BALANCE

Mapping of Natura 2000 habitats

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Denmark
Estonia
Finland
Germany
Latvia
Lithuania
Norway
Poland
Sweden

METRIA

Introduction

Purpose & Aims

Mapping

- Overview

- 1110 Sublittoral sandbanks

- 1130 Estuaries

- 1150 Coastal lagoons

- 1160 Large shallow Inlets and bays

- 1170 Reefs

- 1620 Boreal Baltic Islets and small islands

Conclusions

Perspectives

Purpose & Aims

Purpose:

Estimations of total coverage and the protected percentage of Natura 2000 habitats

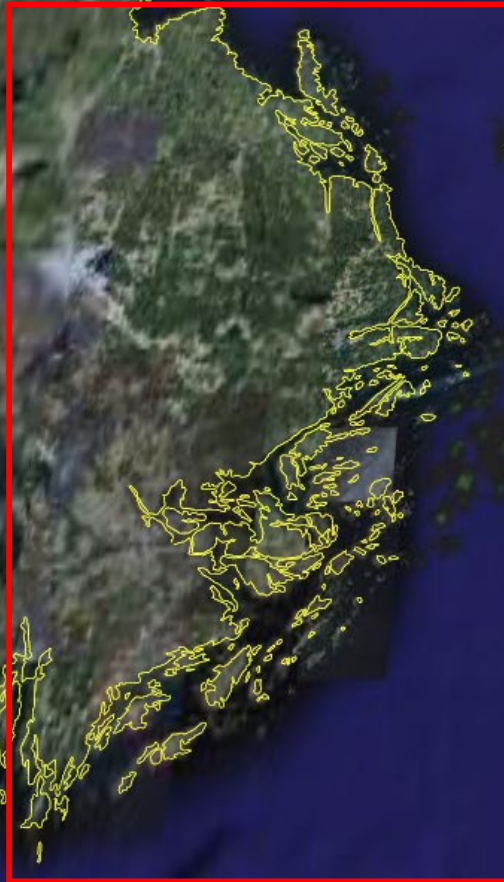Analysis of the representativity of habitats within protected areas

Gathering and harmonization of available GIS-data

Aims:

Maps showing spatial distribution of marine and coastal Natura-2000 habitats with a subtidal part

Comparable results over the national boarders

Pilot area 3

The Archipelago Sea

The Aaland Sea

The Stockholm Archipelago

Mapping – overview

Habitat information layers

Habitat descriptions

Data Sources

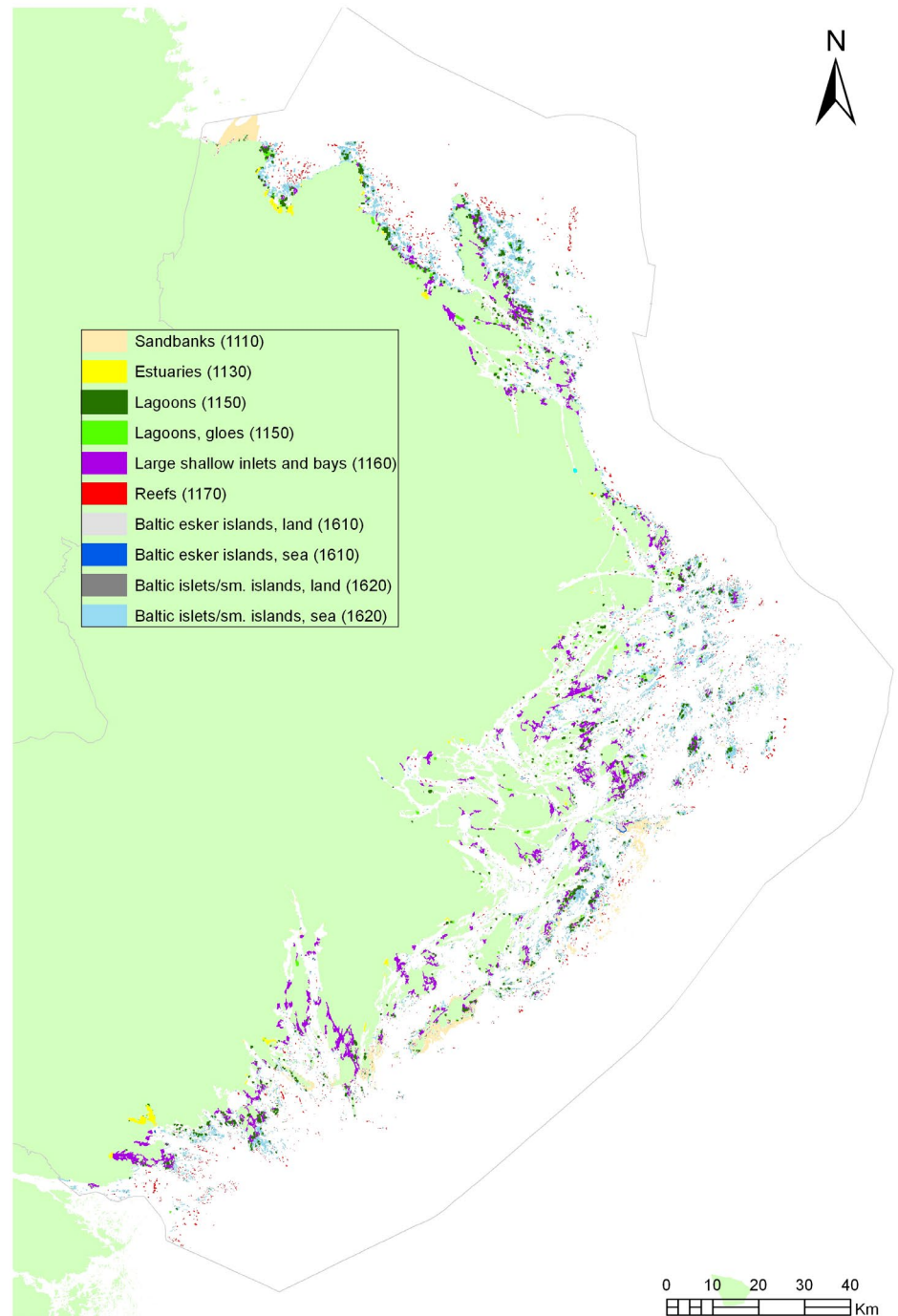Maps, Nautical charts, Land cover, Monitoring programs, Images

Methods

GIS-criteria/model

Result

Presence maps (polygons)

Evaluation

(check against known areas)

Legend:
- Sandbanks (1110)
- Estuaries (1130)
- Lagoons (1150)
- Lagoons, gloes (1150)
- Large shallow inlets and bays (1160)
- Reefs (1170)
- Baltic esker islands, land (1610)
- Baltic esker islands, sea (1610)
- Baltic islets/sm. islands, land (1620)
- Baltic islets/sm. islands, sea (1620)

Mapping – overview

Prediction layer	1110 (Sandbanks)	1130 (Estuaries)	1150 (Lagoons)	1160 (Large bays)	1170 (Reefs)	1610 (Esker Island)	1620 (Baltic Islets)
Sea	S, F	S, F	S, F	S, F	S, F	S, F	S, F
Lakes			S, F				
Rivers		S, F	S	S, F			
Land		S, F	S, F	S, F	S, F	S, F	S, F
Elevation			S, F				
Depth	S, F	S, F	S, F	S, F	S	S	S, F
Terrainmodel/BPI	F				S, F	F	
Wave exposure					S, F		S, F
Bottom substrate	S, F						
Subsurface and surface rocks					S, F		
Soil type (land/shores)					F	F	
Land cover: forest							S, F
Land cover: wetlands		F					
Land cover: estuaries		S					
Land cover: lagoons			S				
Coastal exploitation			S				
Satellite images /aerial photos		S					
Photic depth model					F	F	F
River flow		F					

Mapping – 1110 Sublittoral sandbanks

Sweden:
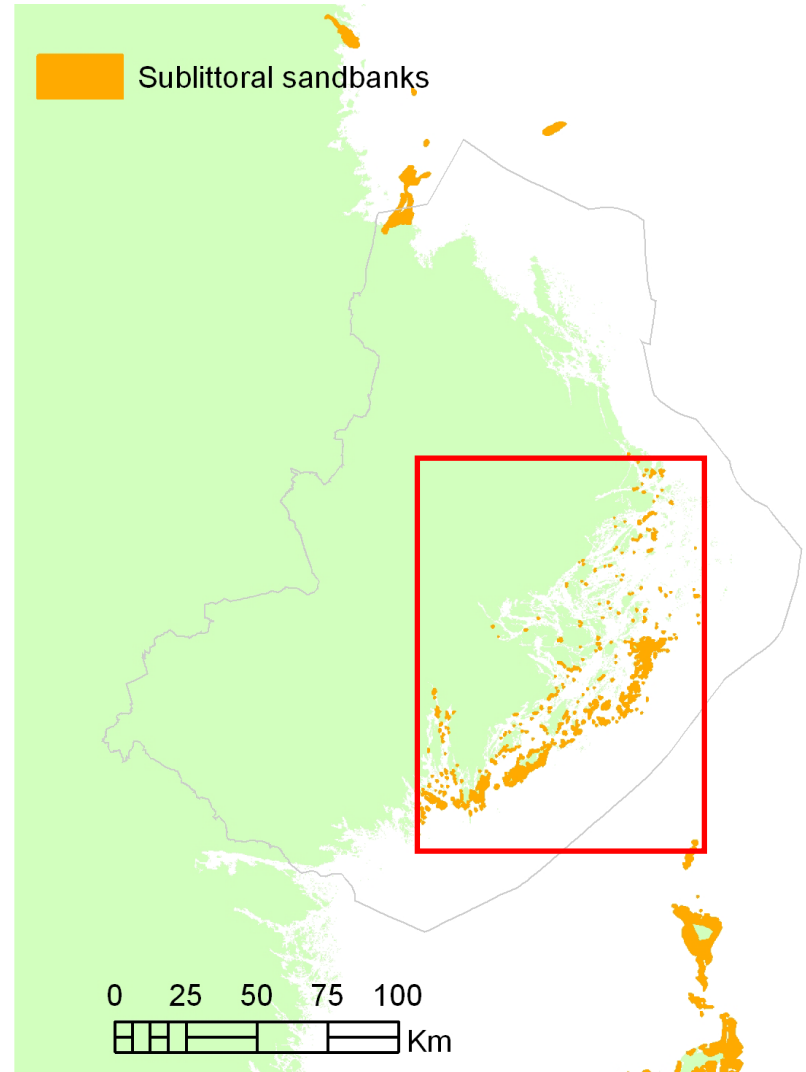
- Geological maps (sand)

- Depth model (< 30 m)

Finland:

- Terrain model (elevations)

- Geological data (> 70 % sand)

- Depth model (partly above 20 m)

Validity:

- Dependent on geological data

Sublittoral sandbanks

0   25   50   75   100
Km

Mapping – 1130 Estuaries

Criteria:

-"Sheltered/enclosed" areas

-Rivers (watershed/water flow)

-Depth model (< 3 m)

-Reed (S, F) /wetlands (F)

Validity:

-Identifies estuary-objects

-Land part of the habitat?

-Boundary towards the Sea?
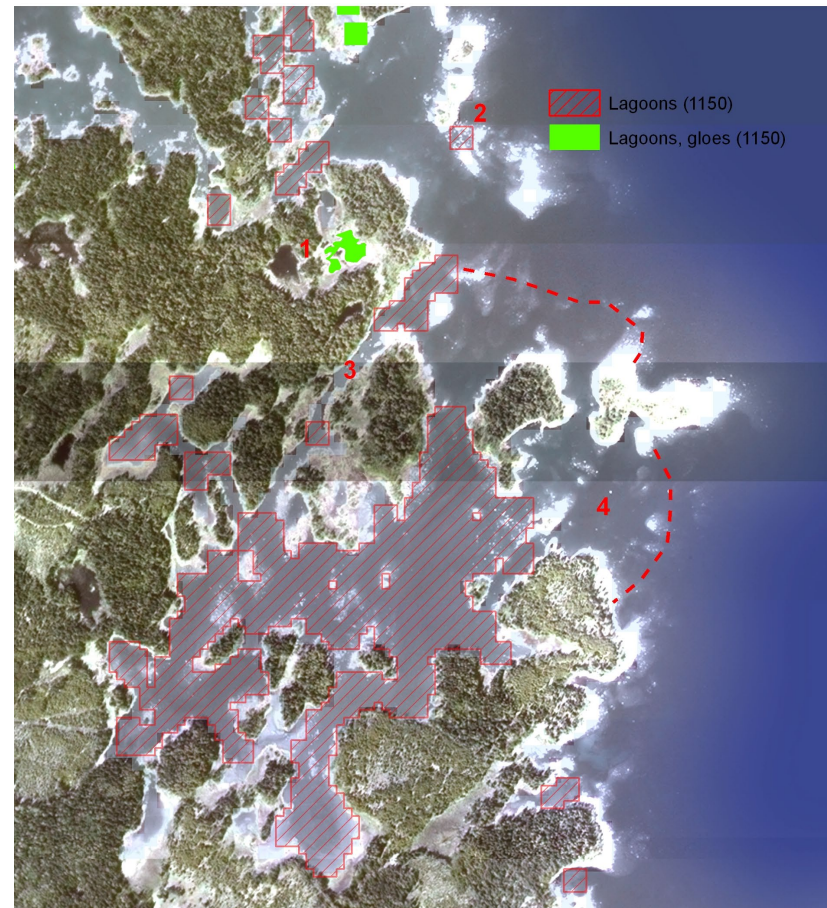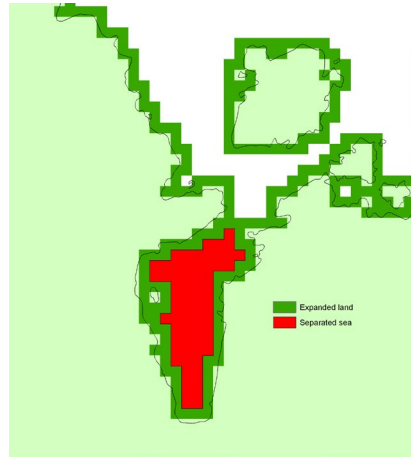
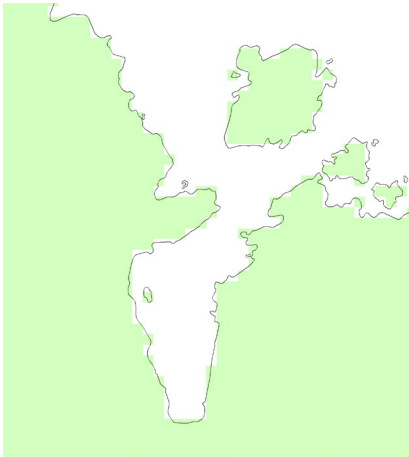# Mapping – 1150 Coastal lagoons

Gloes:

-Lakes < 30 m (F)/15 m (S) to shoreline

-Elevation < 5 m a.sl.

Lagoons (partly separated from sea):

-Opening towards sea < 30 m

-Depth model (< 6 m)

-Objects < 30 ha

-No inflow from rivers or exploitation along shoreline (S)

Mapping – 1150 Coastal lagoons

Expanded land
Separated sea
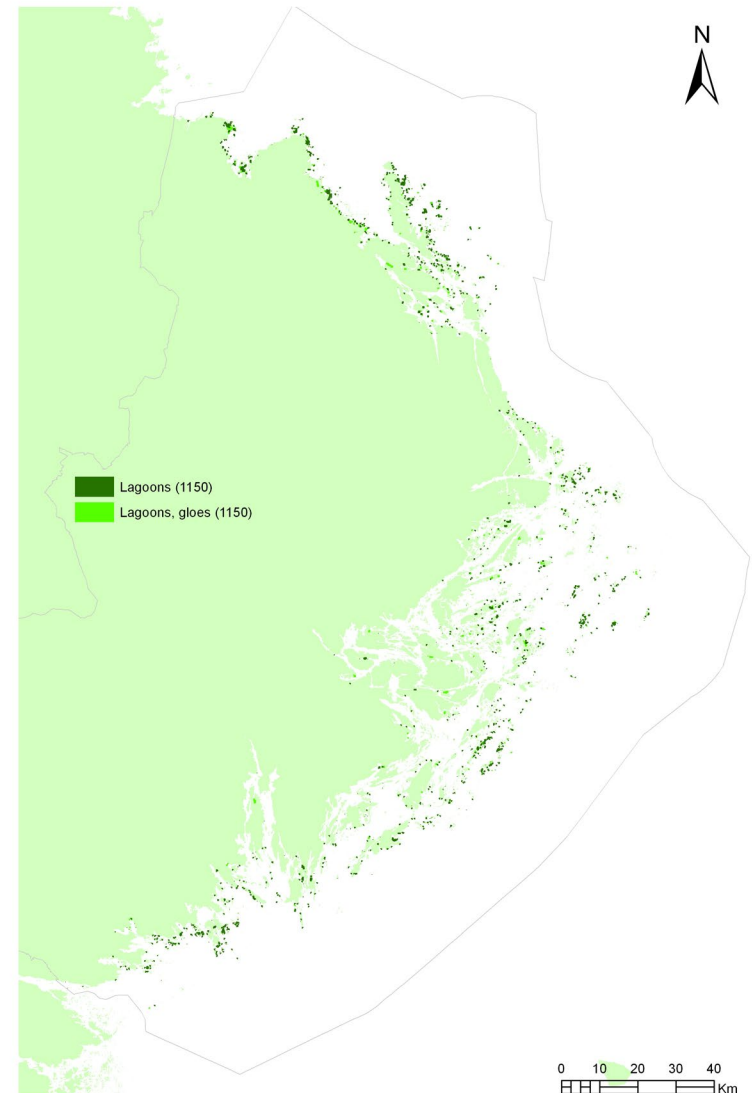
Lagoons (1150)
Lagoons, gloes (1150)

Validity:

-Identifies small, shallow water bodies

-Lakes without connections to sea?

-Rock pools?

-Narrow areas?

-thresholds towards the Sea?

# Mapping – 1150 Large shallow inlets and bays

Criteria:

-Shoreline

-"sheltered" sea areas: neighbourhood analysis of land within 1 km in 8 directions

-Objects > 20 ha

->80% of area < 15 m depth

Large shallow inlets and bays (1160)
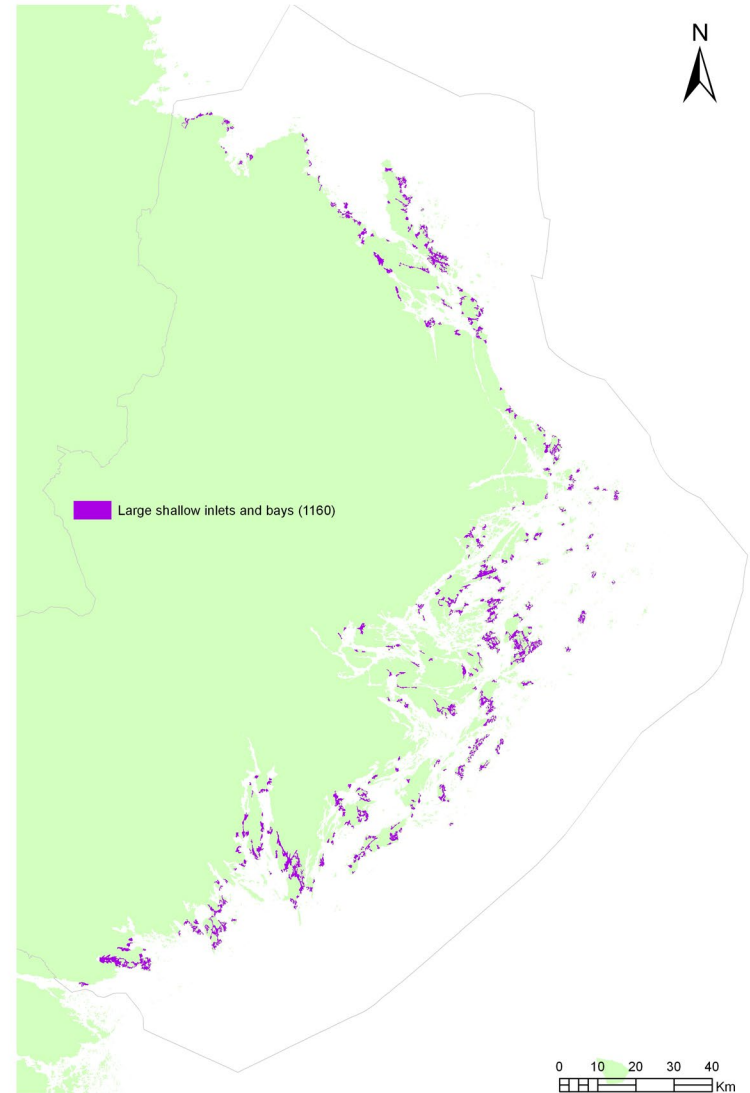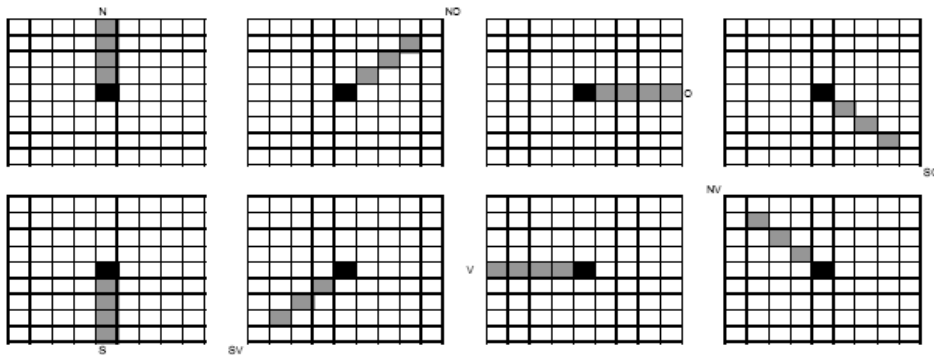
Mapping – 1150 Large shallow inlets and bays

Validity:

-Identifies sheltered shallow water bodies

-High biodiversity/algal zonation?

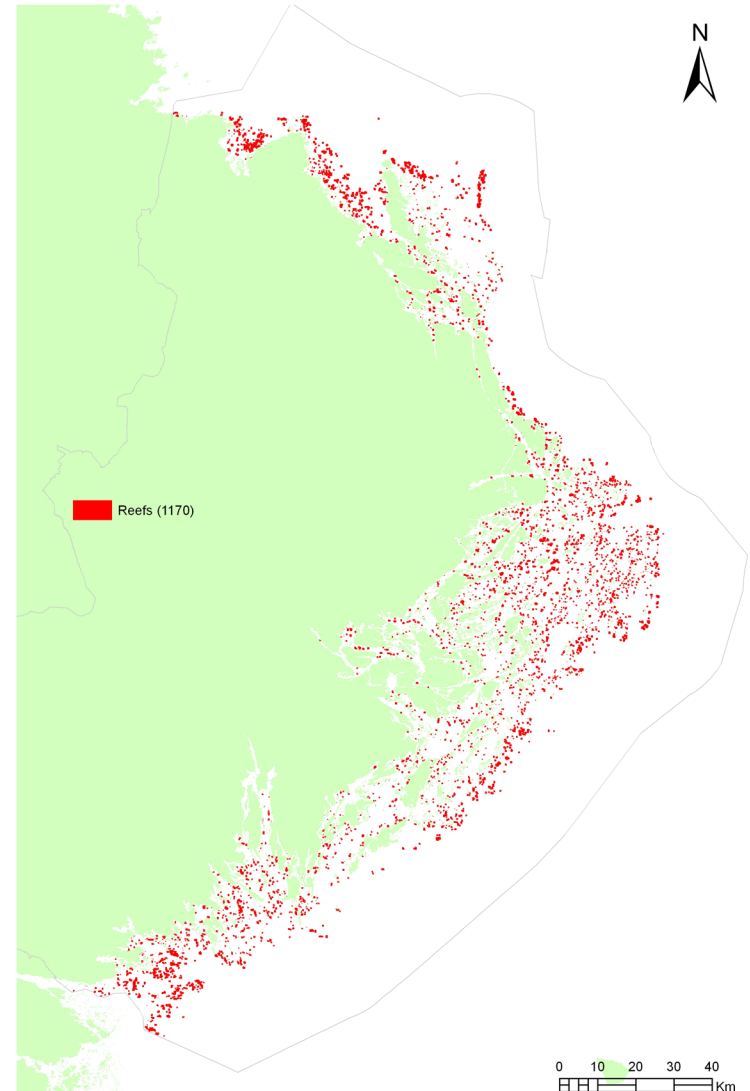
Large shallow inlets and bays (1160)
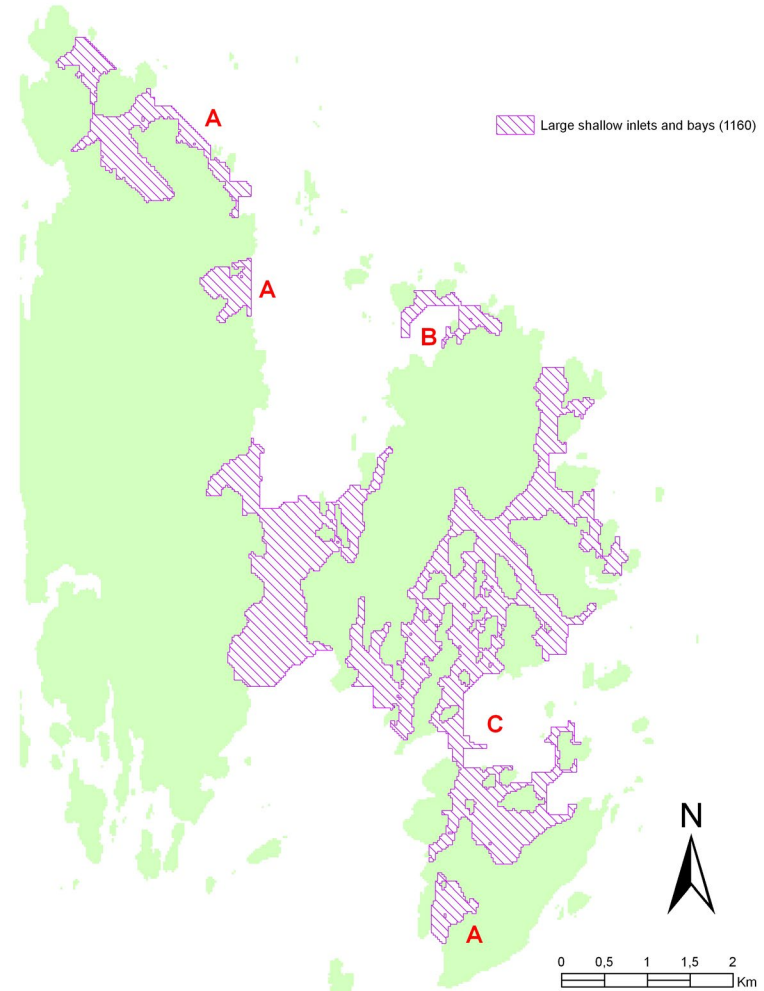
Mapping – 1170 Reefs

Criteria:

-Wave exposure

-Surfs and subsurface rocks

-Depth model (< 10 m S)

-Terrain model (peaks)

Validity:

-Feasible method

-Dependent on bathymetric data

-Dependent on substrate data

-Deeper reefs?

Reefs (1170)

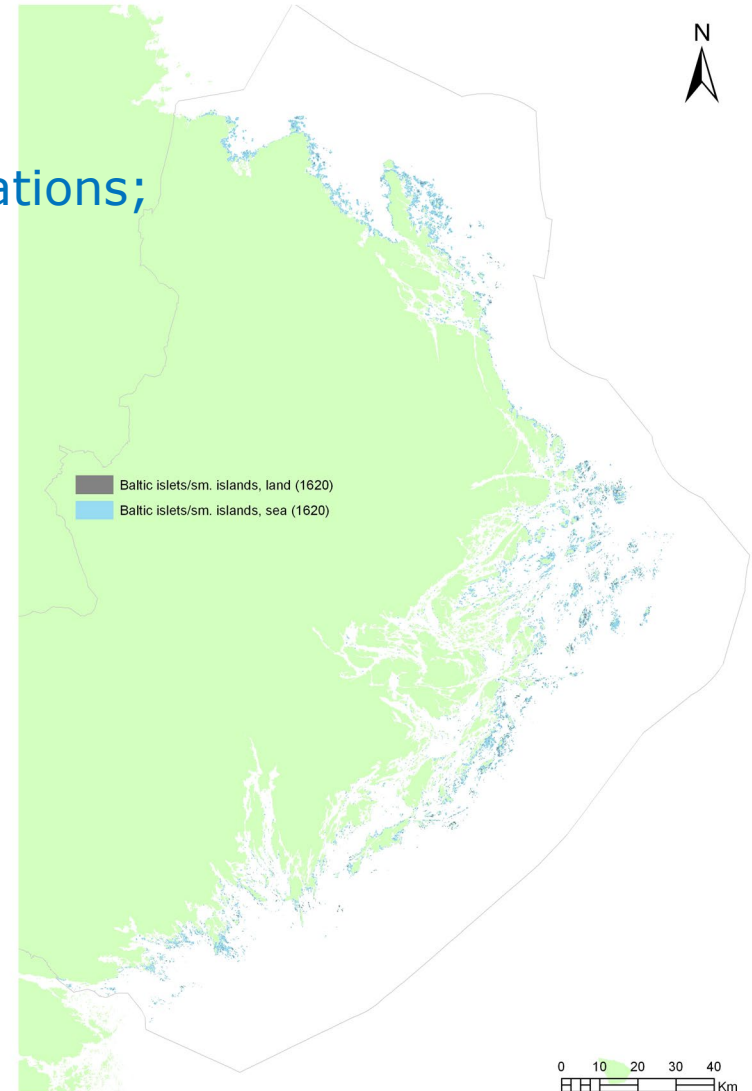# Mapping – 1620 Boreal Baltic islets and small islands

Landpart:

-Islands without forest cover in exposed locations;

 outer archipelago (F)/ wave exposure (S)

Marine part:

-200 m buffer around selected islands

-Photic depth (F)/Depth < 6 m (S)

Validity:

-Good selection of islands

-Marine part?

Baltic islets/sm. islands, land (1620)
Baltic islets/sm. islands, sea (1620)

Conclusions & perspectives

Key messages

The methods are direct and useful for mapping Natura2000-habitats

The results may be harmonised over national boarders

The results are sensitive to quality of input data

Next steps?

Depth and substrate data of higher resolution (availability)

Mapping of hard substrates and deeper habitats

Vegetation cover

Conclusions & perspectives

Perspectives

Gives managers overview

Base for connectivity-analysis

Possibility to compare areas (protected/unprotected)

Characteristics of an area

Photo: Göran Sundblad

Photo: Martin Isæus

Photo: Sandra Wennberg

Thank you for your attention