Ecosystem approach in HELCOM

Monika Stankiewicz

HELCOM Executive Secretary

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  - **from definition to indicators and assessments**
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The ecosystem approach…

…the comprehensive integrated **management of human activities** based on the best available scientific knowledge about the ecosystem and its dynamics, in order to identify and take action on influences which are critical to the **health of marine ecosystems**, thereby achieving sustainable use of **ecosystem goods and services** and maintenance of ecosystem integrity

Ecosystem health

The ecosystem health reflects capacity of an ecosystem to resist an external pressure

- healthy ecosystem has an ability to maintain its structure and function over time while facing an external pressure (Costanza and Mageau 1999).

Good Environmental Status in HELCOM

VISION

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 human economic and social activities

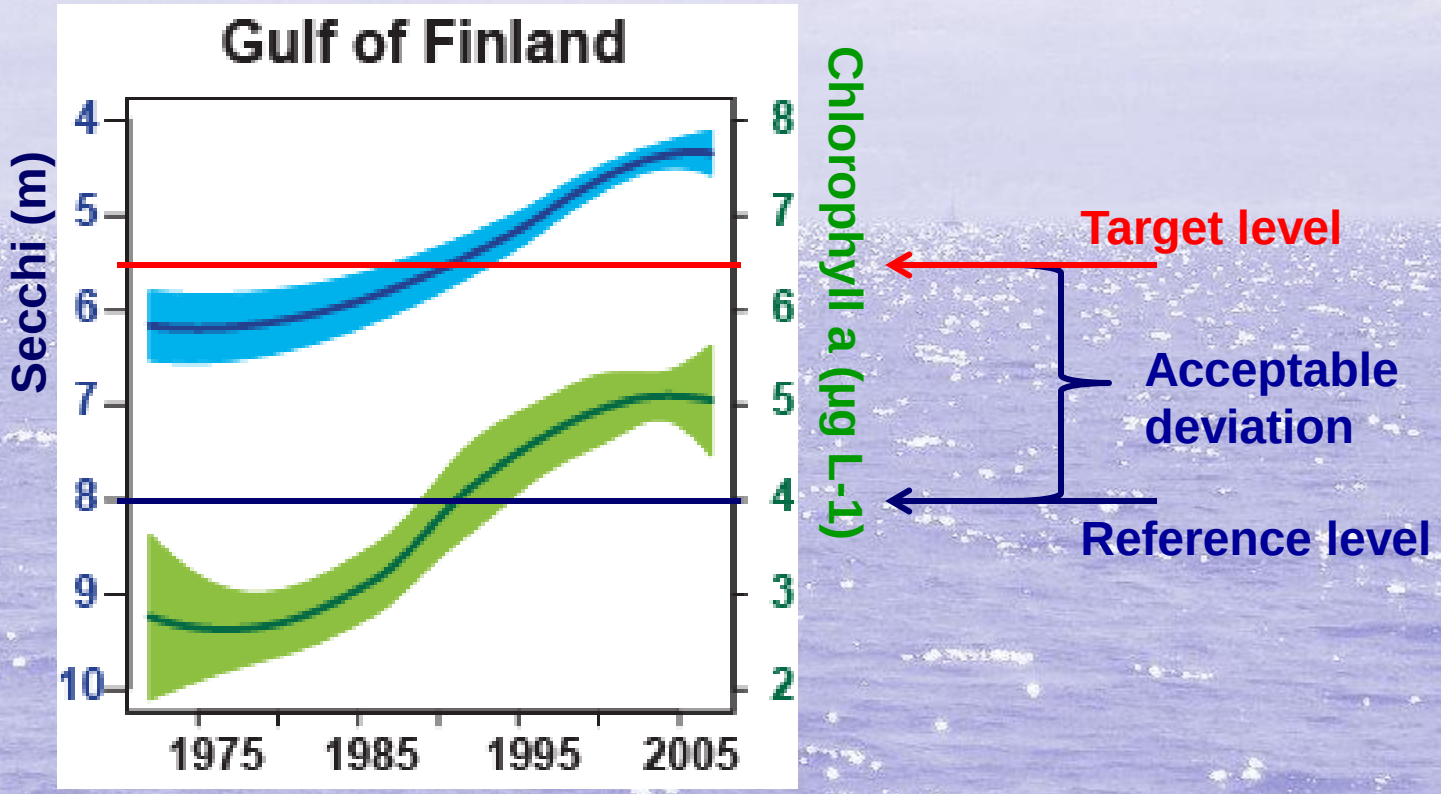
GOALS

- Baltic Sea unaffected by eutrophication
- Baltic Sea life undisturbed by hazardous substances
- Favourable conservation status of Baltic Sea biodiversity
- Maritime activities in the Baltic Sea carried out in an environmentally friendly way

OBJECTIVES

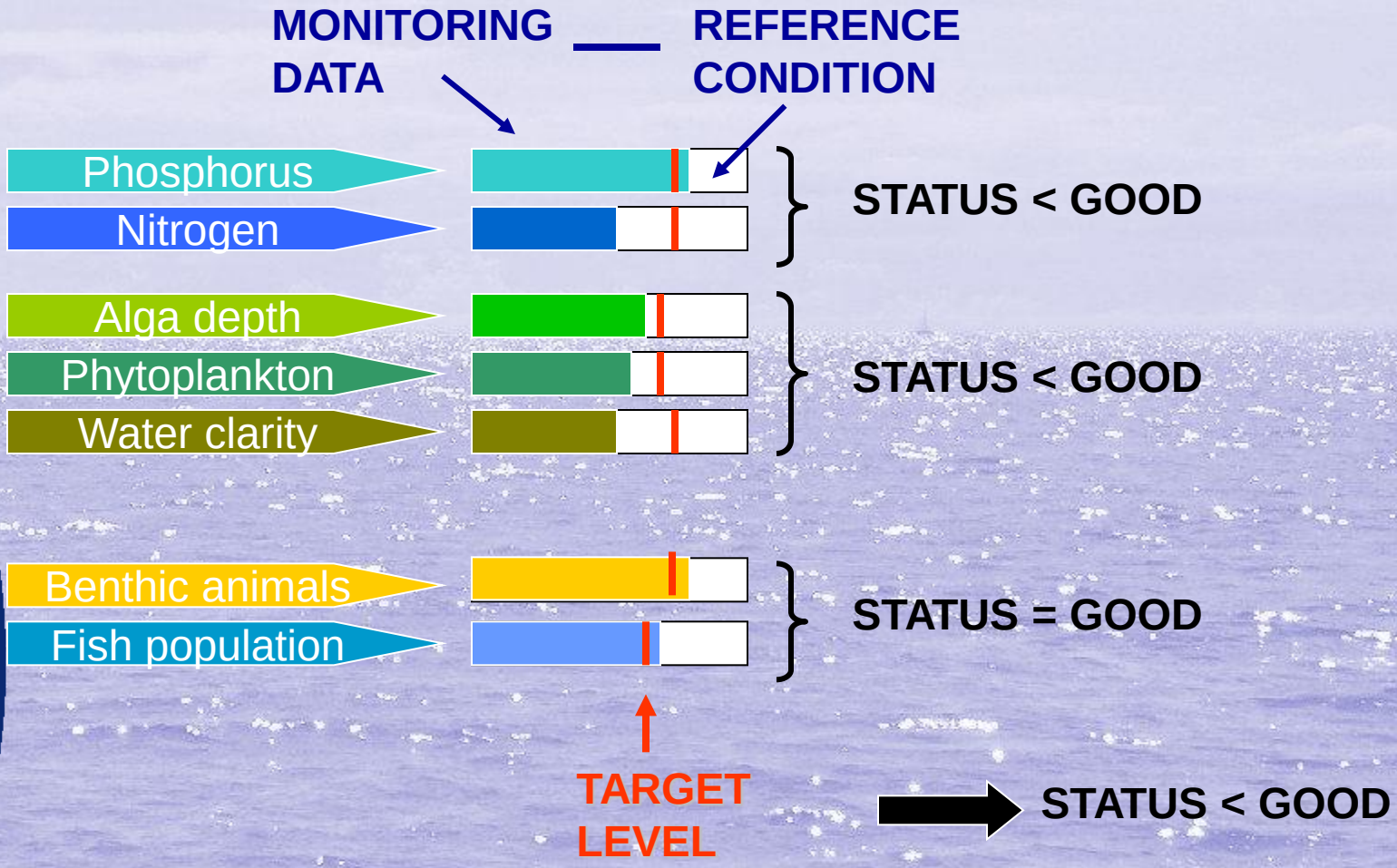
- Concentrations of nutrients close to natural levels
- Concentrations of hazardous substances close to natural levels
- Natural marine and coastal landscapes
- Enforcement of international regulations -No illegal pollution
- Clear water
- All fish safe to eat
- Safe maritime traffic without accidental pollution
- Efficient emergency and response capability
- Natural level of algal blooms
- Healthy wildlife
- Thriving and balanced communities of plants and animals
- Minimum sewage pollution from ships
- Natural distribution and occurrence of plants and animals
- No introductions of alien species from ships
- Minimum air pollution from ships
- Zero discharges from offshore platforms
- Natural oxygen levels
- Radioactivity at pre-Chernobyl level
- Viable populations of species
- Minimum threats from offshore installations

Ecological objective for eutrophication - Clear water

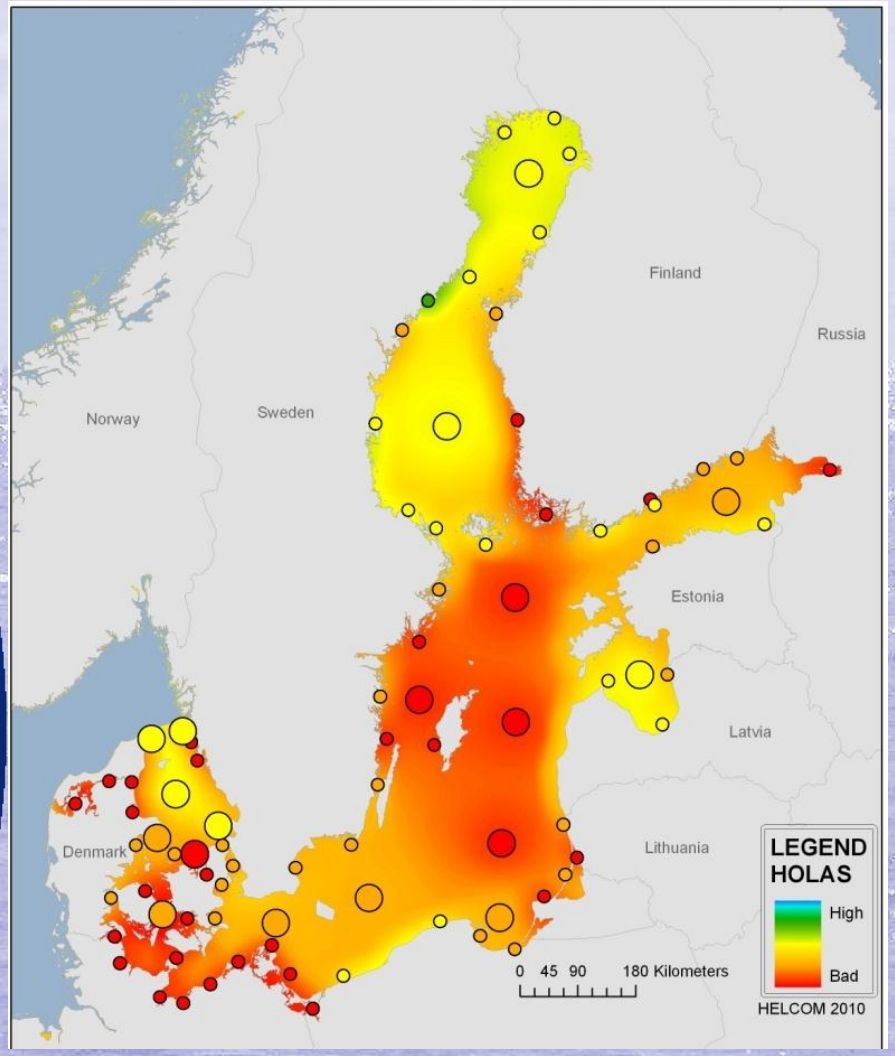


Integrated assessments:

new tools for ecosystem assessments



Baltic ecosystem health status



- Holistic assessment of the ecosystem health, using biological and chemical status indicators
- All sub-basins are in impaired status (moderate, poor or bad status)
- the assessment shows that status is good only in one coastal site of the Gulf of Bothnia

Ecosystem goods and services

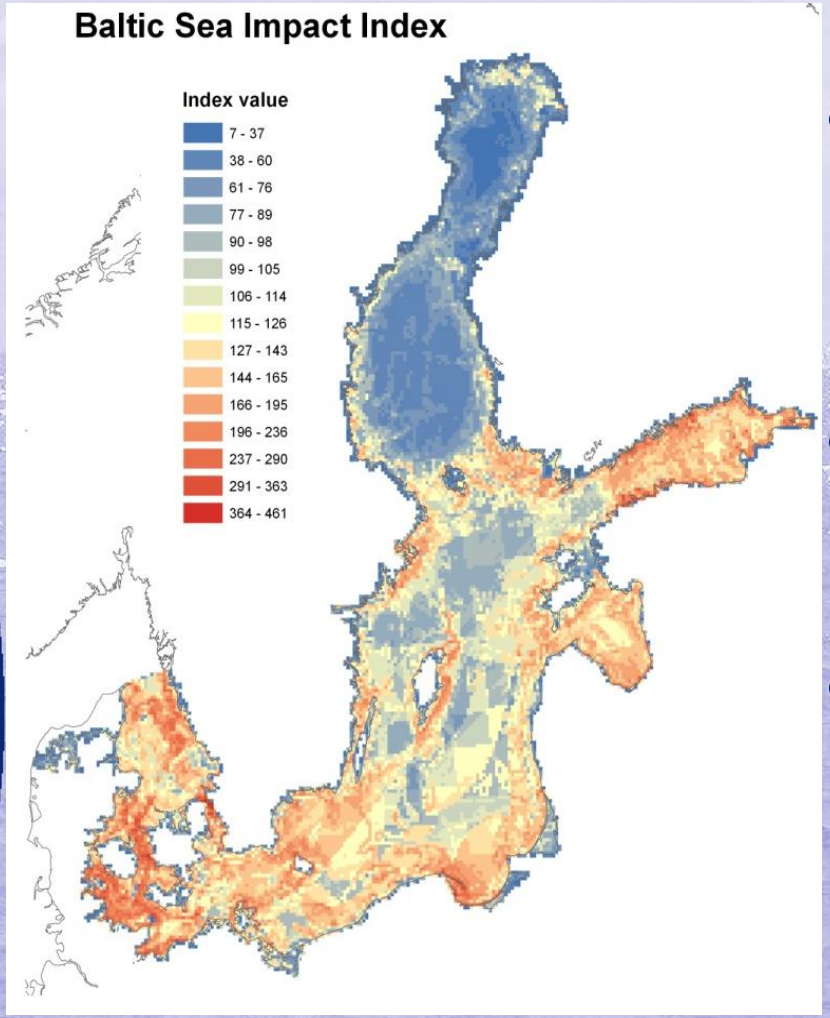
- Non-market value of goods and services
- Integration of ecosystem valuation into planning and financing
- Knoweldge scarse and greatly needed (TEEB, Baltic Stern)

----> Green economy

Managing human activities

The Baltic Sea Impact Index

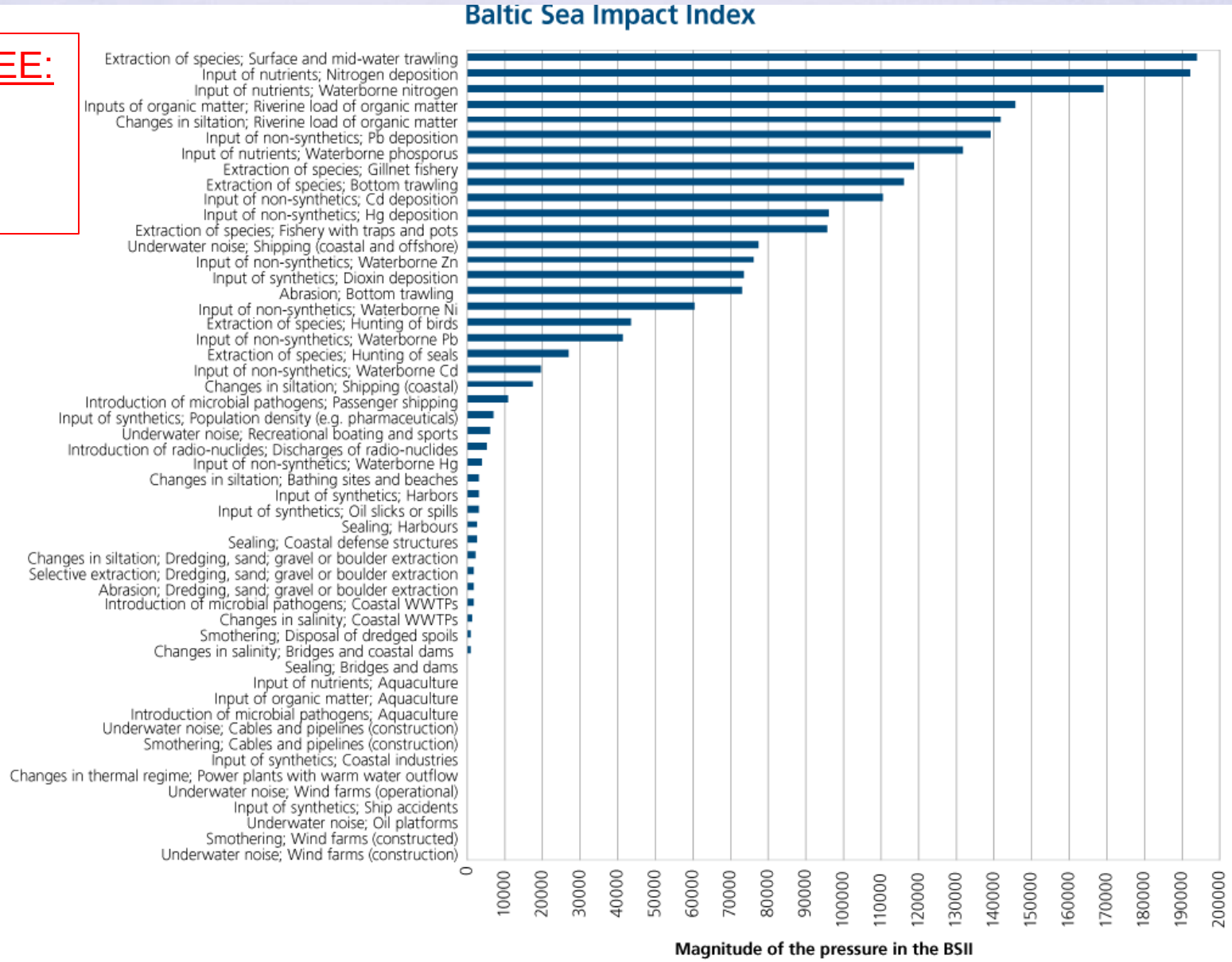
Spatial distribution of potential impacts of human pressures



- Anthropogenic pressures and their potential impacts present in all areas
- Gulf of Bothnia has lower cumulative pressure and potential impacts
- BSII gives a rough estimate of the spatial distribution of the severity of potential impacts

Impacts of human pressures on the Baltic ecosystem

TOP THREE:
Nutrients
Fishing
Pollution

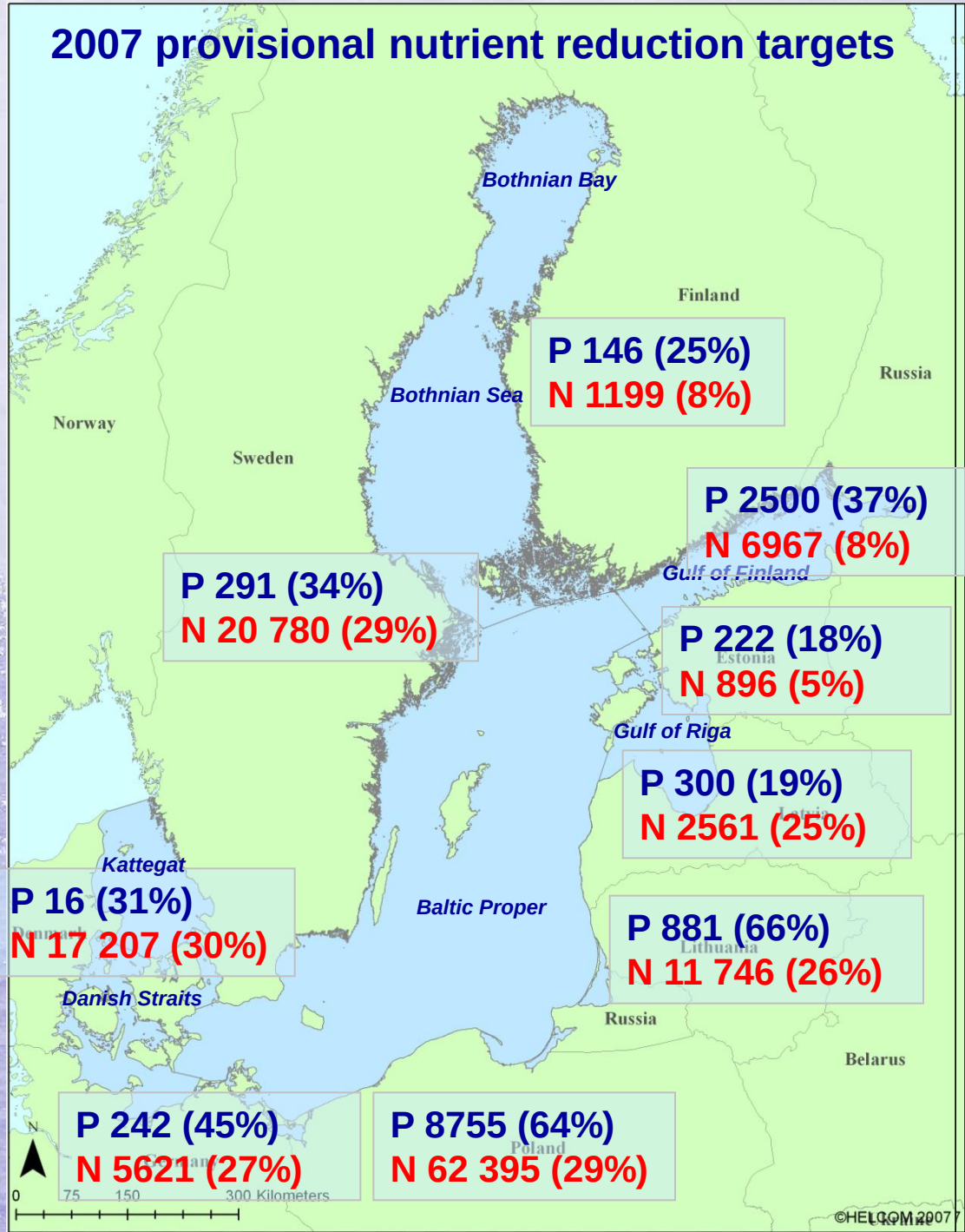


Maximum allowable nutrient inputs:

- 21,060 t of P
- 601,720 t of N

against actual loads

-> Country-wise nutrient reduction targets



Ongoing HELCOM work – towards 2013 Ministerial Meeting and beyond

- Revision of nutrient reduction scheme
- Development and adoption of the core indicators determining good environmental status
- Enhanced assessment tools to be used for the next generation of thematic and integrated assessments
- A wealth of information to become available (e.g. new indicator fact sheets, threat assessments of species and biotopes)

Impact of climate change and adaptation

- We are already living in a changing climate
- HELCOM-BALTEX cooperation (2008 Assessment of climate change in the Baltic, next edition upcoming), 2012 joint conference in Tallinn
- Impacts of climate change may undermine efforts to reach good environmental status – even more stringent /supplementary measures needed in the future (BSAP/2010 Moscow Ministerial Meeting)

Some concluding remarks

- Ecosystem health indicators and assessments vs individual environmental datasets
- How indicators and assessments could be made use of in MSP/by planners: complexity, visual presentation needs, temporal/spatial scales
- More information will become available; focus on open access to data
- Much of the value of the Baltic Sea lies outside the market – hindrance to balancing many potential uses of the sea (ecosystem based MSP) and to green economy

Thank you!

For more information please contact:

Helsinki Commission (HELCOM)
Katajanokanlaituri 6 B
FI-00160 Helsinki
Finland
http://www.helcom.fi