

European Marine Policy and Protection of Marine Ecosystems

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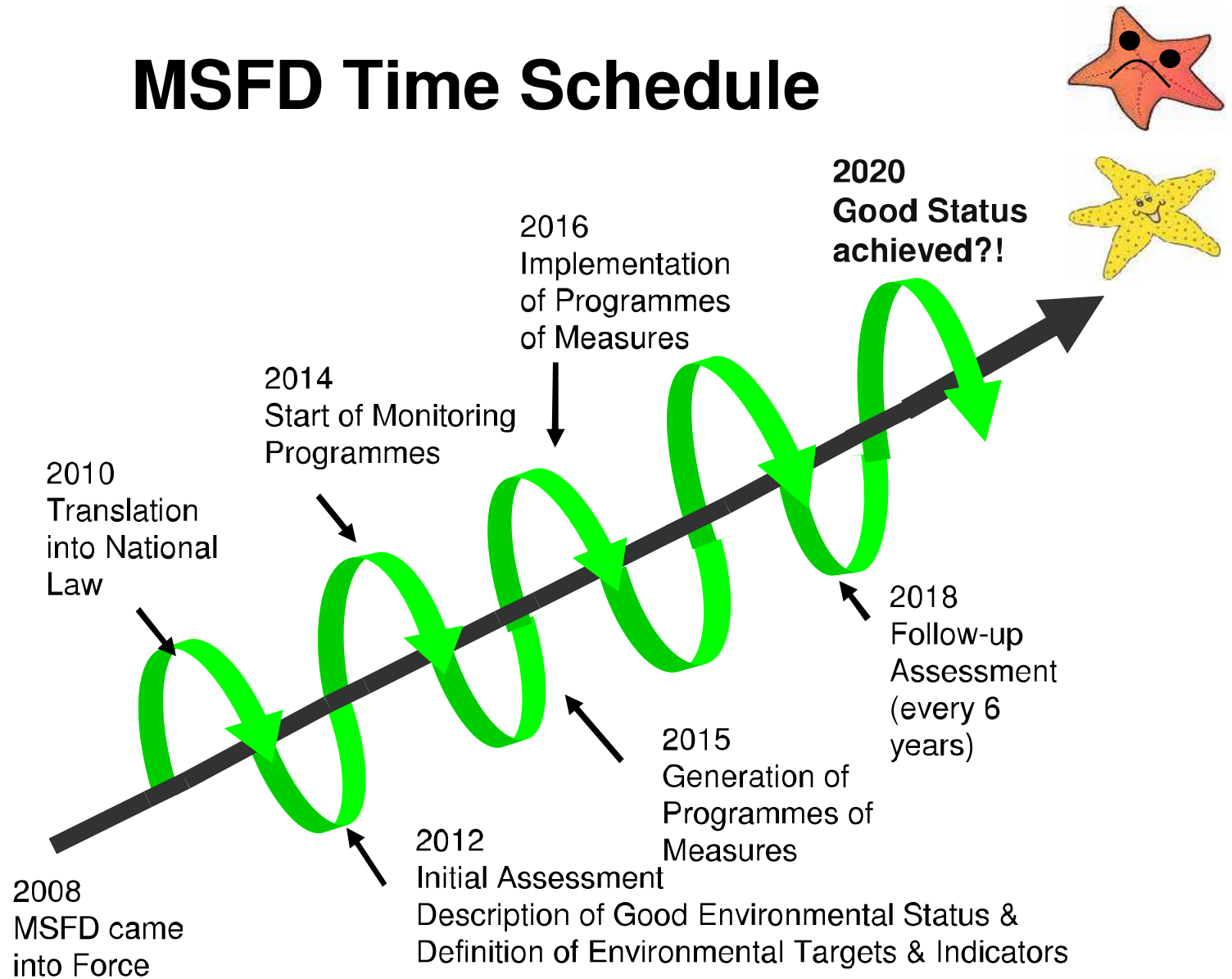


CBD Bureau Workshop Dessau
12th January 2010

New EU Maritime Policy

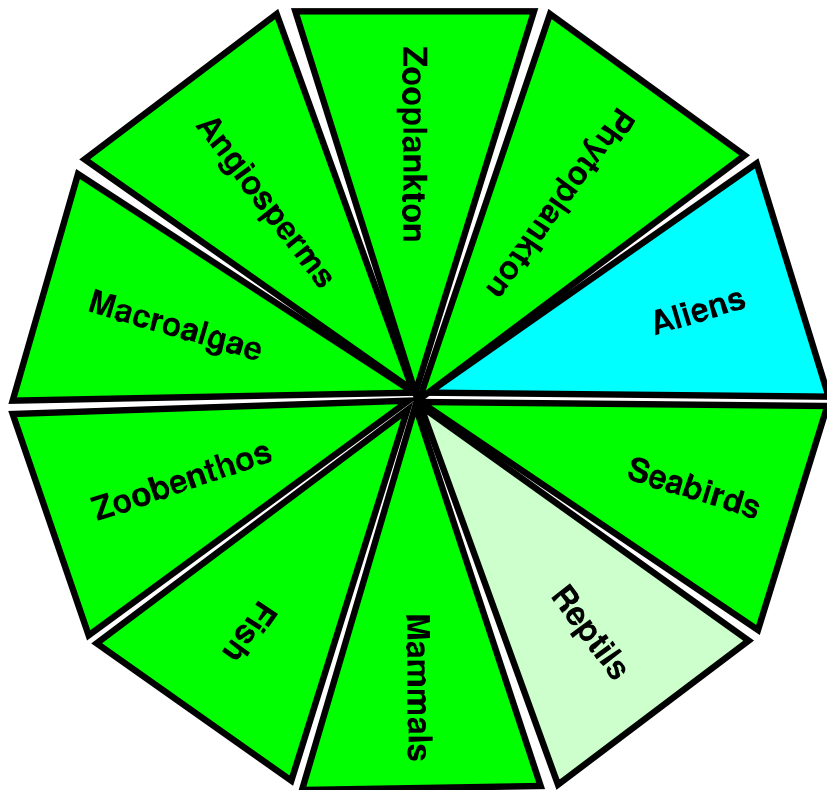
- New tool for sustainable uses & protection of the seas
- Paradigm shift in environmental water policy (WFD & MSFD)
- Both are also basic tools for protection of marine biodiversity

MSFD Time Schedule

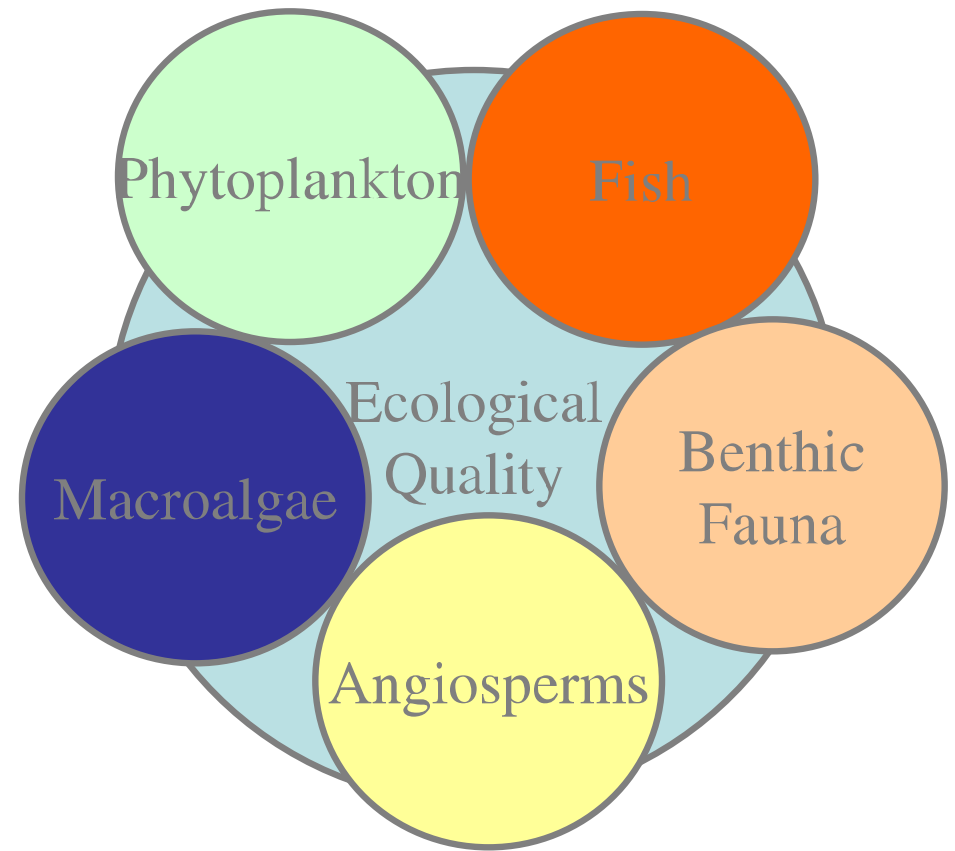


MSFD & WFD Biological Quality Elements

MSFD



WFD



Towards GES...

Descriptors for GES

17 Characteristics

- Nutrients
- Oxygen
- Contaminants
- Phytoplankton
- Zooplankton
- Marine Mammals
- Birds
- Fish
- Etc.

&

18 Pressures / Impacts

- Fisheries
- Nutrient Input
- Noise
- Litter
- Physical Damage
- Etc.



D 1 Biodiversity

D 2 Non-indigenous Species

D 3 Fisheries

D 4 Food Webs

D 5 Eutrophication

D 6 Seafloor Integrity

D 7 Hydrographic Conditions

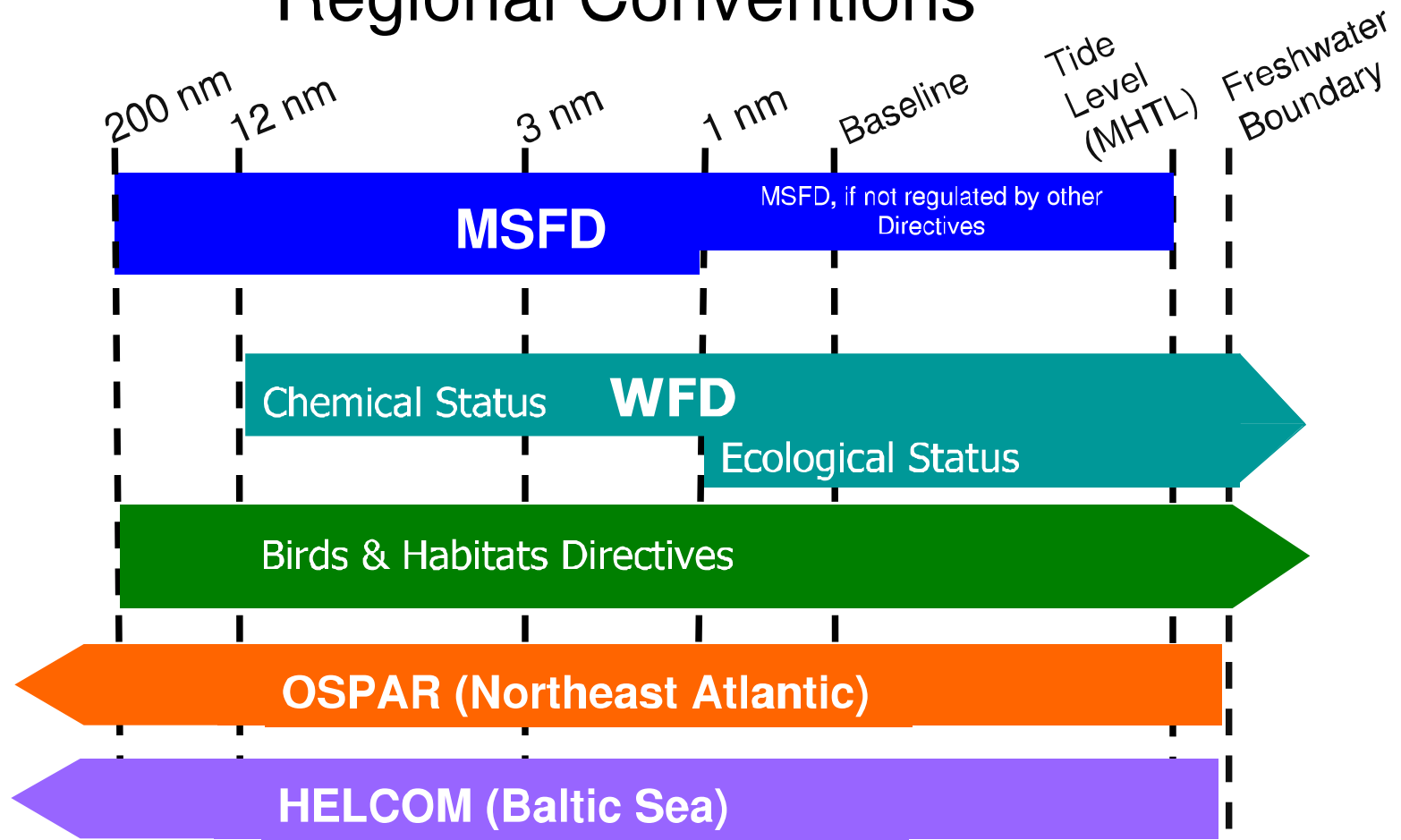
D 8 Contaminants

D 9 Contaminants in Seafood

D 10 Litter

D 11 Noise

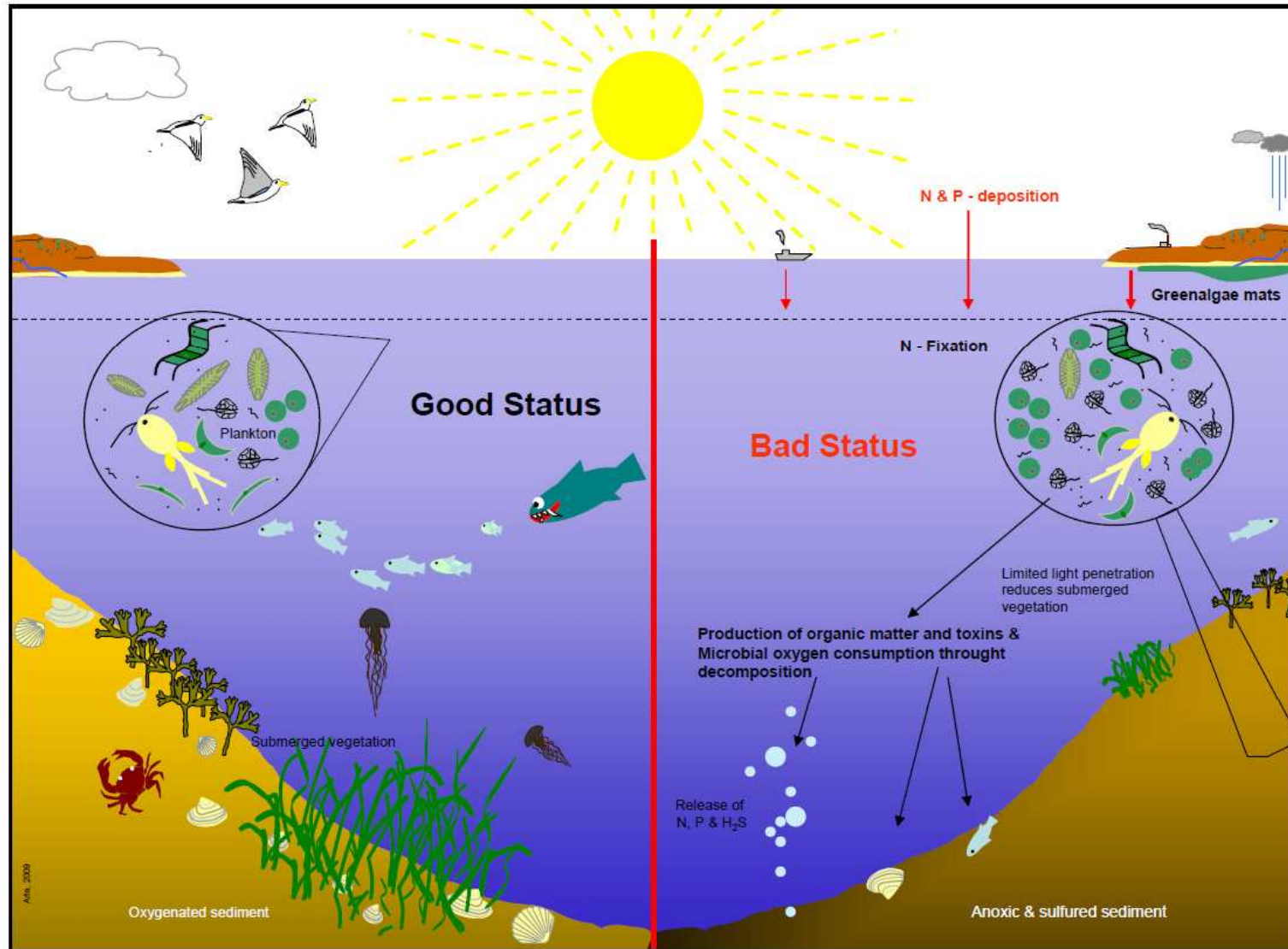
Territorial Overlap of relevant EC-Directives & Regional Conventions



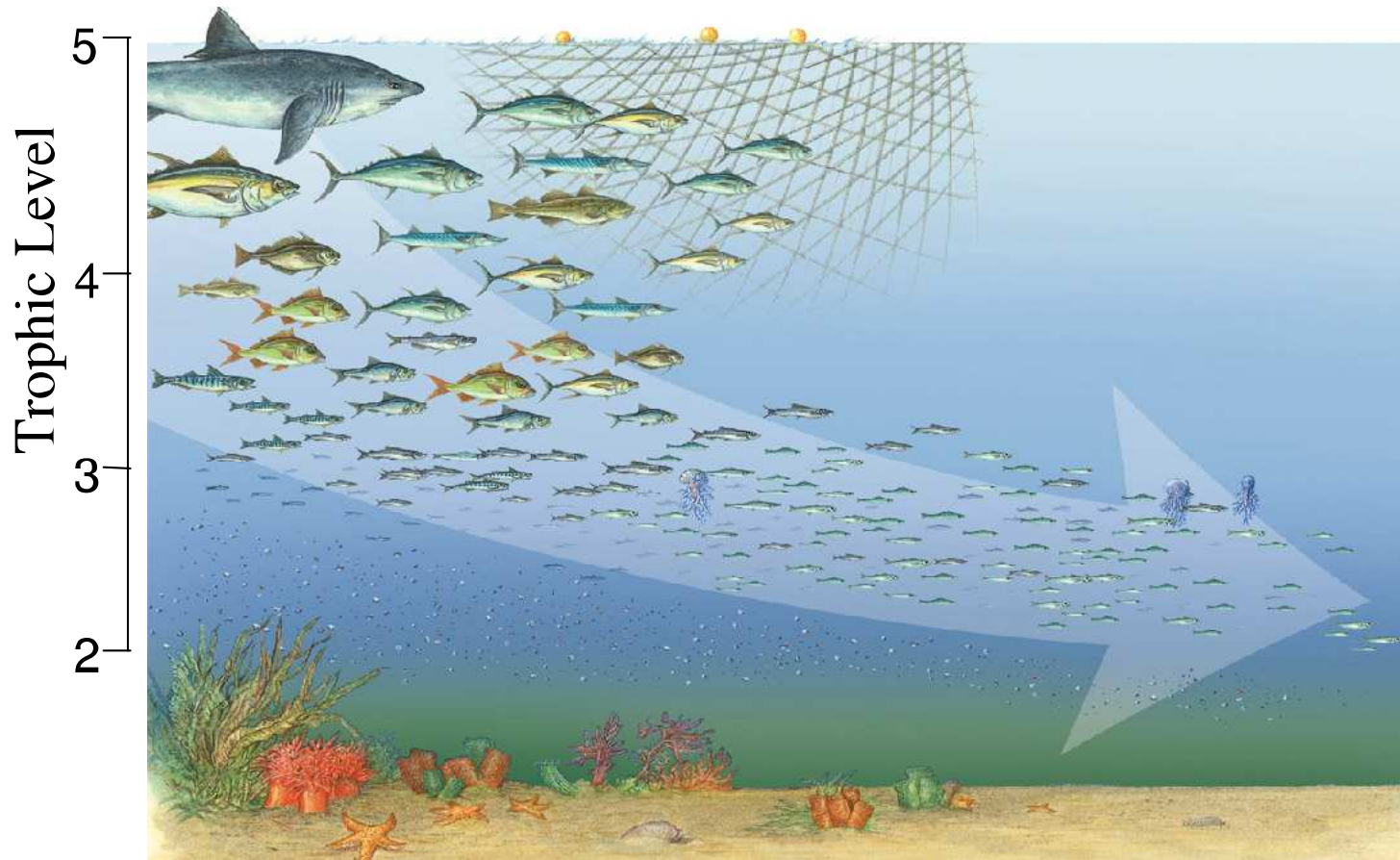


„Ok, which assessment result you wish to have???“

Assessment of the Environmental Status



'Fishing down the foodweb' ...



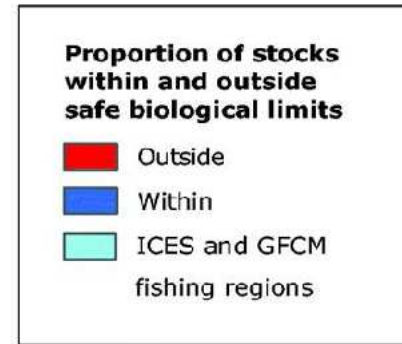
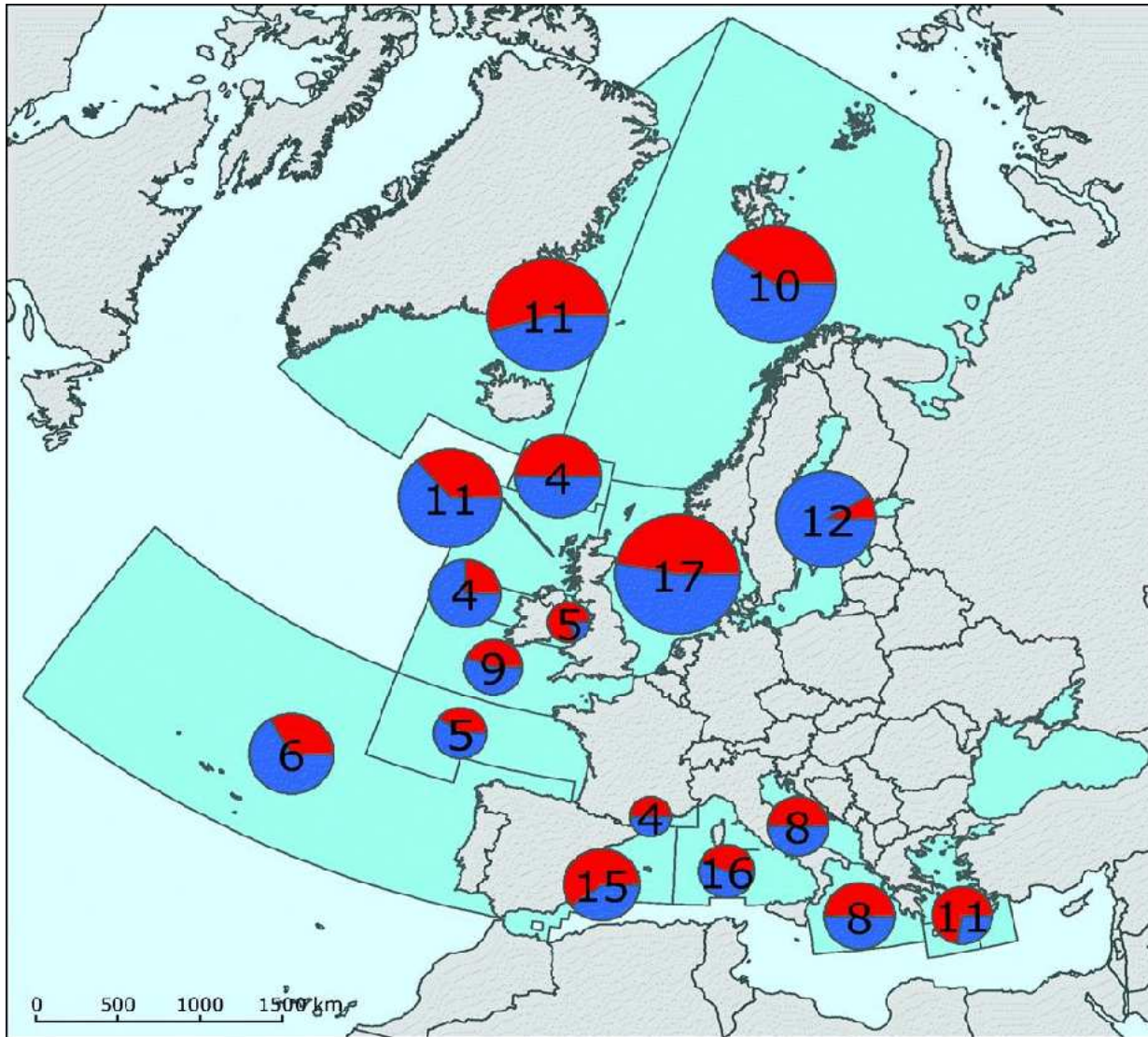
Watson & Pauly in: Atlas of the Ocean

 NATIONALGEOGRAPHIC





Fisheries

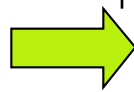


The Problem with Eutrophication

Symptoms and Consequences of Nutrient Enrichment



Increased N and P conc.



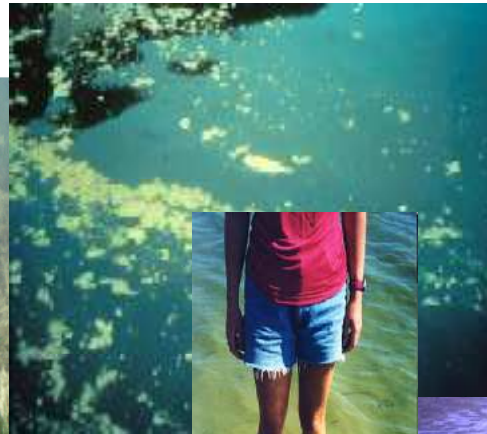
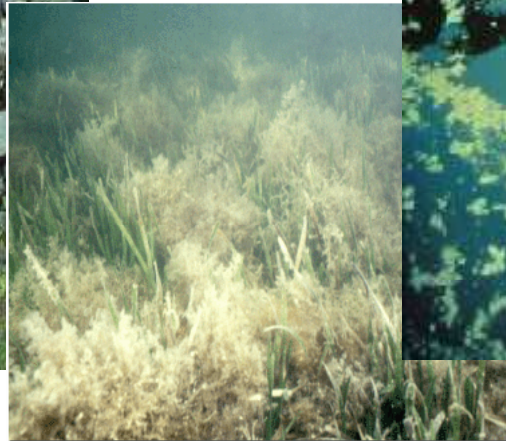
High algal production
Loss of water clarity
Epiphyte problems
Macroalgal problems



Loss of SAV
Low D.O.
Nuisance/Toxic Blooms

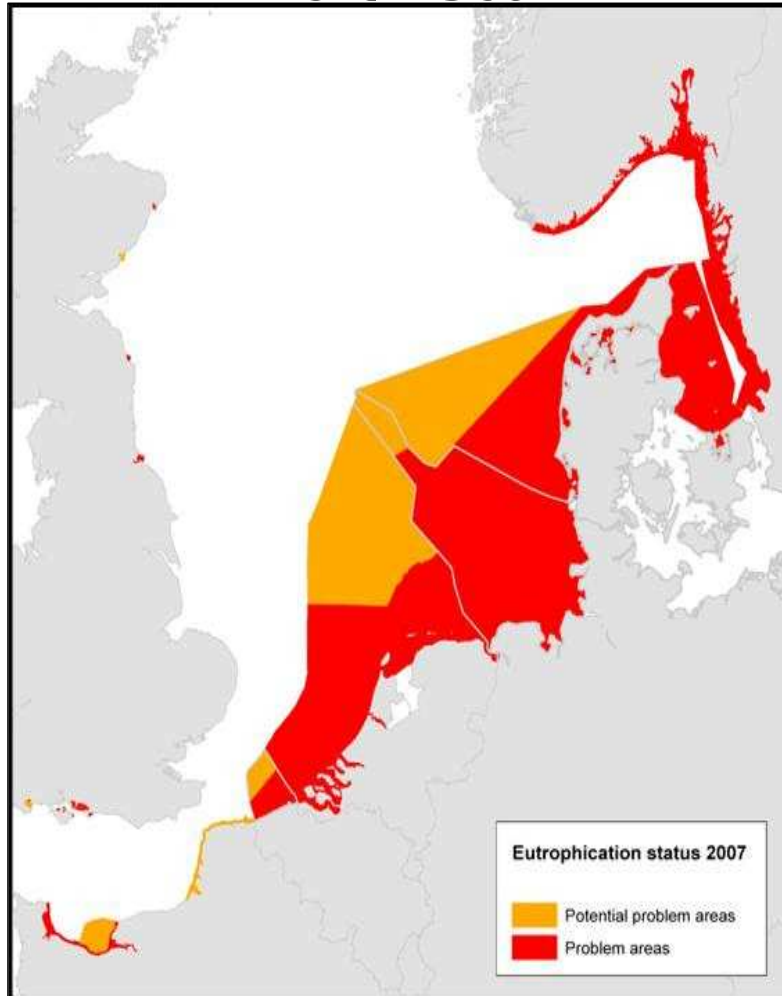


Fish kills
Loss of habitat
Human health risks
Loss of Tourism
Closed fishing beds



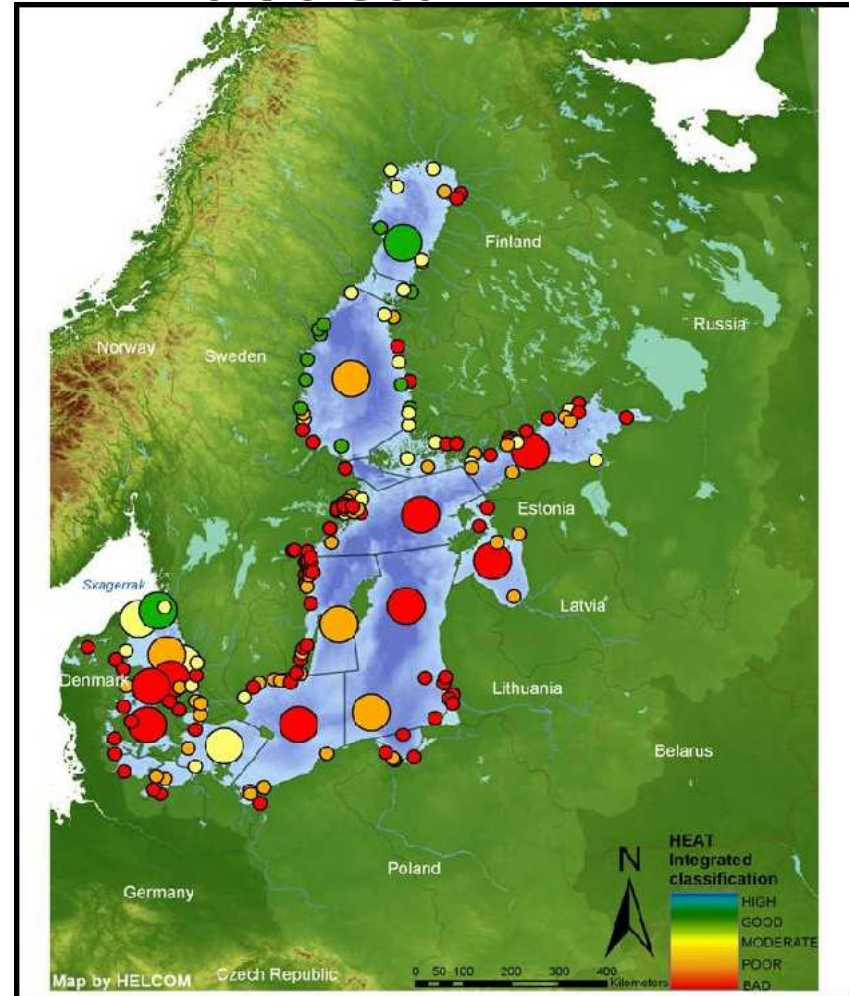
Eutrophication

North Sea



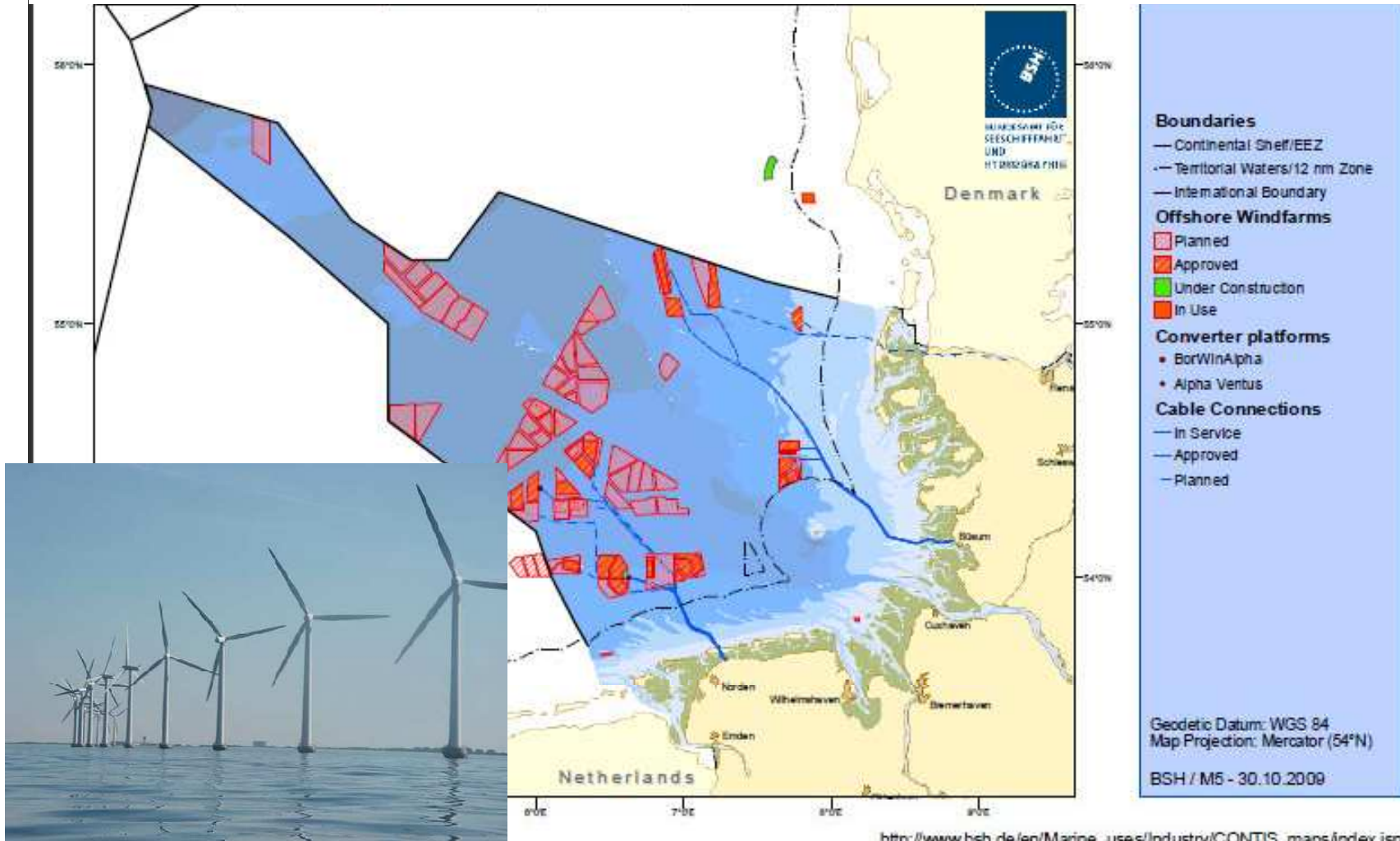
Source: OSPAR Integrated Report on the Eutrophication Status of the OSPAR Maritime Area (2008).

Baltic Sea



Source: Eutrophication in the Baltic Sea. Baltic Sea Environment Proceedings No.115B (2009).

North Sea Offshore Windfarms in the German EEZ



Windfarms in the German EEZ

	Appr. Wind Parks	1st Phase No. of Turbines	Total Cap. (MW)	Wind Parks in Approva l	Total Capacity [MW]
North Sea	22	1,550	7,536	46	18,000
Baltic Sea	3	240	1,040	6	2,000
Σ	25	1,790	8,576	52	20,000



- **Technical Details**

- Multibrid M 5000
- Rotordiameter: 116 m
- Hub Height: 90 m
- Effective power: 5 MW
- Rotation Speed: 5,9 - 14,8 U/min
- Max. Speed Rotor Blade Tip:
 - ca. 90 m/s (ca. 320 km/h)
- Lifetime: 20 years
- Housing (with Rotor & Hub): 309 t
- Tripod, Tower, Housing: 1000 t

Underwater Noise



Identification of Indicator Species



Common Seal
(*Phoca vitulina*)

Atlantic Herring
(*Clupea harengus*)



Grey Seal
(*Halichoerus grypus*)



Squid (*Sepia officinalis*)

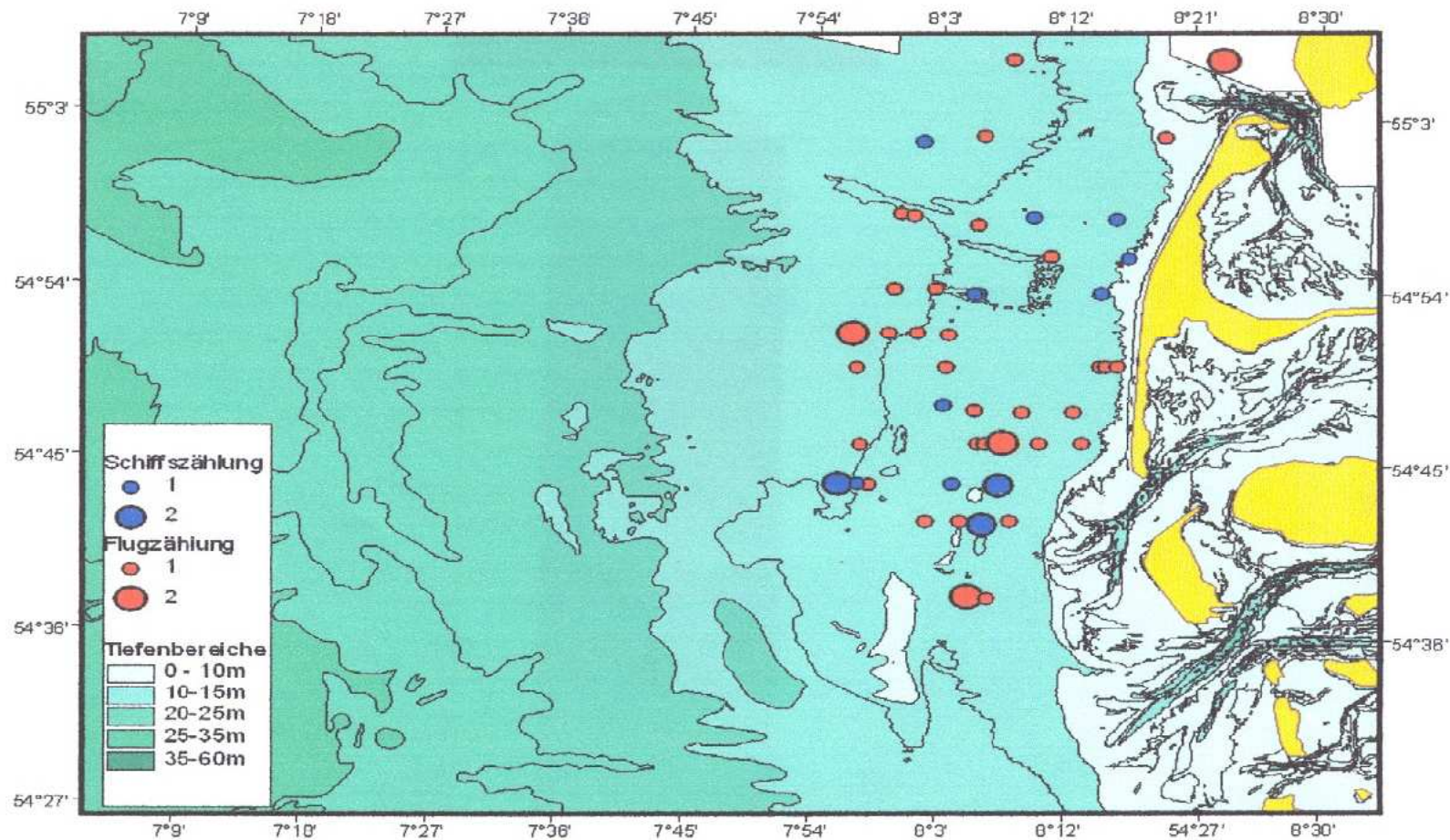


Harbour Porpoise
(*Phocoena phocoena*)



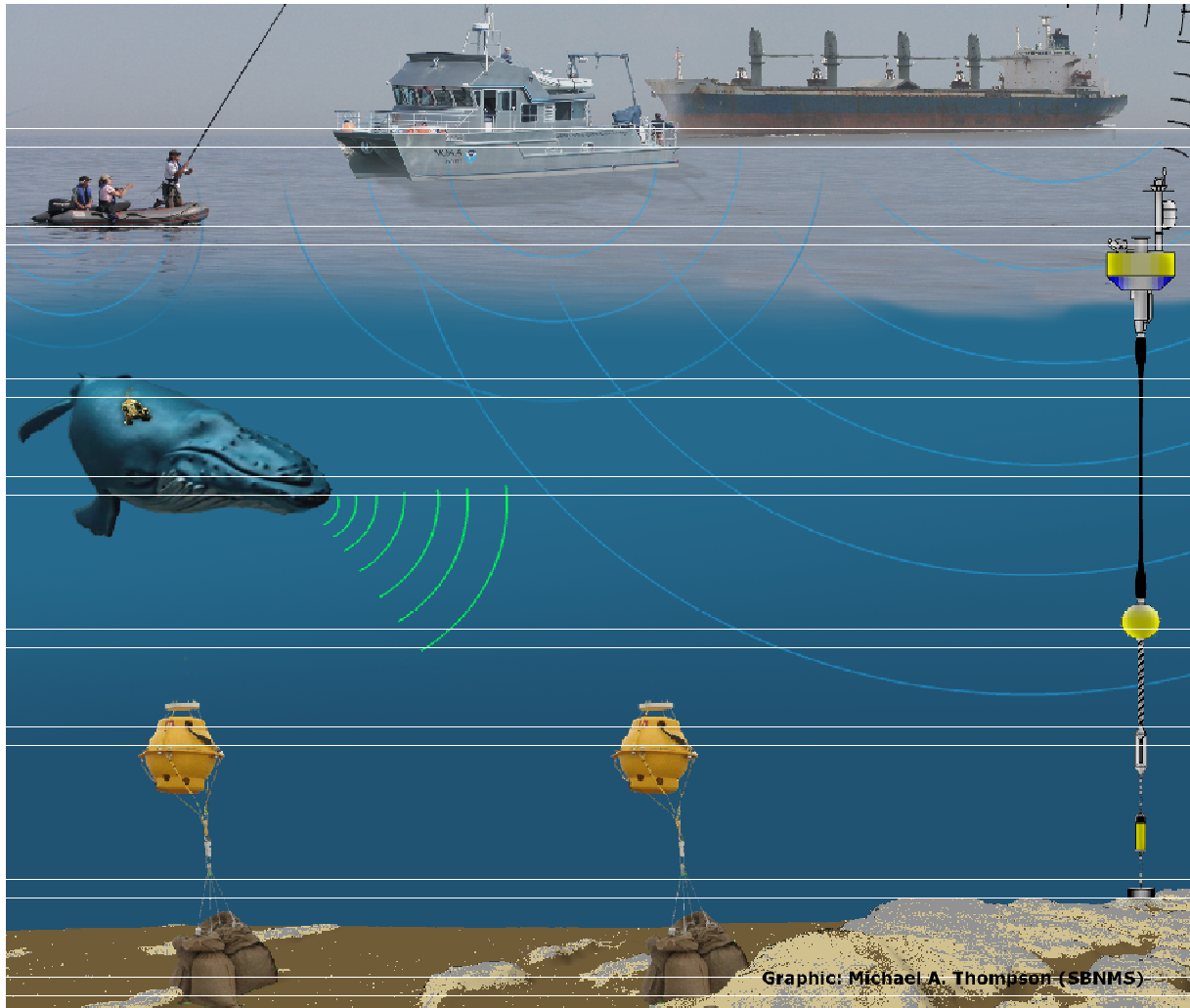
Cod (*Gadus morhua*)

Mapping of Important Reproduction and Breeding Areas

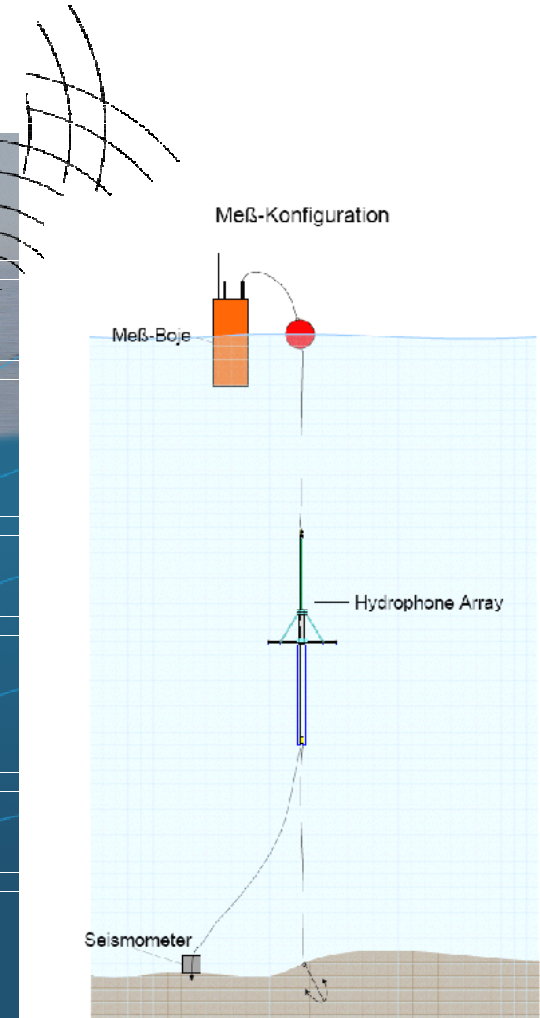


- Sighting of Harbour Porpoises in a Special Protected Area off the Island of Sylt; July 2003
- (Quelle: Ludwig, Werner, Risch, Siebert: MINOS Final Report)

Noise Mapping

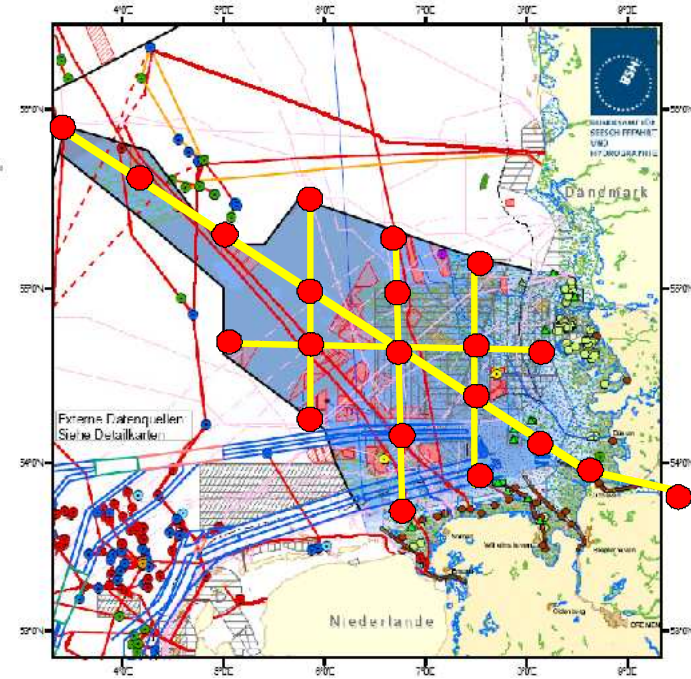
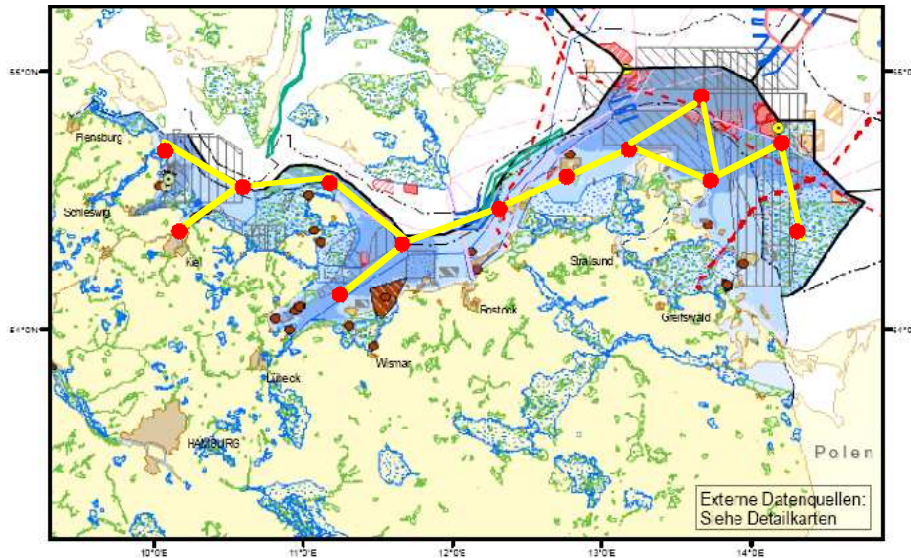


Graphic: Michael A. Thompson (SBNMS)



Survey of noise profiles

Possible Positions of Hydrophones for Long-term Measurements in German Waters



Marine Litter



Different Pathways



**Riverine
Input**



**Coastal
Dump
Sites**



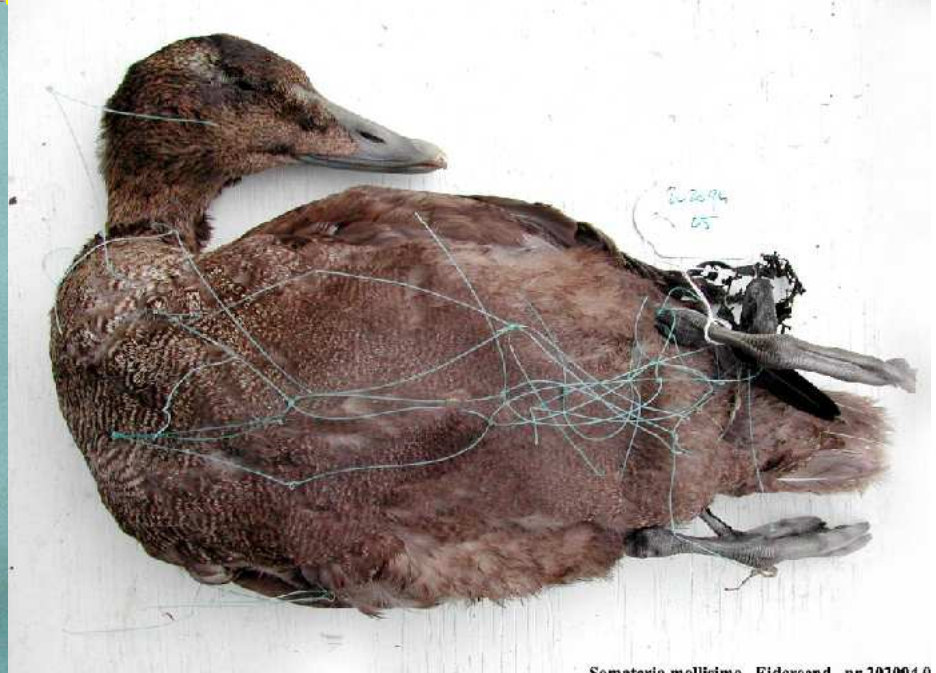
Shore-based industries

Shipping & Fisheries





Some Effects are visible



Some are Invisible



Northern Fulmar (*Fulmaris glaciales*)

Way Forward

- **Establishment of Monitoring**
- **Development of Assessment Methods**
- **Implementation of Measures**



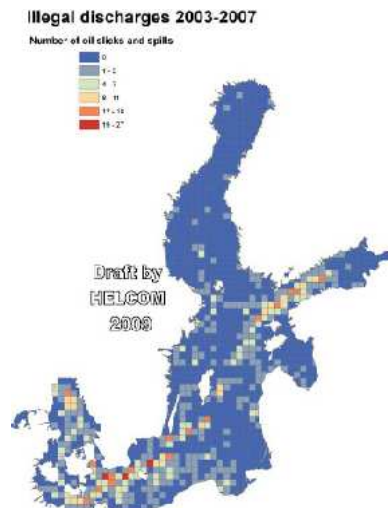
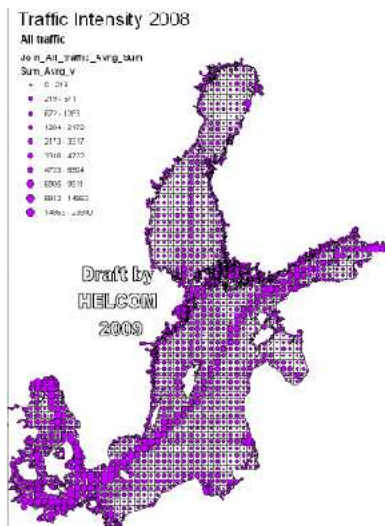
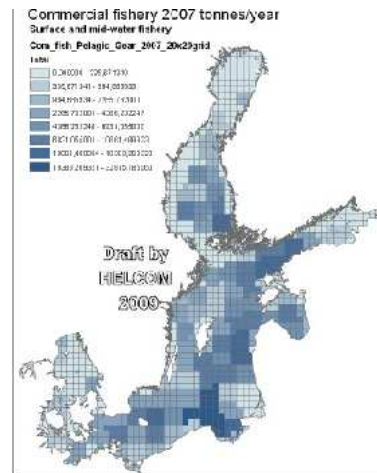
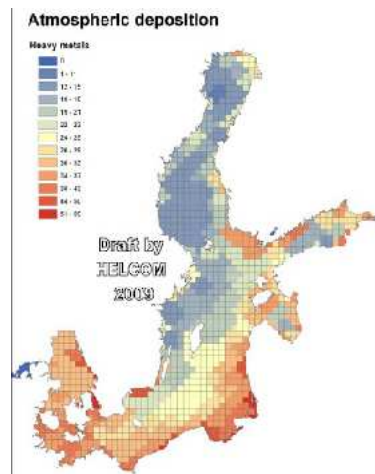
Baltic Sea Pressure Index

- **Within HELCOM, a BSPI under development aiming at**
 - Offshore Windmills
 - Trawling (pelagic, bottom), coastal/stationary fisheries
 - Shipping intensity
 - Disturbance of sea bed (dredging, disposal of dredged spoils)
 - Harbours (for marine litter)
 - Waterborne inputs (N, P, contaminants)
 - Heavy Metal atmospheric deposition
 - Nitrogen atmospheric deposition
 - Power plants (thermal regime)
- **Maps based on „Benthic Marine Landscape Maps“ under addition of eelgrass, mussel reefs & wetlands**
- **Calculation of cumulative and average impact**

Baltic Sea Pressure Index

A draft version for
the 3rd meeting of
HELCOM HOLAS
Task Force

Samuli Korpinen, Laura Meski,
Jesper Andersen & Maria Laamanen
29 October 2009

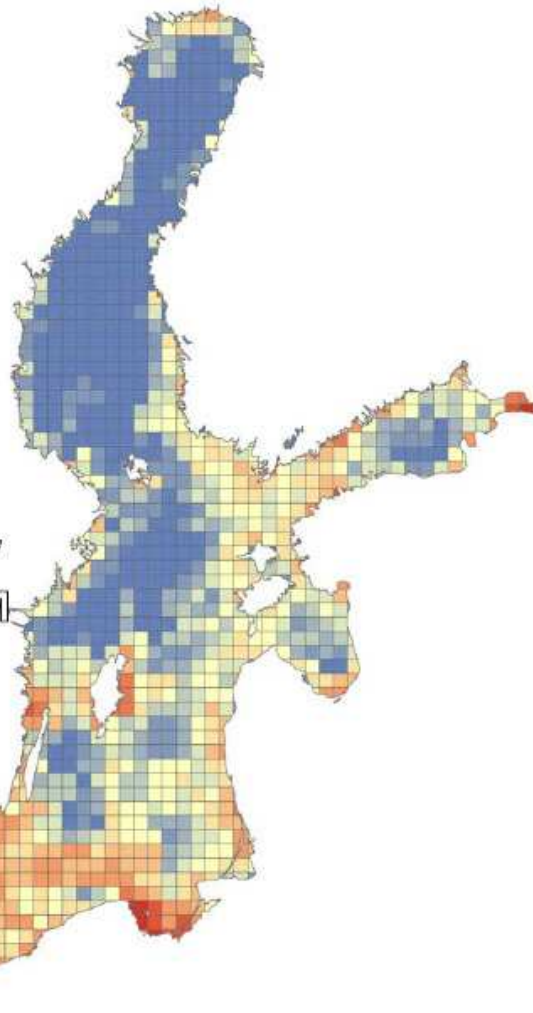
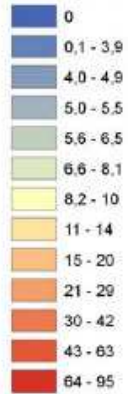


Baltic Sea Pressure Index

Baltic Sea Pressure Index

Cumulative impact

Sum/square



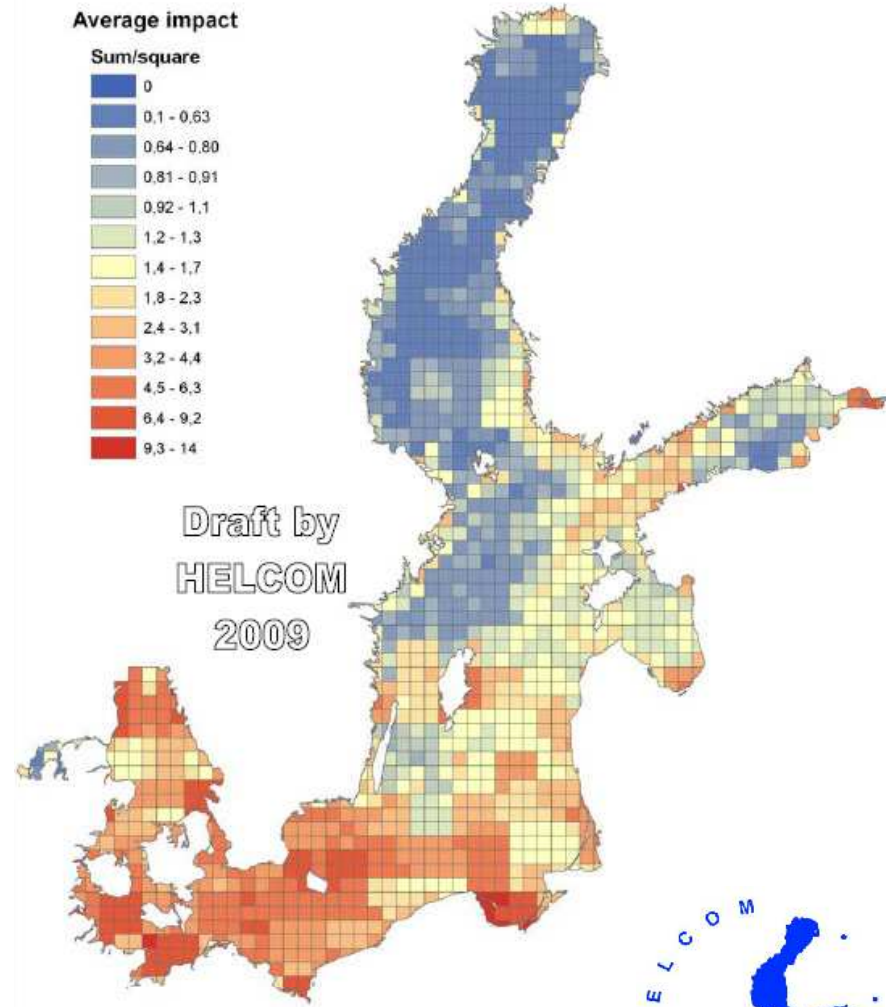
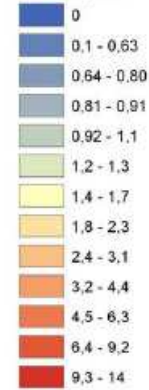
Draft by
HELCOM
2009

Cumulative impact

Baltic Sea Pressure Index

Average impact

Sum/square

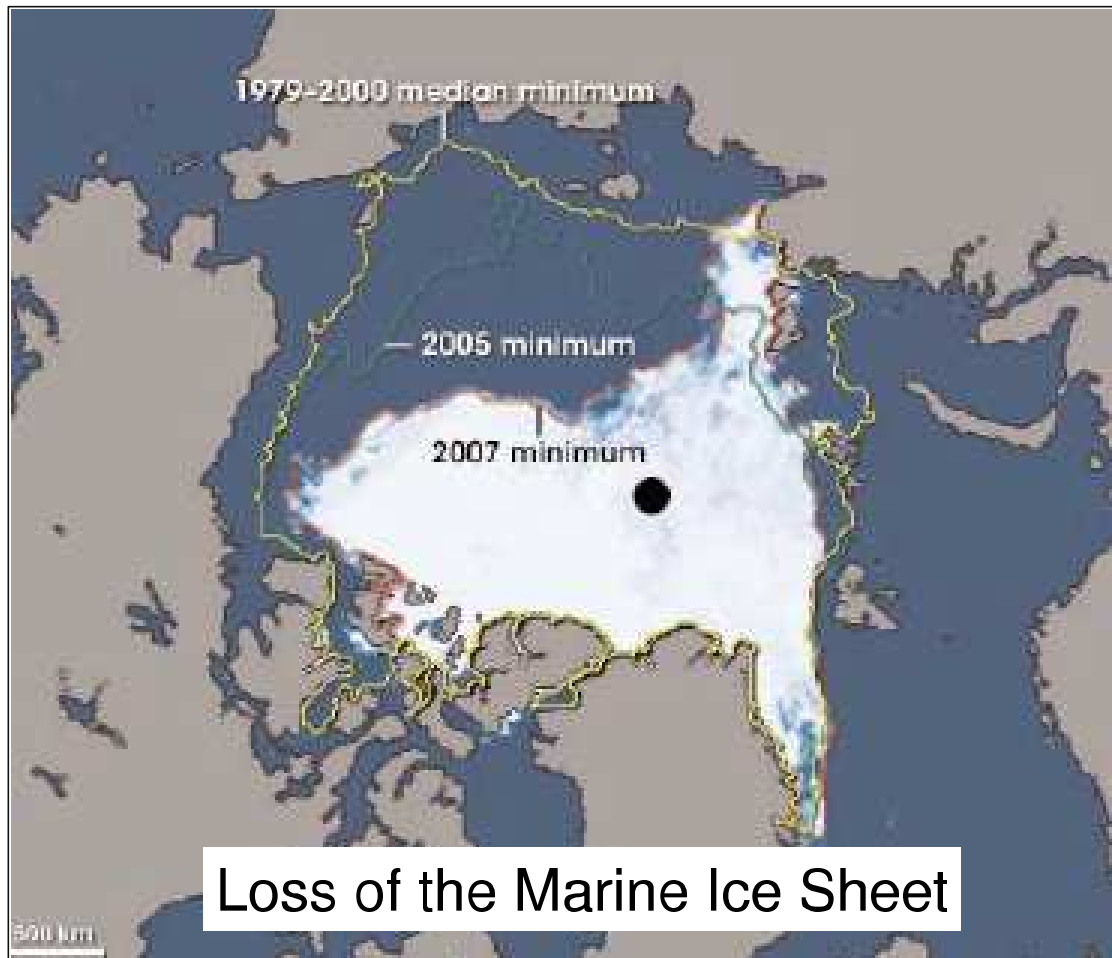


Draft by
HELCOM
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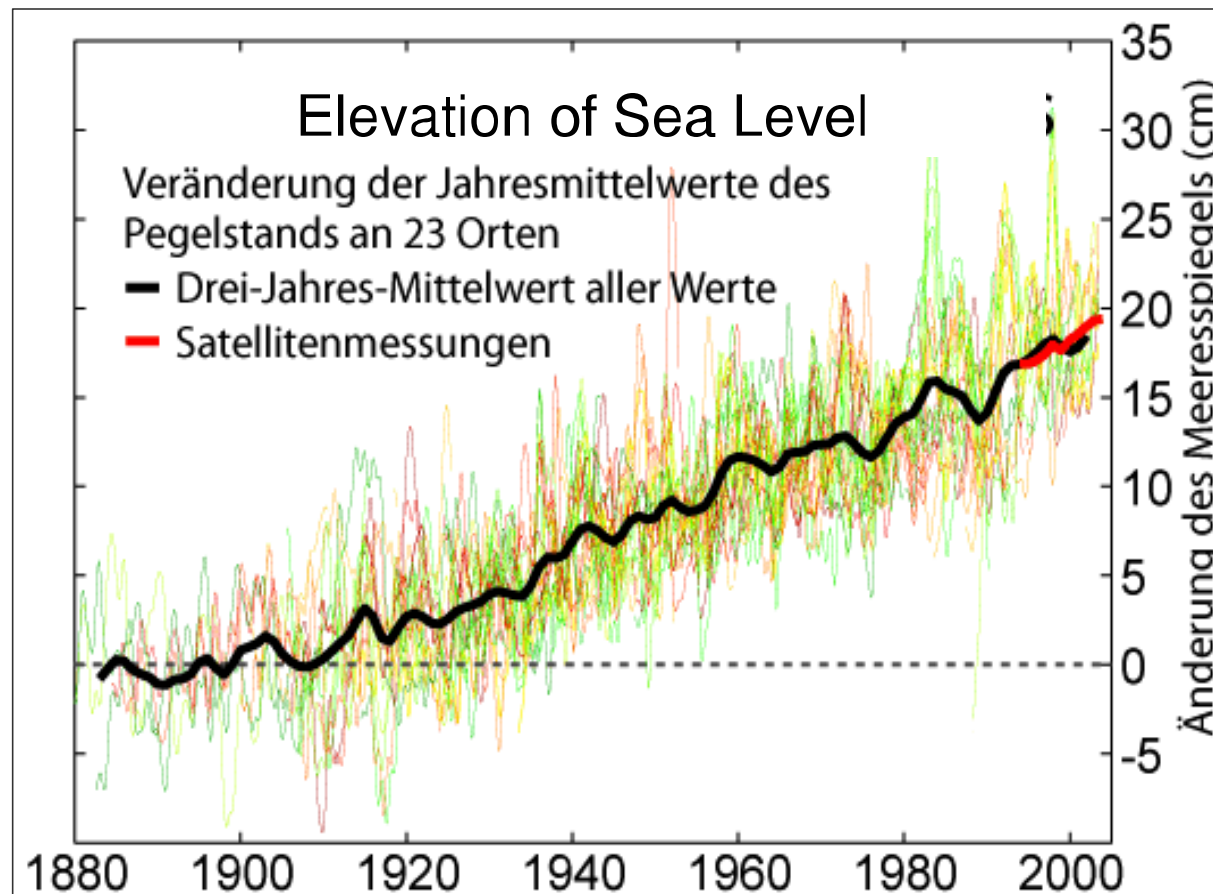
Average impact



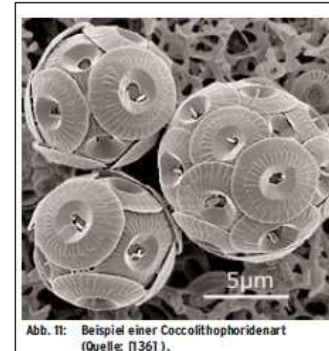
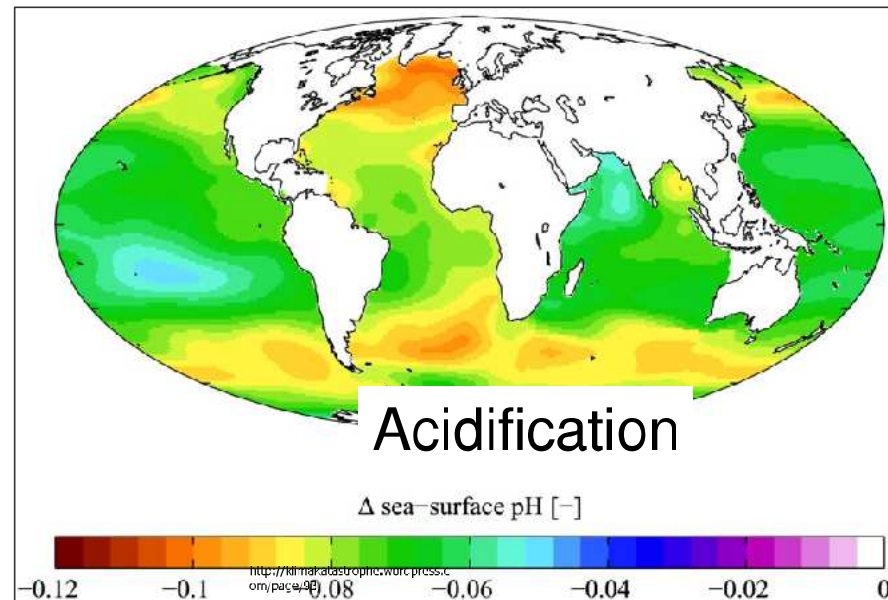
Consequences of Climate Change on Marine Ecosystems



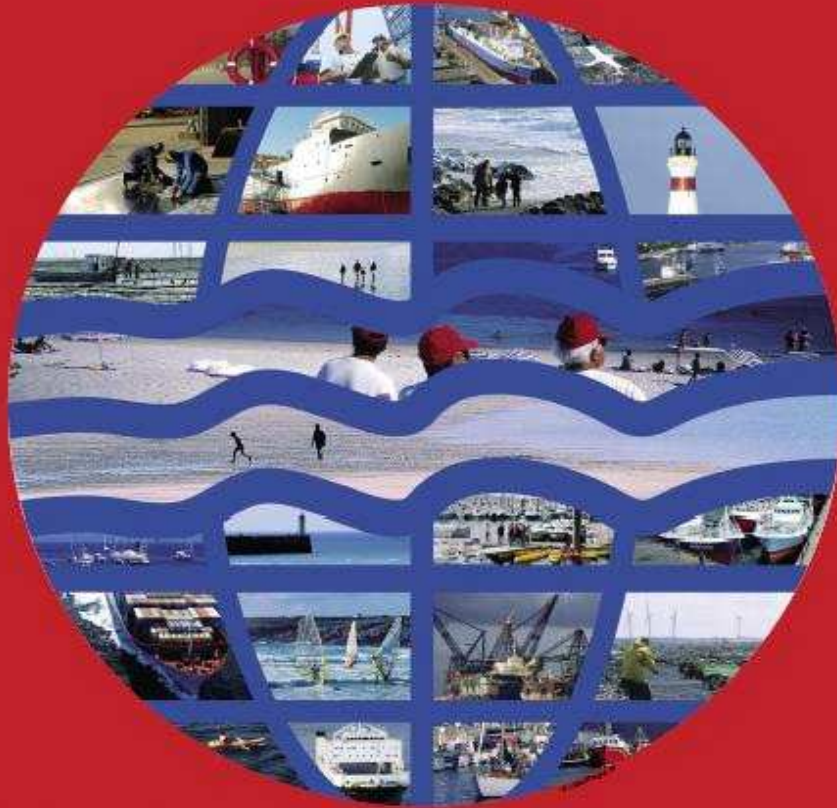
Consequences of Climate Change on Marine Ecosystems



Consequences of Climate Change on Marine Ecosystems



What maritime policy for the EU?



Have your say:

<http://ec.europa.eu/maritimeaffairs>



The EC Marine Strategy Framework Directive acts as the environmental pillar of the EU maritime policy

MSFD Main Elements



1. Overall goal is GES
2. Status Assessment
3. Pressure Analysis
4. Set up of Programmes of Measures
5. Establishment of Monitoring Programmes
6. Analysis of costs (for measures & non-action - degradation)

Conclusions

- Beside EC Directives on nature protection MSFD & WFD are basic tools for biodiversity protection in European Seas & Oceans
- The MSFD goes beyond biodiversity emphasising ecosystem integrity, structure and function
- The European Common Implementation Process assists to develop a common understanding e.g. of Good Environmental Status
- Climate change is influencing the seas. They are also used for mitigation (e.g. production of renewable energy & sub seabed CO₂ storage)
- Long timelines as for the WFD & MSFD are essential if one aims at realistic and ambitious goals



Thank you very much for your attention & patience

