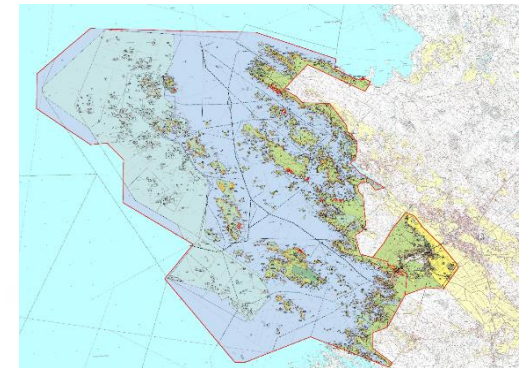
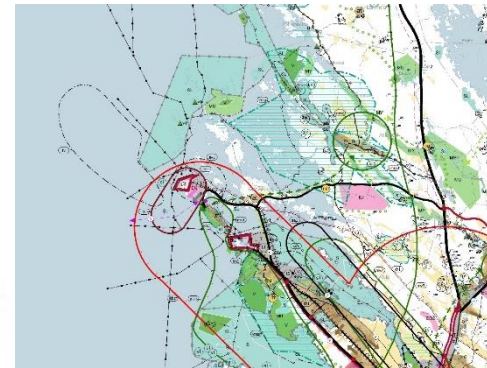


Regional plans as a tool to assess human pressures in the coastal zone of Finland

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Plan4Blue seminar 5.6.2019



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Acknowledgements

- SustainBaltic 2016–2018 (Interreg Central Baltic 2014-2020)
 - Aims to enhance integrated coastal zone management and sustainable use of coastal resources in the Northern Baltic Sea
 - Lead by University of Turku, Finnish project partners Finnish Environment Institute and the Regional Council of Satakunta
- SmartSea 2014–2021 (Strategic Research Council of Academy of Finland)
 - Provides science-based guidance and new innovations for the sustainable use of the Finland's marine resources
 - Lead by Finnish Meteorological Institute, other Finnish partners e.g. Finnish Environment Institute, Natural Resources Institute, VTT Technical Research Centre of Finland and the Universities of Turku and Helsinki



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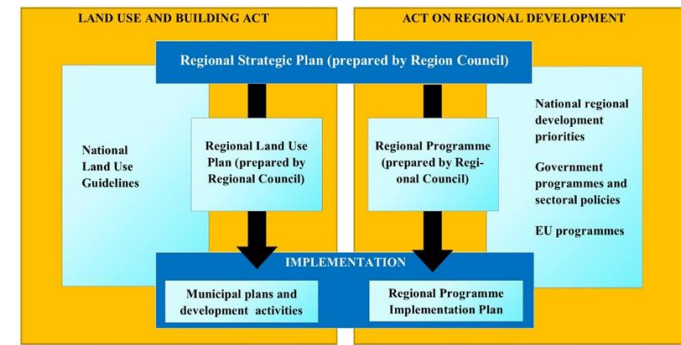
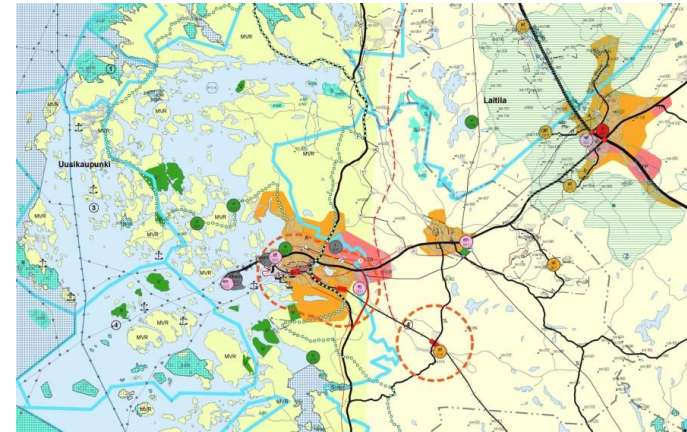


Pressures, conflicts and planning in the coastal zone management

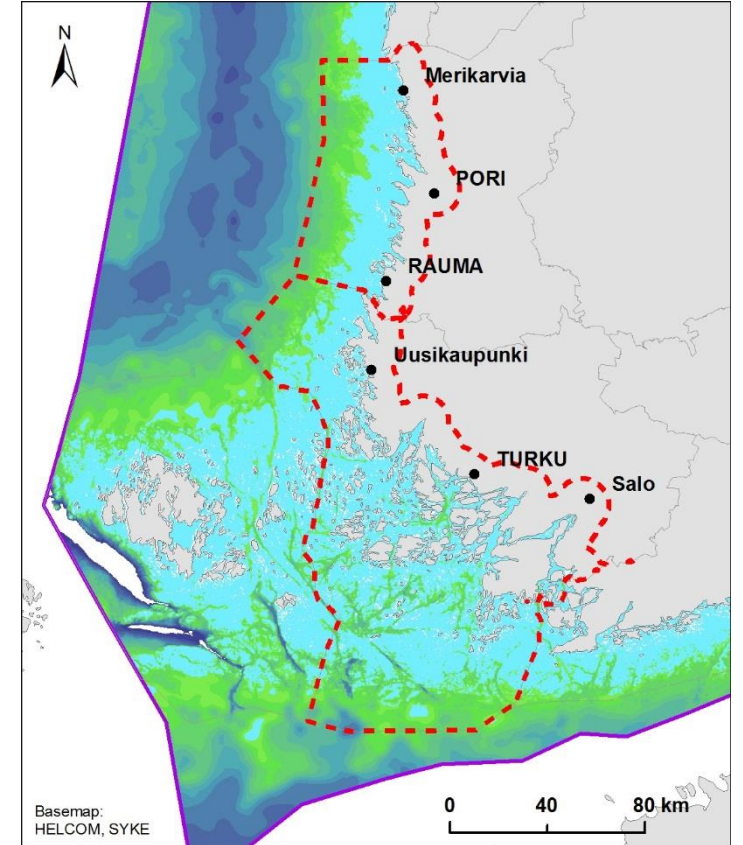
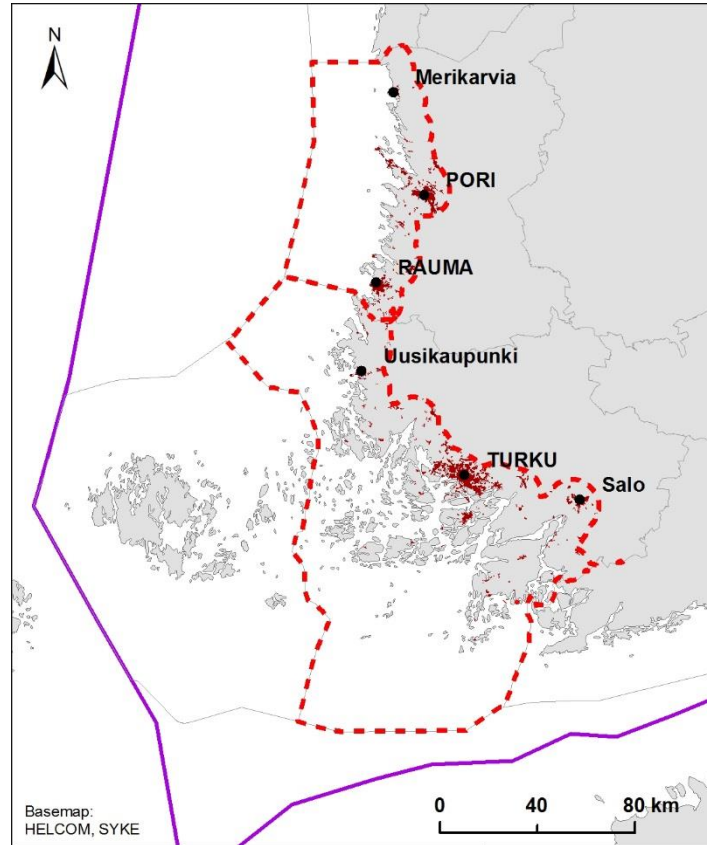
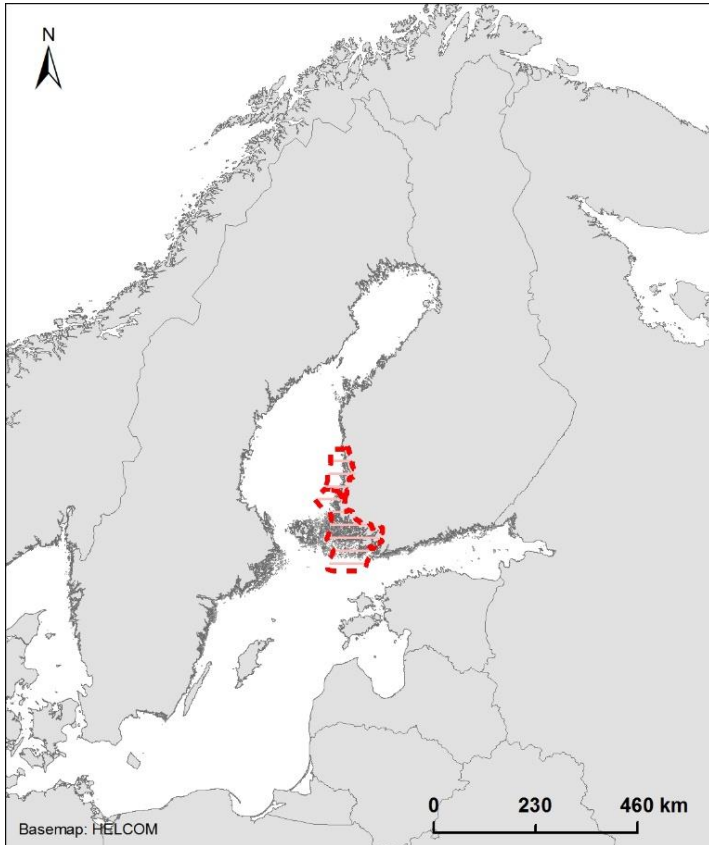
- Land-use conflicts are situations in which involved people and parties have incompatible interests concerning the land use within the specific area (Hersberger ym. 2015).
- Planning resolves conflicts by 1) identifying potential conflict areas in the early stages of the process, and 2) seeking mutual agreement between competing interests and stakeholders
- High number people and limited space increases both human pressures towards fragile coastal ecosystems and conflicts within the coastal zone

Land use planning system in Finland

- Three-level planning system which translates National Land Use Guidelines and regional objectives to the activities on a local scale
 - *Regional plan creates a vision for the future land use (~10 years) based on the current and proposed activities and interests*
 - *Regional plans cover the entire region but they can have large areas with no specific interests ("white areas")*
 - *Large variety of marking and descriptions*
 - Regional Councils and coastal municipalities have the mandate to plan activities also on territorial waters
- ⇒ **Overlap between terrestrial and maritime spatial planning in Finland!**



Study area



Aims of this presentation

- 1) To demonstrate the use of regional plans as a baseline data to analyze the distribution of regional interests in the coastal zone of Finland
- 2) To compare the intensity of coastal land and marine use in southwestern Finland (regions of Satakunta and Southwestern Finland) based on the statutory regional plans
- 3) To identify areas with high interest towards
 - I. *human development (i.e. activities that alter natural environments), and*
 - II. *environmental conservation and regulation (i.e. activities that maintain the state of the environment)*

Data extraction and analysis

1. Data extraction

- Regional plans of Satakunta and SW Finland (available in Lounaispaikka.fi)
- Only statutory (finalized) plans considered

2. Layer extraction, polygonization and buffering

- Point markings (buffers 150 m and 250 m), line markings (buffer 150 m)

3. Data harmonization and layer synthesis

- Combining similar activities into same layers within and between regions

4. Classification of markings based on their environmental impact

- Three classes: 1) Active land use (development), 2) Neutral/inconclusive, and 3) Conservation and regulation

5. Summation of activities within 1 km*1 km grid

- Border cells (partly within neighboring region) excluded

A) Satakunta (41 layers)

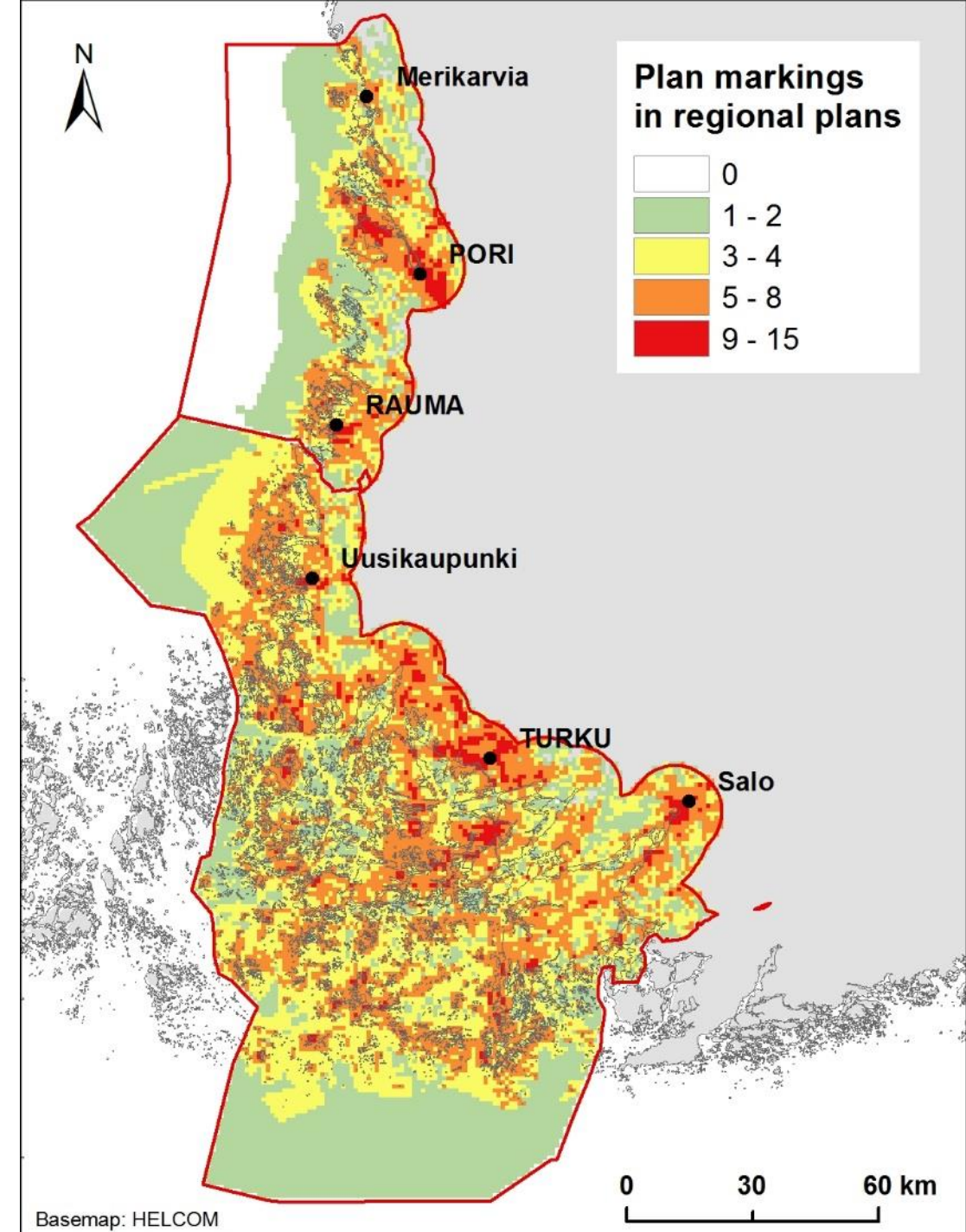
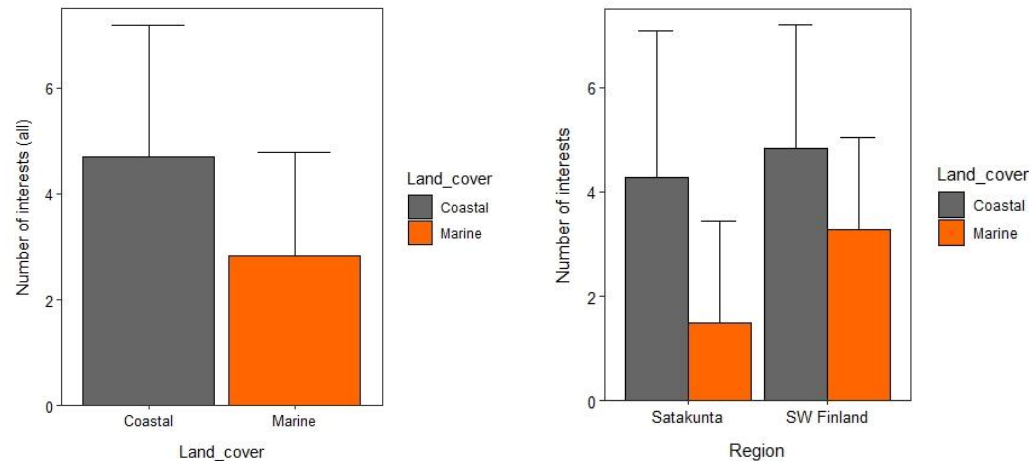
	Development	Neutral	Conservation
Autoliikenne	1	0	0
Energiahuolto	1	0	0
GE_alueet	0	0	1
Hiljaisuus	0	0	1
Jatehuolto	1	0	0
Kaasuputki	1	0	0
Kaivostoim	1	0	0
Kauppa	1	0	0
Kaupunkipuisto	0	0	1
Keskustatoim	1	0	0
Keskustatoim_keh	1	0	0
Kulttuuriymp	0	0	1
Laivavayla	1	0	0
Lentoliikenne	1	0	0
Lsuoj_heikko	0	0	1
Lsuoj_kova	0	0	1
Maa_aines_turve	1	0	0
Maisema	0	0	1
Matkailu_keh	0	1	0
Matkailupalvelut	1	0	0
Melu	0	1	0
Moottorirata	1	0	0
Muinaisjaan	0	0	1
Natura2000	0	0	1
Palvelut	1	0	0
Pohjavesi	0	1	0
Raideliikenne	1	0	0
Satama	1	0	0
Satama_keh	0	1	0
Suojavyoh	0	1	0
Taajama	1	0	0
Teollisuus	1	0	0
Tie_hist	0	0	1
Tulva	0	1	0
Tuulivoima	1	0	0
Tyopaikat	1	0	0
Vedenottamo	1	0	0
Vesijohto_viem	1	0	0
Viestiliikenne	1	0	0
Virkistys	0	0	1
Voimajohto	1	0	0

B) SW Finland (41 layers)

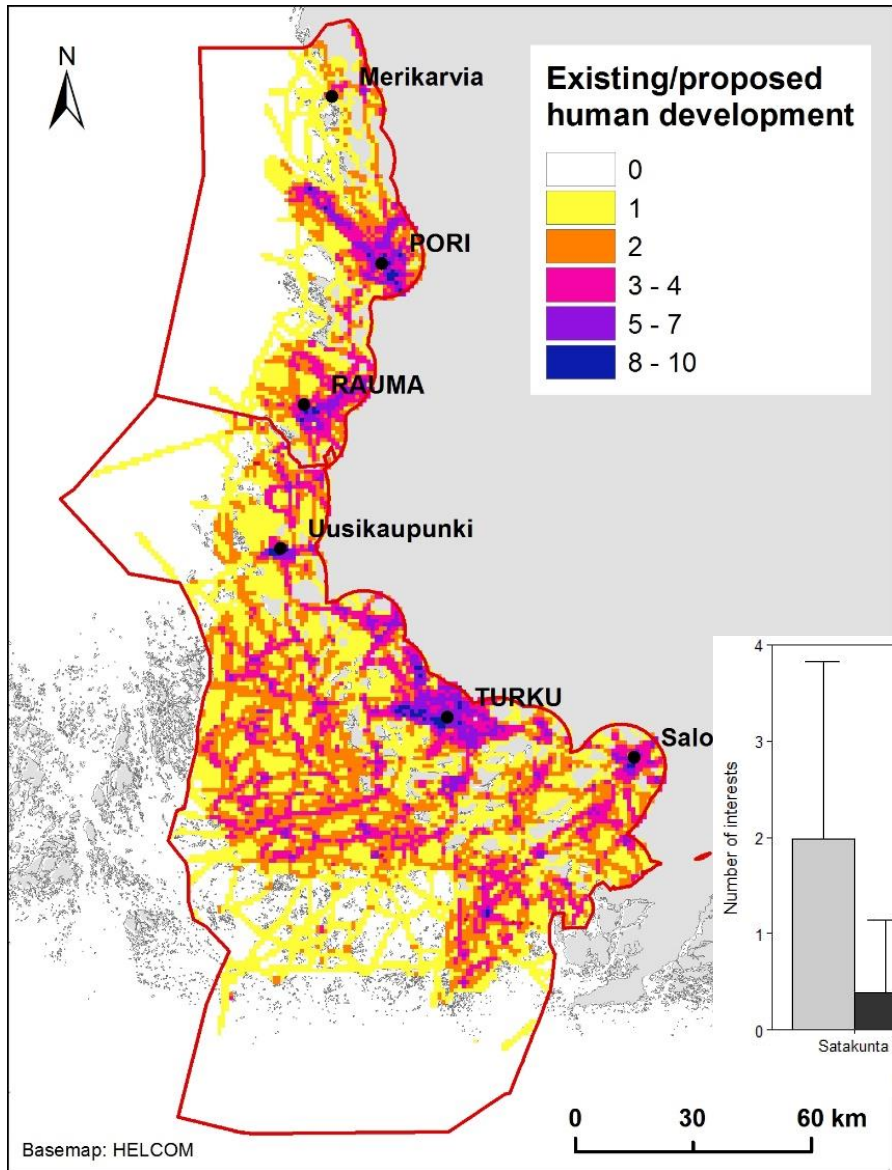
	Development	Neutral	Conservation
Ampuma	1	0	0
Autoliik	1	0	0
Energia	1	0	0
GE_alueet	0	0	1
Jatehuolto	1	0	0
Kaasuputki	1	0	0
Kaivostoim	1	0	0
Kalatalous_keh	0	1	0
Kauppa	1	0	0
Kauppa_keh	1	0	0
Kaupunki_keh	1	0	0
Keskusta	1	0	0
Kulttuuriymp	0	0	1
Laivaliikenne	1	0	0
Lentoliikenne	1	0	0
Matkakeskus	1	0	0
Lsuoj_heikko	0	0	1
Lsuoj_kova	0	0	1
Luontomatk_keh	0	1	0
Maisema	0	0	1
Matkailu	1	0	0
Melu	0	1	0
Mitoitus1-6	* Mitoitusperusteen mukaan		
Muinaisj	0	0	1
Natura2000	0	0	1
Pintavesi	0	1	0
Pohjavesi	0	1	0
Puolustus	0	0	1
Raideliikenne	1	0	0
Satama	1	0	0
Suojavyoh	0	1	0
Taajama	1	0	0
Taajama_keh	1	0	0
Teollisuus	1	0	0
Teollisuus_keh	1	0	0
Tie_hist	0	0	1
Tuulivoima	1	0	0
Tyopaikat	1	0	0
Vesihuolto	1	0	0
Virkistys	0	0	1
Voimajohto	1	0	0

Distribution of regional interests in the study area

- Number of different plan markings varied between 0-15 within grid squares (1 km * 1km, n= 19 432)
- Activities focus on coastal (4.7±2.5 marks/pixel, n=6 819) rather than marine areas (2.8±2.0, n=12 613)

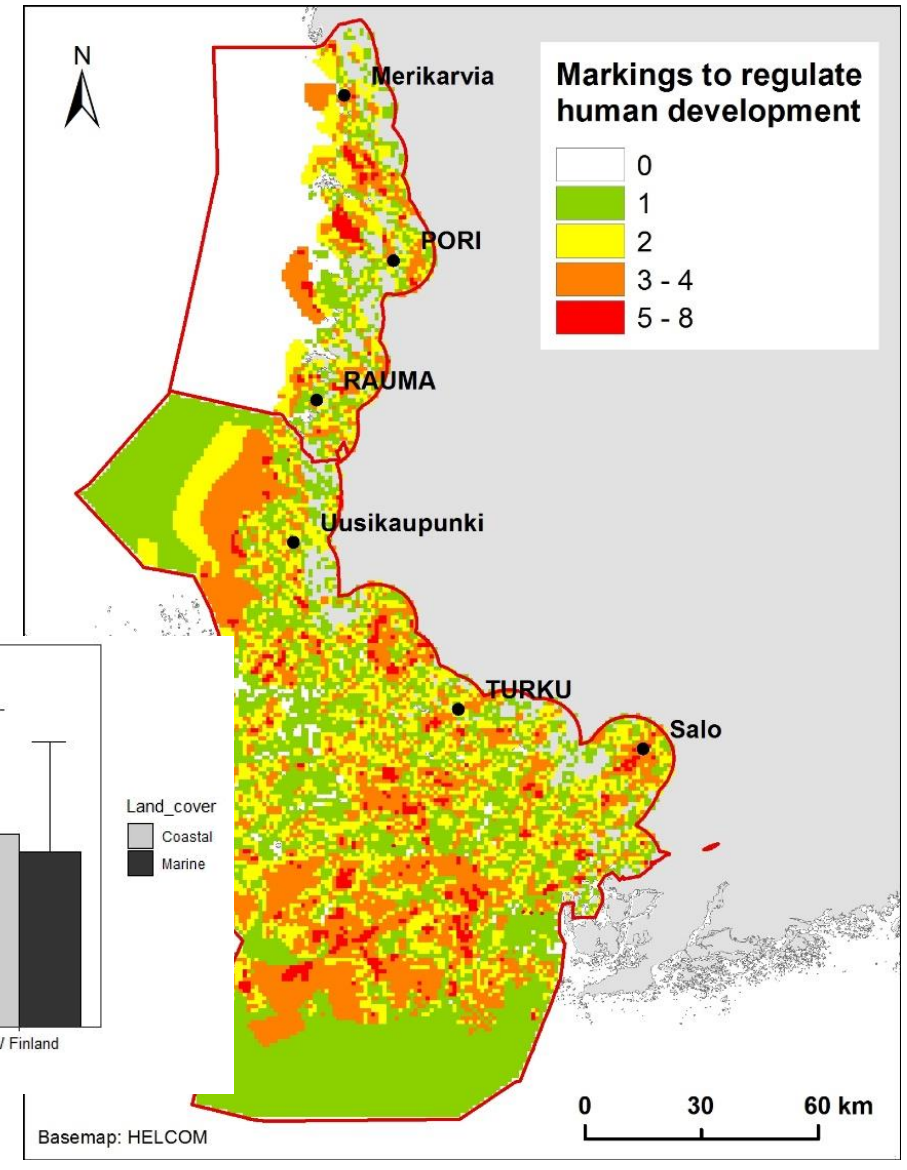


A) Human development



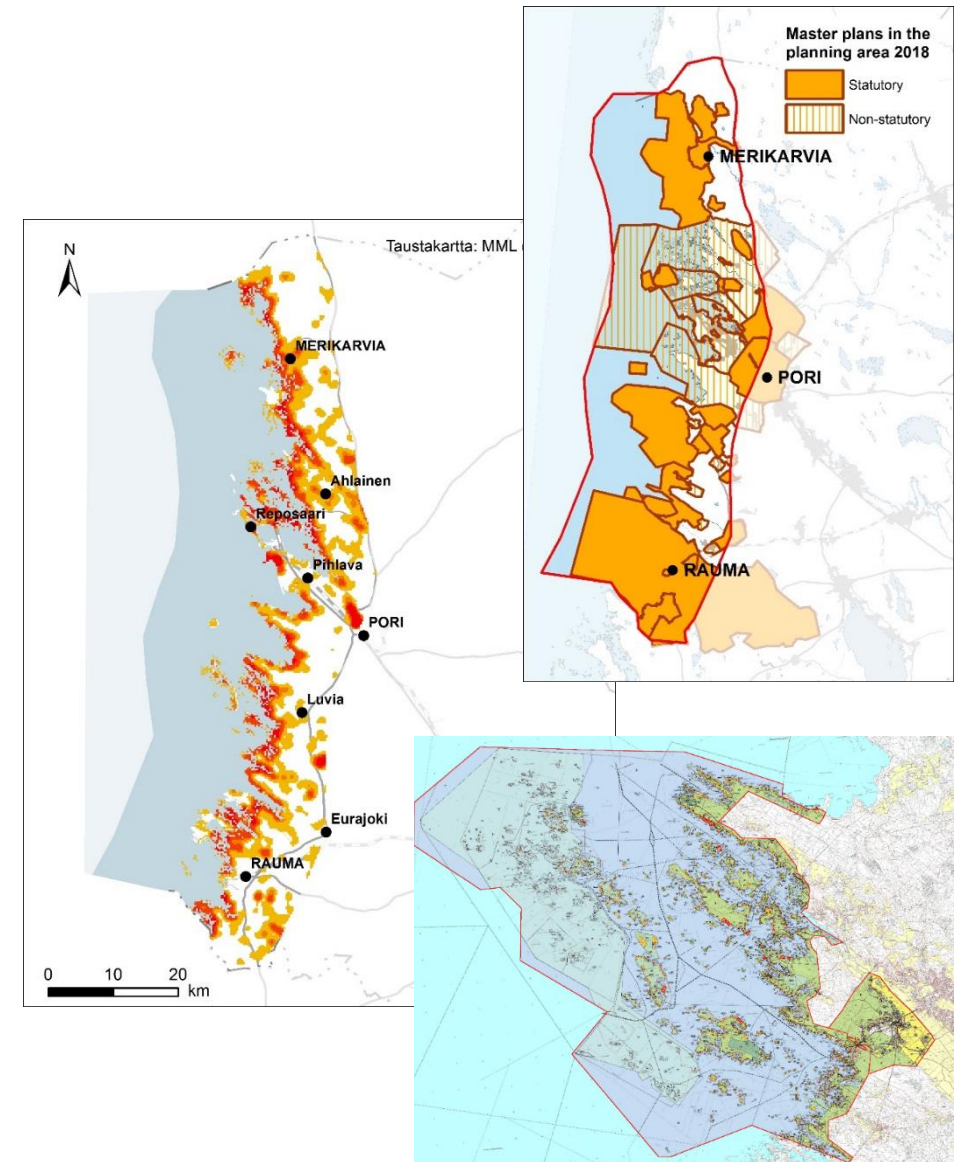
Distribution of land use interests in the study area based on the regional plans

B) Conservation and regulation



Limitations of the analysis

- Naive method!
- Unharmonized markings between regions limit the explicit comparison
- Finnish land use planning system does not regulate all human-based activities/interests. Additional data is needed at least from the following activities
 - *Forestry (announcements of the forest management)*
 - *Nature conservation (areas designed for nature conservation)*
 - *Small-scale residential housing and construction (municipal master plans)*
 - *Professional fisheries*





Plans and reports produced in the SustainBaltic project can be downloaded from:

- <https://www.utu.fi/en/sites/SustainBaltic/Pages/home.aspx>

Thank you for your interest!

