Status of coastal fish communities in the Baltic Sea during 2011-2016 – the third thematic assessment

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OBJECTIVES and CONTENT

CHAPTER 1 – Background

CHAPTER 2 – Factors influencing coastal fish communities

CHAPTER 3 – Status assessment

CHAPTER 4 – Measures for coastal fish

CHAPTER 5 – Conclusions and recommendations
Coastal fish monitoring in the Baltic Sea
Factors influencing coastal fish communities (Chapter 2)

- Temperature
- Salinity
- Eutrophication
- Fishing
- Habitat availability and quality
- Offshore processes
- Other factors (ambient physical properties of the area, food-web processes including predation from apex predators, large-scale climate changes, hazardous substances, invasive species, maritime transport, aquaculture)

Conclusions:
- A multitude of natural and human-induced factors impact coastal fish
- A few strong factors often explain a large proportion of variation in fish abundance and distribution
- Effects of other factors can only be observed locally or under certain conditions
- The extent of different factors varies across areas and communities
- Local assessment must be undertaken
Status assessment – methods (Chapter 3)

The status of two CORE indicators are assessed
- *Abundance of key fish species* (perch or flounder)
- *Abundance of key functional groups* (piscivores and cyprinids/mesopredators)

Two assessment protocols:
- *Deviation from a defined baseline*
  -> time series > 15 years
- *Trend-based approach (slope of trend-line)*
  -> time series < 15 years
Status assessment – results (Chapter 3)

Key species

Key functional groups

Per area

Per assessment unit
# Measures for coastal fish

## (Chapter 4)

<table>
<thead>
<tr>
<th>Aim of measure</th>
<th>Measure name</th>
<th>Link to major pressures</th>
<th>Scientific support for effectiveness for fish in the Baltic Sea</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reducing mortality</strong></td>
<td>Permanent fisheries closures (no take areas)</td>
<td>Fishing</td>
<td>Yes (see below)</td>
</tr>
<tr>
<td>✓</td>
<td>Partial fisheries closures</td>
<td>Fishing</td>
<td>Yes (see below)</td>
</tr>
<tr>
<td>✓</td>
<td>Regulation of fishing gears and catch</td>
<td>Fishing</td>
<td>Yes (see below)</td>
</tr>
<tr>
<td><strong>Supporting productivity</strong></td>
<td>Stocking of young fish</td>
<td>Fishing</td>
<td>No</td>
</tr>
<tr>
<td>✓</td>
<td>Nutrient reduction</td>
<td>Eutrophication</td>
<td>No</td>
</tr>
<tr>
<td>✓</td>
<td>Habitat protection</td>
<td>Physical exploitation</td>
<td>Yes (see below)</td>
</tr>
<tr>
<td>✓</td>
<td>Habitat restoration</td>
<td>Physical exploitation, Eutrophication</td>
<td>Yes (see below)</td>
</tr>
<tr>
<td>✓</td>
<td>Reduction of hazardous substances</td>
<td>Input of hazardous substances</td>
<td>No</td>
</tr>
<tr>
<td>✓</td>
<td>Biomanipulation</td>
<td>Fishing, Eutrophication</td>
<td>No</td>
</tr>
</tbody>
</table>
Summary and conclusions (Chapter 5)

• A multitude of natural and anthropogenic pressures simultaneously and potentially also synergistically impact the status of coastal fish communities – a local perspective needed

• The status of coastal fish communities are rather poor:
  - only half of the assessment units assessed attain good status
  - status appears to be better in more northern areas
  - poor status in some areas due to high abundances of cyprinids
  - half of all assessment units not assessed due to lack of data

• Few measures are evaluated scientifically. Fisheries closures and habitat protection and restoration proven to be effective, but no measure is generic – a local perspective needed

• Coastal fish assessments and monitoring in the Baltic Sea has taken noteworthy steps forward during recent years
Recommendations (Chapter 5)

• Maintain the current level of monitoring as a minimum and initiate, if possible, new monitoring programs and relevant data collection for coastal fish

• Continue to develop the present set of indicators

• Harmonization and development of assessment methods

• Development of generic size-based indicators for coastal fish

• Expand the use of coastal fish data

• Evaluation of measures to restore and support coastal fish communities
THANK YOU FOR LISTENING

QUESTIONS?

Photo: Martin Karlsson

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