



[ICES Spatial Facility](#)

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Welcome to the **ICES Spatial Facility**, this facility contains a collection of metadata and spatial datasets relevant to the ICES community, featuring:

- **Free access** for search, viewing and download of spatial data, no need to login
- For download of data you must accept the [ICES data policy](#)
- Use the maps in map clients through [WMS](#)
- Upload of spatial data (shape file format) and metadata (ISO 19115/19139)
- For upload of data you need to login. [Contact us](#) to get an account, specifying who you are and what kind of data you want to upload

Working Group on Marine Habitat Mapping ([WGMHM](#)) maintains a collection of habitat map outlines and metadata descriptions

- [See a view](#) of the Marine Habitat Map outlines/metadata descriptions maintained by WGMHM
- For instructions on how to capture metadata in relation to Working Group on Marine Habitat Mapping (WGMHM), [see document](#)



[Search ICES Spatial Facility](#)



<http://geo.ices.dk/>

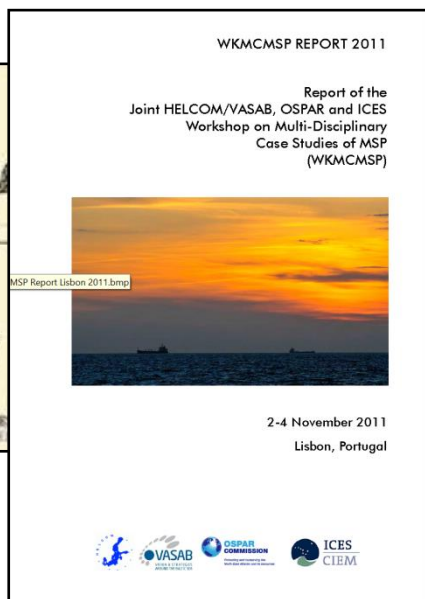
<http://ecosystemdata.ices.dk/>

with
PAR

Marine Spatial Planning (MSP)

MSFD -> PoMs that balance human activities and a functioning marine ecosystem

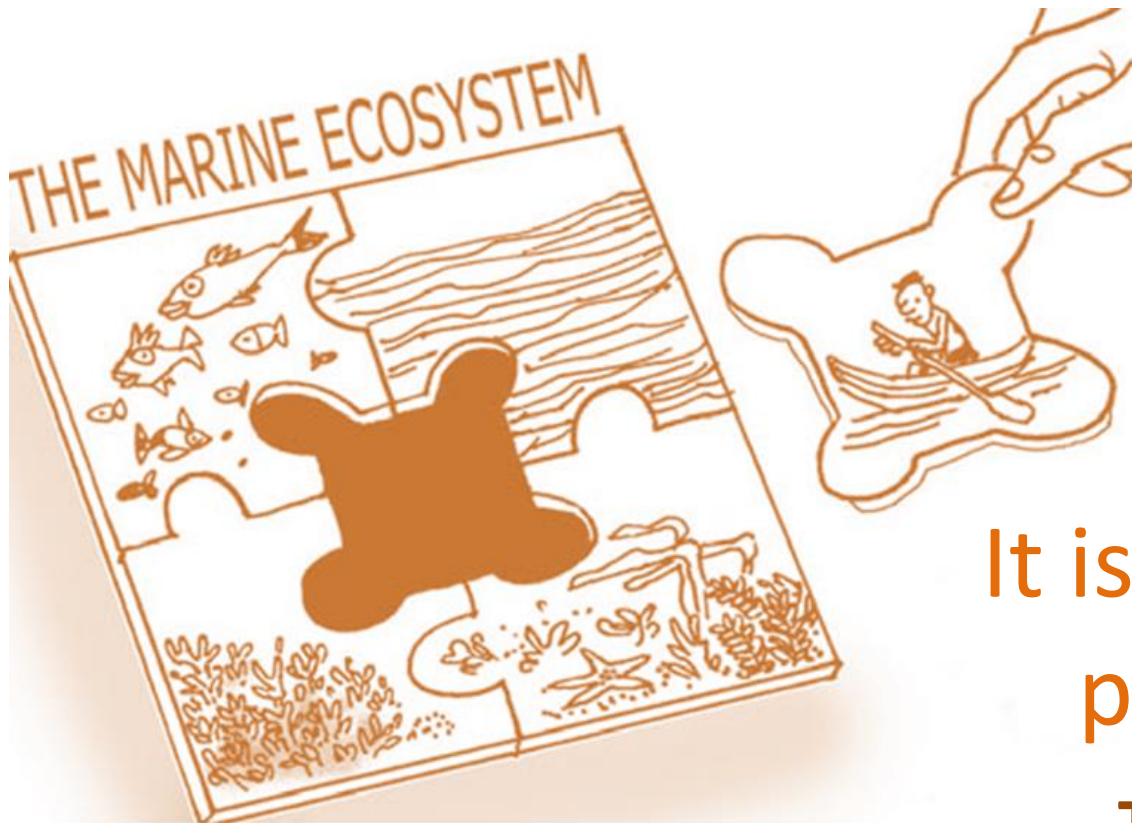
MSP -> GES ("realistic" integration), MPAs = tool



e.g. ICES joint workshop with
HELCOM/VASAB and OSPAR



Expect complexity, stay adaptive



It is an iterative
process

THANK YOU

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