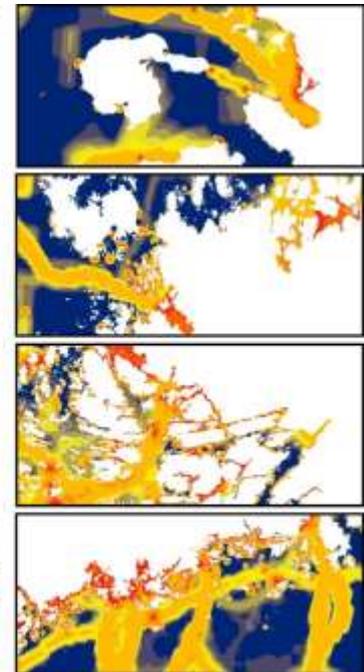
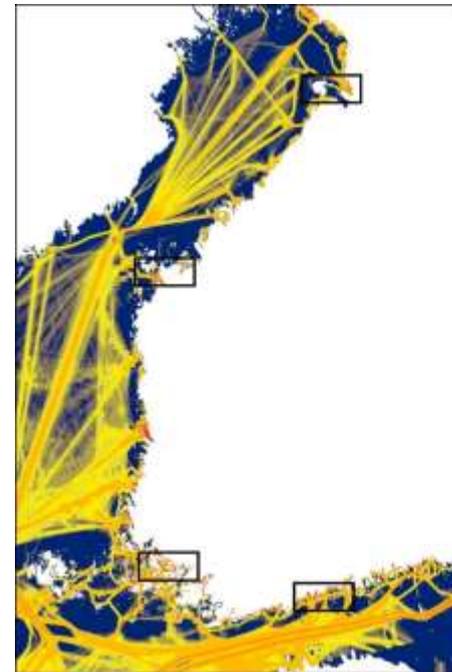
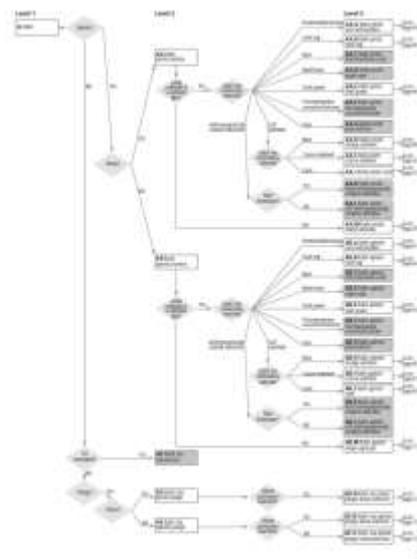
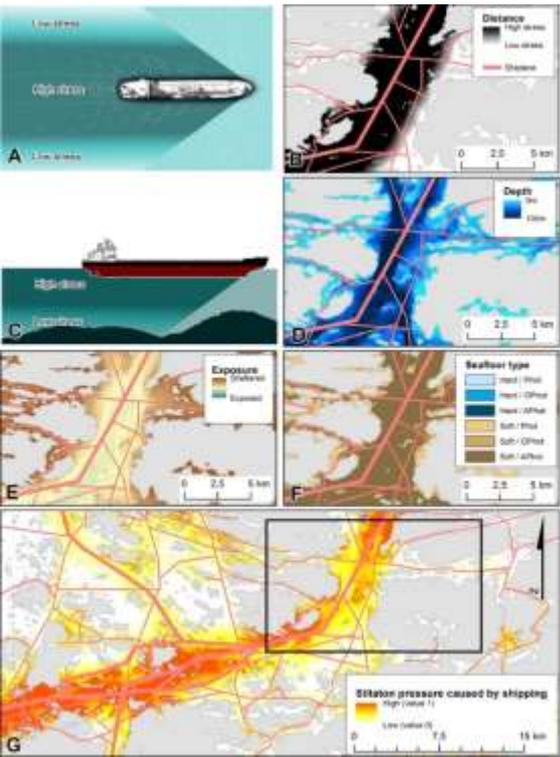


HUB –biotopes & Human Pressures



Briefing for the expert evaluations

You will be soon asked to evaluate how human pressures affect to HUB –biotopes

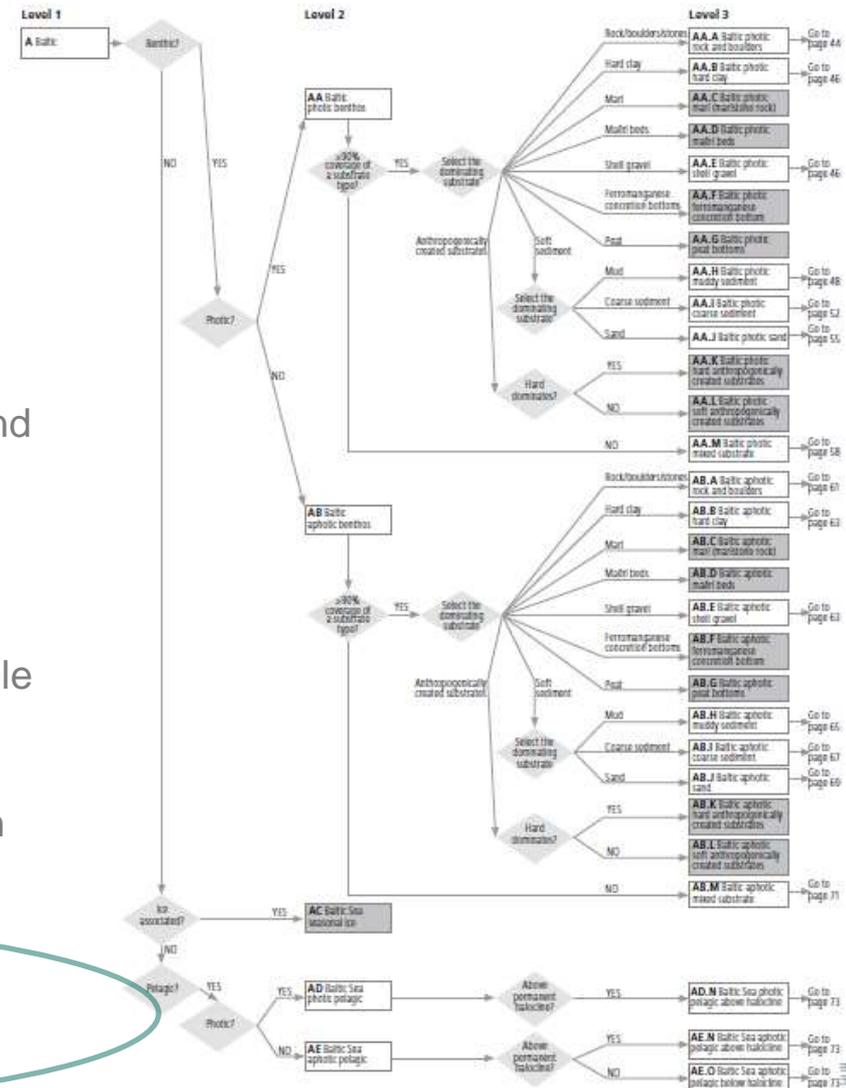
So you will need information on:

- HUB –biotopes
- Human pressure categories
- Instructions for the evaluations
 - How will the gained data be used
 - Practicalities

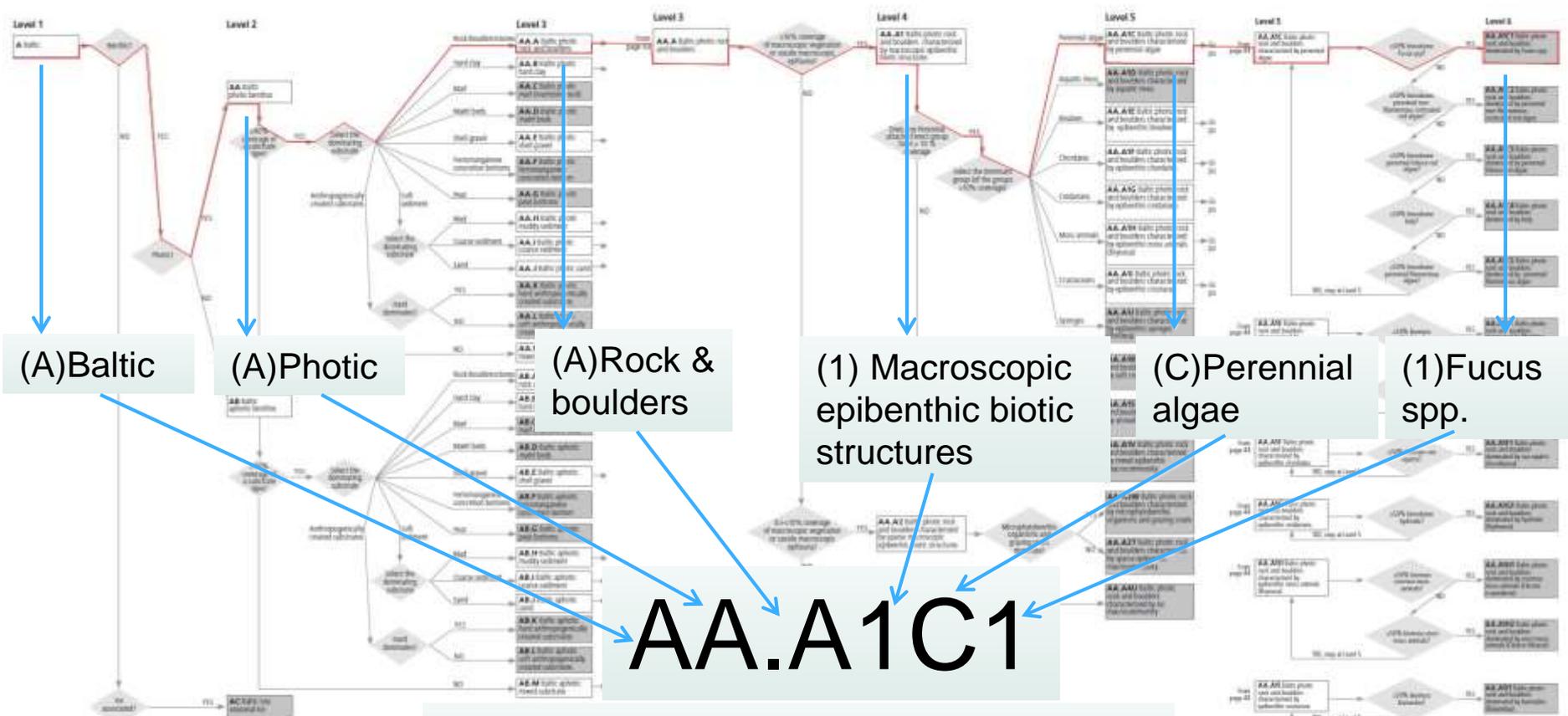
HUB -biotopes

HELCOM HUB

- Data-driven biotope classification system
- Hierarchically structured
- Clear split-rules allows classification down to 6 different levels depending on input data
 - Cut-off values were set based on expert judgment
- Delineates in total 328 biotopes (same species and species groups occur on multiple substrates)
- Flowchart 31 pages: Long, but easy to follow
- Same biotope codes and names apply to the whole Baltic Sea region
- Compatible with the European Nature Information System (EUNIS)
- The important thing is that by classification large amounts of data can be easily interpreted and understood.



HUB –classification



(A)Baltic

(A)Photic

(A)Rock & boulders

(1) Macroscopic epibenthic biotic structures

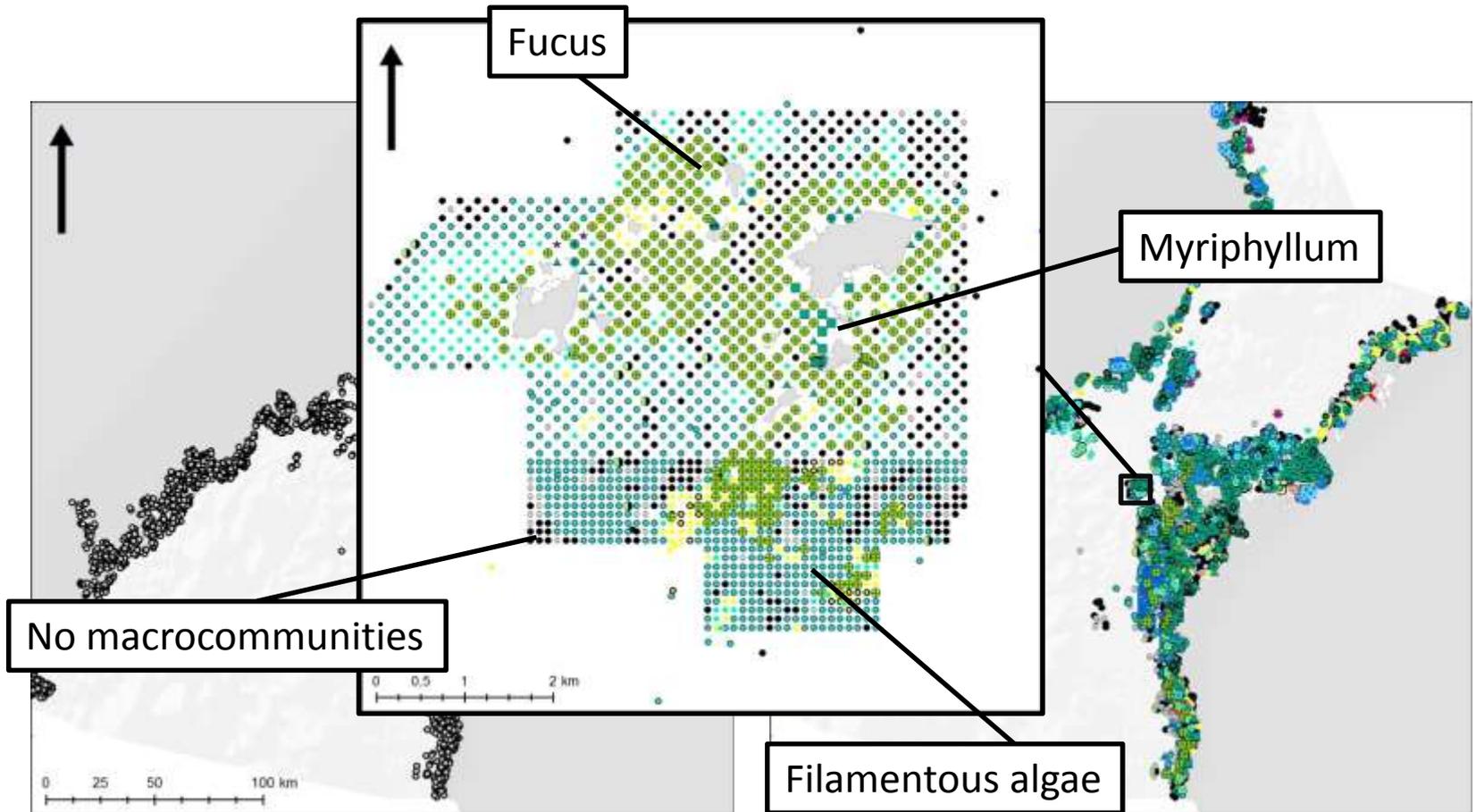
(C)Perennial algae

(1)Fucus spp.

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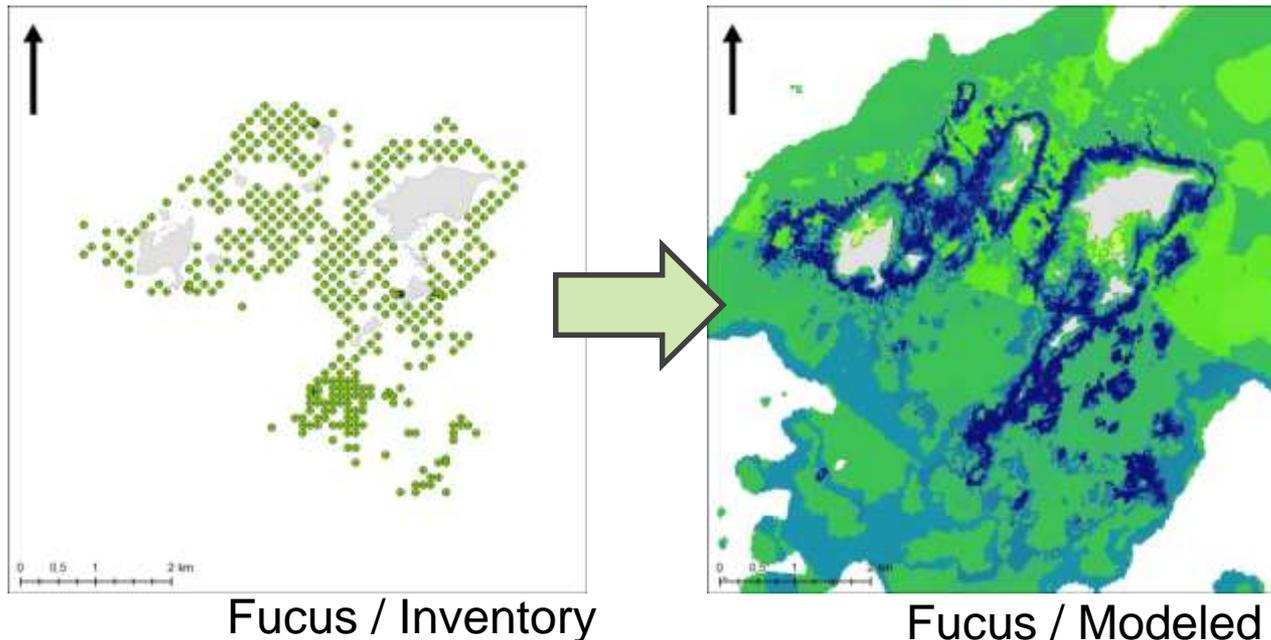
Baltic biotope in photic layer, where dominating substrate is rock. Perennial algae is dominating and Fucus spp. has the highest biomass

More than 30 000 inventory points got their HUB -class

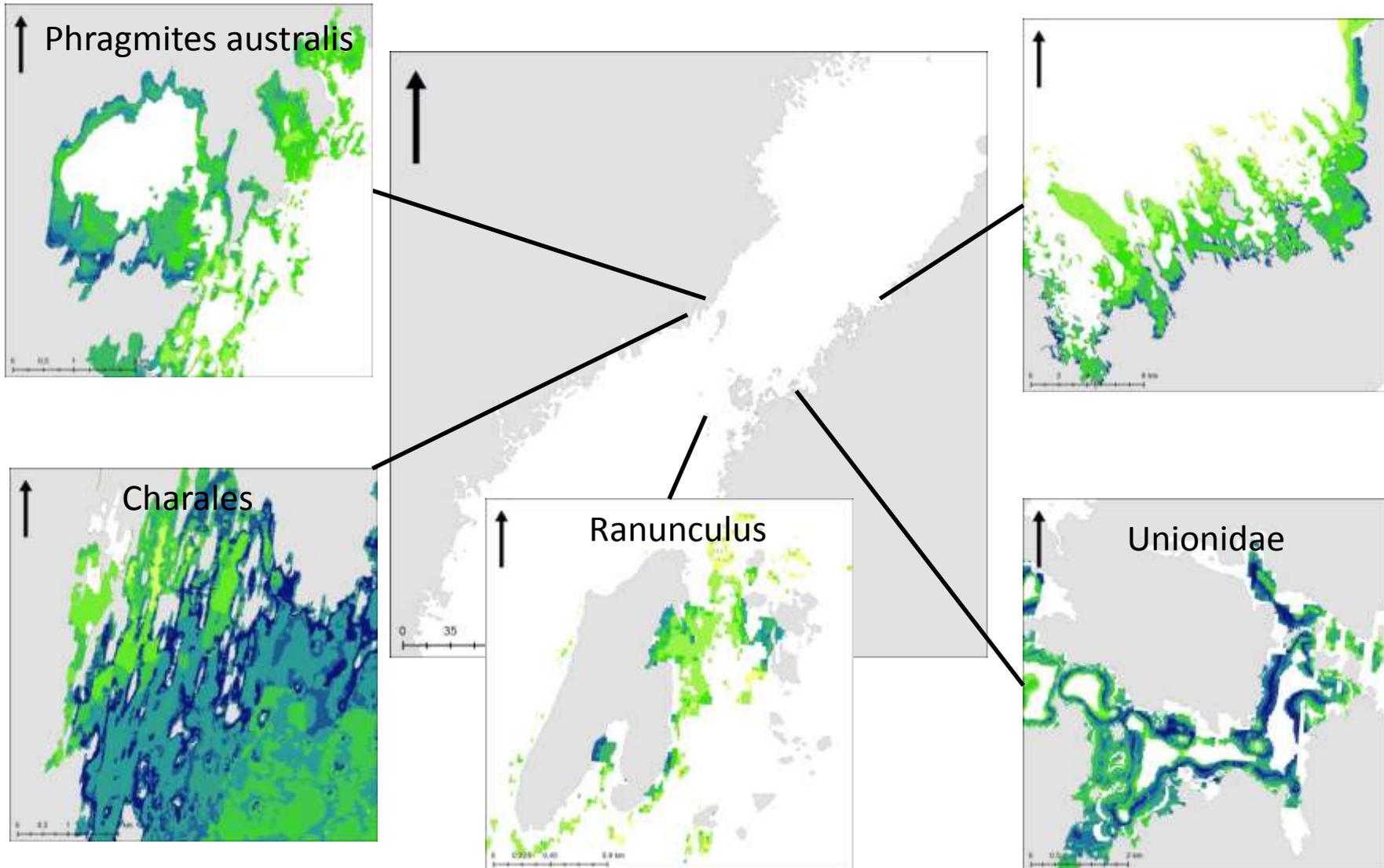


Modelling

- By modelling, the most propable biotopes can be calculated
 - not an image of the real life situation
 - However modelling provides (accuracy tested) estimates in contrast to planning on blank charts
- Environmental variables such as depth, salinity, exposure and bottom structures can be used to calculate at which kind of locations certain biotopes are likely to occur
- We can get the spatial extent of likely occurrence even from areas, where inventories have not taken place



25 HUB biotopes has been modeled for the whole project area (1. run)



With modeling the spatial extent of the biotopes has become available

- Can be used together with pressure evaluation
- The biotopes to you will evaluate the pressures are on level 5 (species groups):
 - A Emergent Vegetation (Phragmites A., Cyperaceae)
 - B Submergend rooted plants, (Potamogeton, Charales, Myriophyllum etc.)
 - C Perennial algae (Fucus, Perennial filamentous algae etc.)
 - D Aquatic Moss
 - E Epibenthic bivalves (Mytilus etc.)
 - G Epibenthic Cnidarians
 - H Epibenthic moss animals
 - I Epibenthic Crustaceans
 - J Epibenthic sponges
 - L Infaunal bivalves
 - R Soft crustoise algae
 - S Annual Algae

Human pressures

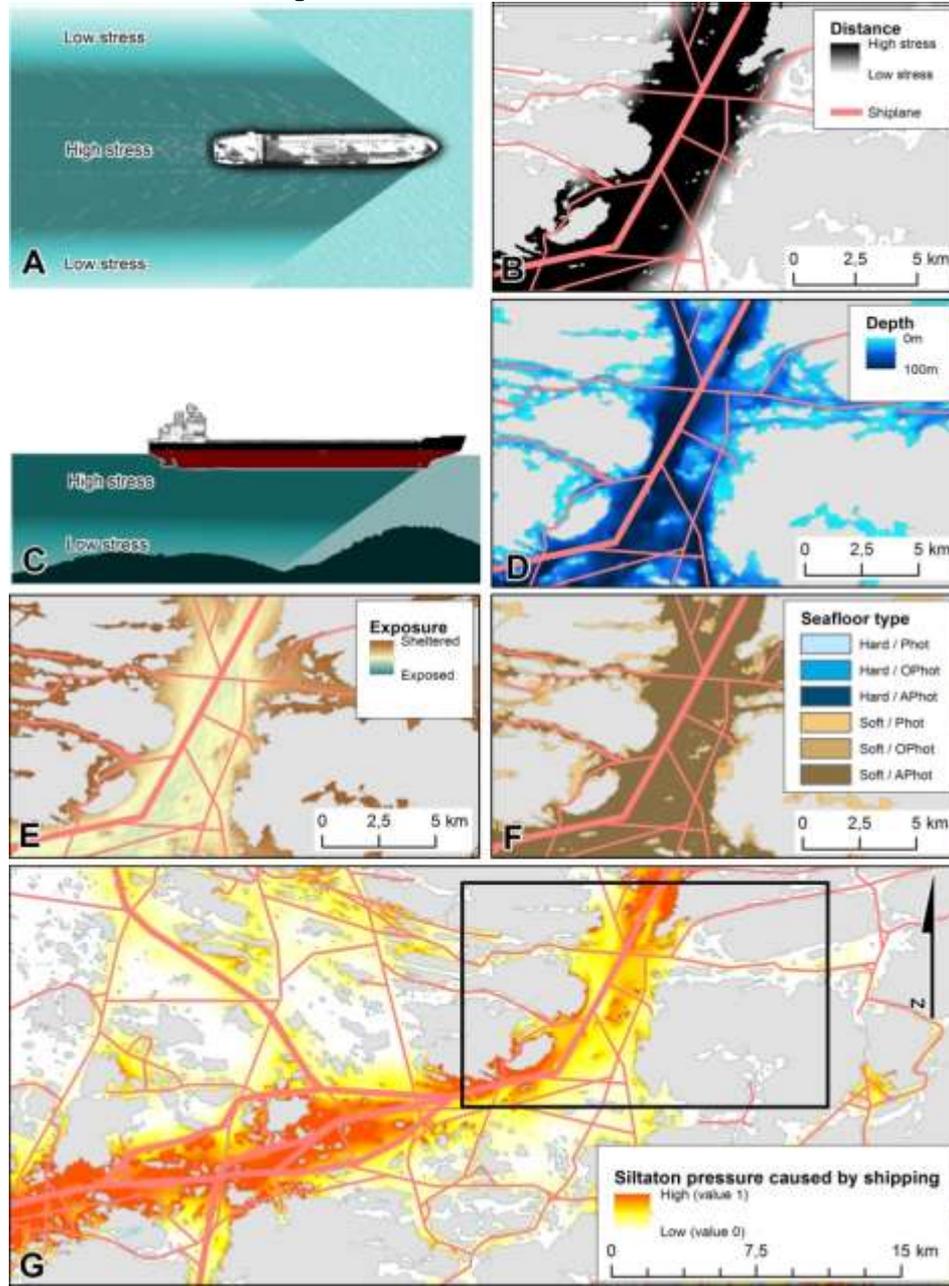
Human pressures are caused by human activities

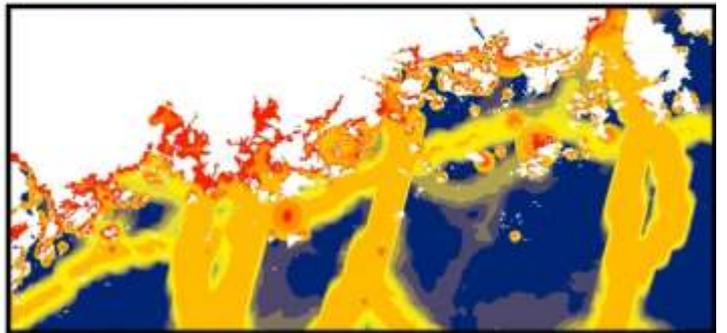
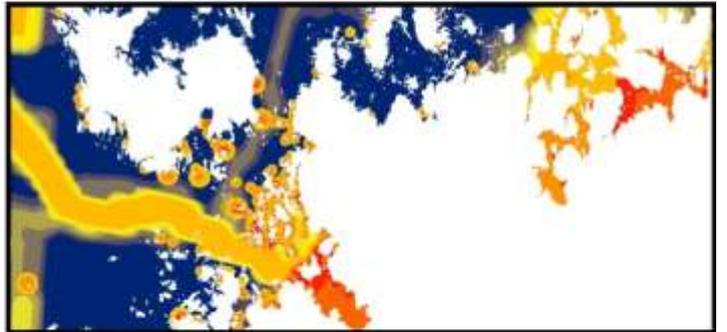
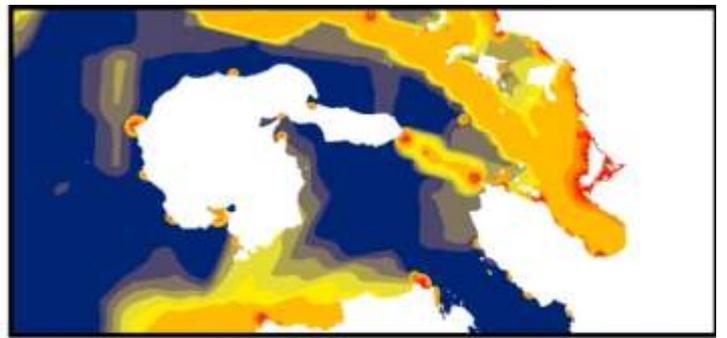
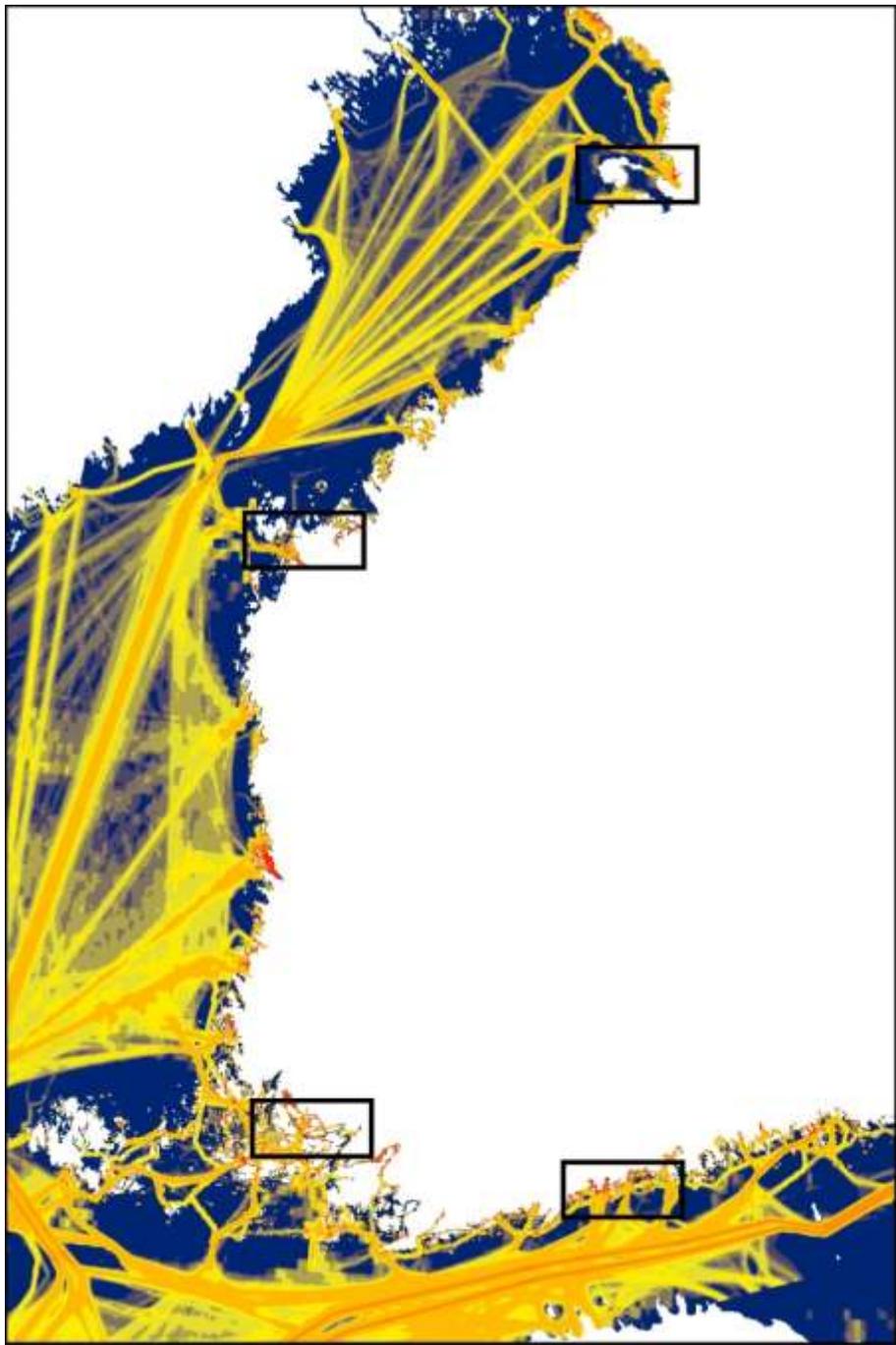
- Marine Strategy Framework Directive: Annex III as basis for evaluations (pressure categorization)
- Similar work on HELCOM TAPAS & HOLAS II – projects on Baltic Sea scale (resolution 1km?)
- In SeaGIS 2 the spatial resolution and modeling techniques are enhanced to fit the needs of regional MSP (resolution 20m)

Pressures to evaluate

1. Physical loss (permanent effects on the seabed)
2. Physical Disturbance or damage to seabed (temporary or reversible effects)
3. Changes to hydrological conditions (e.g. by constructions impeding water movements)
4. Inputs of anthropogenic sounds (into water)
5. Input of heat (e.g. by outfalls from power stations) into water
6. Inputs of hazardous substances
7. Inputs of nutrients
8. Oil slicks and spills
9. Inputs of organic matter
10. Extraction of, or mortality/injury to fish

Human pressure modeling





What does this got to do with you?

- We need expert evaluation on how much each pressure type causes harm to a biotope group.
- The values we get will be used as weighting scores when we combine HUB –biotope models and Human pressure models to indicate impact on “conflict areas”.

Instructions for the evaluations

- 2 Groups
- Sli.do → Feed in four digit code we will give
- Select your group
- Answer to questions