



Kartverket

National report Norway

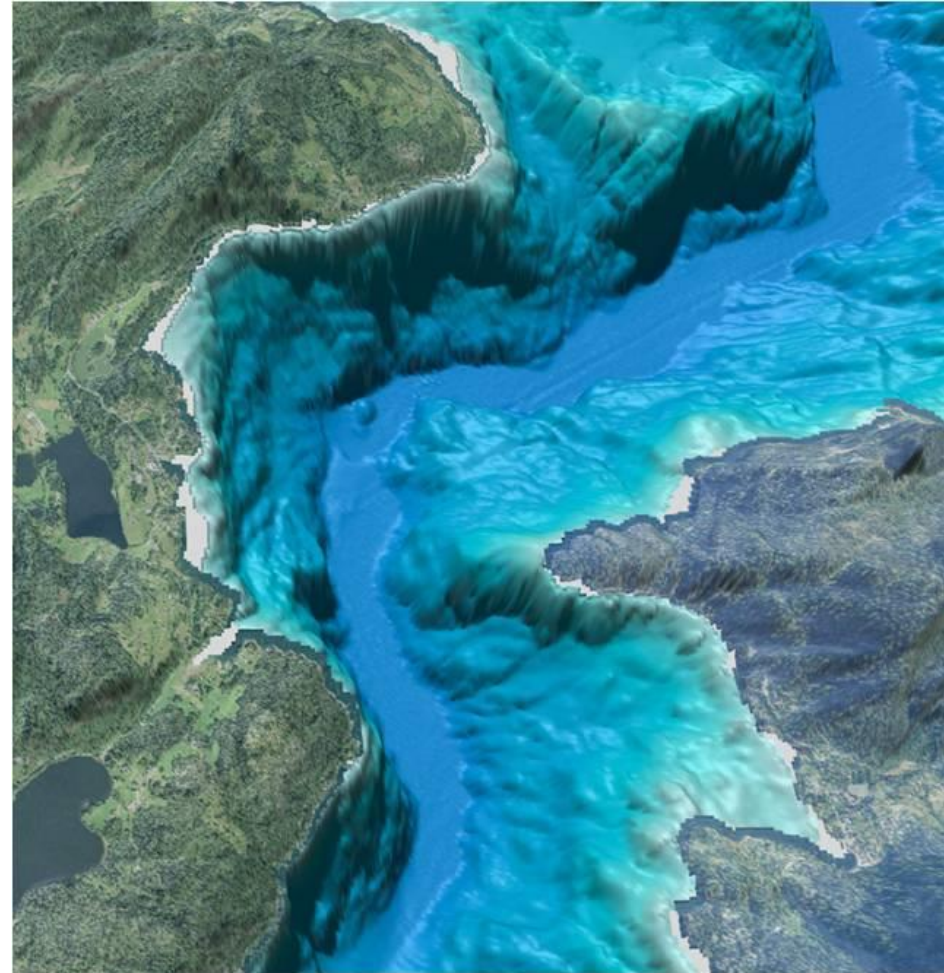
SAIHC16

2-5 September 2019, Cape Town



Highlights

- Restructuring NHS
- Development Marine Spatial management Tool
- Mareano
- Digital Nautical Publ.
- S-102 project
- Marine base maps in Norway (MAGIN)
- Condensed depth curves pilot project
- Involvement in Seabed 2030

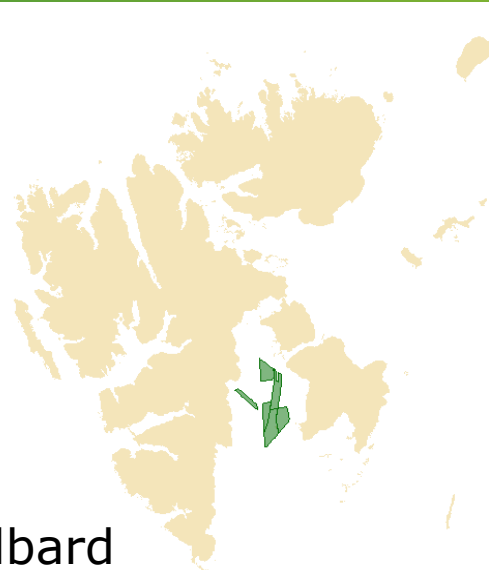


Survey 2018

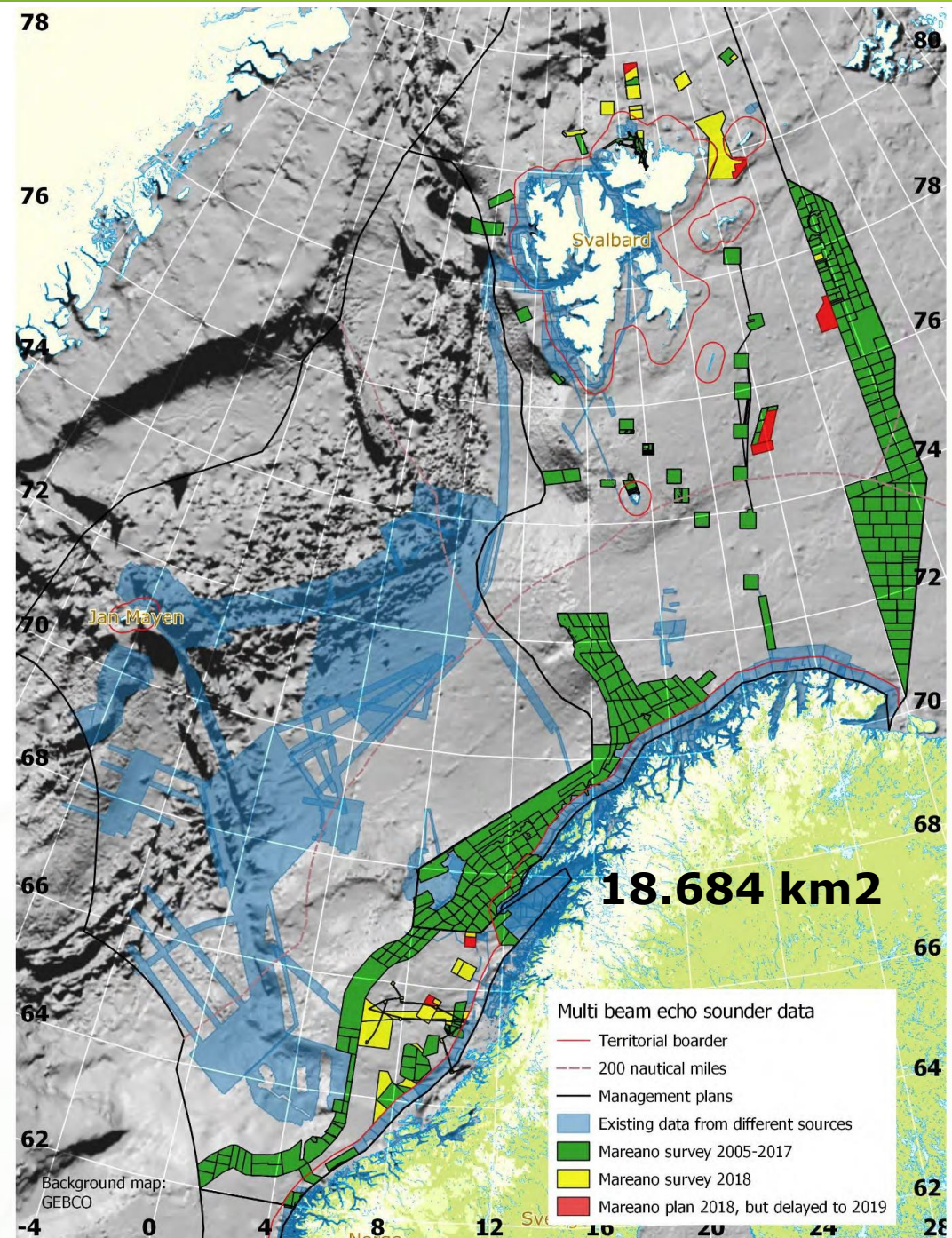
Norwegian
coast



Svalbard



www.mareano.no



MSDI ≠ HSDI

**y
d
r
o
g
r
a
p
h
i
c**

Marine Spatial Management Tool

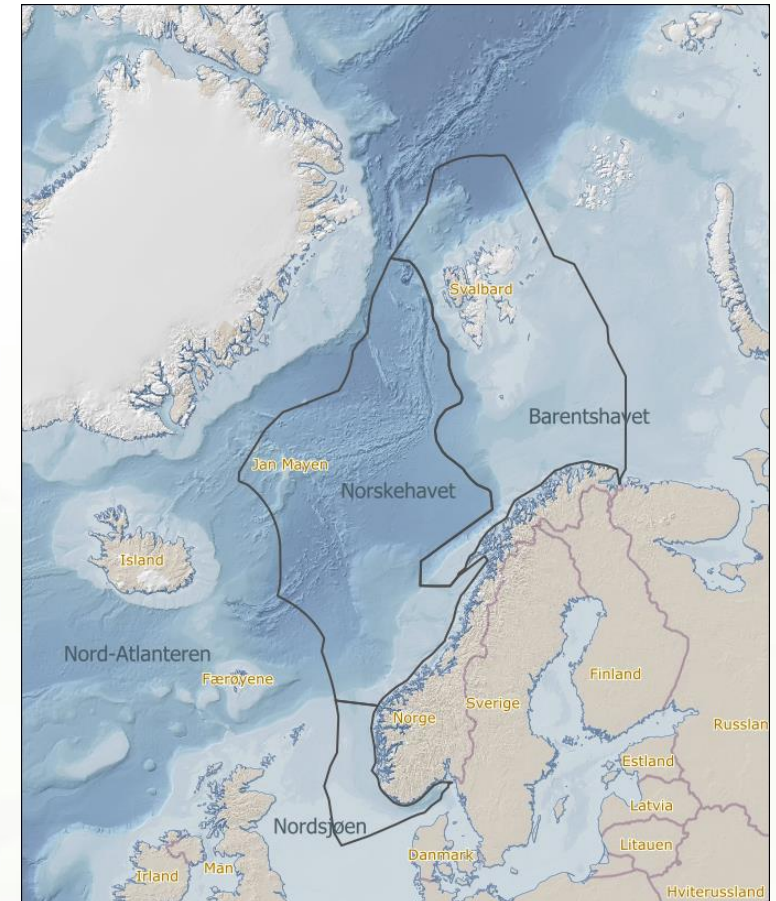
Support the marine spatial planning process with updated and reliable geospatial information

Marine management is important to Norway with extensive ocean areas which are very rich in resources

The purpose of the management plans is to facilitate value creation while also maintaining natural diversity

The Ministry of Climate and Environment is responsible and leads an intergovernmental Steering Committee that has representation from all the ministries that work with issues relating to these marine areas

The foundation is an extensive collaboration, both between expert groups and between ministries



The Norwegian Government has developed integrated marine management plans for all Norwegian sea areas

Marine Spatial Management Tool

A cross-sectoral development project through an intergovernmental cooperation

A governmental initiative based on the need for a more coherent and uniform geospatial information content, suitable for underpinning tasks attached to marine spatial planning and marine management

- More effective updates of the management plans
- Better overview over political decisions and actions related to marine management
- Contribute to more transparency, openness and increased involvement from the stakeholders



Marine Spatial Management Tool

A cross-sectoral development project through an intergovernmental cooperation

A governmental initiative based on the need for a more coherent and uniform geospatial information content, suitable for underpinning tasks attached to marine spatial planning and marine management

- More effective updates of the management plans
- Better overview over political decisions and actions related to marine management
- Contribute to more transparency, openness and increased involvement from the stakeholders

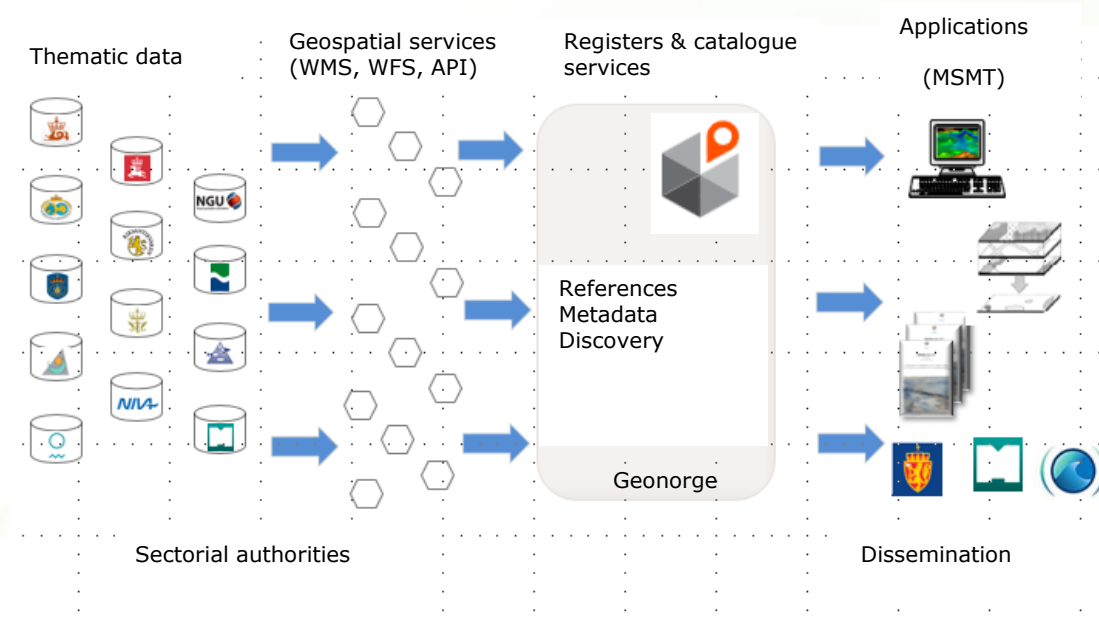


Marine Spatial Management Tool

Service based approach

Key elements:

- Thematic geospatial information services offered from relevant sectorial authorities
- Standardized network based services enabling real time use of geospatial data content in user client (e.g. MSMT)
- Standardized and harmonized data content and user adapted presentation rules, cartography and semantics
- Real time access to associated metadata through network based services consumable in user client



Marine Spatial Management Tool

Examples of building thematic map compositions

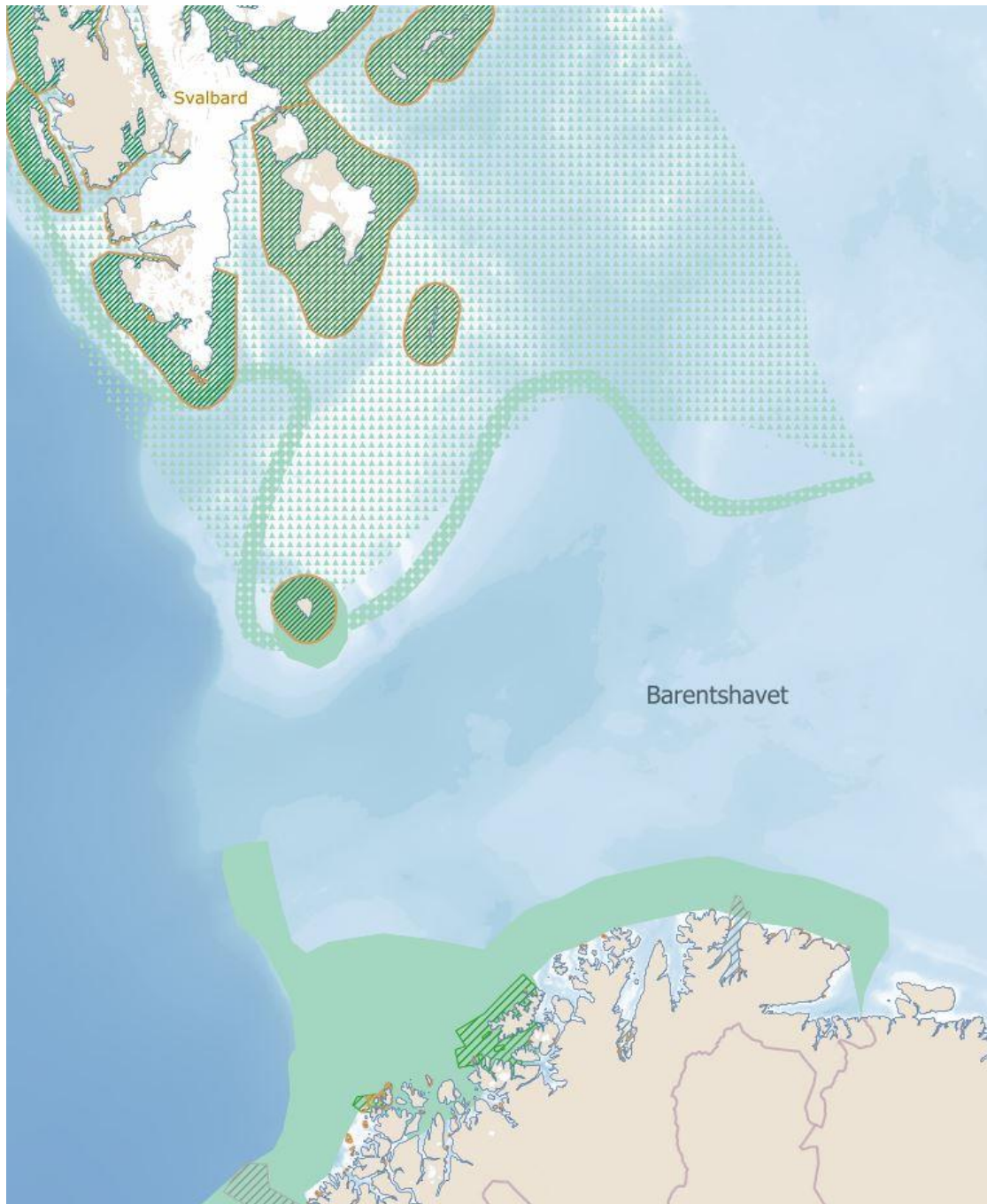
Status at the moment:

- 35 main categories of thematic data available through corresponding geospatial services
- 11 governmental agencies serving their respective thematic datasets and geospatial services



Base map (incl. depth areas)



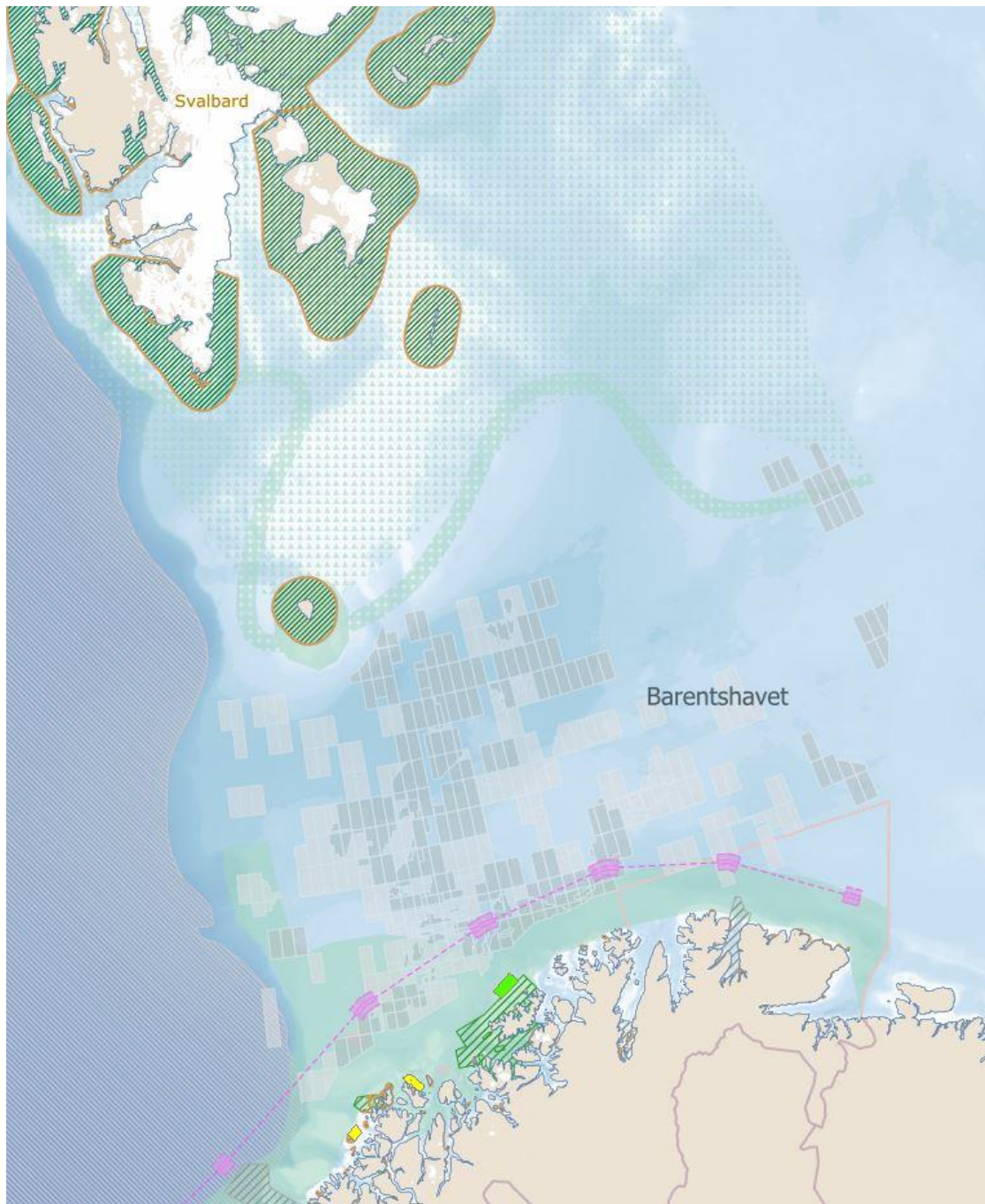


Base map (incl. depth areas)

+ Regulations

- **Marine Protected Areas**
- **Particularly vulnerable and valuable marine areas**



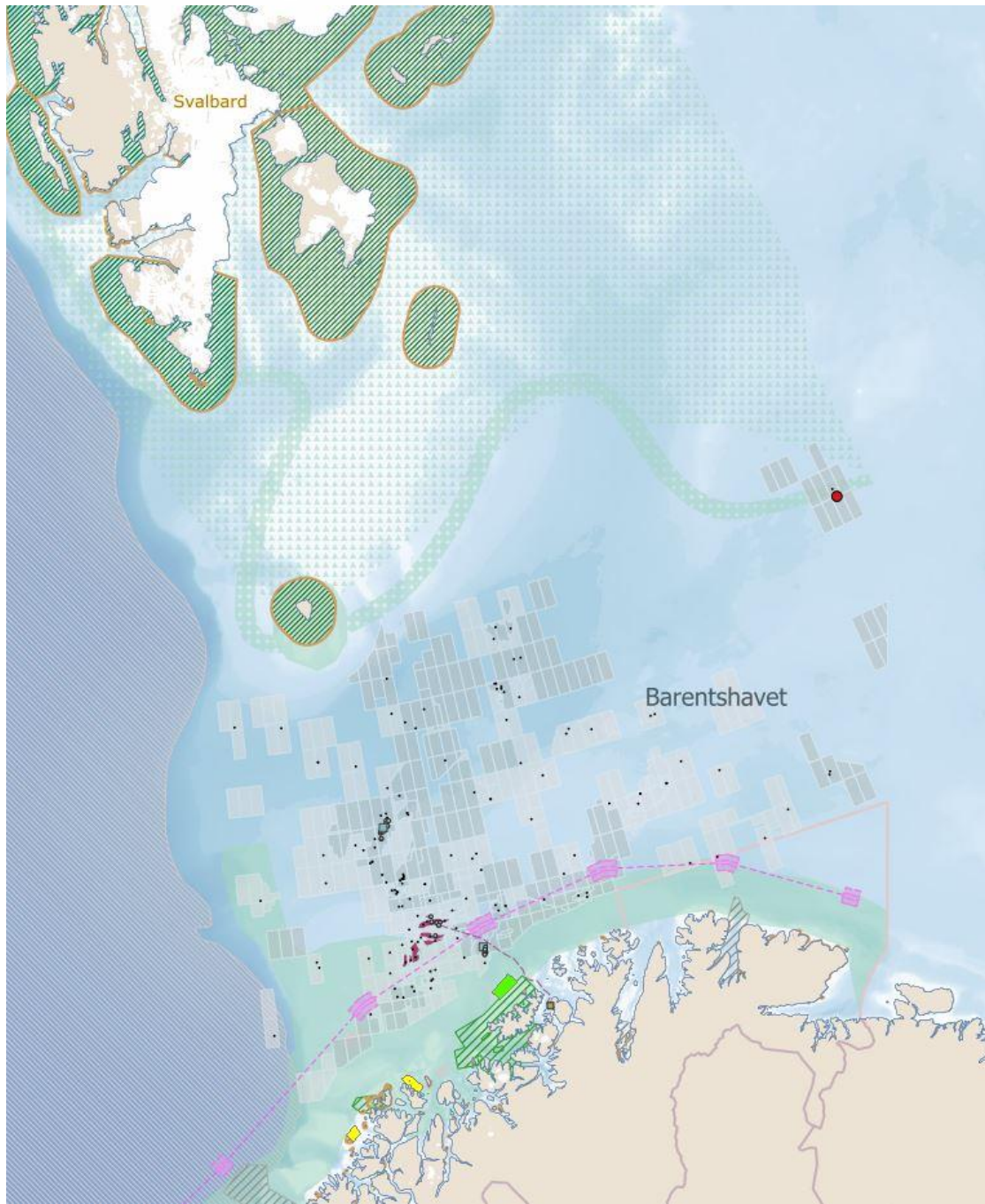


Base map (incl. depth areas)

+ Regulations

- **Marine Protected Areas**
- **Particularly vulnerable and valuable marine areas**
- **Fishery regulations**
- **Production licenses (petroleum)**
- **Offshore wind farm assessments**
- **Traffic Separation Scheme**





Base map (incl. depth areas)

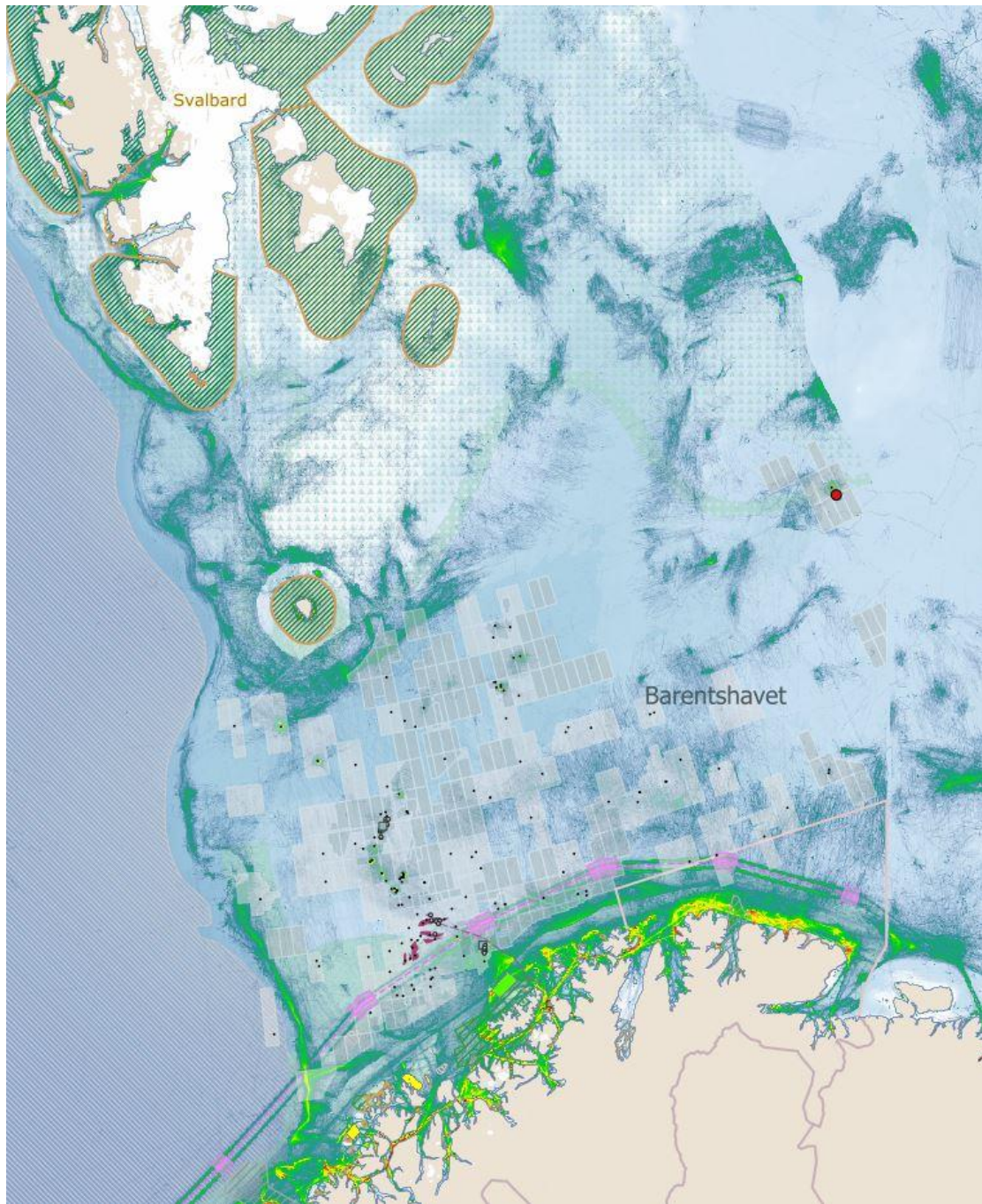
+ Regulations

- Marine Protected Areas
- Particularly vulnerable and valuable marine areas
- Fishery regulations
- Production licenses (petroleum)
- Offshore wind farm assessments
- Traffic Separation Scheme

+ Commercial activities

- Petroleum (facilities, cables, pipelines)





Base map (incl. depth areas)

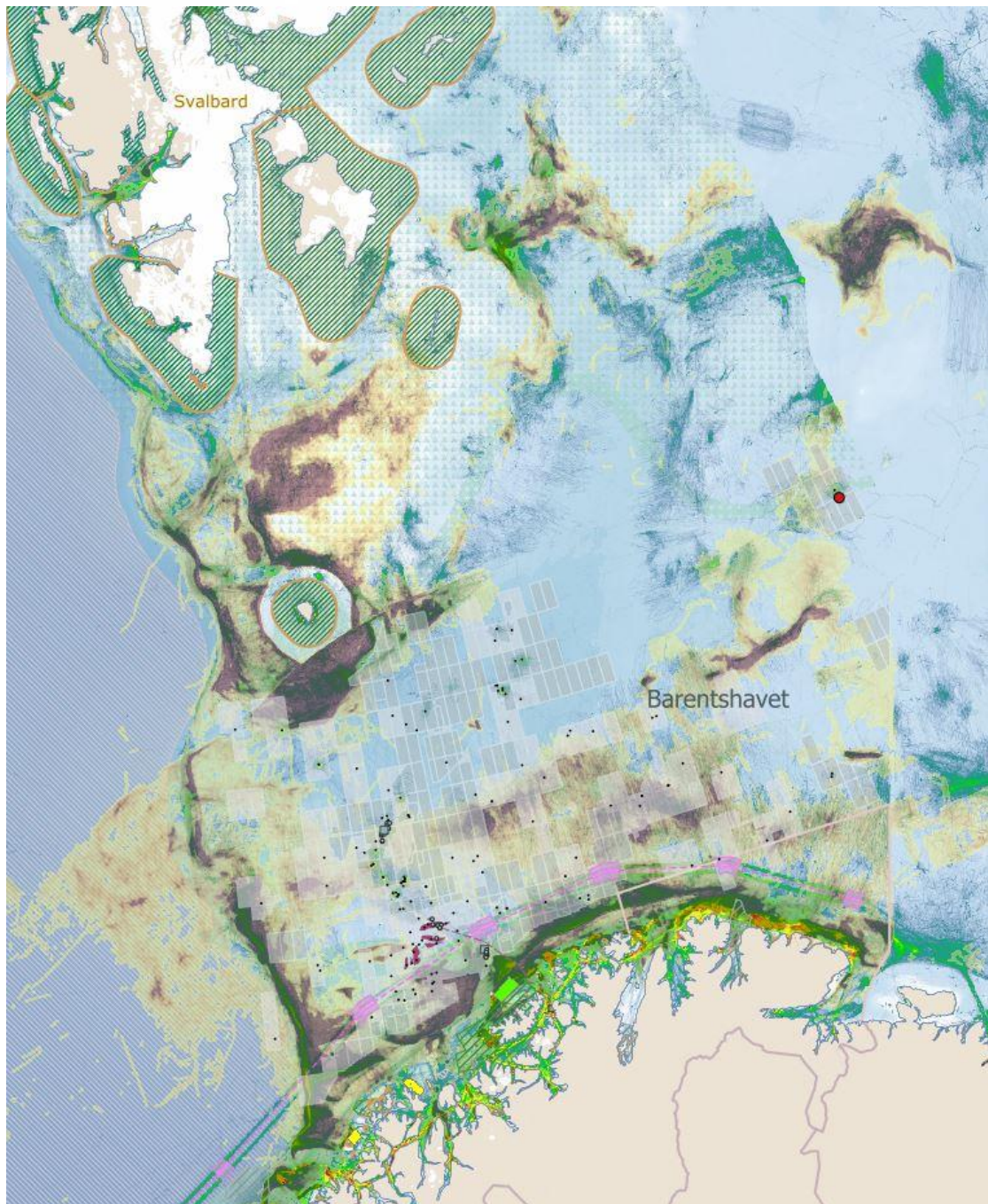
+ Regulations

- Marine Protected Areas
- Particularly vulnerable and valuable marine areas
- Fishery regulations
- Production licenses (petroleum)
- Offshore wind farm assessments
- Traffic Separation Scheme

+ Commercial activities

- Petroleum (facilities, cables, pipelines)
- Shipping (traffic density)





Base map (incl. depth areas)

+ Regulations

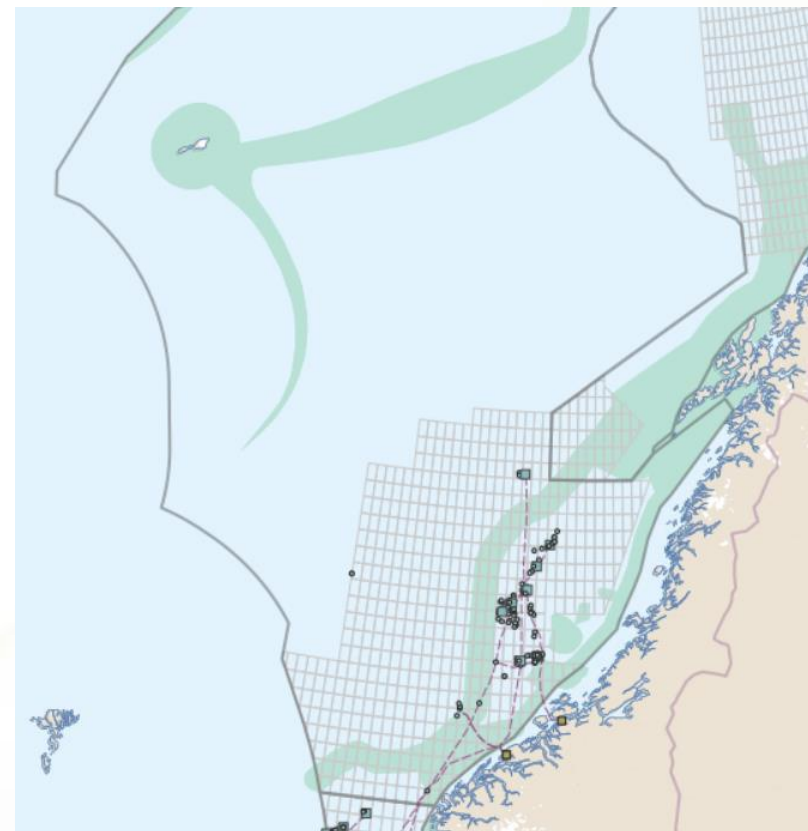
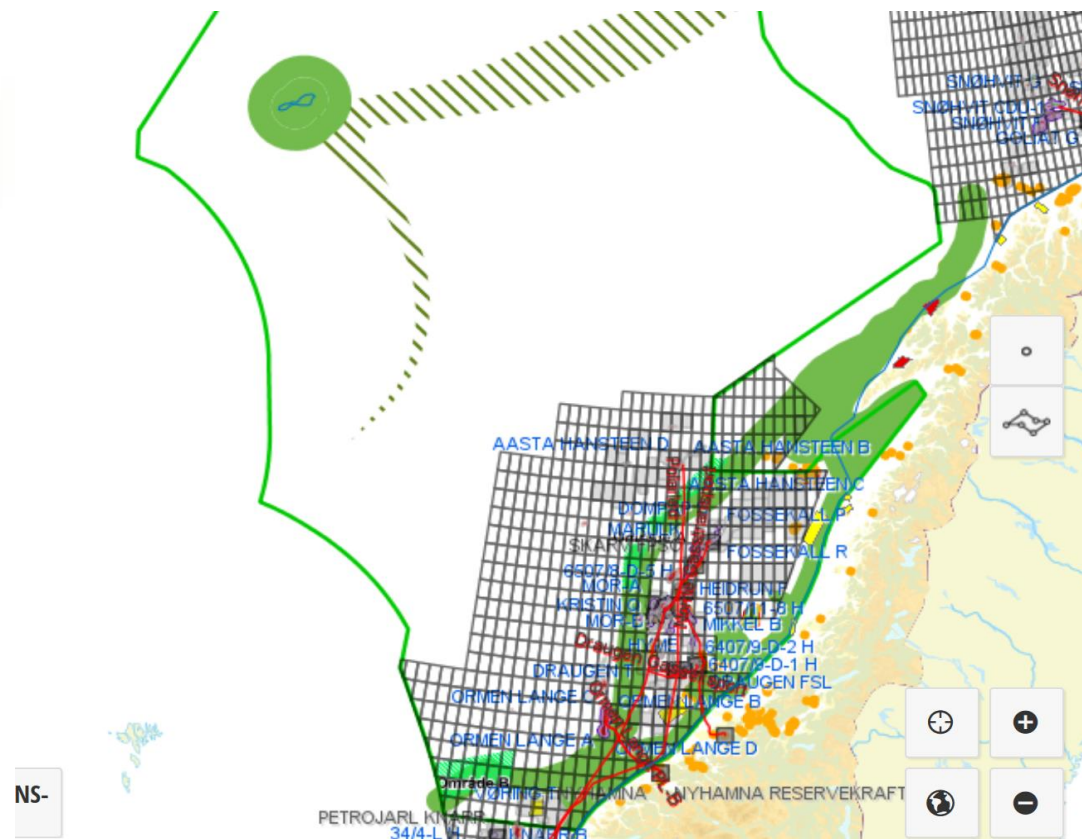
- Marine Protected Areas
- Particularly vulnerable and valuable marine areas
- Fishery regulations
- Production licenses (petroleum)
- Offshore wind farm assessments
- Traffic Separation Scheme

+ Commercial activities

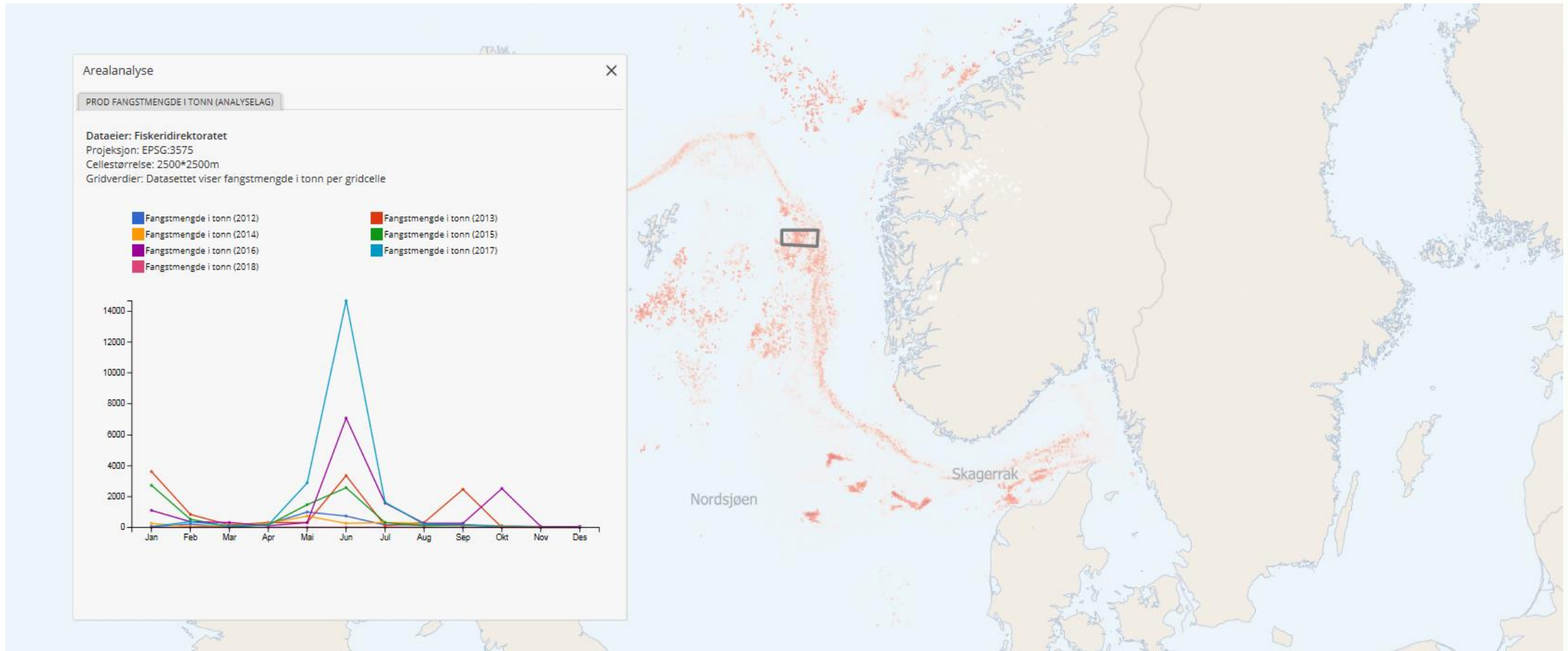
- Petroleum (facilities, cables, pipelines)
- Shipping (traffic density)
- Fisheries (density on operations)



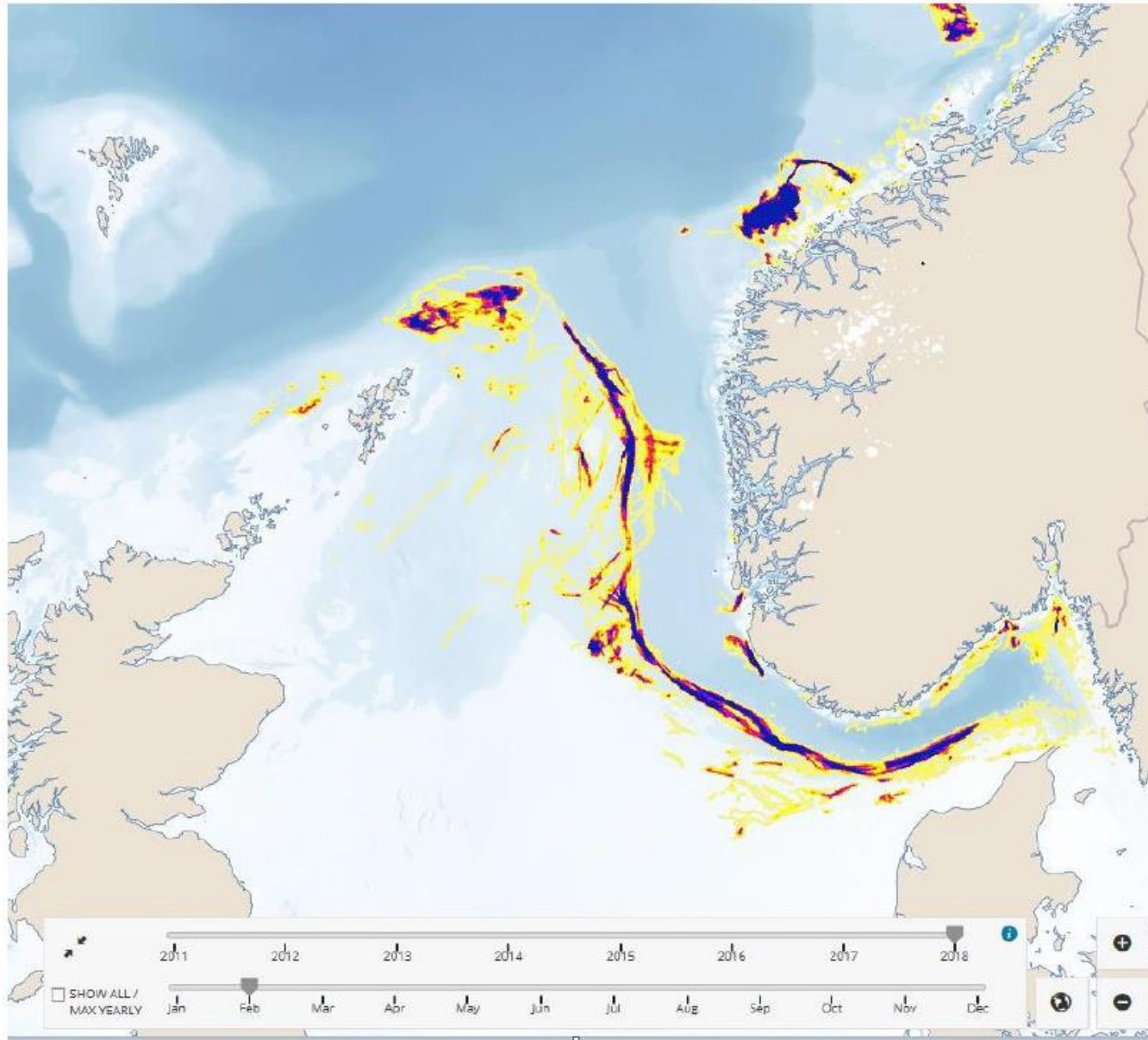
Harmonizing cartography



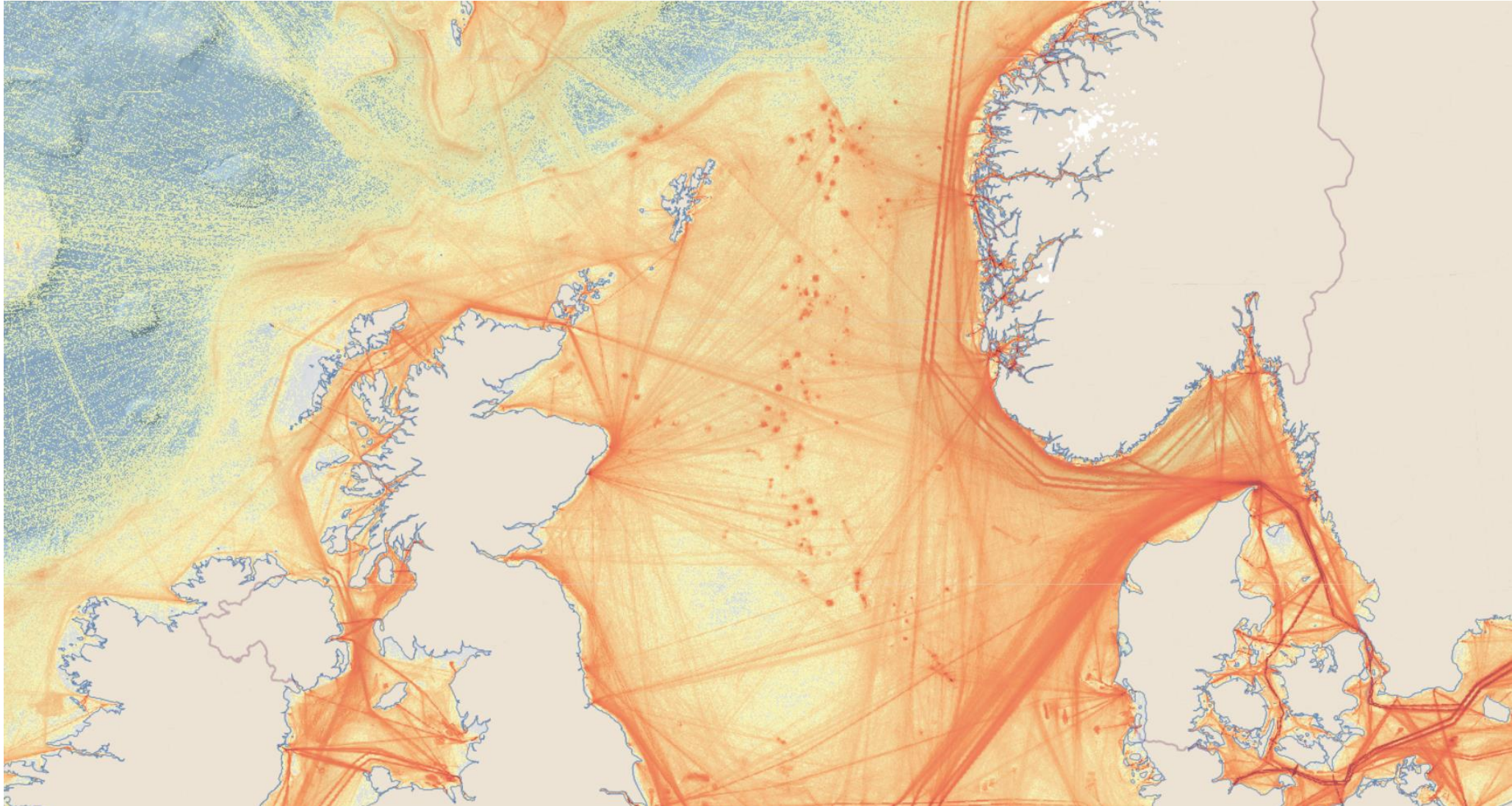
Geospatial statistics



Support time dimension



Ship traffic density

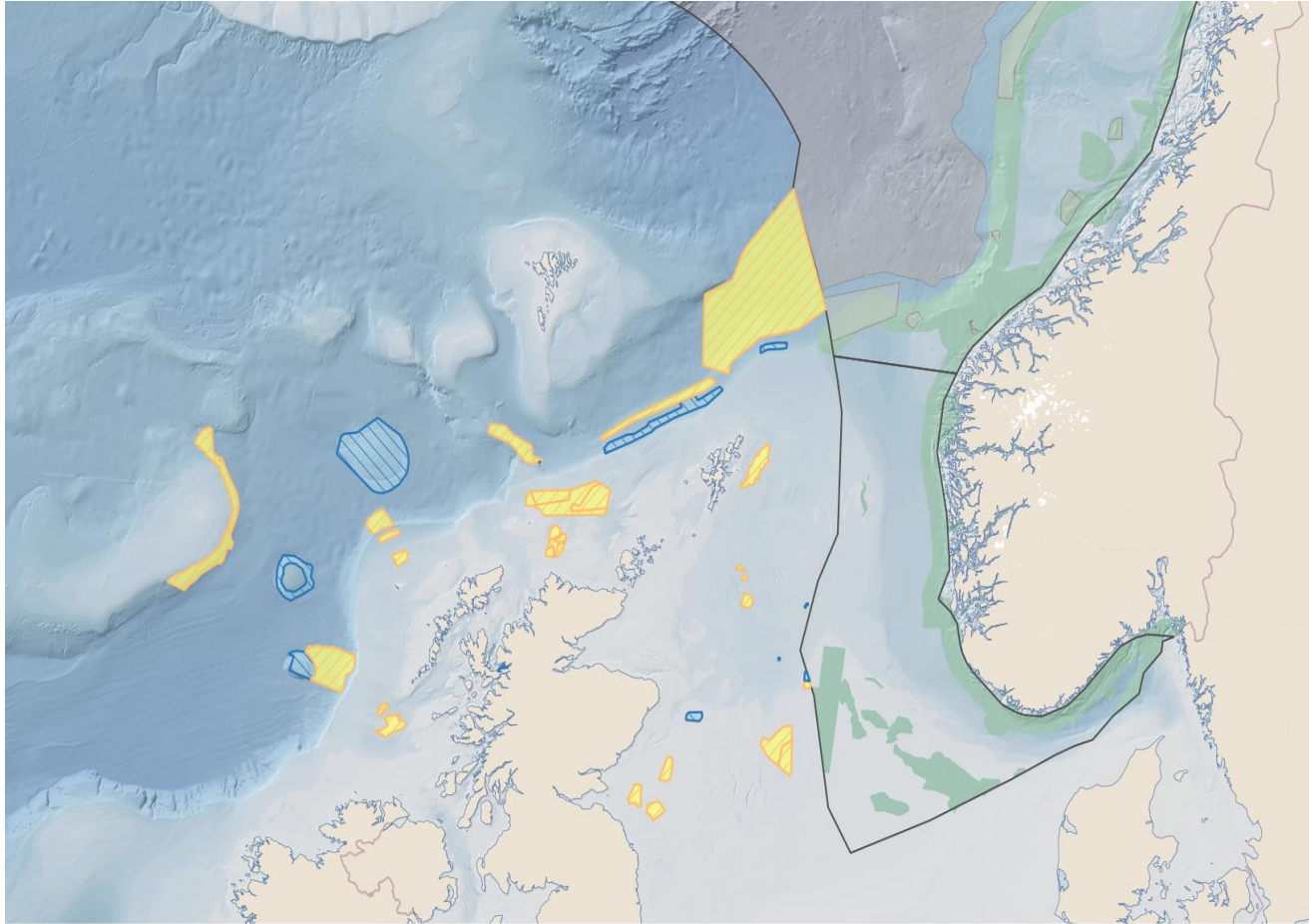


Attributes and linked data

The screenshot displays the FACTPAGES web application interface. On the left, a map shows the Norwegian continental shelf with various offshore facilities marked. A pop-up window for a selected facility provides details such as Type (SUBSEA STRUCTURE), Oppstart (2007/10/12 00:00), and Operator (Gassco AS). The main content area features a navigation menu with tabs for Wellbore, Licence, BAA, Field, Discovery, Company, Survey, Facility, TUF, and Stratigraphy. The 'Facility' tab is active, showing a list of facilities with columns for Name, Type, and Date. A detailed view of a facility is shown on the right, including a table of general information and a small map of the facility's location.

General information	
Name	FLA...
Nation	GRE
NPOID facility	377
Factmaps in new window	link
Kind	SUB
Phase	IN S
Functions	T-C
Surface facility	N
Water depth (m)	140
Design lifetime (year)	30
Belongs to	TAM
Current operator	Gass
Startup date	12.1
NS degrees	61°
EW degrees	1° 4
Geodetic datum	ED5
UTM zone	31
NS UTM	676
EW UTM	429

Re-use of national geospatial services in an international setting



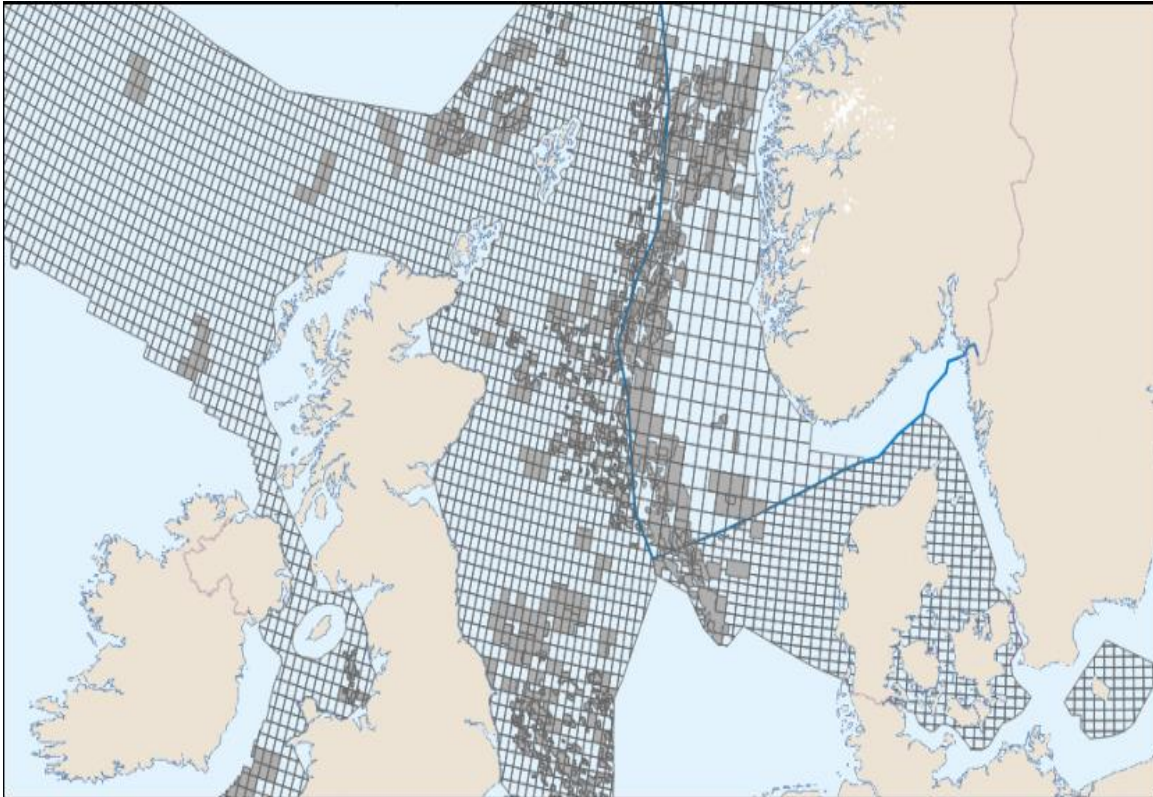
Examples from assembling marine regulations in UK and Norway

Standard OGC services ensures easy access and re-use of geospatial information

Near real-time use of geospatial data and services from each countries governmental agencies, ensures utilization of authoritative data

Cartographic challenges for further improvements to achieve unified presentations within common thematics, seamless across borders

Re-use of national geospatial services in an international setting



Assembling the licencing system in the North Sea continental shelf through national geospatial datasets (Norway, UK, Denmark)

Standard OGC services ensures easy access and re-use of geospatial information

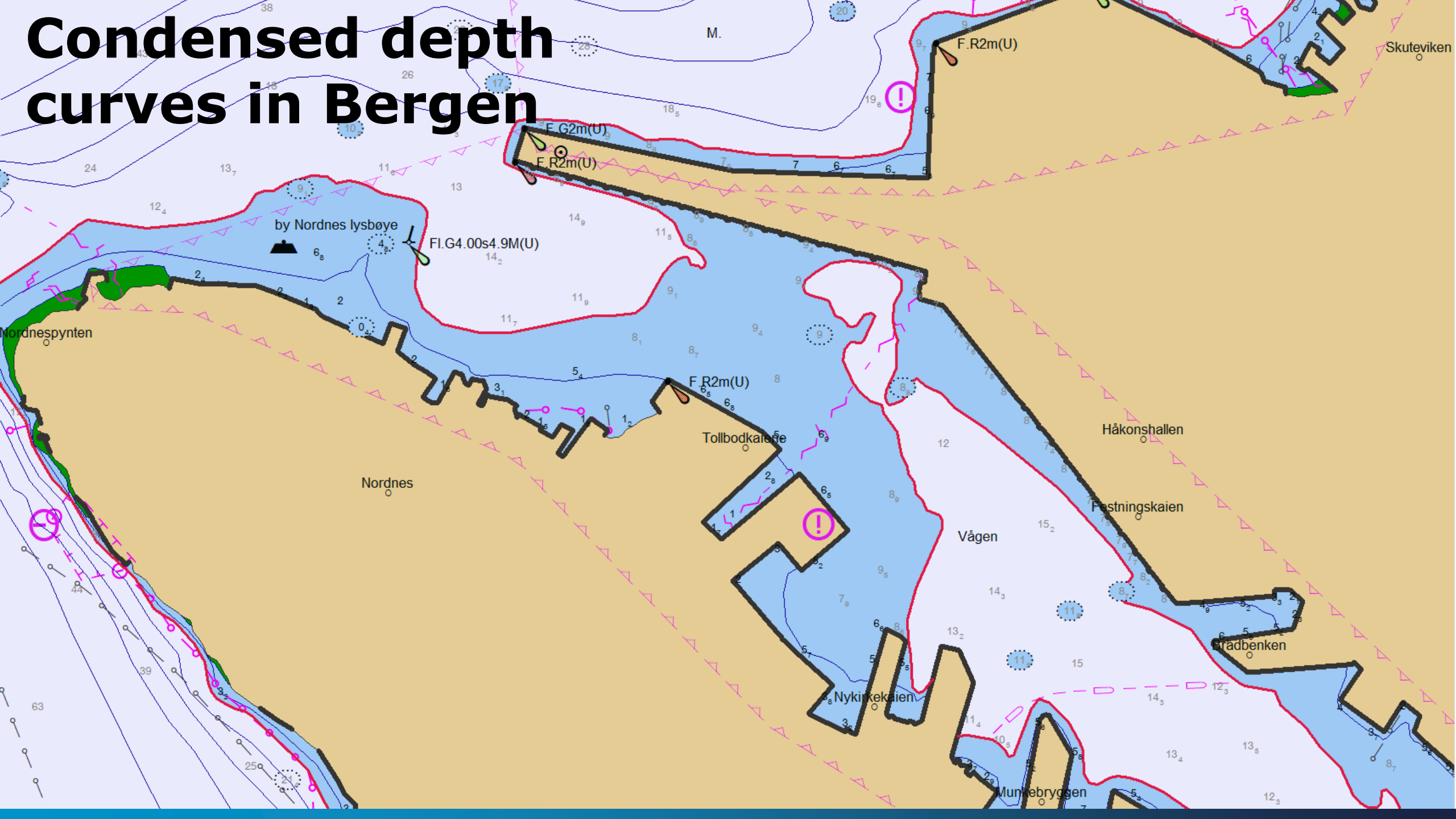
Real time use of geospatial data and services from each countries governmental agencies, ensures utilization of authoritative data

Cartographic challenges for further improvements to achieve unified presentations within common thematics, seamless across borders

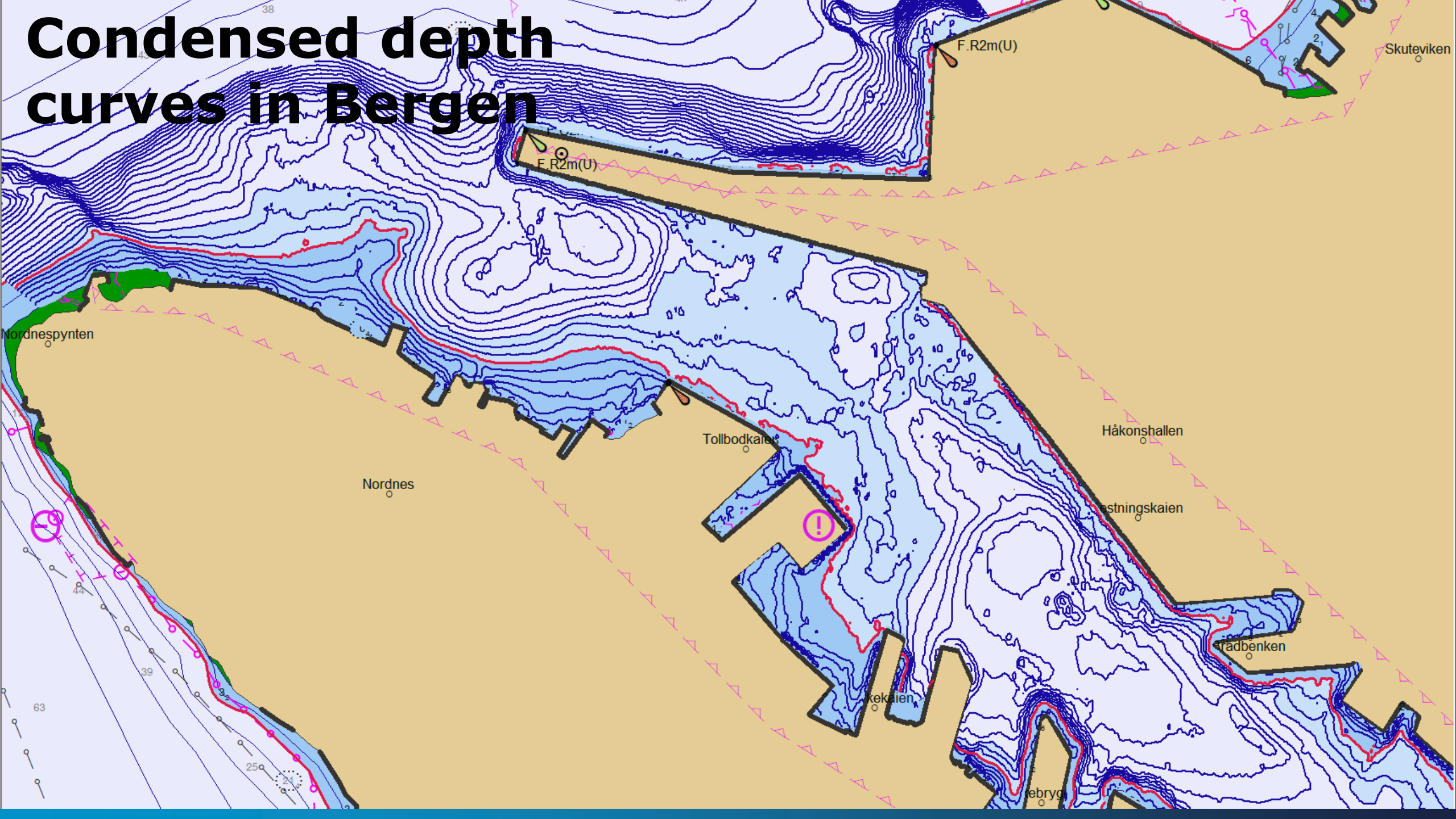
MAGIN: Marine Base Maps in Norway



Condensed depth curves in Bergen

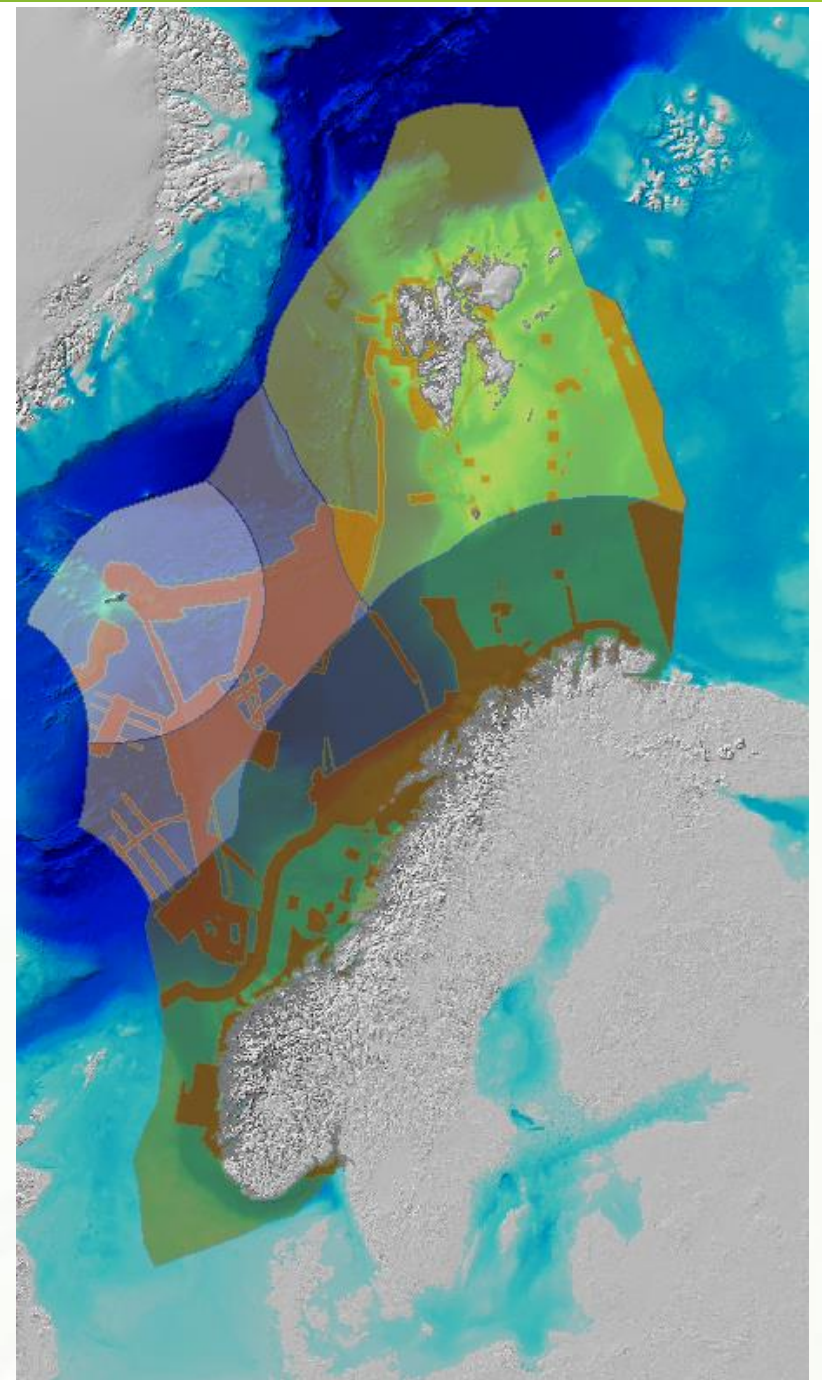


Condensed depth curves in Bergen



Seabed 2030

area	tot_km2	SB_data_ km2	missing_ km2	coverage %
Norway	935,635	314,185	621,450	33.6%
Svalbard	805,143	117,014	688,129	14.5%
Jan Mayen	296,493	81,404	215,089	27.5%
International waters	319,706	151,709	167,997	47.5%
total	2,356,977	664,312	1,692,665	28.2%



Questions?

