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The role of spatial biotope data and landscape characterization for linking biodiversity and ecosystem services in Finnish Archipelago Sea area

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The role of spatial data in biodiversity and ecosystem service research

- Habitat type and biodiversity are closely attached to ecosystem services
- Research interest is the link between habitat type and ESs
- Useful data by combining spatial datasets (e.g. habitat types, species inventories, cultural habitats, geology, landscape…)

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Landscape services

- Landscape mosaic – basis of ecosystem functions
- Landscape services: important but difficult to define
- Habitat type and landscape together could work as indicators for ecosystem services
  - Habitat type data is not necessarily representing the landscape characteristics

Landscape characterization

- Classification tool for landscape
- *Landscape characterization* aims to recognize unique character areas by their physical features, both natural and human induced (Swanwick 2002)
- *Character area* refers to distinctive, identifiable areas in landscape
- Practicable in different scales

Landscape characterization

- Classification is based on geologal, topographical, vegetational and land use data
- Physical features from datasets are calculated for each polygon of the area
- Statistical analysis: clustering polygons into groups
- Landscape character areas can be interpreted from similar polygon groups
- Analysis can be validated on field

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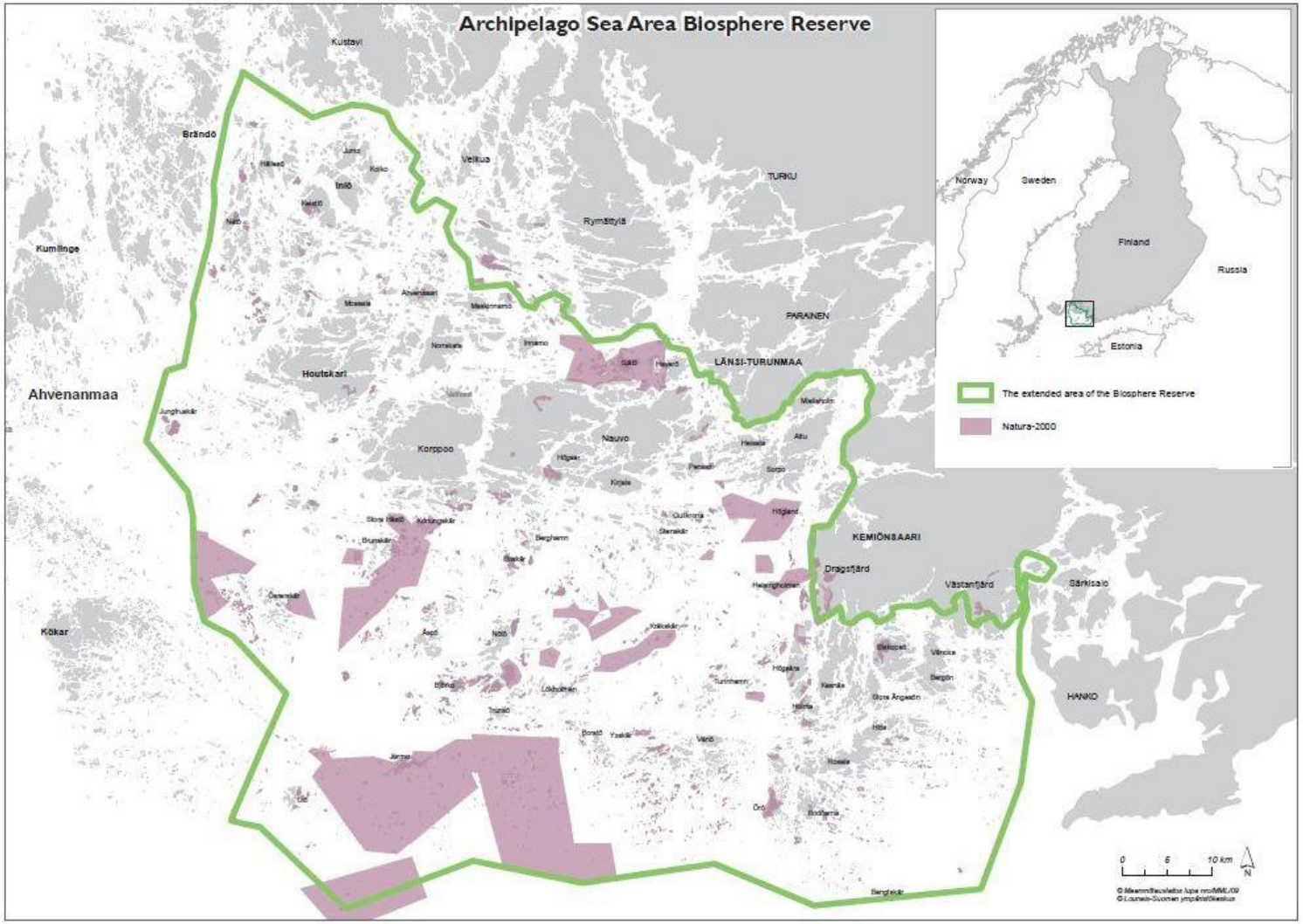
Landscape characterization in Archipelago Sea



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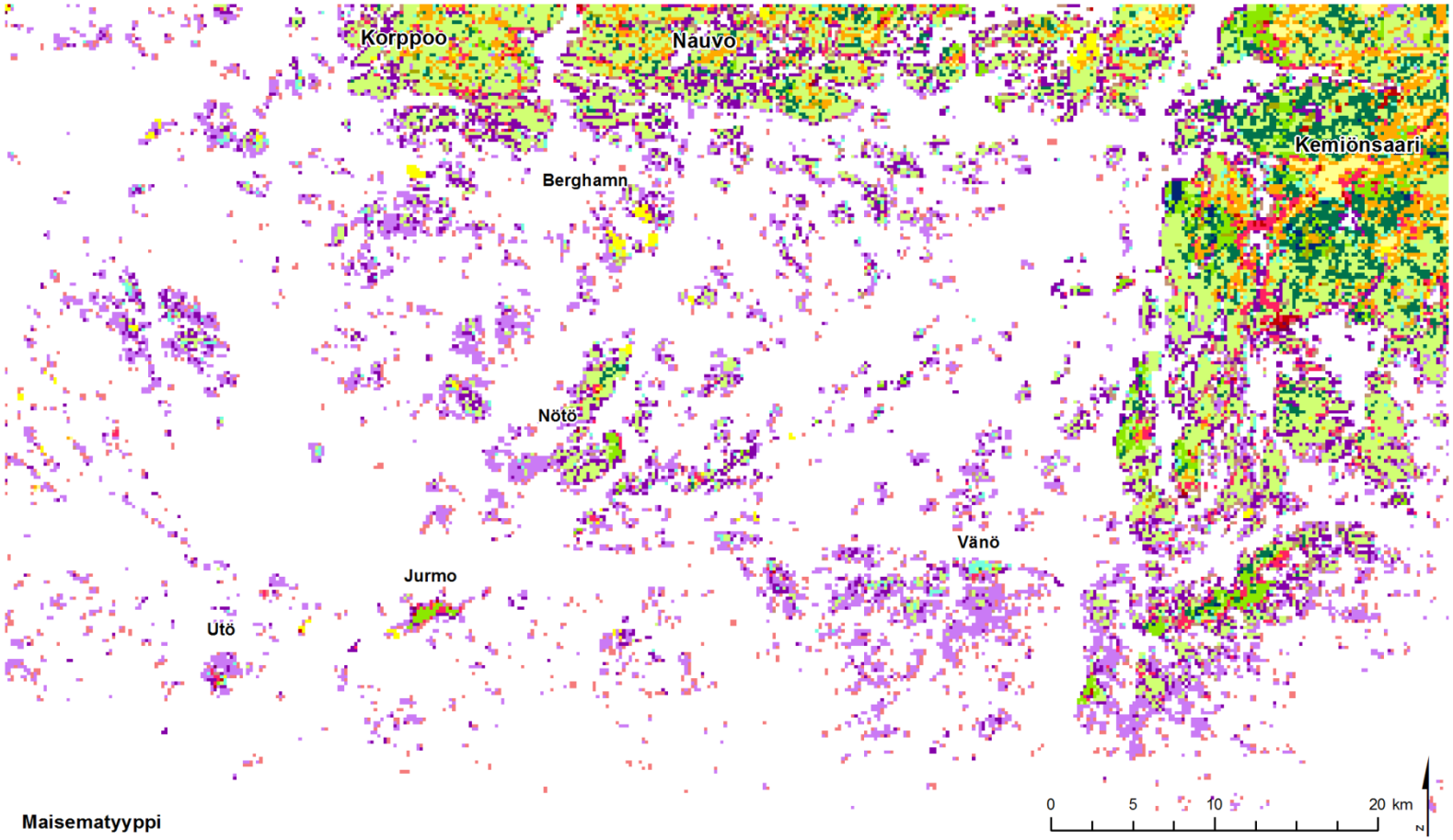
Korppoo
Nauvo
Kemiönsaari
Berghamn
Nötö
Vänö
Jurmo
Utö
0
5
10
20 km
N
Maisematyyppi
Vesi
1 Tiiviisti rakennettu tasainen alue
2 Maastoltaan vaihteleva esikaupunkialue/maaseutukaupunkialue
3 Väljästi rakennettu puustoinen ranta
4 Metsäinen haja-asutusalue vaihtelevassa maastossa
5 Peltotasanko savi- tai suomaaperällä
6 Pellon ja metsän vuorottelu vaihtelevassa maastossa
7 Laitumet
8 Paljas tasainen avokallio
9 Kumpuileva männikköinen avokallio
10 Tasainen mäntymetsä kalliomaalla (ranta)
11 Mäkinen mäntymetsä kalliomaalla
12 Tiheä moreenimaan kuusimetsä
13 Lehtipuuvaltainen metsä mäkisessä maastossa
14 Sekametsä mäkisessä maastossa
15 Sekametsä kumpuilevassa maastossa
16 Sekametsä tasaisessa maastossa

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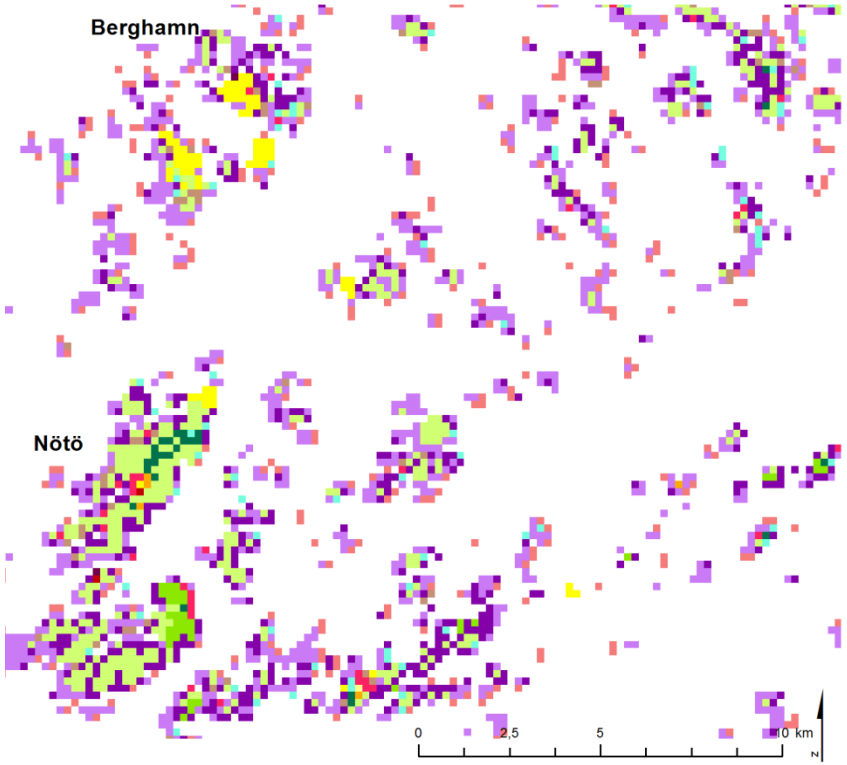
Prospects and challenges

- Landscape characterization could be used as a tool for ES mapping
  - Landscape services
  - Other services by combining landscape data with other datasets
- Landscape changes
  - Challenging for analysis
  - Interesting from the viewpoint of ESs
  - Repeated analyses to distinguish landscape change?

Prospects and challenges

- Data from varying sources
- Classification is subjective tool
- Scale – which one to choose?
- Scales vary depending

  on used datasets



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Thank you!

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