

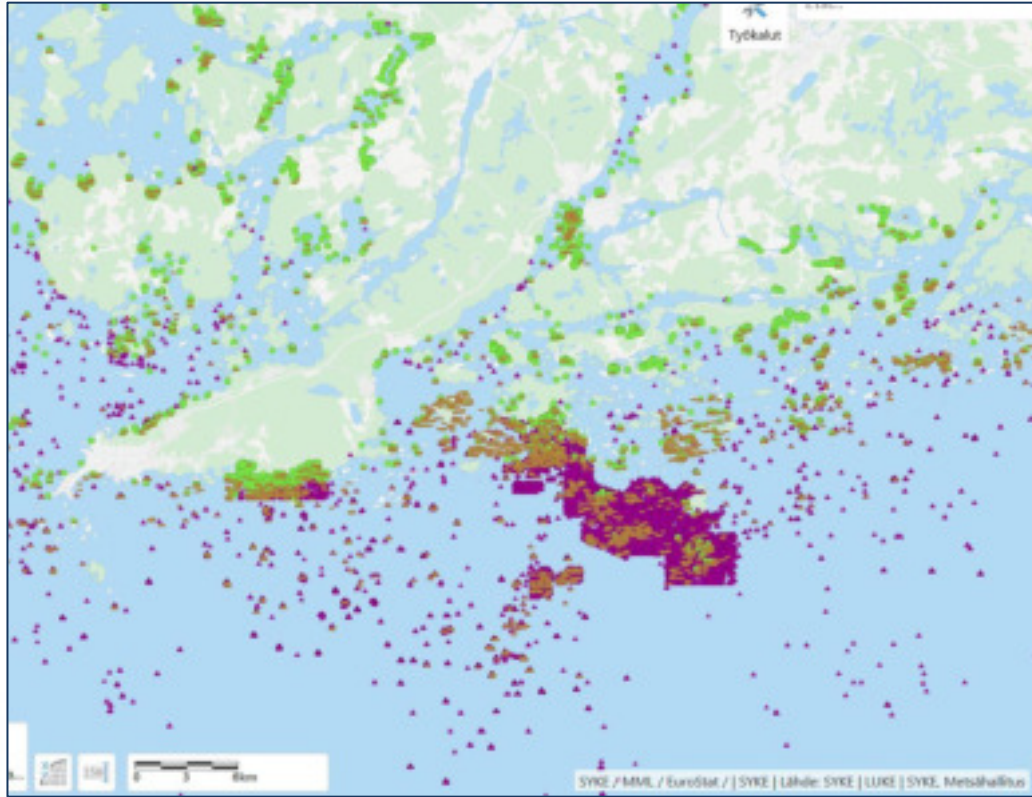
Ecosystem components for maritime spatial planning

Kirsi Kostamo

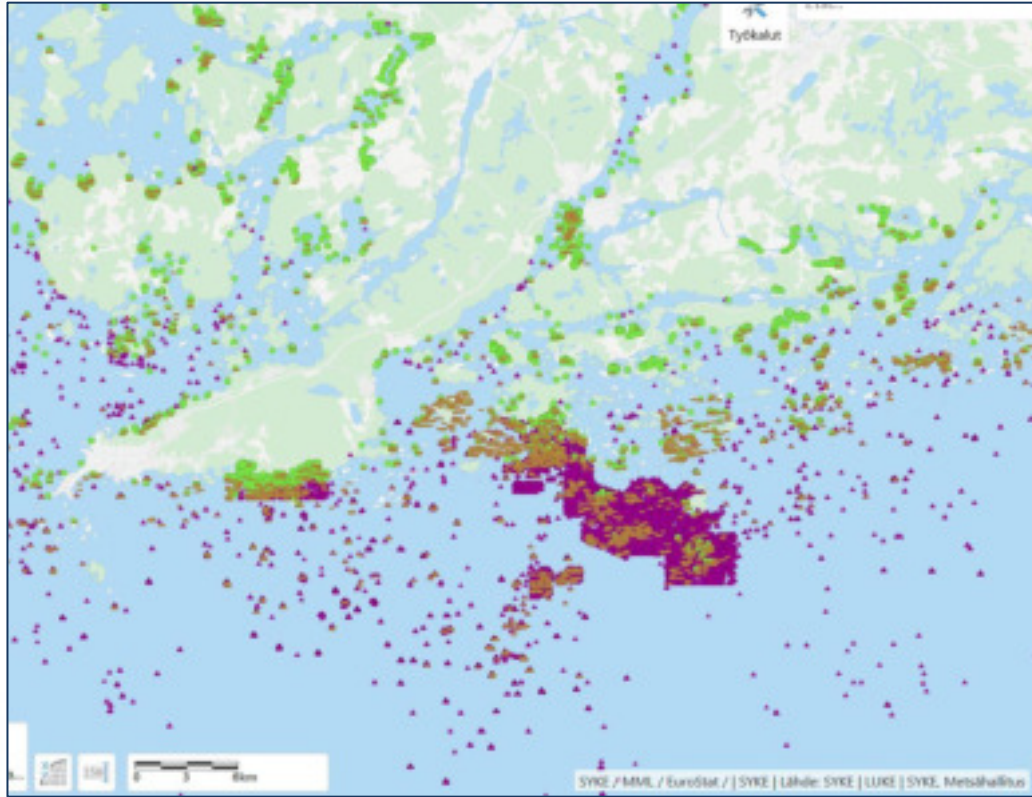
Marine Research Centre

Finnish Environment Institute

From sampling to ecosystem components

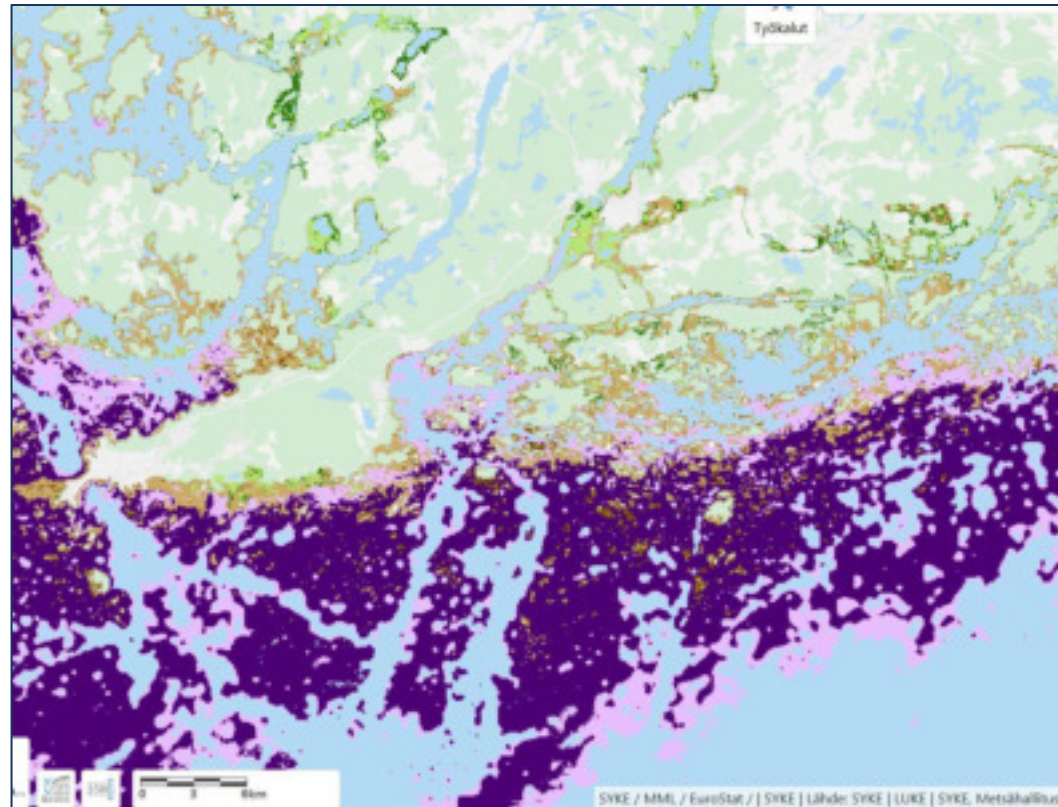


From sampling to ecosystem components



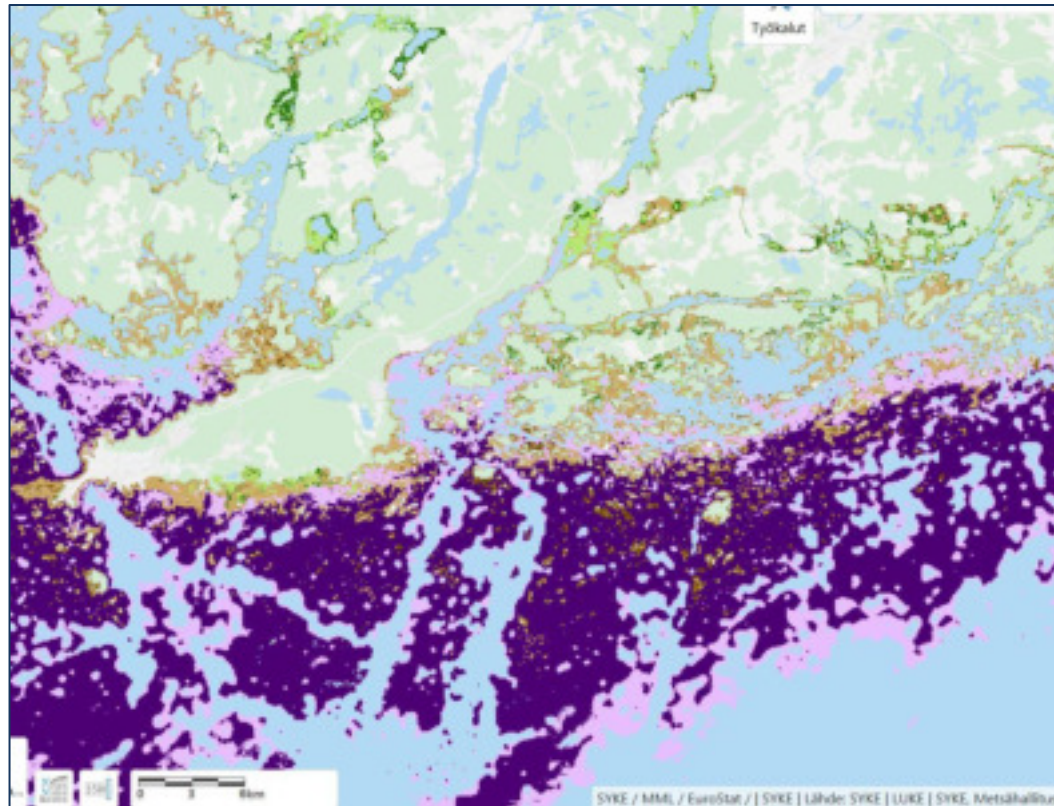
- Presence of key habitat forming species
- Some areas are covered more efficiently by sampling (MPA)

From sampling to ecosystem components

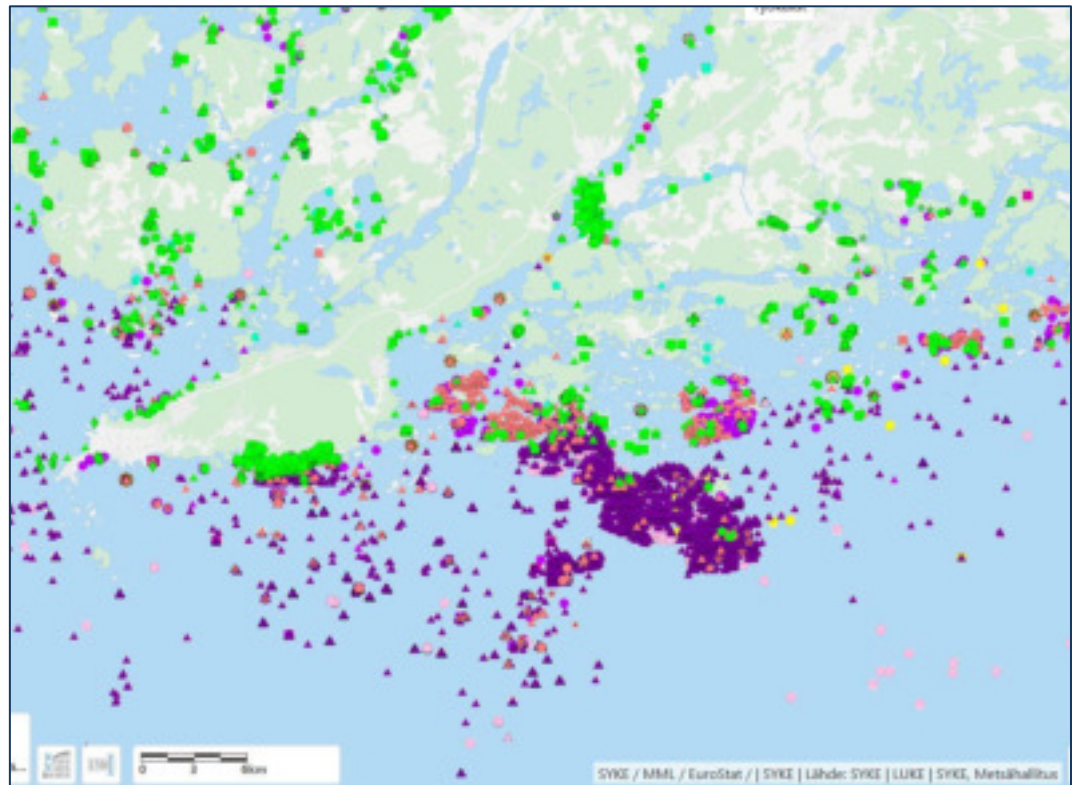


From sampling to ecosystem components

- Models of habitat forming species distribution
- Data availability and modeling methods strongly influence the results

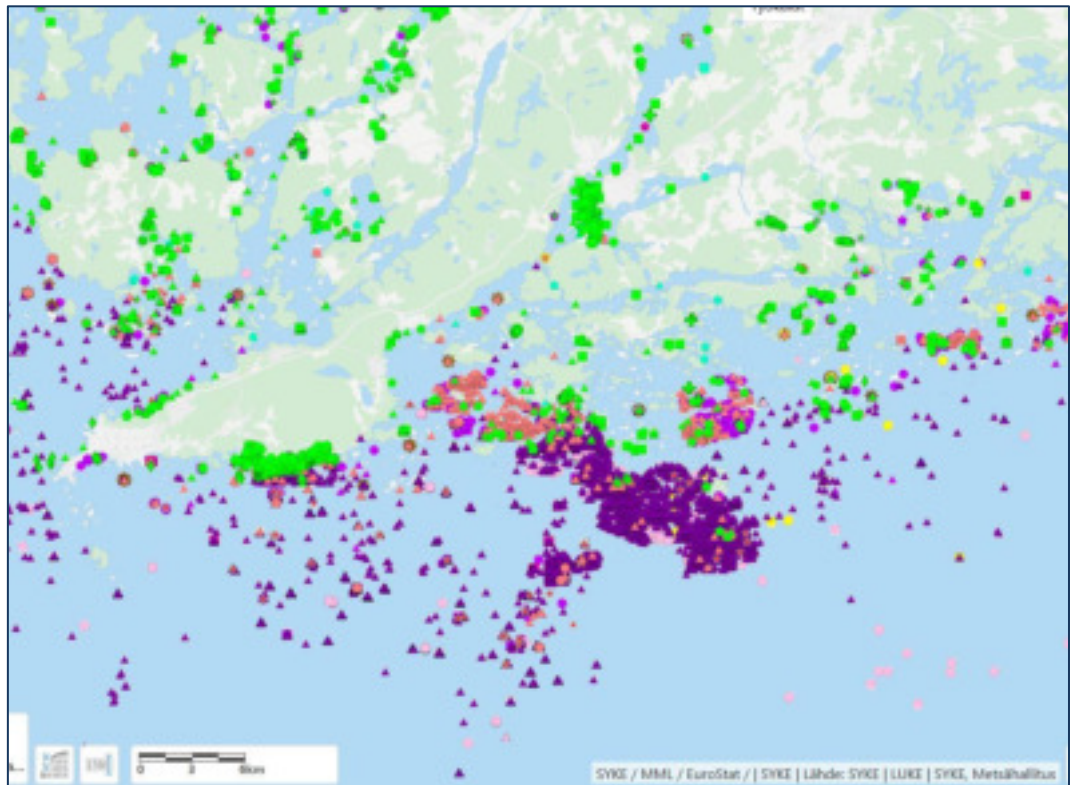


From sampling to ecosystem components

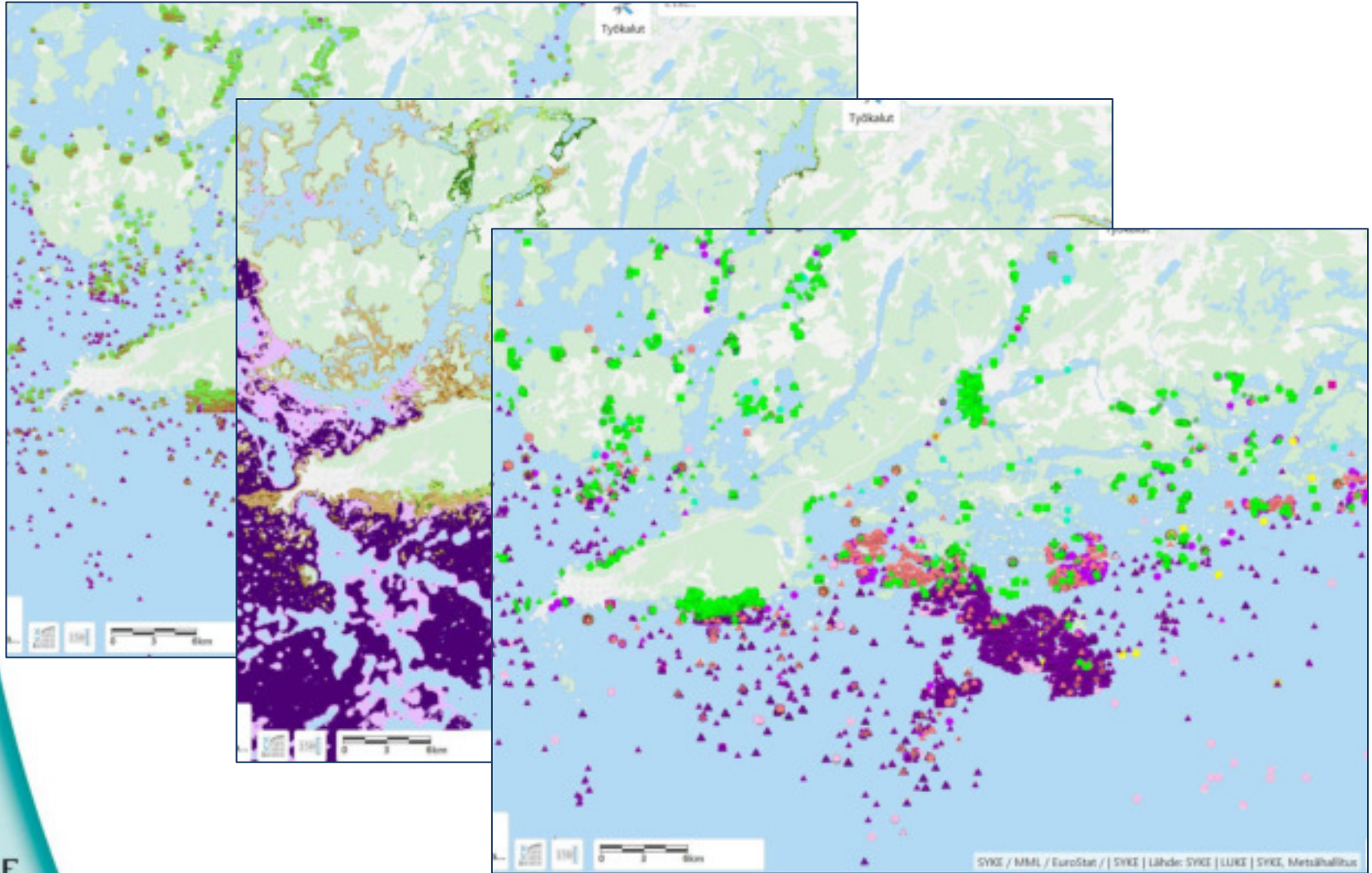


From sampling to ecosystem components

- HELCOM Biotope classes occurrence based on sampling points
 - We have also models on their distribution
 - Models on have restrictions...



From sampling to ecosystem components



Ecosystem components for MSP

- Habitat forming species
- Key habitats
- Fishes and their reproduction/migration areas
- Birds: nesting, migration, etc.
- Mammals
- Endangered species

- Ecosystem functions?
- Ecosystem services?

Ecosystem components for MSP

- Habitat forming species
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- Birds: nesting, migration, etc.
- Mammals

→ *At the best, dozens of maps requiring expert knowledge on marine biology, modeling, etc.*

How can this vast amount of knowledge be used efficiently as a part of ecosystem-based MSP process?

How can planners know that they are following the principles of ecosystem-based MSP process?

How can stakeholders assess the process?

Common approach for ecosystem-based MSP

1. Data driven identification of environmental hotspot areas and their recognition in the planning process
2. Harmonized use of environmental legislation throughout the MSP process
3. Efficient monitoring

1. Data driven identification of environmental hotspot areas and their recognition in the planning process

- Sound database: environmental (and socio-economic) values identified, mapped and modeled
- Identification of environmental hotspot areas that sustain BD and ecosystem functions (scientists)
- Participatory process to identify key areas for high BD/ecosystem functions
- Assignment of BD areas in the MSP (planners)

2. Harmonized use of environmental legislation through MSP process

- Restrictions and requirements for MSP from existing legislation and international agreements identified
- Example 1. EU's Habitats Directive
 - Locations of important marine and coastal habitats, endangered species
- Example 2. EU's MSFD
 - Are there measures that need to be taken in planning to achieve the goals of MSFD? What are they?
 - Are there some restrictions needed for sea use to achieve GES?

→ Planning is easier when a harmonised view on restrictions and requirements exist

→ EIA processes are more predictable and economically viable

3. Efficient monitoring

- Environmental and socio-economic indices to assess the success of MSP
 - Do existing environmental indices sufficiently describe the spatial existence, functions and state of the marine environment?
 - Do we have suitable socio-economic indices?

Measuring the effects of realised MSP will give tools for future development!



Thank you!