

BALANCE

Synthesis Marine habitat mapping in the Baltic Sea region

BALANCE Conference

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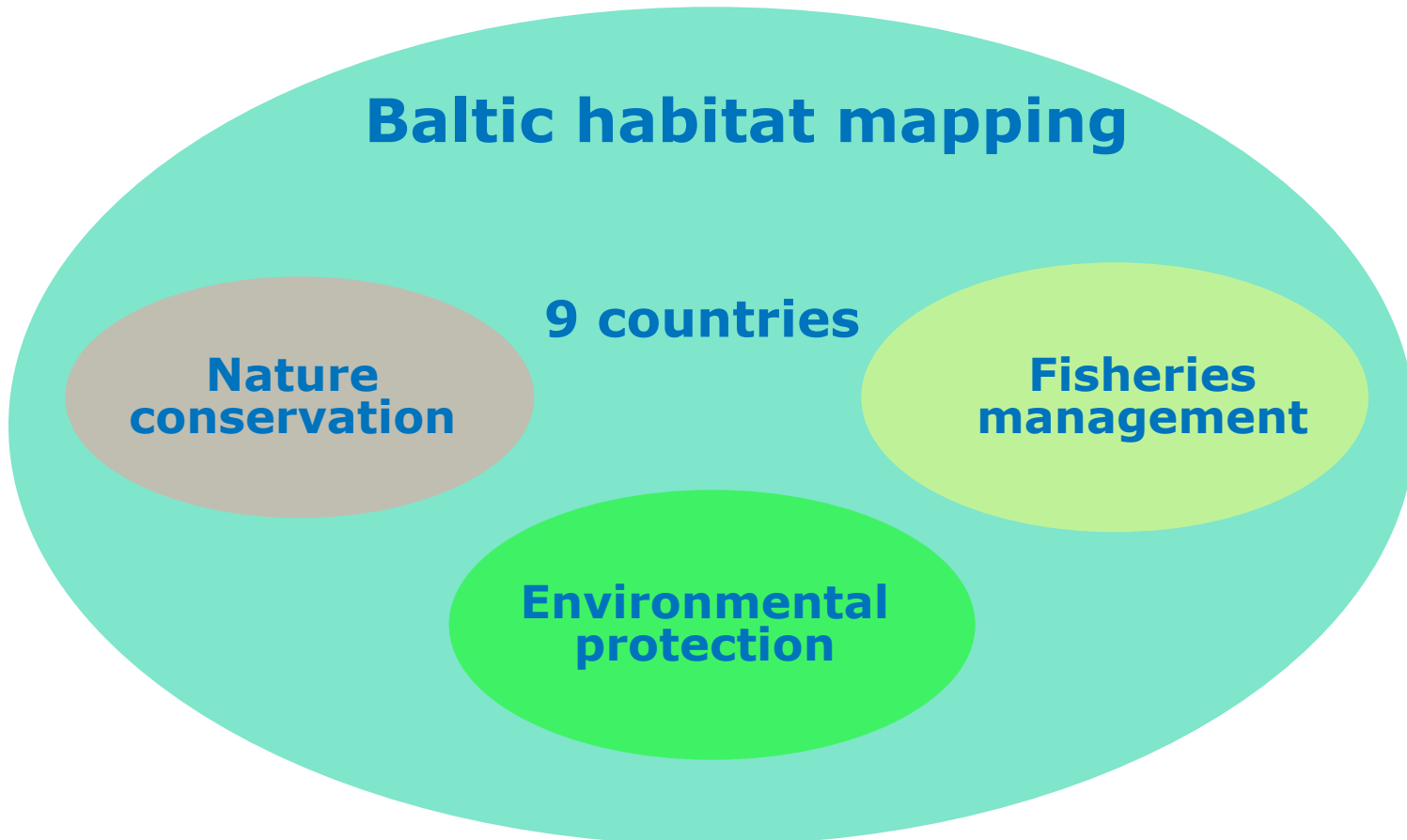
The Danish Spatial and Environmental Planning Agency

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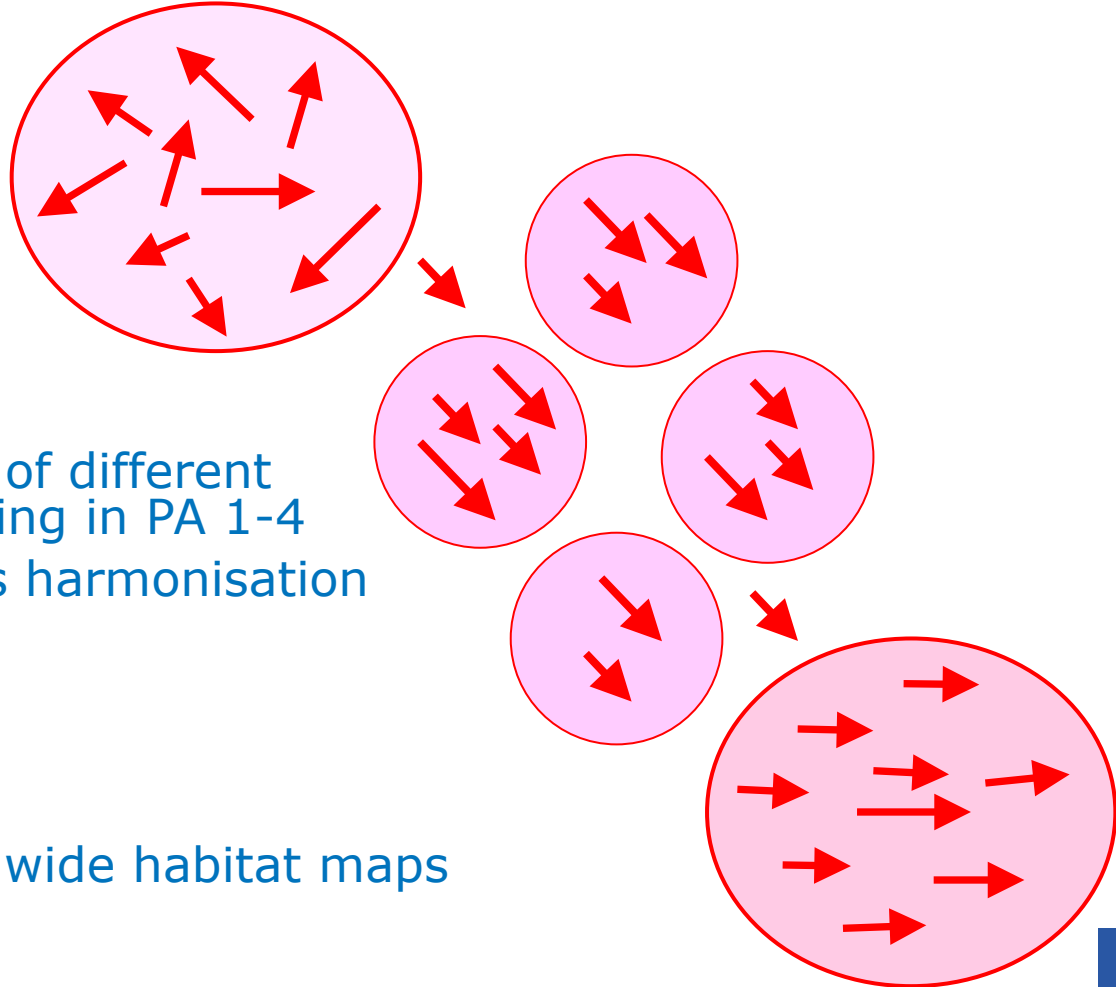
Overall purpose

“to produce an overview of the habitat mapping efforts in the Baltic Sea Marine Region”



Habitat mapping - the current state of affairs

Several sectors
from 9 countries

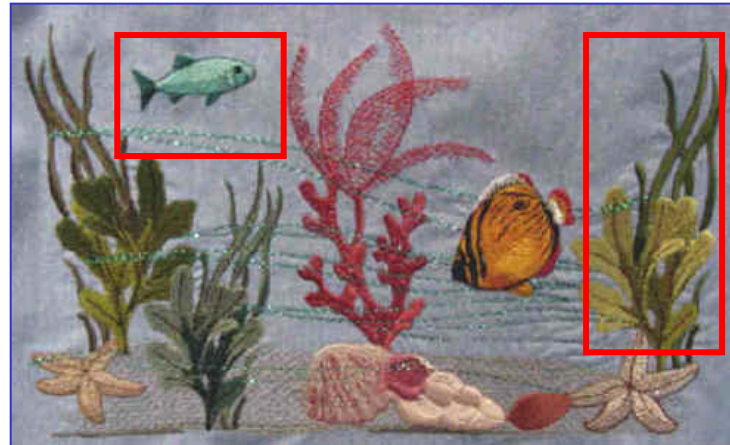


Provide an overview of different
approaches to mapping in PA 1-4
- a first step towards harmonisation

The next step
- towards Baltic Sea wide habitat maps

Habitat mapping in the Baltic region

1. Scale
2. The finding of habitats
3. Habitat characteristics



Contributions from: J.H. Andersen, T. Bekkby, U. Bergström, M. Bučas, I. Carlén, K. Dahl, D. Daunys, J. Hansen, K. Herkul, M. Isæus, G. Kraus, J. Kotta, J. O. Leth, C. Lindblad, G. Martin, F. Moy, H. Nillson, A. Nöjd, K.M. Norderhaug, H. Orav-Kotta, A. Pedersen, J.B. Reker, A. Sandström, M. Simm, M. Sköld, C.R. Sparrevohn, G. Sundblad, S. Wennberg & P. Zembls

What are we mapping?



Hvalrosser i Nordøstgrønland

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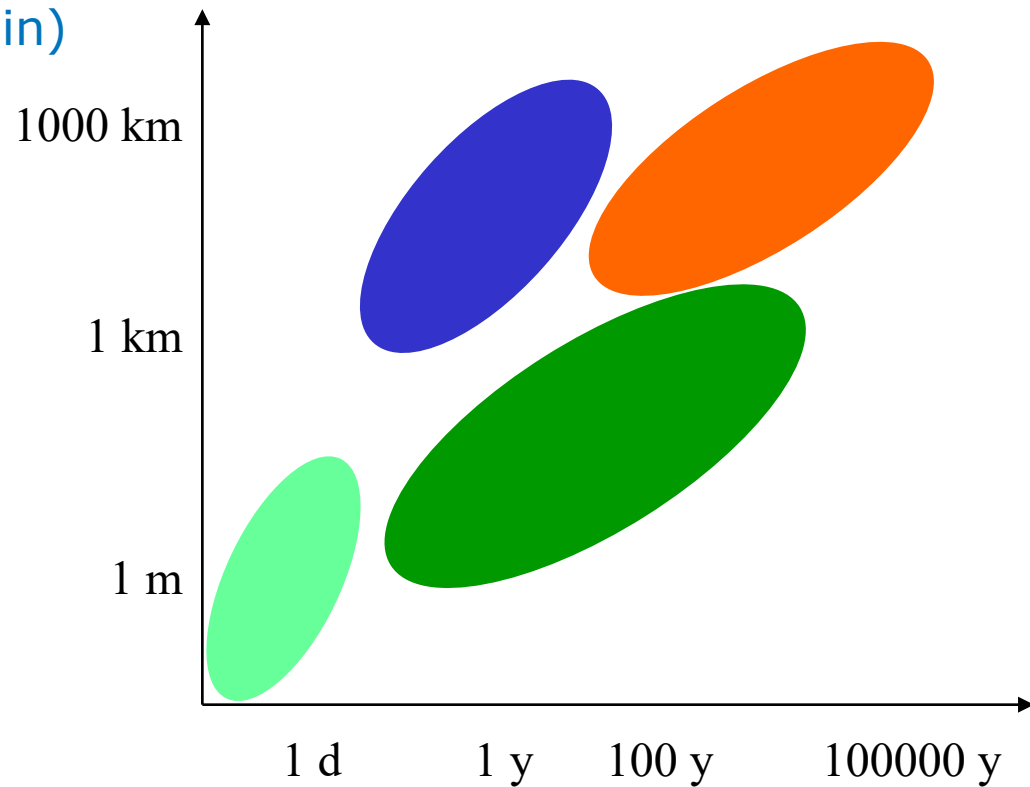


A matter of scale...

Space (3D, extent & grain)

Time (linear, duration)

Resolution (grain)



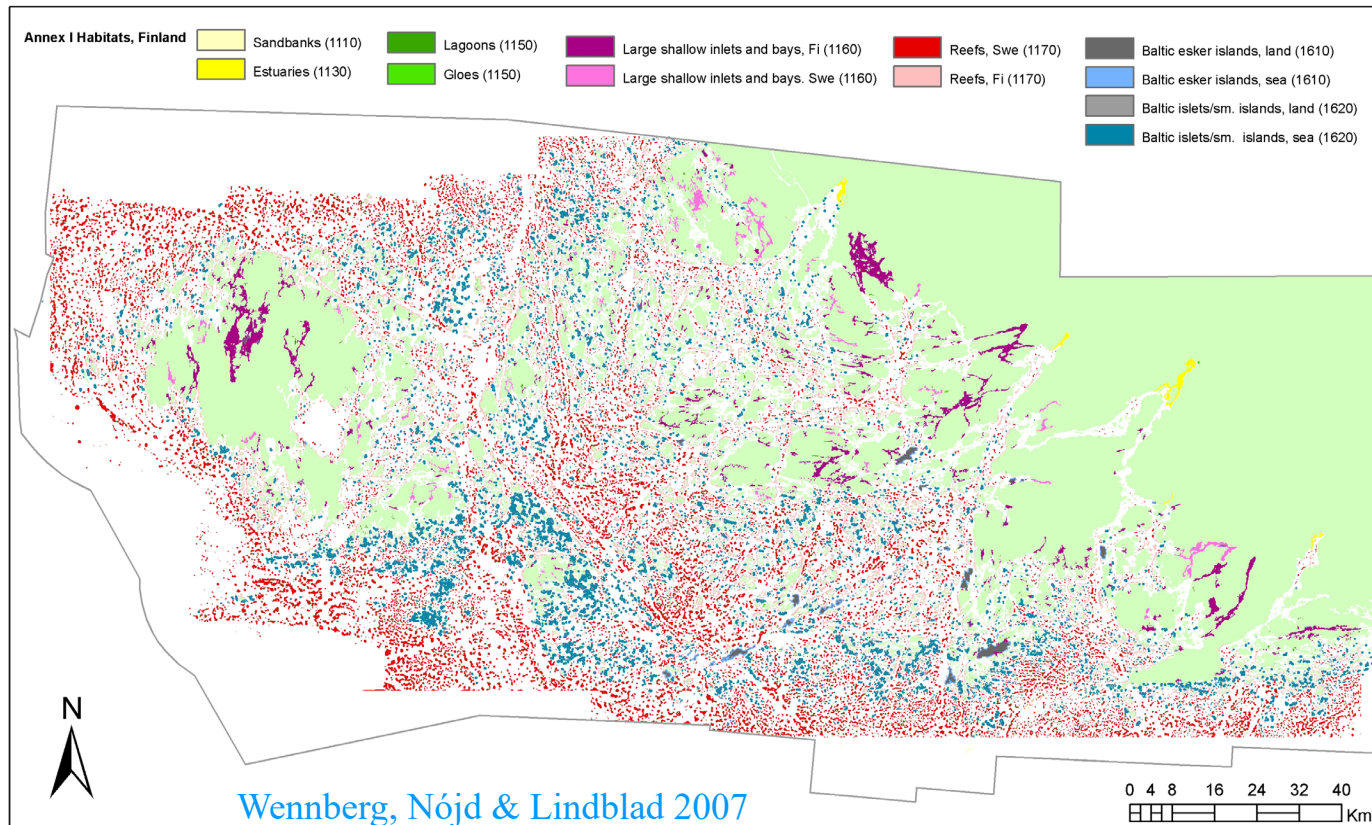
(after Fenchel 2006)



The finding of NATURA 2000 "habitats"

Pilot Area 3 – Finland & Sweden

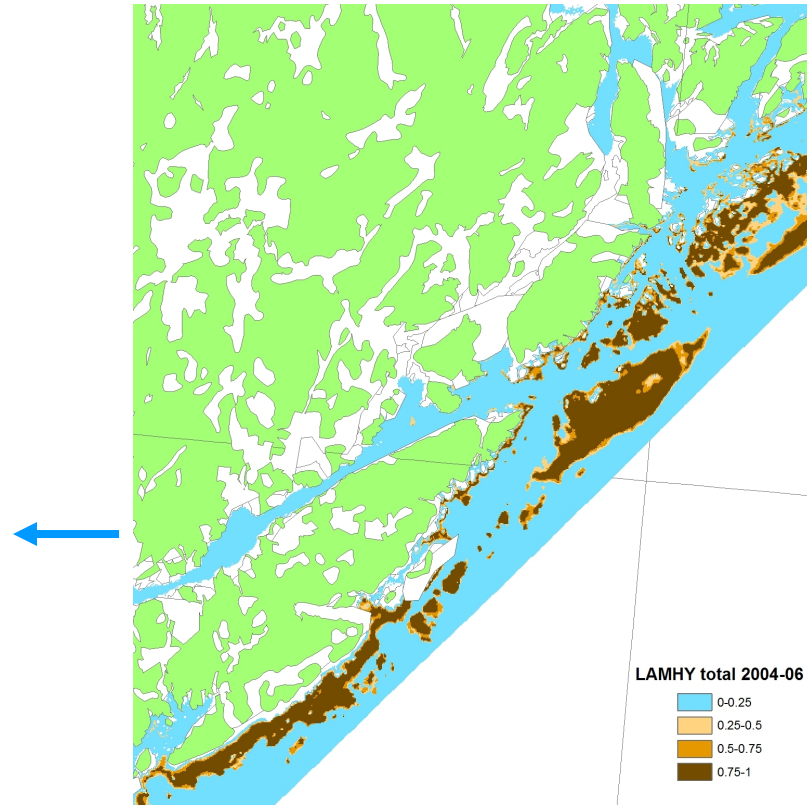
- Geophysical features & GIS analyses
- 1110, 1130, 1150, 1160, 1170, 1610, 1620



The finding of a SAV habitat...

PA 1. Norwegian coast of Skagerrak

- Environmental features (predictor & response variables)
- Predictive models
- Model selection
- *Laminaria hyperborea*

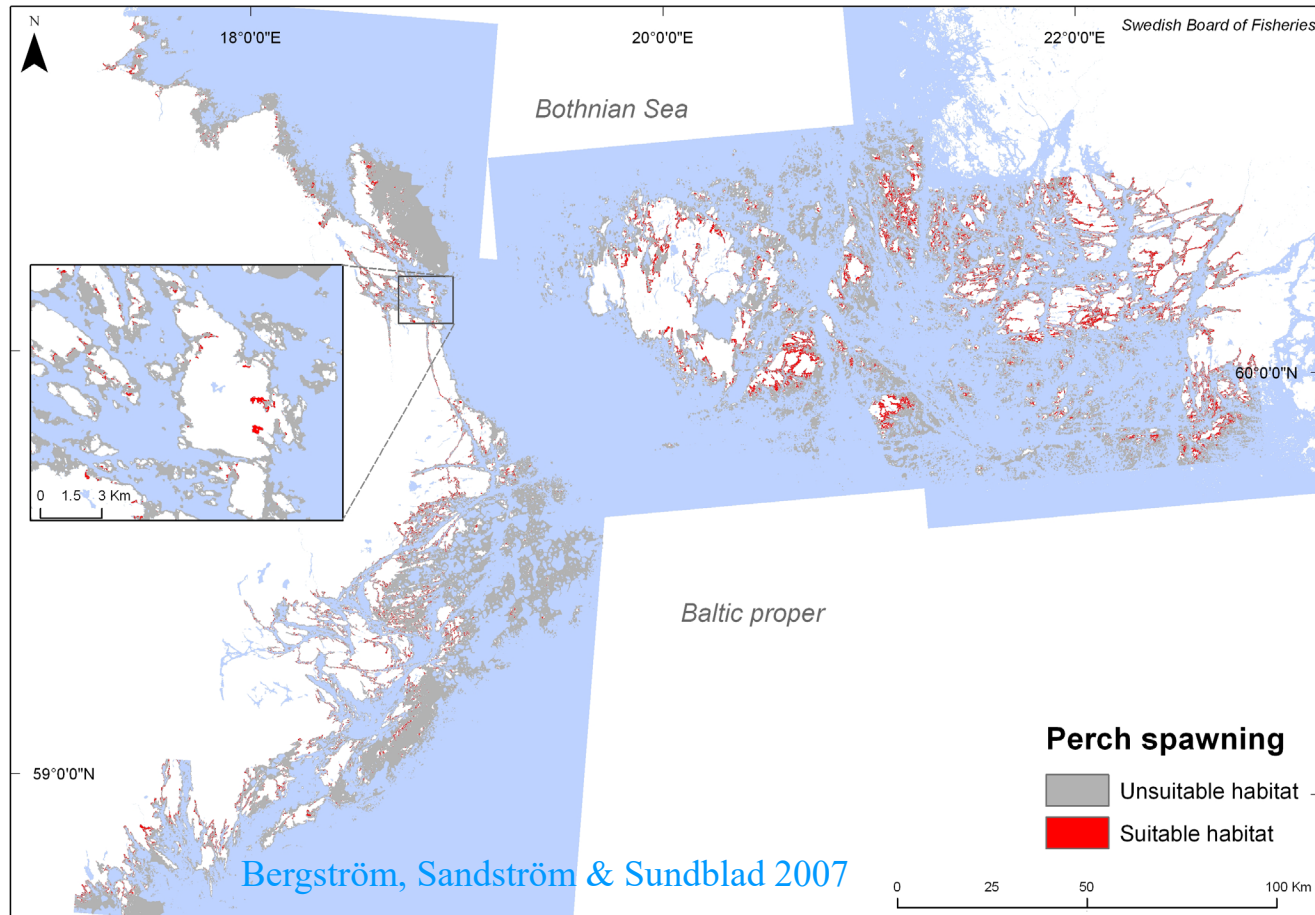


Photograph by Martin Isæus

Norderhaug, Isæus, Bekkby, Moy & Pedersen 2007

The finding of an essential fish habitat...

PA 3. Perch – habitats suitable or unsuitable for spawning

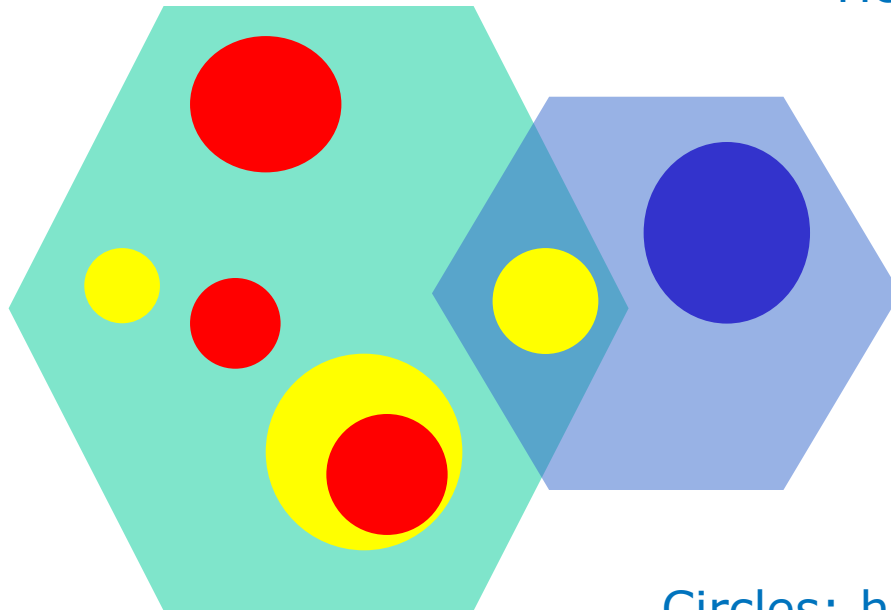


Habitat characteristics...

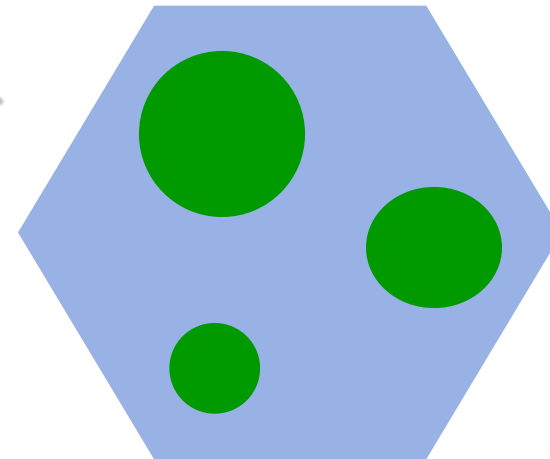


Comparison of habitats and boundaries

Hexagons: NATURA 2000 "habitats"



Reef



Circles: habitats of species or assemblages

Large shallow bay

Conclusion – key messages

YES...



Did we fulfil our objectives?

1. Identified and mapped selected Baltic Sea habitats
2. Produced maps and demonstrated methods in PA1-4
3. Provided material for WP3 and WP4

What did we learn?

- GIS analyses are appropriate for mapping of NATURA 2000 “habitats” using physiographic and geological features
- Physiographic data are available at a coarse scale, while fine scale data are often missing (e.g. bathymetry, substrate)
- Predictive modelling is a cost effective way to develop fine-grained, large extent distribution maps of marine habitats of species and species assemblages
- Biological data must cover the entire gradient and extent of the environmental variables

Perspective

The next steps?

Methods are in place for modelling and mapping of NATURA 2000 "habitats", SAV, FISH, and BIF

- Harmonisation & coordination is needed!

Development of Baltic-wide habitat maps of ecological relevance requires:

- Step 1: Harmonisation of habitat characteristics and their relation to marine landscapes
- Step 2: Guidelines for a common approach to modelling and mapping
- Step 3: Harmonisation of data collection and monitoring methods



Thank you for your attention

