



Sveriges lantbruksuniversitet  
Swedish University of Agricultural Sciences

Department of Aquatic Resources

# Essential fish habitats in MSP

Fishing for space  
Vilnius, 14 November 2013

Ulf Bergström

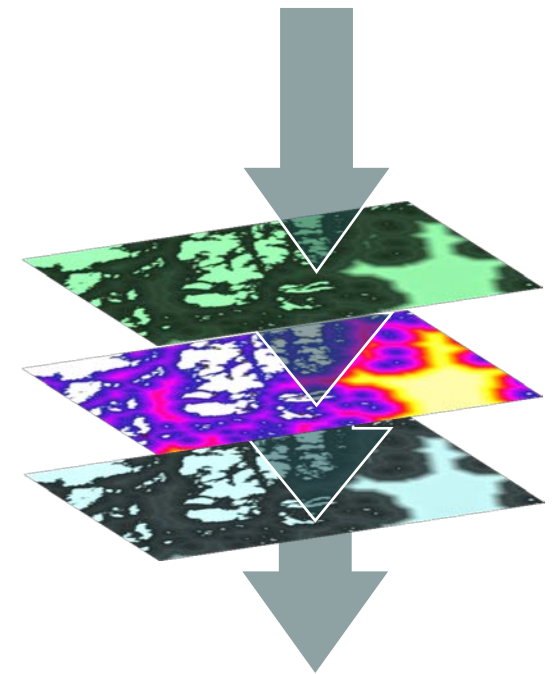
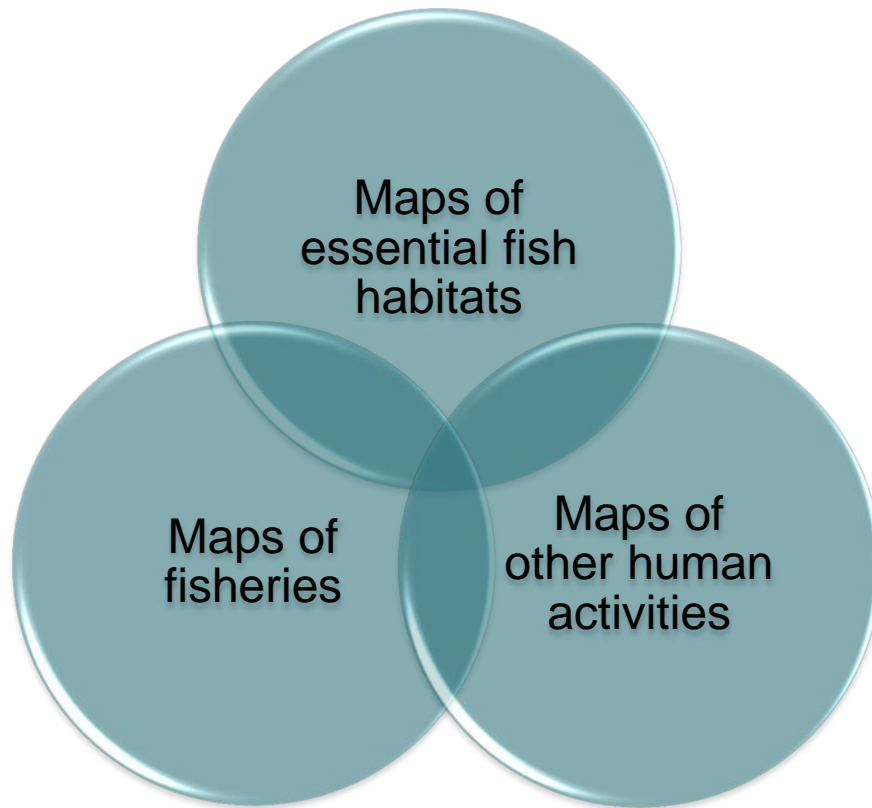


# Shallow coastal habitats important for many fishes

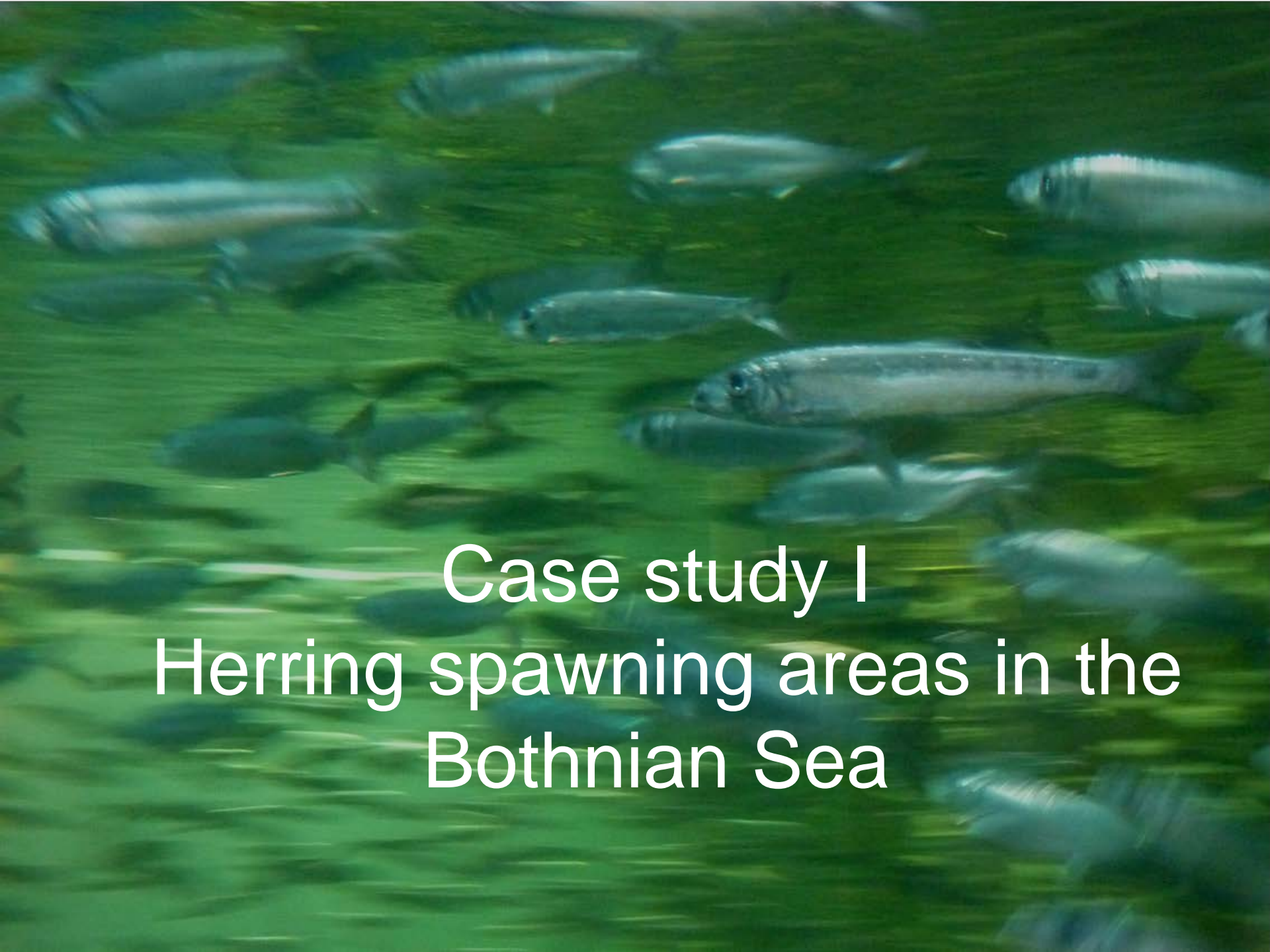
- Shallow coastal habitats used by 80% of ICES advice species
- Early life stages often dependent on specific habitat types for their survival = essential fish habitats
- Pressure on coastal habitats extremely high → we need MSP to minimize habitat loss



# For spatial planning to gain fishes and fisheries we need...



Identification of conflict areas → solve by MSP

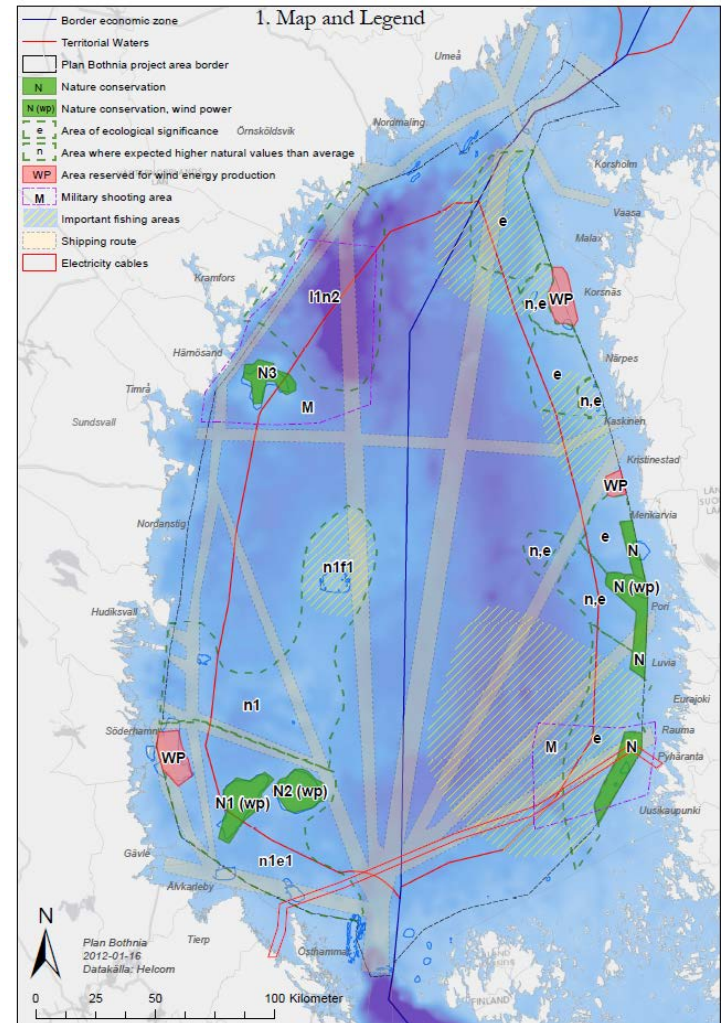
A large school of herring swimming in greenish water. The fish are silvery with a dark dorsal fin and are moving in a coordinated pattern. The water is a deep green color, and the fish are the central focus of the image.

Case study I  
Herring spawning areas in the  
Bothnian Sea



# PLANBOTHNIA

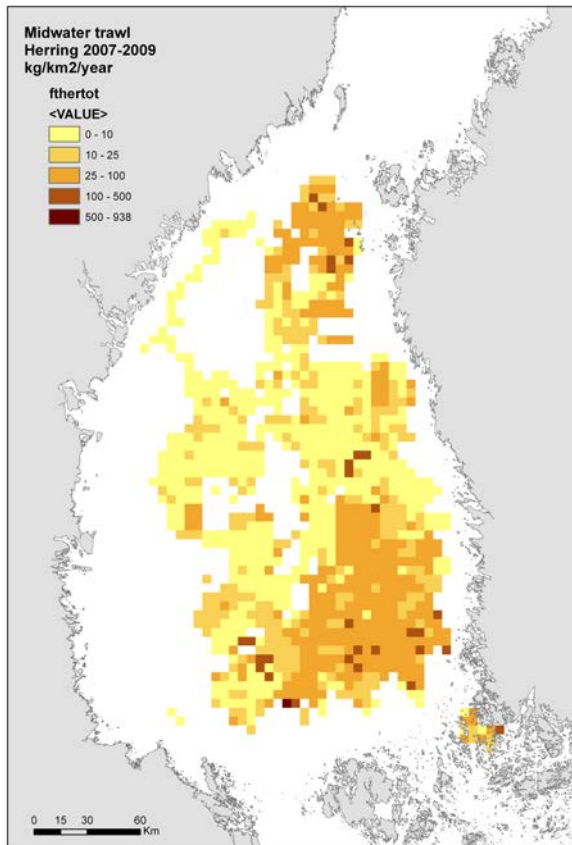
- "Preparatory action" financed by DG Mare. Test of transboundary spatial planning in the Bothnian Sea
- <http://planbothnia.org/>
- <http://maps.helcom.fi/website/PlanBothnia/index.html>



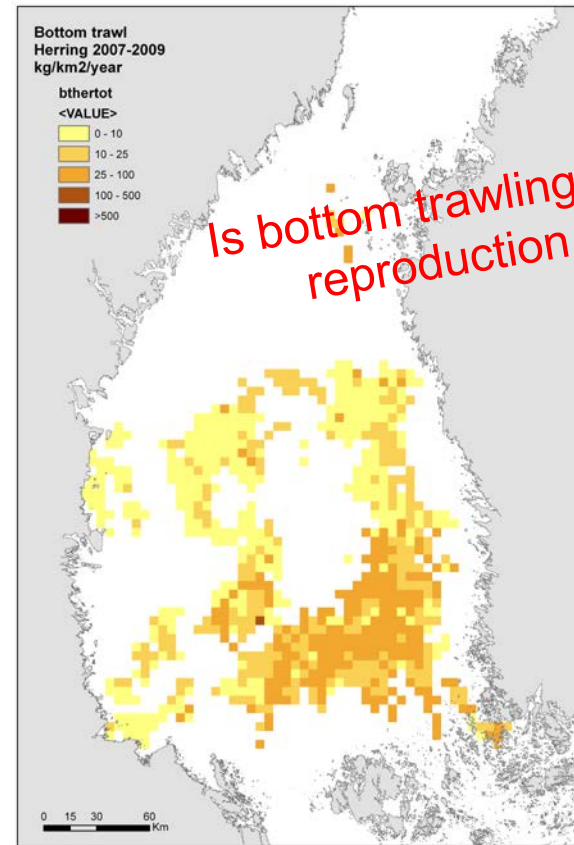
# Mapping the trawl fishery

- 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 %)



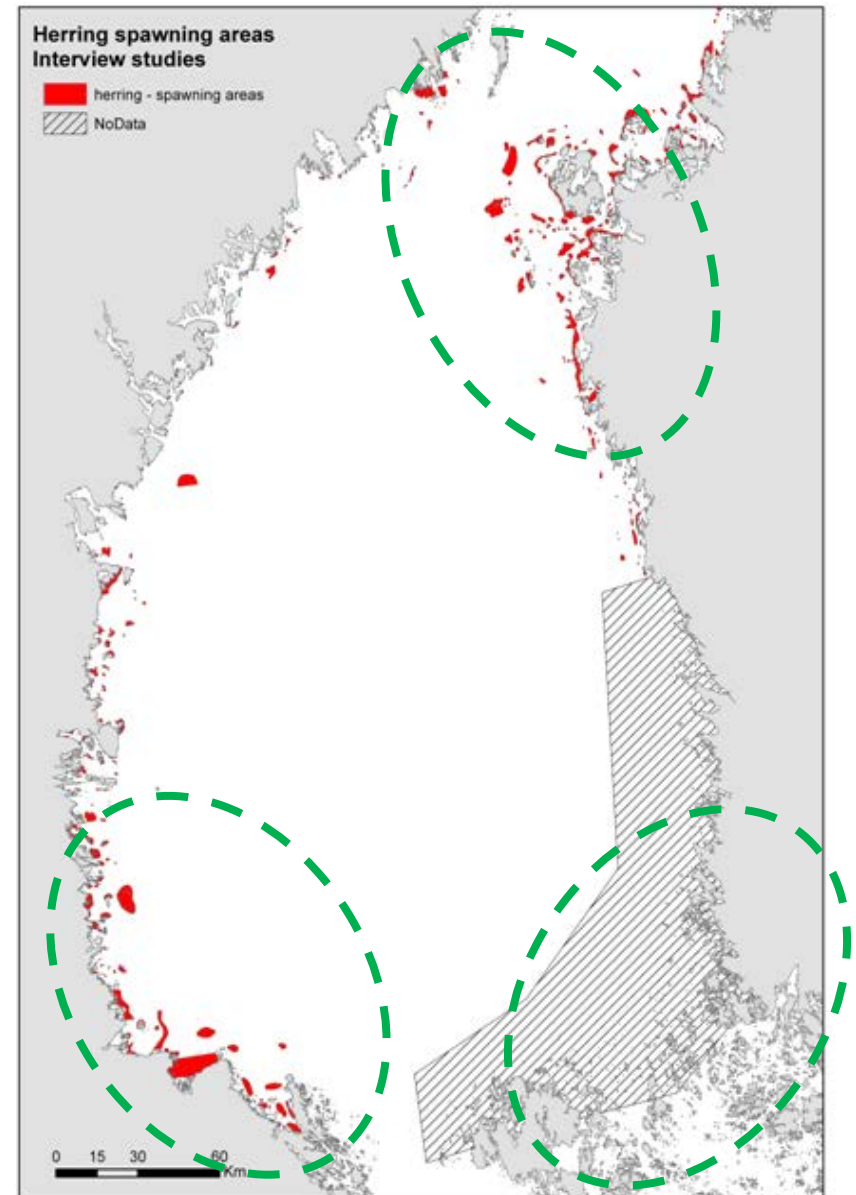
Bottom trawl (30 %)



Is bottom trawling affecting fish reproduction habitats?

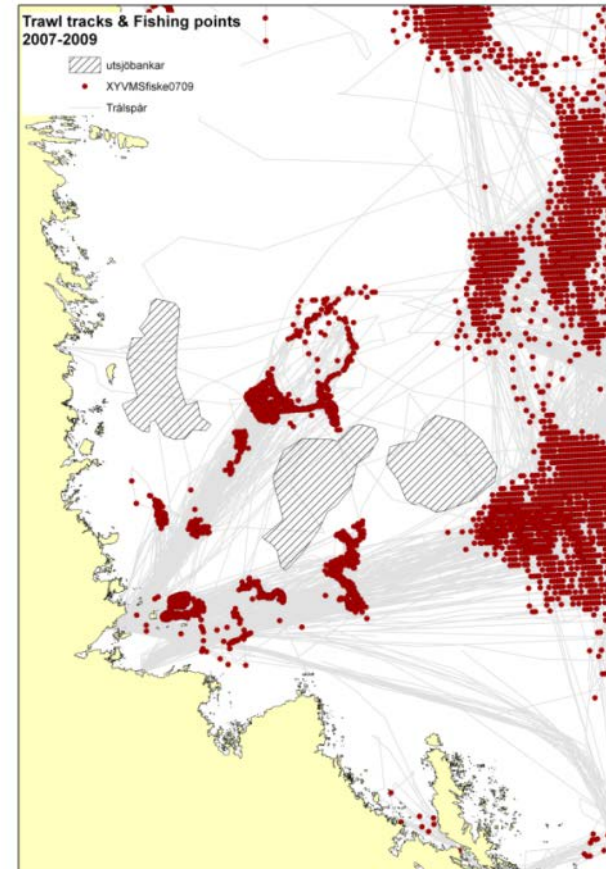
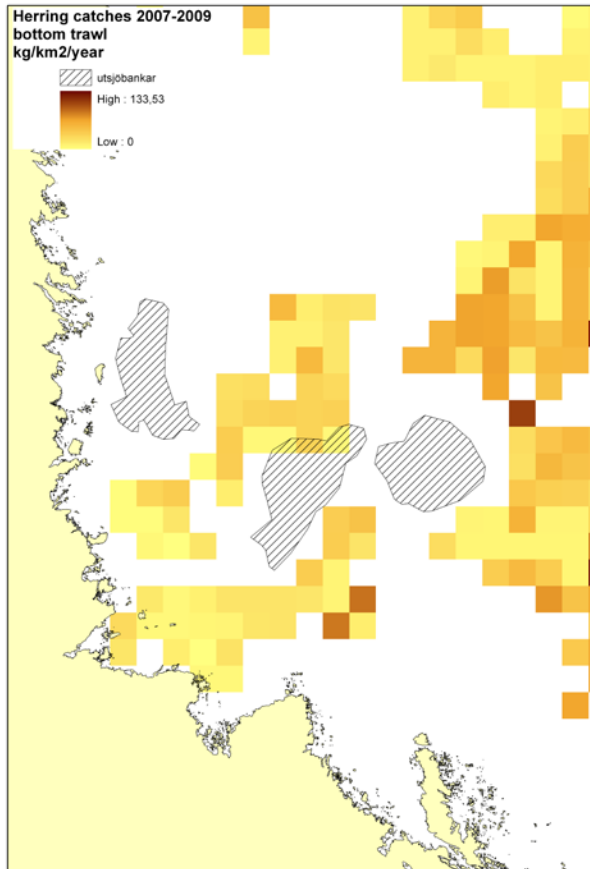
# Maps of herring spawning grounds

- From interviews with fishermen
- Difficult to handle "white spots" lacking data
- Three major areas



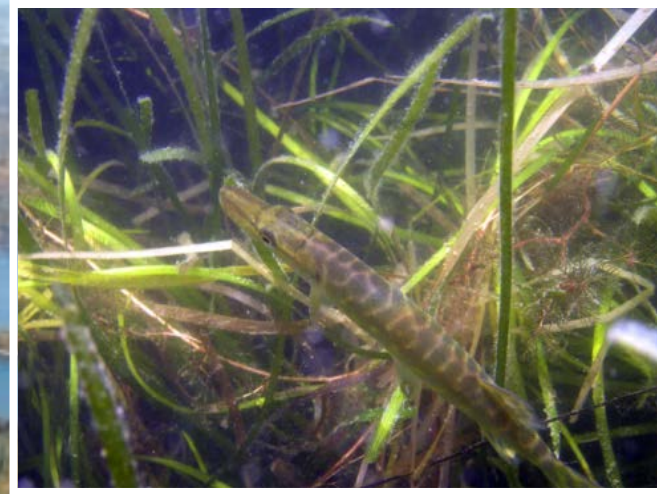
# Bottom trawling at offshore banks

Bottom trawling does not affect the offshore banks  
= no conflict





# Case study II – Value of nearshore fish reproduction habitats



# Coastal development threatens habitat

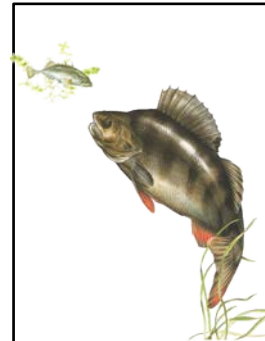


To protect them,  
we need to demonstrate the  
economic value of these habitats

# Estimating the economic value of this essential fish habitat

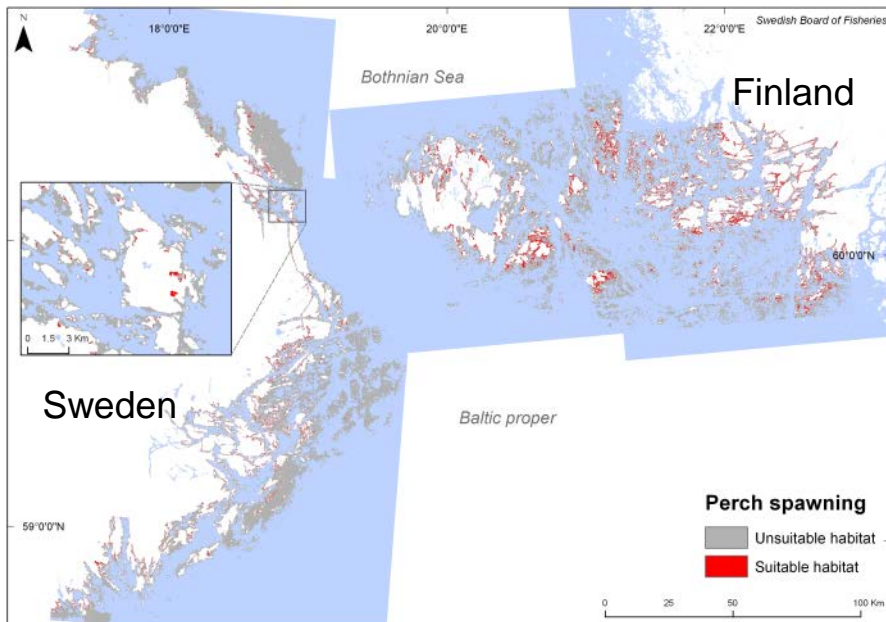
We need to know:

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

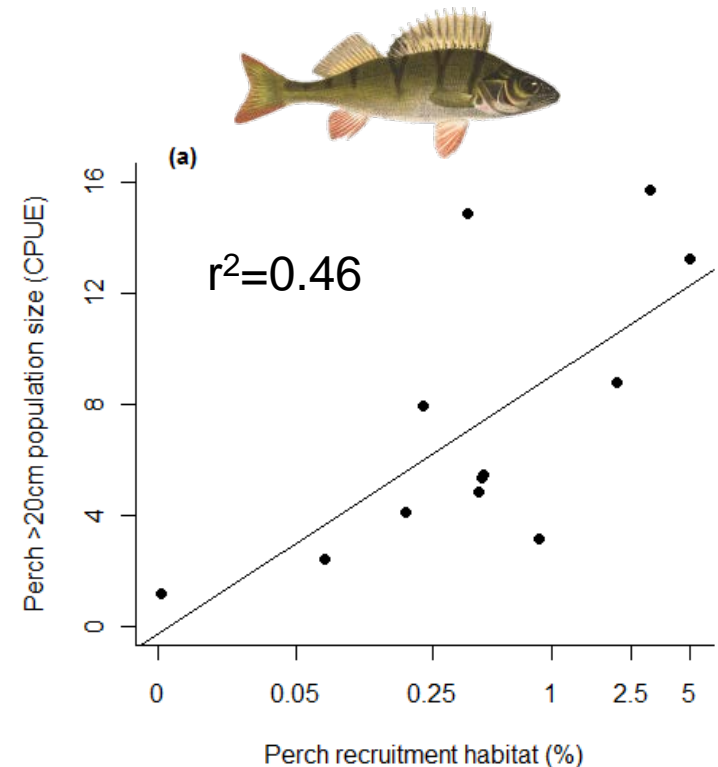


# We are getting there

## 1. Distribution of habitats



## 2. Fish production per unit area

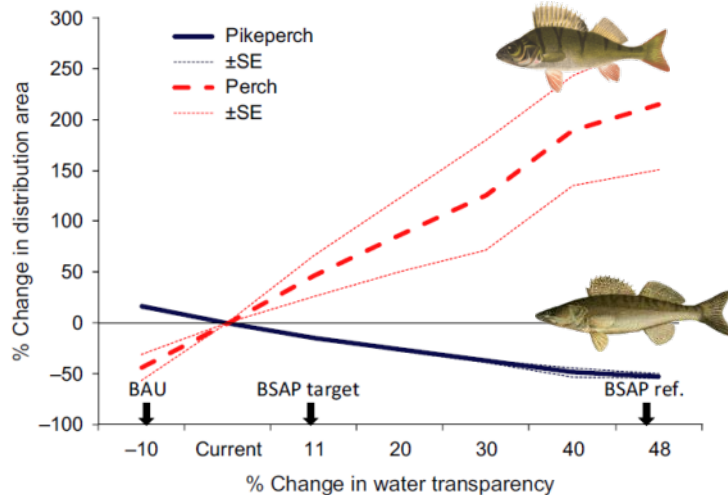


...but we still lack the economic valuations

# The effects of human pressures

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

## Eutrophication



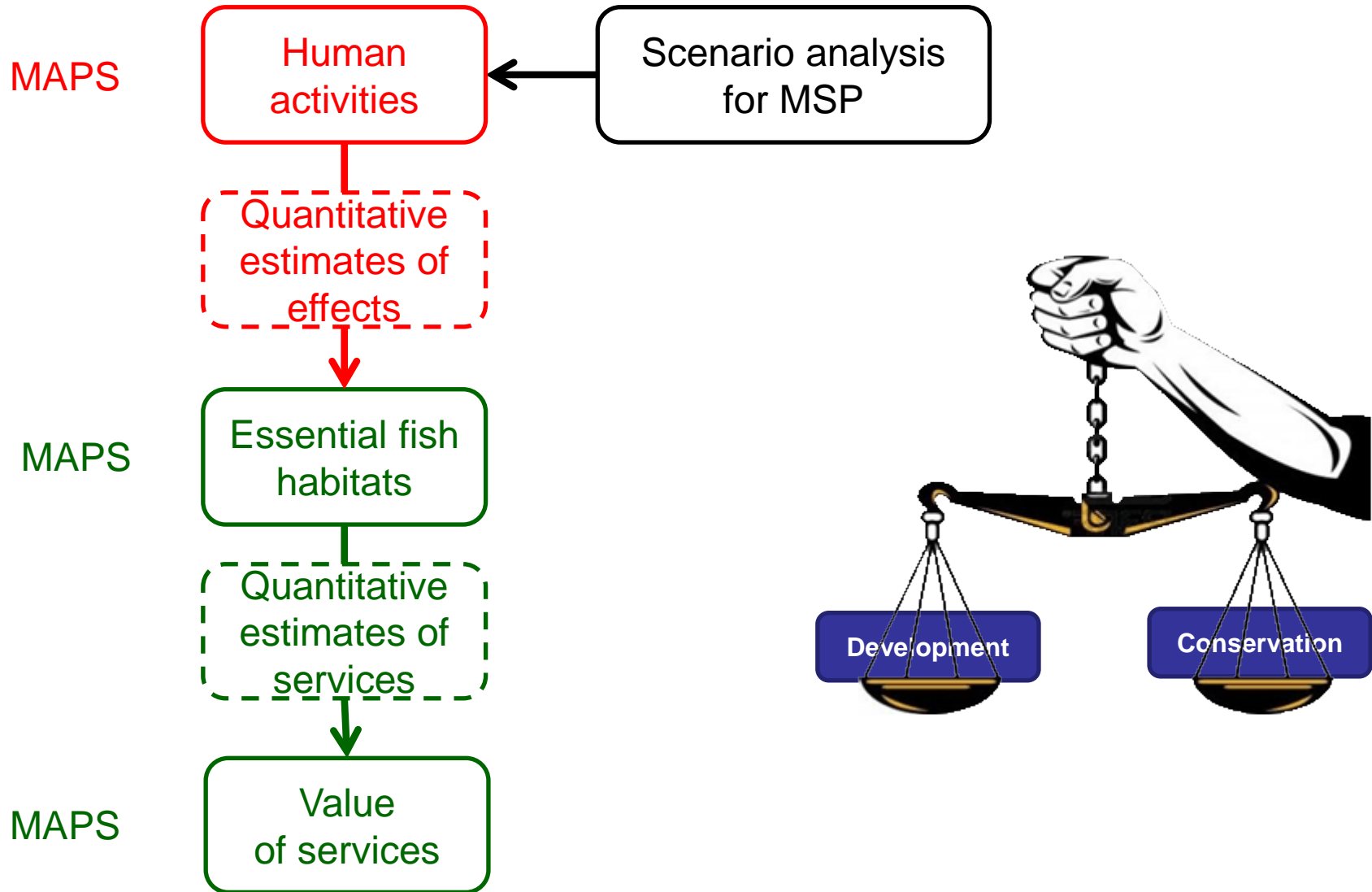
Bergström et al 2013, J Appl Ecol

## Shoreline development



Sundblad & Bergström unpublished

# Sketching a tool for planning



# 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!



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Institutionen för akvatiska resurser