TARTU ÜLIKOOL
UNIVERSITY OF TARTU

BONUS
SCIENCE FOR A BETTER FUTURE OF THE BALTIC SEA REGION

INtegrating SPatIal pRocesses into Ecosystem models for sustainable utilization of fish resources (INSPIRE)

Henn Ojaveer

BALTIC MSP FORUM, Riga, Latvia, 17-18. June 2014

BONUS

- **The only joint research and development programme addressing the issues of one particular European regional sea;**
- **A unique funding mechanism integrating the national and European Community research and development in funds for a certain purpose;**
- **Brings together the research communities of marine, maritime, economical and societal research to address the major challenges faced by the Baltic Sea region;**

BONUS cont-d

- **Objective: to integrate the Baltic Sea system research into a durable, cooperative, interdisciplinary and focused multinational programme in support of the regions sustainable management;**
- **Duration 2010-2016; total budget 100 mio eur;**
- **BONUS call 2012: VIABLE ECOSYSTEM: 87 proposals submitted; 7 funded.**

INSPIRE

Integrating spatial processes into ecosystem models for sustainable utilization of fish resources

Addresses BONUS Theme 3.3. *Improving stock assessments and resolving spatial heterogeneity and temporal dynamics of the Baltic Sea fish stocks*

INSPIRE will fill in critical gaps in knowledge on

- the mechanisms of changes in spatial distributions of different life-history stages of fish (due to various drivers such as climate, fishing and species interactions);
- the impact of such changes on the structure and function of the Baltic ecosystem(s);
- the sensitivity and robustness of analytical fish stock assessment, particularly for flatfish.

INSPIRE will provide answers

- What habitat (both pelagic and benthic) conditions characterize the spatial distributions of cod, herring, sprat and flounder?
- To what extent do fishing and species interactions affect the local and basin-scale distribution of exploited stocks?
- What drives spatial connectivity and migrations of different fish species/populations?
- How does stock structure and separation of natural populations impact stock assessment outcomes?

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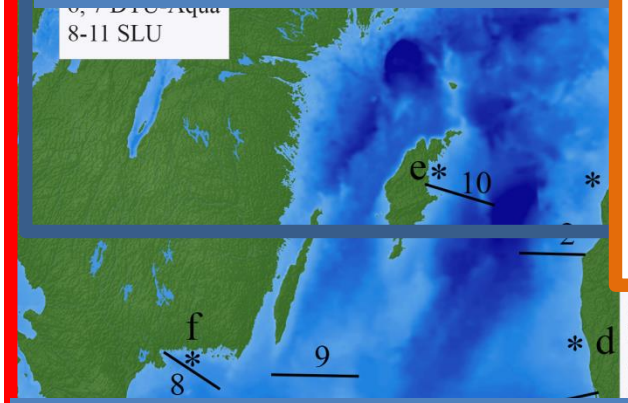
12 (UU)	Uppsala University	Sweden	Anders Nissling

Historical tagging data and DST data

Step 4: Adding dynamics to the meso-scale distributions

Step 5: Describing small-sc
heterogeneity in space and t
(experimental acoustics, VPR



+ standard surveys and additional hydroacoustic surveys

Step 1: Data
Step 2: Maps
Step 3: Simulating (static) distributions

Step 10:
Regional Marine Strategy Framework Directive indicators for Biodiversity (1), commercial species (3), and food-webs (4); regional climate-based hydrographic indices.

Step 7: (Observed)
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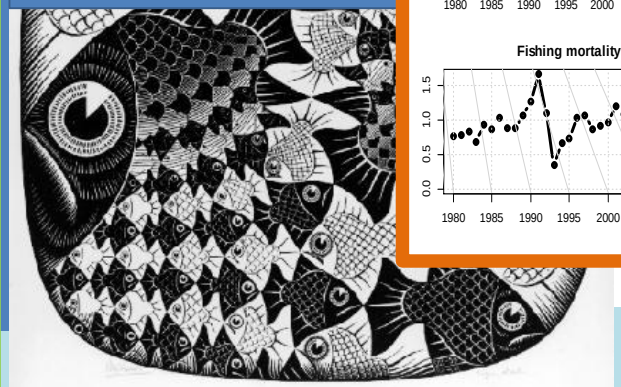
and interactions m



WP4 Assessment

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3: Spatially explicit
-species stock
sment and prediction
d, herring and sprat.

9: Spatially explicit
asssessment for
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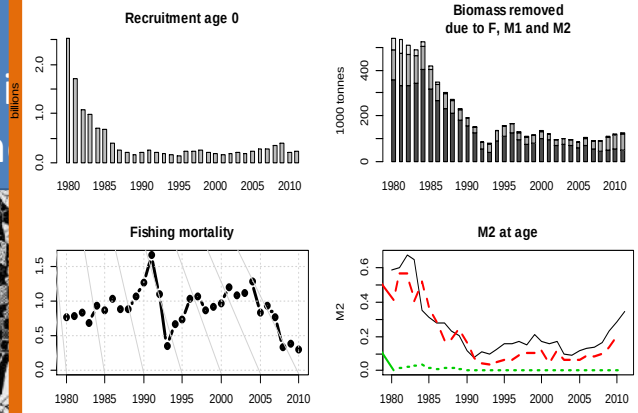
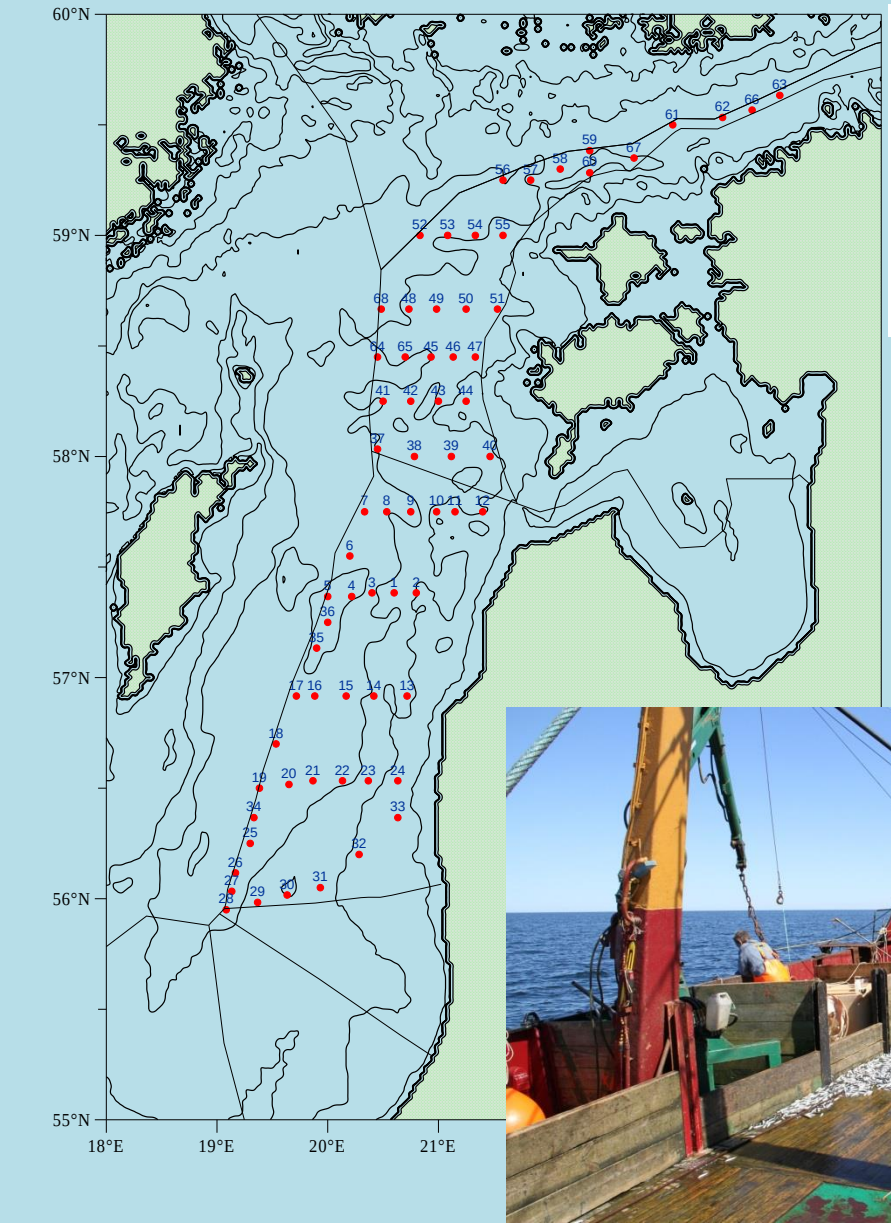
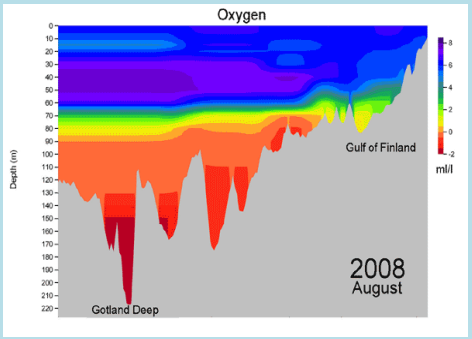


Clupeid field surveys





Data

- Free and open access principle;
- Scientists generating the data have an opportunity to have first publication of the data (as much as possible in Open Access journals);
- Moratorium period, in which the project consortium will have privileged or exclusive access to the data;
- Whenever relevant, INSPIRE data will be submitted to ICES database and made thereby freely available.

Support activites

- Training school on: *'Science delivery for sustainable use of Baltic Sea fishery resources'*

- Concluding symposium on: *'Integrating spatial processes into ecosystem models for sustainable utilization of fish resources'*

THANK YOU