Essential fish habitats in MSP

Fishing for space
Vilnius, 14 November 2013

Ulf Bergström
Shallow coastal habitats important for many fishes

- Shallow coastal habitats used by 80% of ICES advice species
- Early life stages often dependent on specific habitat types for their survival = essential fish habitats
- Pressure on coastal habitats extremely high → we need MSP to minimize habitat loss
For spatial planning to gain fishes and fisheries we need...

- Maps of essential fish habitats
- Maps of fisheries
- Maps of other human activities

Identification of conflict areas → solve by MSP
Case study I
Herring spawning areas in the Bothnian Sea
PLANBOTHNIA

• “Preparatory action” financed by DG Mare. Test of transboundary spatial planning in the Bothnian Sea

• http://planbothnia.org/

• http://maps.helcom.fi/website/PlanBothnia/index.html
Mapping the trawl fishery

- Main herring fishing area in the Baltic. Truly transboundary
- Combined catch and gear data from logbooks with spatial VMS-data to get high-resolution maps of fisheries

**Midwater trawl (70 %)**

**Bottom trawl (30 %)**

*Is bottom trawling affecting fish reproduction habitats?*
Maps of herring spawning grounds

- From interviews with fishermen
- Difficult to handle "white spots" lacking data
- Three major areas
Bottom trawling at offshore banks

Bottom trawling does not affect the offshore banks
= no conflict
Case study II – Value of nearshore fish reproduction habitats
Coastal development threatens habitat

To protect them, we need to demonstrate the economic value of these habitats
Estimating the economic value of this essential fish habitat

We need to know:

1. How much habitat is there and where

2. How much fish is produced per unit area of the habitat

3. The value of ecosystem services provided by the fish
We are getting there

1. Distribution of habitats

2. Fish production per unit area

...but we still lack the economic valuations

Sundblad et al 2013. ICES Journal of Marine Science, in press
The effects of human pressures

We have quantitative estimates of how eutrophication and shoreline exploitation affect the reproduction habitats.

Eutrophication

Shoreline development

0.5-1 % of reproduction habitats exploited each year

Bergström et al 2013, J Appl Ecol

Sundblad & Bergström unpublished
Sketching a tool for planning

Scenario analysis for MSP

Human activities

Quantitative estimates of effects

Essential fish habitats

Quantitative estimates of services

Value of services

MAPS

MAPS

MAPS

Development

Conservation
Lessons learnt

• Shallow coastal habitats have a large influence on fish production. Pressure on these habitats is very high
• Comprehensive maps of EFH and of pressures often missing. Planning is difficult with white spots on the maps
• Spatially explicit valuation of ecosystem services will become a useful tool for habitat protection in MSP
In habitat protection, conservation meets fisheries

Habitat protection needed to maintain fish stocks

Predatory fishes needed for healthy habitats
Thank you!