



Conference on Maritime Spatial Planning  
Pärnu, 19 Mai 2015

# Maritime spatial planning needs in terms of data

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# Marine space



**DIRECTIVE 2014/89/EU OF THE EUROPEAN PARLIAMENT AND OF THE  
COUNCIL**

**establishing a framework for maritime spatial planning**

**The high and rapidly increasing demand for maritime space for different purposes, such as installations for the production of energy from renewable sources, oil and gas exploration and exploitation, maritime shipping and fishing activities, ecosystem and biodiversity conservation, the extraction of raw materials, tourism, aquaculture installations and underwater cultural heritage, as well as the multiple pressures on coastal resources, require an integrated planning and management approach.**

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COUNCIL**

**establishing a framework for maritime spatial planning**

**Maritime spatial planning will contribute to the effective management of marine activities and the sustainable use of marine and coastal resources, by creating a framework for consistent, transparent, sustainable and evidence-based decision-making.**

**While it is appropriate for the Union to provide a framework for maritime spatial planning, Member States remain responsible and competent for designing and determining, within their marine waters, the format and content of such plans, including institutional arrangements and, where applicable, any apportionment of maritime space to different activities and uses respectively.**

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COUNCIL**

**establishing a framework for maritime spatial planning**

**In marine waters, ecosystems and marine resources are subject to significant pressures. Human activities, but also climate change effects, natural hazards and shoreline dynamics such as erosion and accretion, can have severe impacts on coastal economic development and growth, as well as on marine ecosystems, leading to deterioration of environmental status, loss of biodiversity and degradation of ecosystem services.**

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## **establishing a framework for maritime spatial planning**

**In order to promote the sustainable growth of maritime economies, the sustainable development of marine areas and the sustainable use of marine resources, maritime spatial planning should apply an ecosystem-based approach with the aim of ensuring that the collective pressure of all activities is kept within levels compatible with the achievement of good environmental status and that the capacity of marine ecosystems to respond to human-induced changes is not compromised, while contributing to the sustainable use of marine goods and services by present and future generations.**

# Stakeholder participation



## Stakeholder mutual learning






# Web application in support of stakeholder participation

<http://www.sea.ee/gof2014-msp>

Gulf Of Finland 2014 Start Home




**Gulf of Finland  
Year 2014**

Healthy and Safe Gulf of Finland together  
Yhdessä terve ja turvallinen Suomenlahti  
Üheskoos Soome lahe heaks  
Сохраним природу Финского залива вместе

## Gulf Of Finland Year 2014

Maritime Spatial Planning - from vision to action



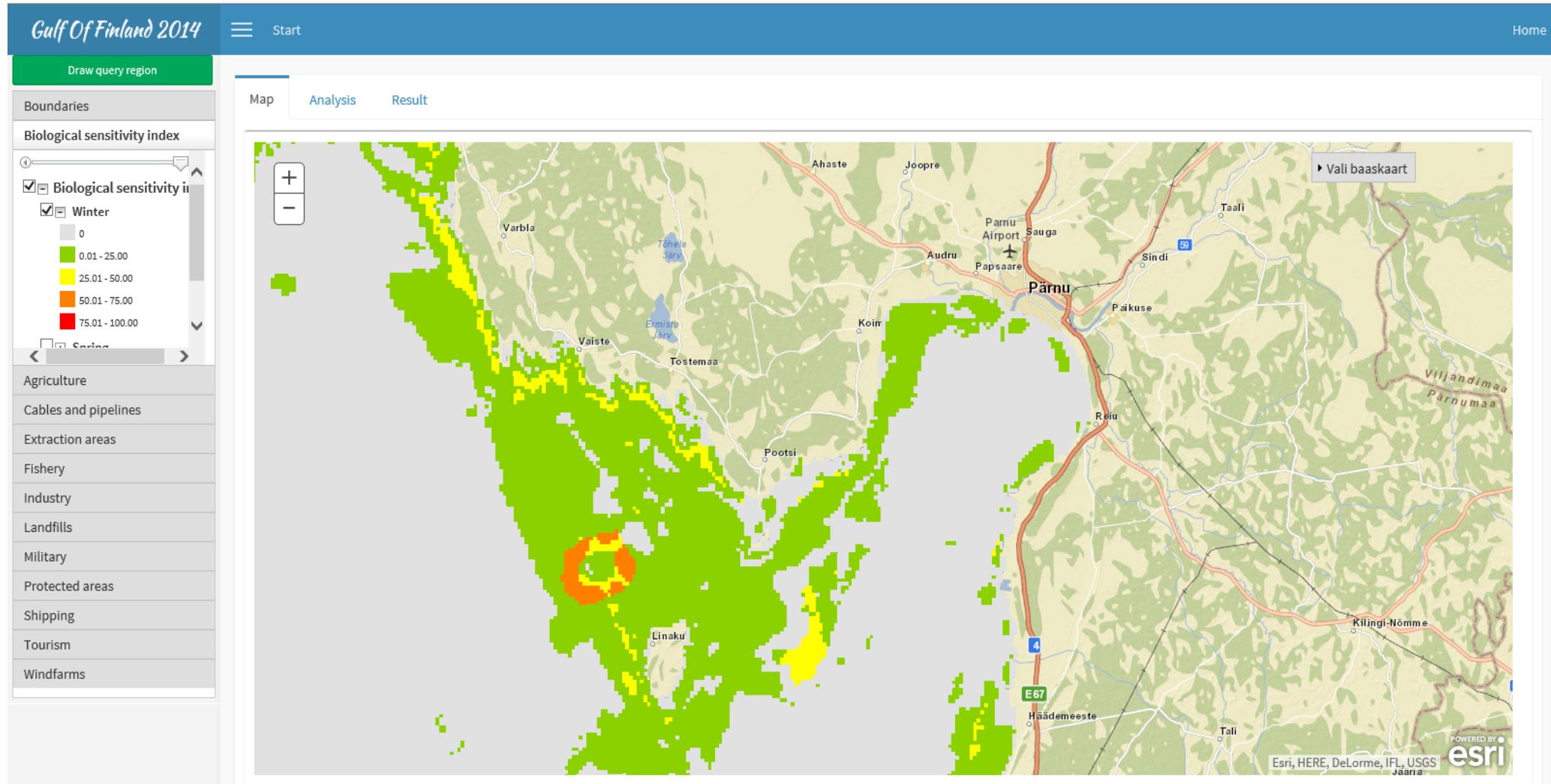
TARTU ÜLIKOOL  
UNIVERSITAS TARTUENSIS  
1632

EMJ  
EESTI  
MEREINSTITUUT

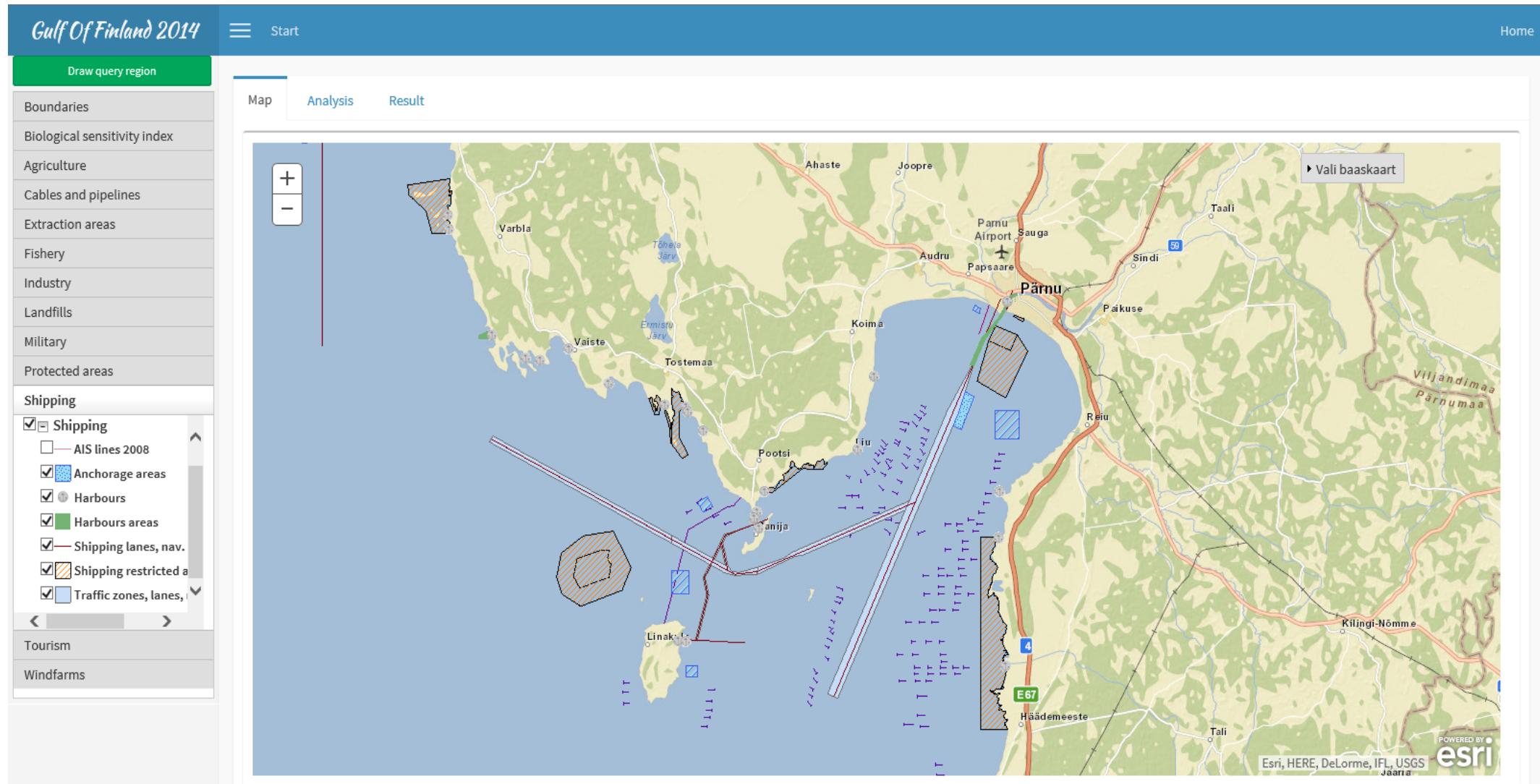
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ENVIRONMENTAL INVESTMENT  
CENTRE

SYKE

# Ecological sensitivity index - winter



# Human use – shipping, fishing, dumping areas, grid



# NATURA areas and tourism

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Draw query region

- Boundaries
- Biological sensitivity index
- Agriculture
- Cables and pipelines
- Extraction areas
- Fishery
- Industry
- Landfills
- Military
- Protected areas
  - Protected areas
    - Conservation areas
    - National protection areas
    - Natura
      - Natura (linnuala)
      - Natura (loodussala)
- Shipping
- Tourism
- Windfarms

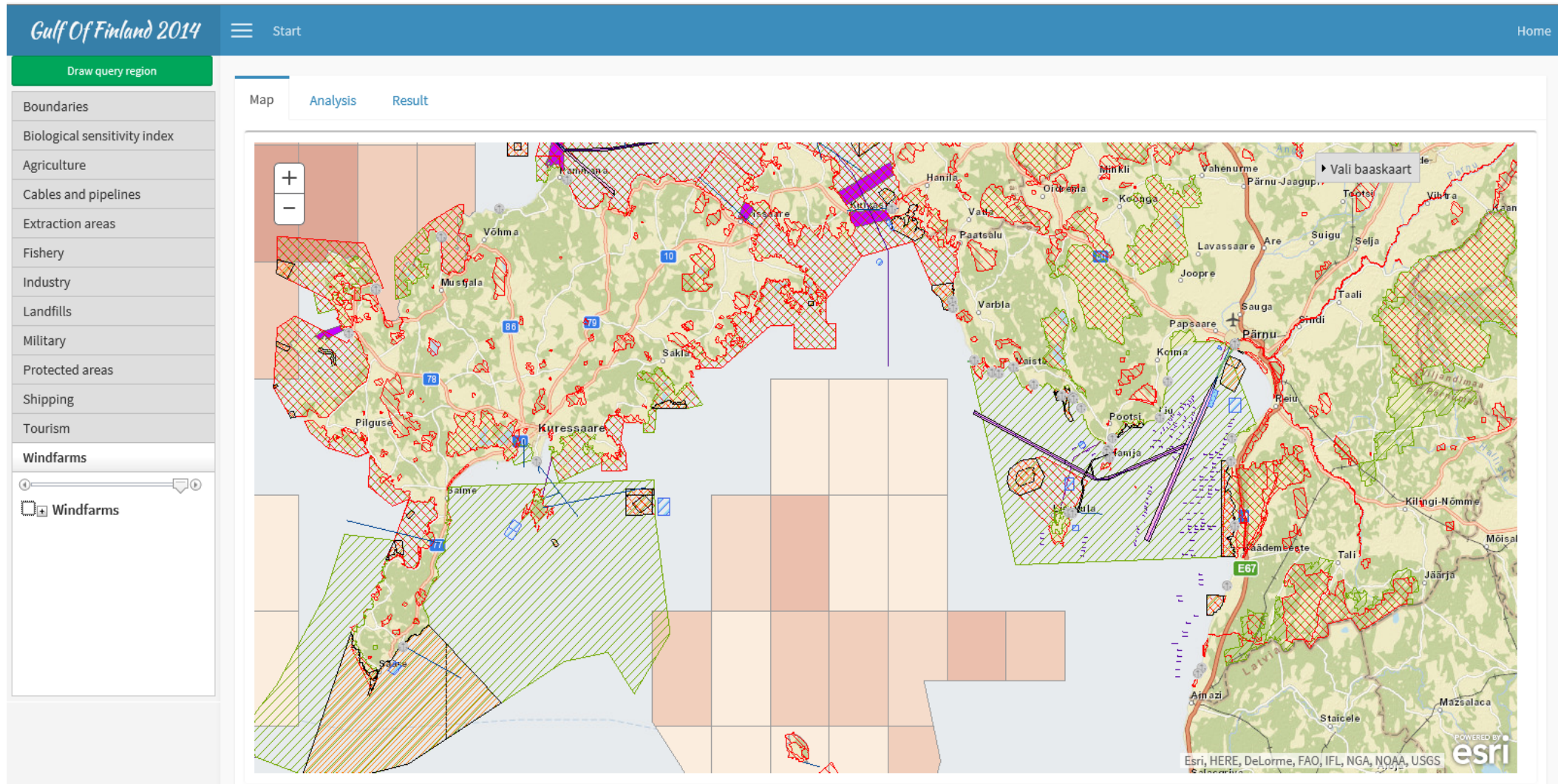
Map Analysis Result

The map displays the Pärnu region in Estonia, highlighting Natura 2000 sites. The Natura (linnuala) sites are shown with green diagonal hatching, and Natura (loodussala) sites are shown with red diagonal hatching. The map also shows the coastline, major roads, and the Pärnu Airport. A legend on the left side of the map provides details on the protected areas. The map is powered by Esri, HERE, DeLorme, IFL, and USGS.

Vali baaskaart

POWERED BY  
Esri, HERE, DeLorme, IFL, USGS  
Jaaria

# Fishing statistics



# Stakeholder spatial argumentation



# Analysis of potential conflicts – choosing the sea area

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Draw query region

- Boundaries
- Biological sensitivity index
- Agriculture
- Cables and pipelines
- Extraction areas
- Fishery
- Industry
- Landfills
- Military
- Protected areas
  - Protected areas
    - Conservation areas
    - National protection areas
    - Natura
      - Natura (linnuala)
      - Natura (loodusala)
- Shipping
- Tourism
- Windfarms

Map Analysis Result

Map showing various land use and protected areas. A red hatched area is highlighted in the sea, indicating a query region. The map includes labels for locations like Pärnu, Sauga, and Taali. A legend on the left lists various categories like 'Protected areas' and 'Natura'.

Powered by Esri, HERE, DeLorme, IFL, USGS

# Human uses– NATURA area and the fishing trap-nets

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Draw query region

- Boundaries
- Biological sensitivity index
- Agriculture
- Cables and pipelines
- Extraction areas
- Fishery
- Industry
- Landfills
- Military
- Protected areas
  - Protected areas
    - Conservation areas
    - National protection areas
    - Natura
      - Natura (linnuala)
      - Natura (loodusala)
- Shipping
- Tourism
- Windfarms

Map Analysis Result

### Conflict Pairs

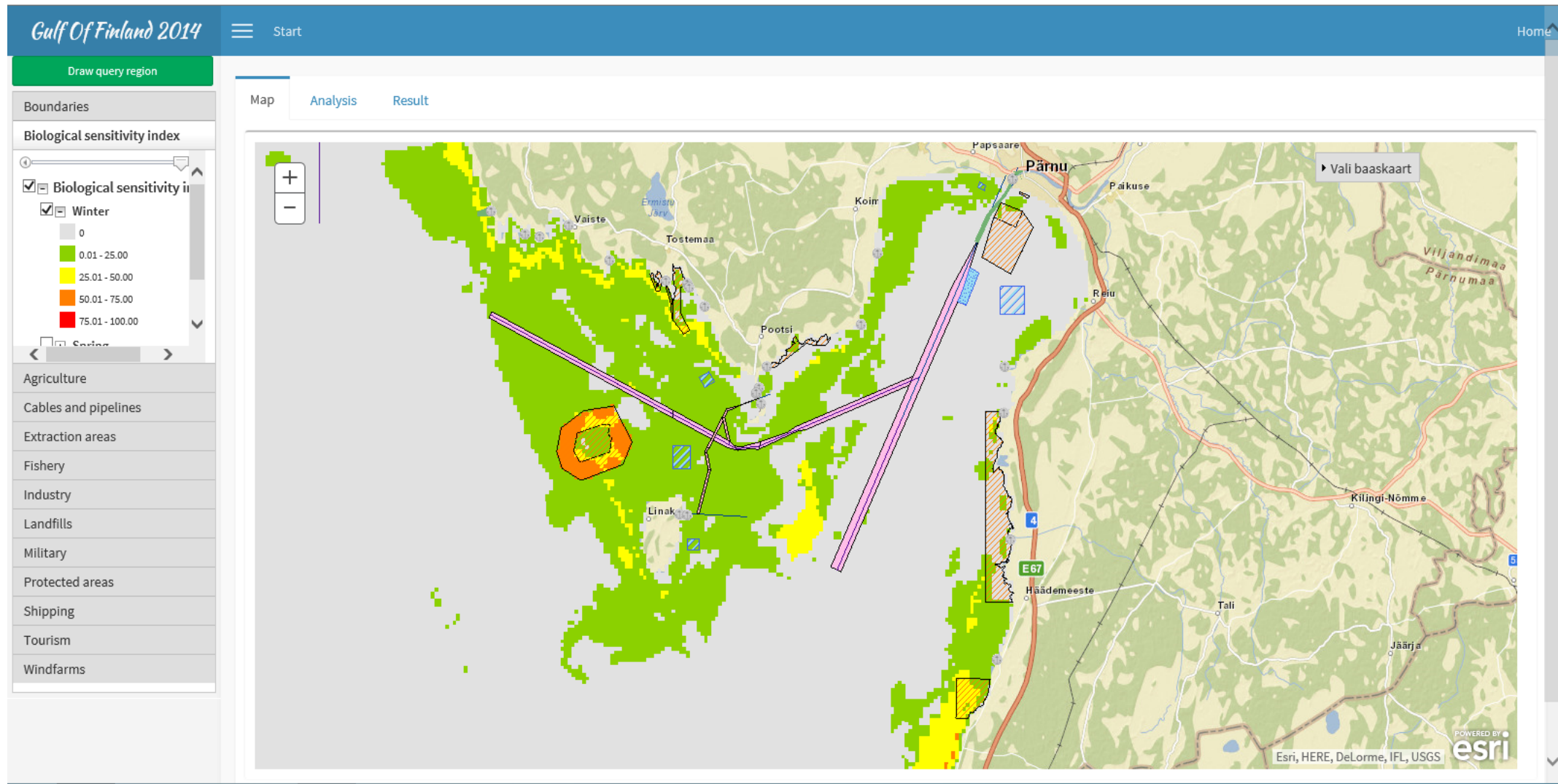
Nr	Layer name	Layer name	Conflict Exist	Partial	Compatible
1	Fishery/Trap-nets	Protected areas/Natura	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### Cross Layers Table

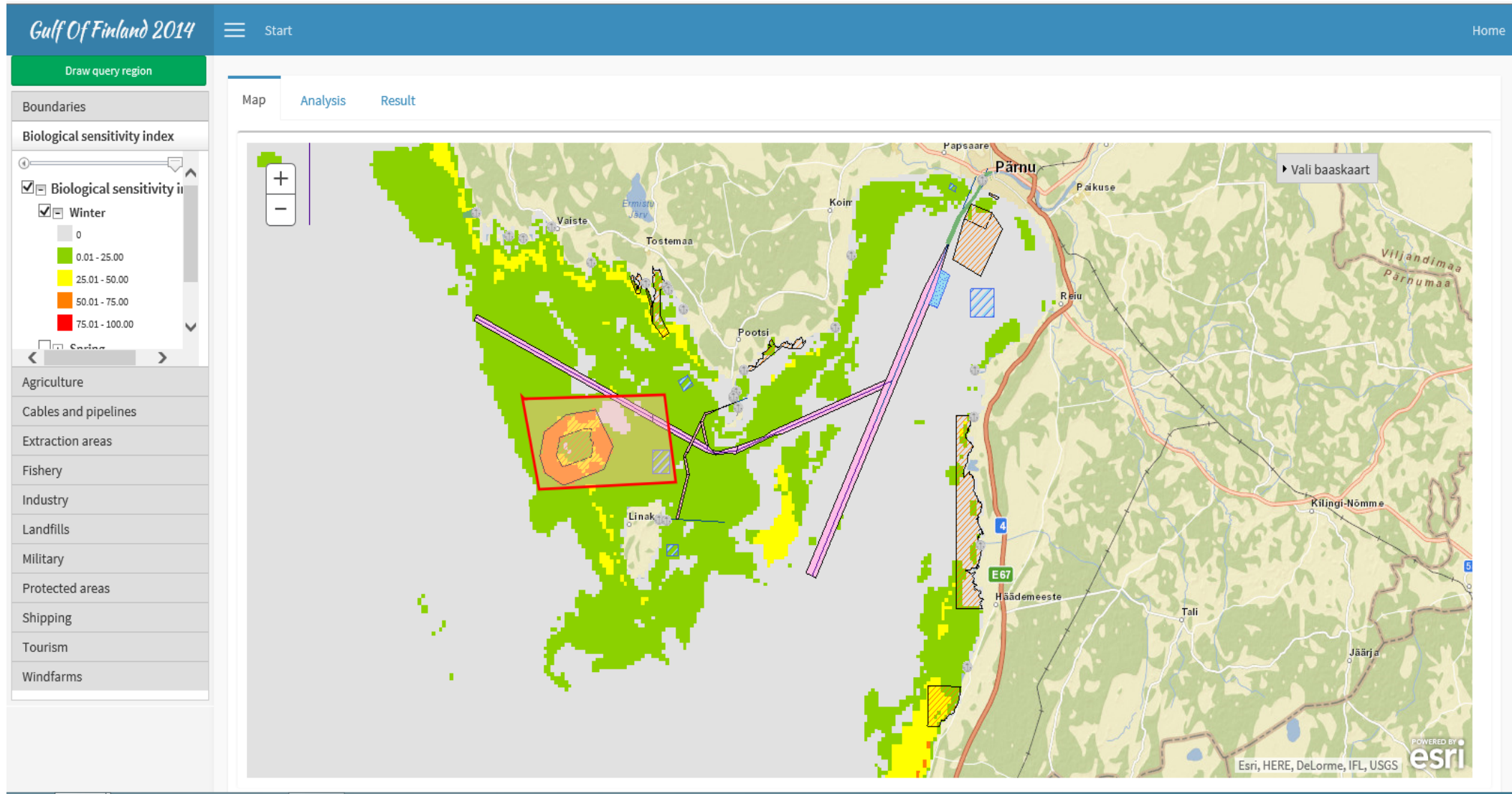
Layers	Fishery/Trap-nets	Protected areas/Natura
Fishery/Trap-nets		
Protected areas/Natura		



# General view of the Maritime Spatial Planning sea area



# Region of interest



# Expert opinions on potential conflicts– conflict, partial, compatible

Nr	Layer name	Layer name	Conflict Exist	Partial	Compatible
1	Biological sensitivity index/Winter/0	Shipping/Dumping gound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Biological sensitivity index/Winter/0	Shipping/Recommended track	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Biological sensitivity index/Winter/0	Shipping/Shipping restricted area	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	Biological sensitivity index/Winter/0	Shipping/Two way route	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Biological sensitivity index/Winter/25	Shipping/Dumping gound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6	Biological sensitivity index/Winter/25	Shipping/Recommended track	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7	Biological sensitivity index/Winter/25	Shipping/Shipping restricted area	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	Biological sensitivity index/Winter/25	Shipping/Two way route	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9	Biological sensitivity index/Winter/50	Shipping/Dumping gound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10	Biological sensitivity index/Winter/50	Shipping/Recommended track	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11	Biological sensitivity index/Winter/50	Shipping/Shipping restricted area	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12	Biological sensitivity index/Winter/50	Shipping/Two way route	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
13	Biological sensitivity index/Winter/75	Shipping/Dumping gound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

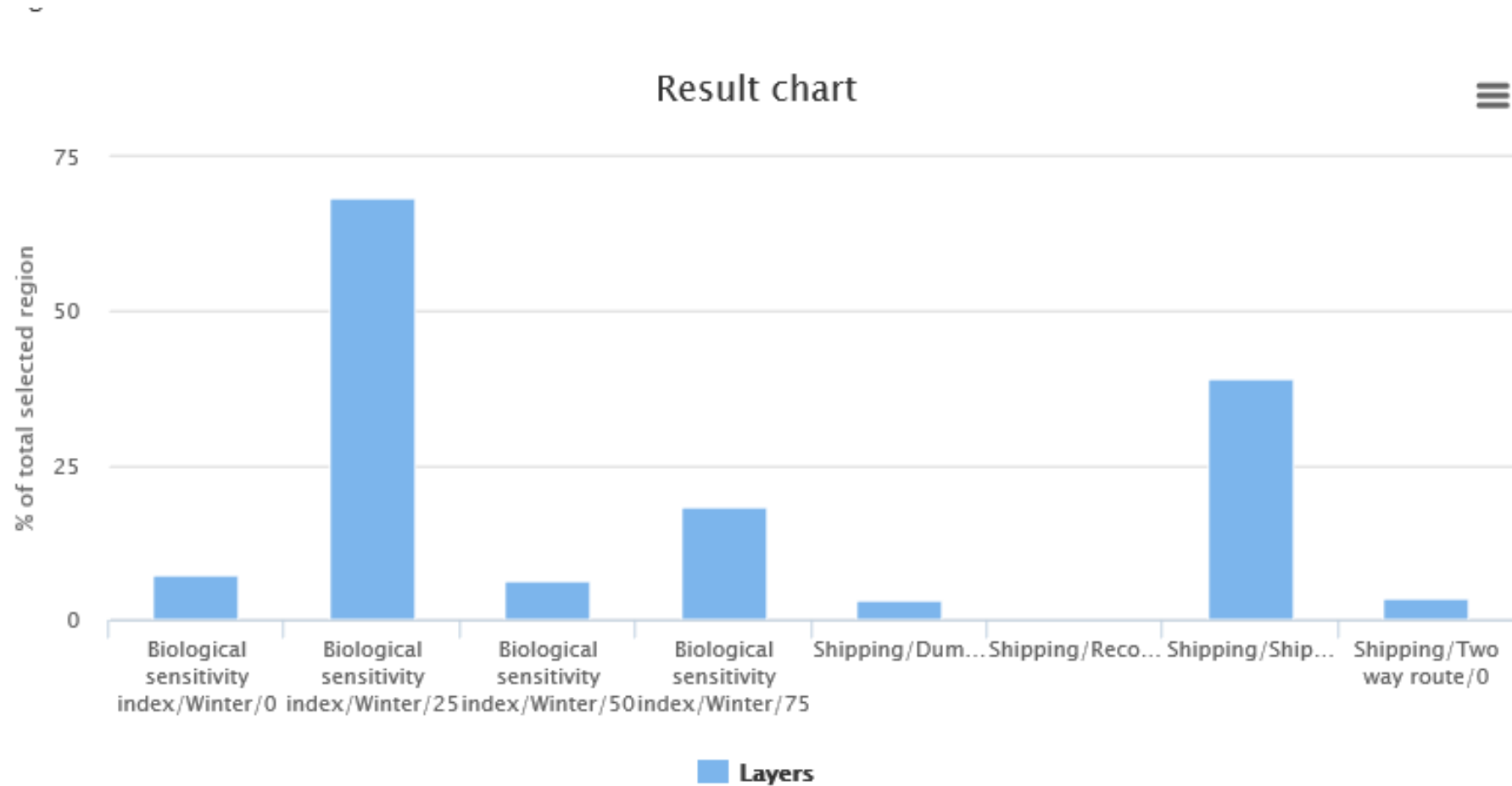
# Potential conflict matrix

16 Biological sensitivity index/Winter/75 Shipping/Two way route

**Cross Layers Table**

Layers	Biological sensitivity index/Winter/0	Biological sensitivity index/Winter/25	Biological sensitivity index/Winter/50	Biological sensitivity index/Winter/75	Shipping/Dumping gound	Shipping/Recommended track	Shipping/Shipping restricted area	Shipping/Two way route
Biological sensitivity index/Winter/0					Green	Green	Green	Green
Biological sensitivity index/Winter/25					Orange	Orange	Green	Orange
Biological sensitivity index/Winter/50					Orange	Orange	Orange	Orange
Biological sensitivity index/Winter/75					Red	Red	Green	Red
Shipping/Dumping gound	Green	Orange	Orange	Red				
Shipping/Recommended track	Green	Orange	Orange	Red				
Shipping/Shipping restricted area	Green	Green	Orange	Green				
Shipping/Two way route	Green	Orange	Orange	Red				

# Visualization of results



# Ecosystem approach to Maritime Spatial Planning



# Vision



# *Acknowledgements*



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**Thank you for your attention!**