



Exploring future use and climate scenarios: OLAMUR and MARCO projects

Øivind Bergh

Institute of Marine Research, Bergen, Norway

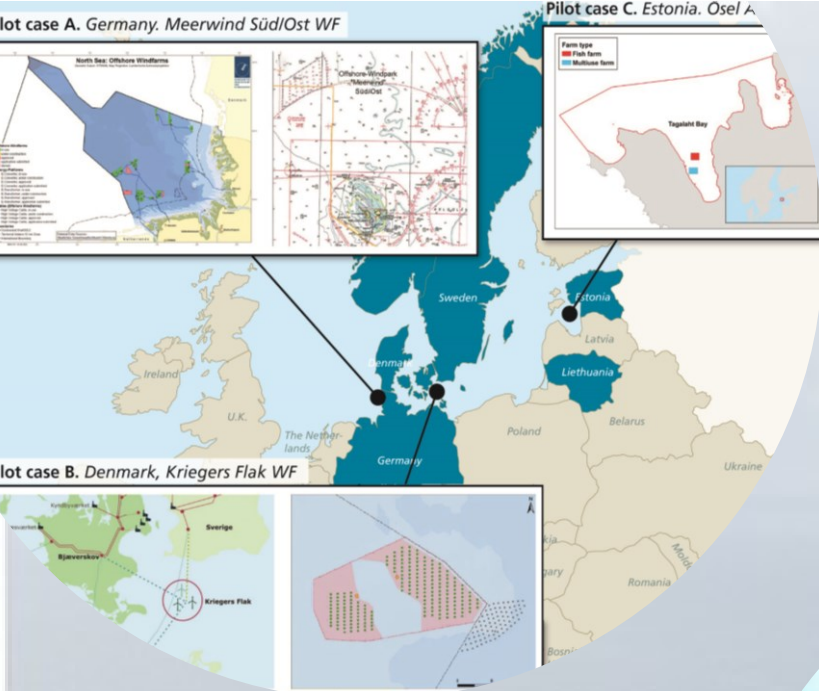
**OLAMUR: Offshore Low-trophic Aquaculture
in Multi-Use scenario Realisation**

Horizon Europe: 2023-2026

MARCO: MARine CO-operation

Research Council of Norway
2023-2026





Large EU project on kelp and mussel farming within offshore wind farms

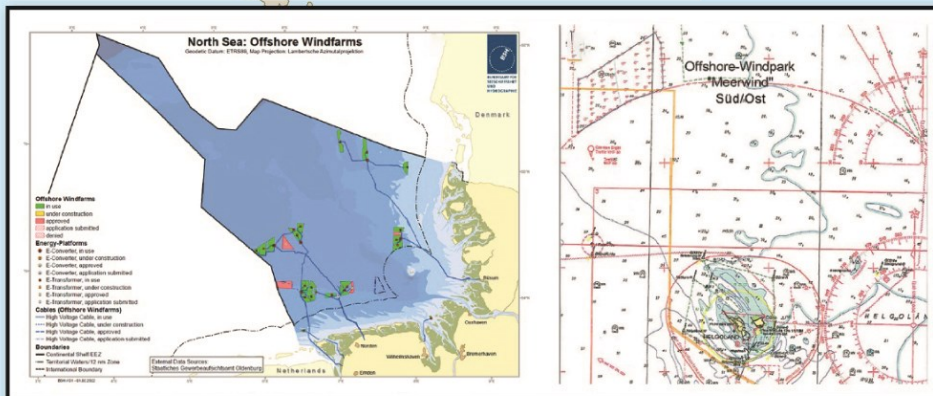
Ambition

OLAMUR will address and solve key bottlenecks hampering development of commercially viable and sustainable **offshore low-trophic aquaculture (LTA)** in **wind farms** or **fish farms** and thereby enhancing a sustainable LTA production in the EU.

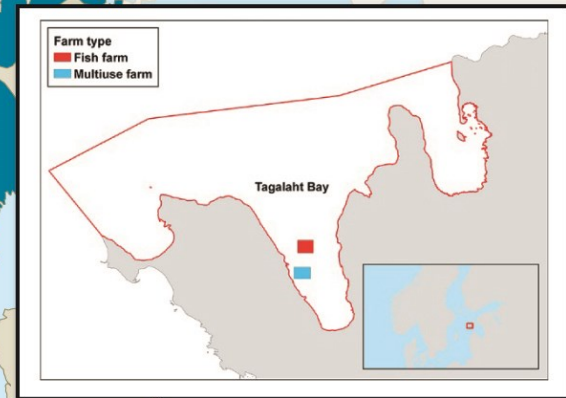




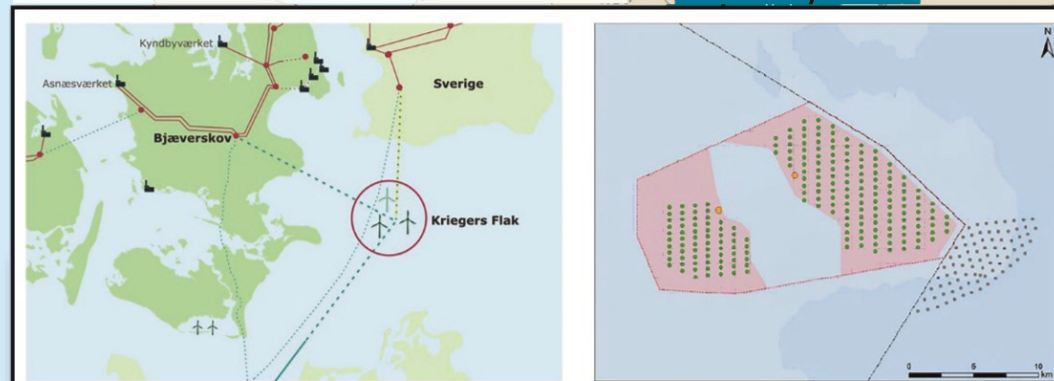
Pilot case A. Germany. Meerwind Süd/Ost WF



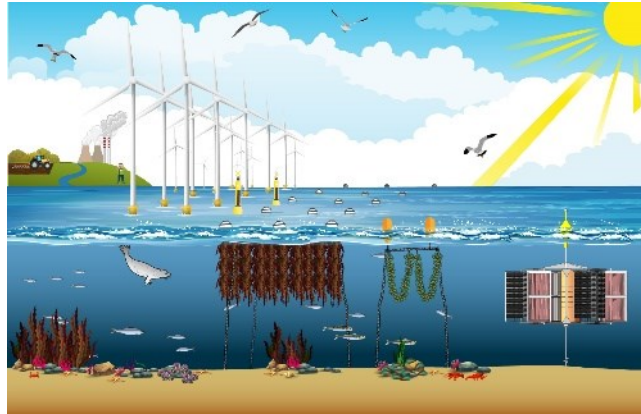
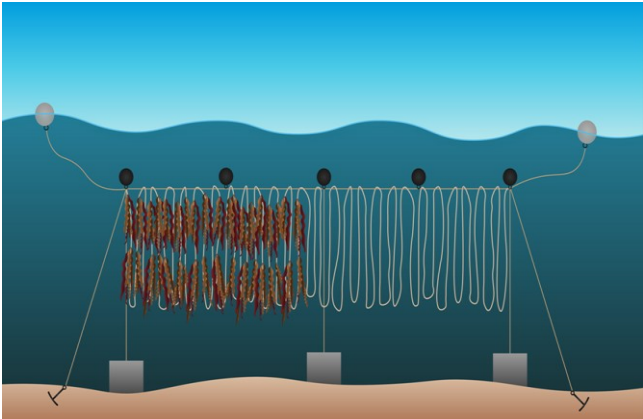
Pilot case C. Estonia. Ösel Aquafarms



Pilot case B. Denmark, Kriegers Flak WF

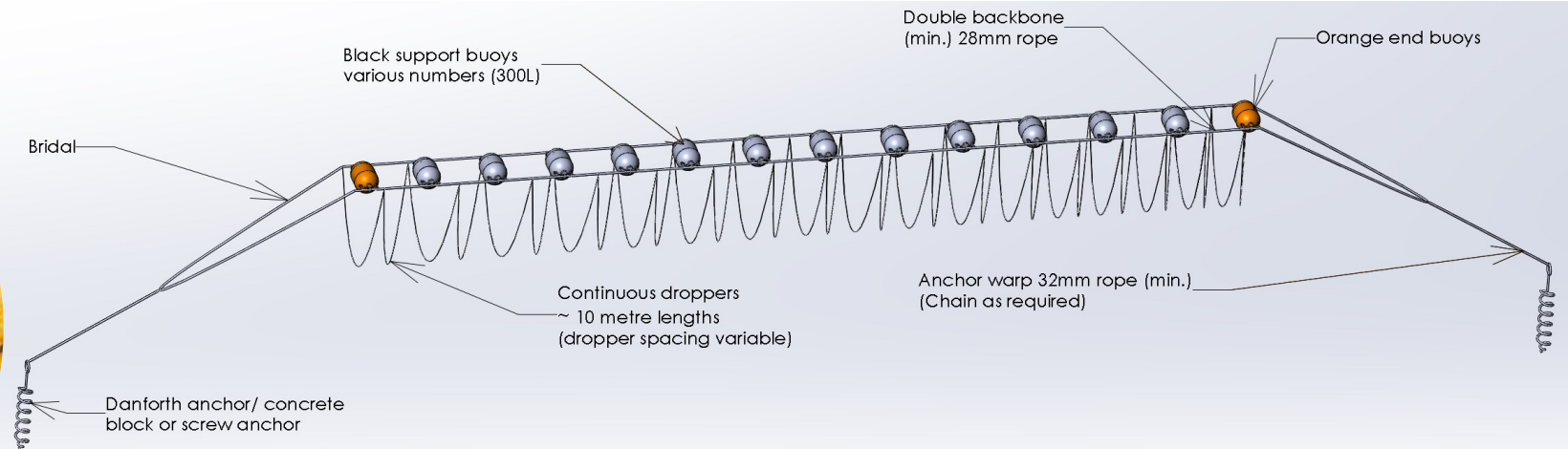


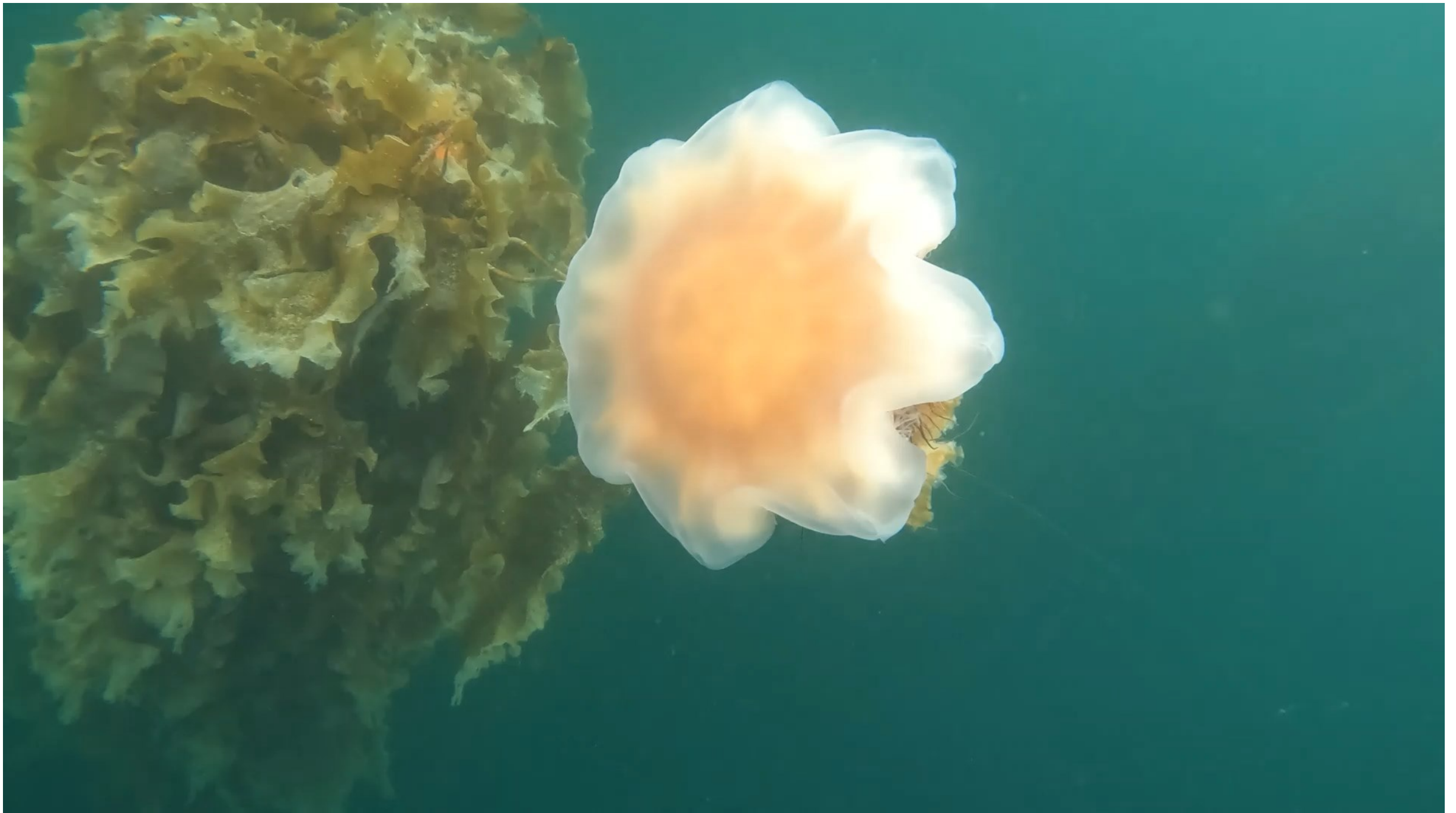
Funded by the European Union, grant agreement NO 101094065. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for them.

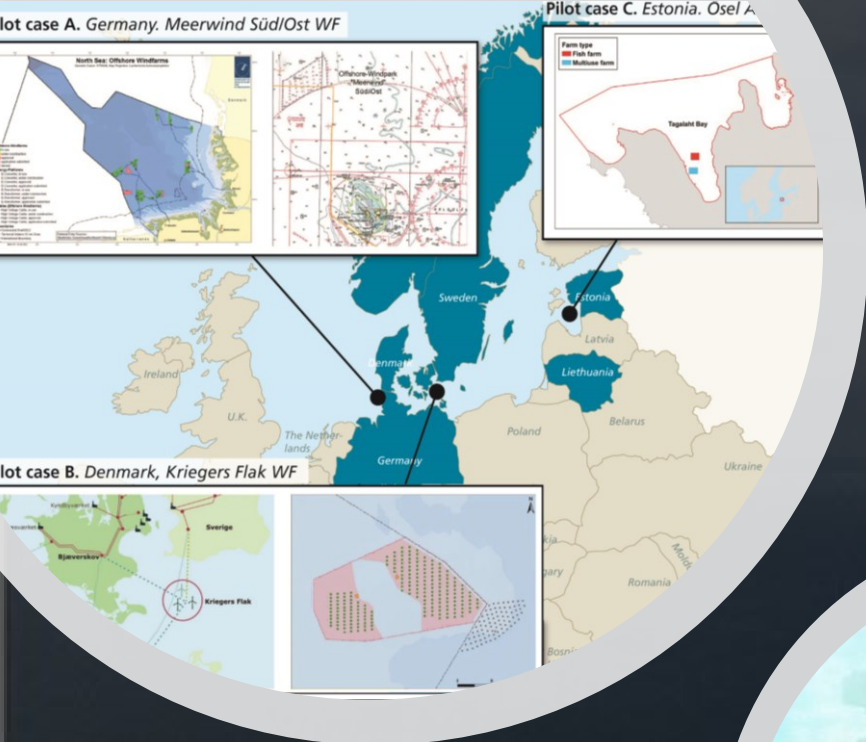


Contribute to:

- Security
 - Energy security
 - Food security
- Mitigation
 - Sea restoration
 - CO₂ capture
 - Nutrient caption





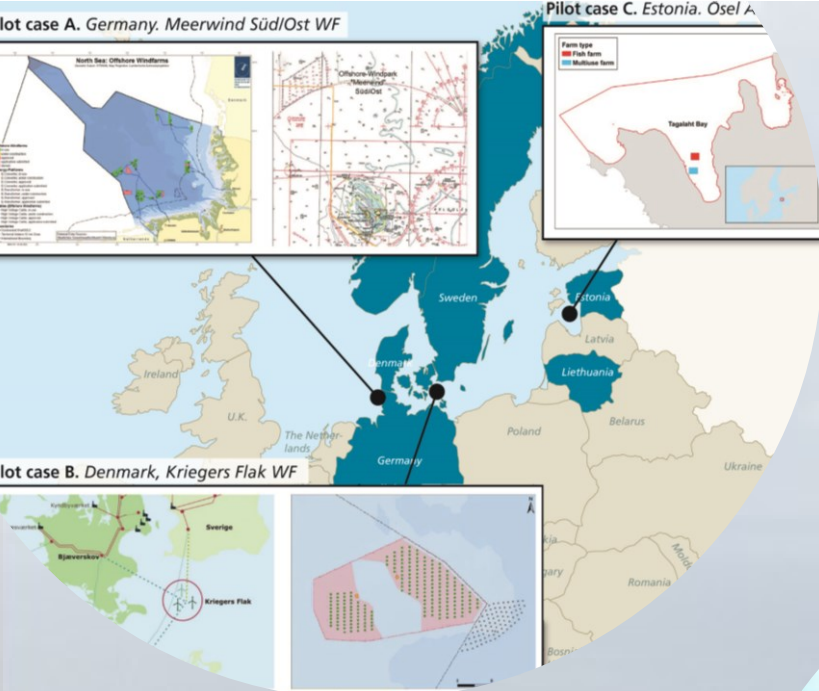


Stort EU “Flagship” prosjekt om tare og blåskjell kombinert med havvind (og fiskeoppdrett)

Ambisjoner

- *Restaurere Østersjøen og Nordsjøen*
- *Skaffe mer fornybar energi*
- *Øke Europas marine bioproduksjon*
- *Mer effektiv arealutnyttelse*





Large EU project on multi-use: kelp and mussel farming combined with

- offshore wind farms
- fish farms

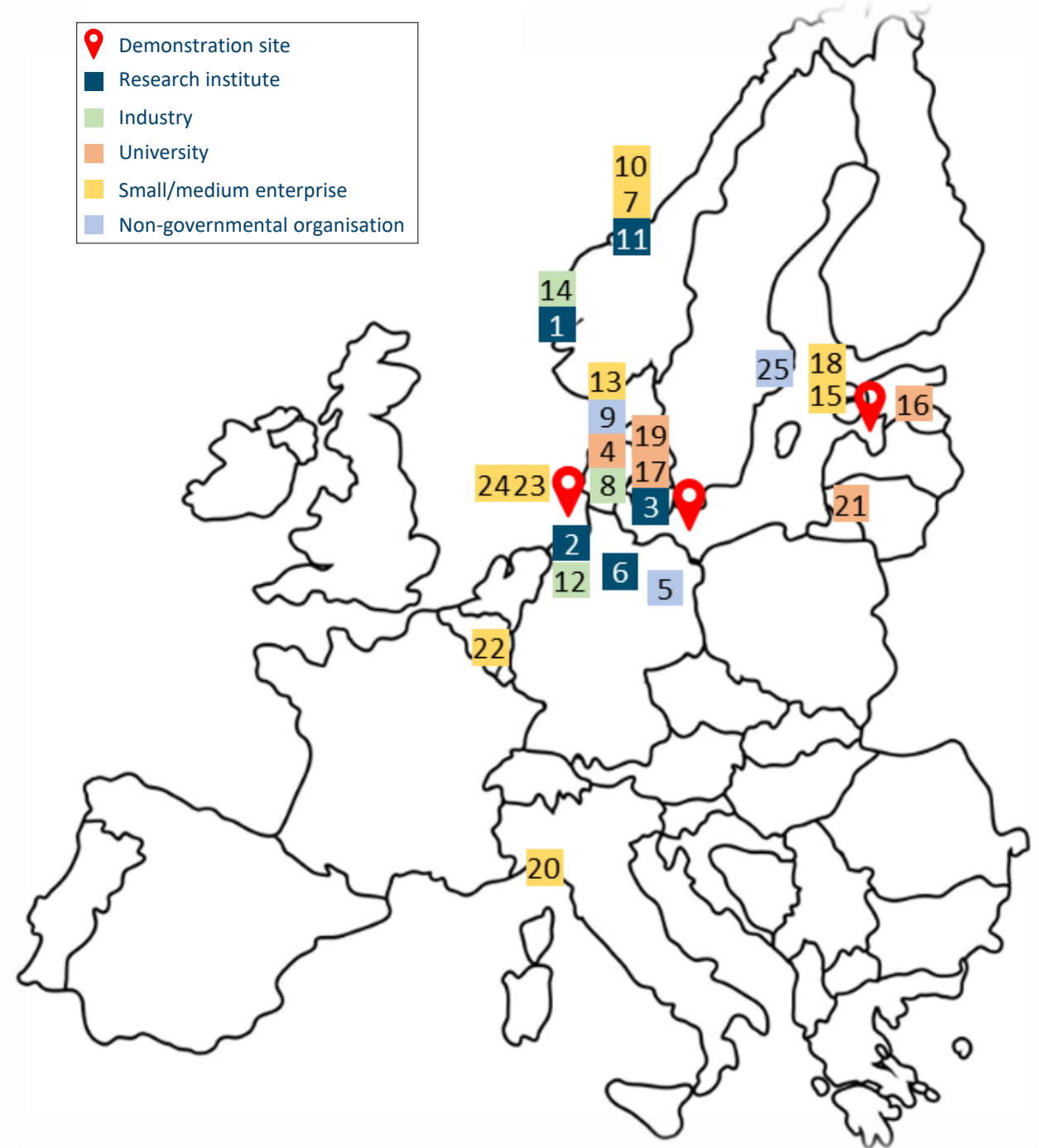


Ambition

OLAMUR will address and solve key bottlenecks hampering the development of commercially viable and sustainable offshore low-trophic aquaculture (LTA) in wind farms or fish farms and thereby enhancing a sustainable LTA production in the EU.

25 partners from research, organisations and industry

- 1 Havforskninginstituttet , Norway
- 2 Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research , Germany
- 3 Danmarks Meteorologiske Institut , Danmark
- 4 Aarhus Universitet , Danmark
- 5 GCF - Global Climate Forum EV , Germany
- 6 Helmholtz-Zentrum Hereon , Germany
- 7 Maritime Robotics AS , Norway
- 8 Vattenfall Europe Windkraft AS , Danmark
- 9 Kattegatcentrets Driftsfond , Danmark
- 10 Skarv Technologies AS , Norway
- 11 SINTEF Ocean AS , Norway
- 12 WindMW GmbH , Germany
- 13 Kerteminde Seafarm Aps , Denmark
- 14 Lerøy Seafood Group ASA , Norway
- 15 RedStorm OÜ , Estonia
- 16 Tartu Ulikool , Estonia
- 17 Danmarks Tekniske Universitet , Danmark
- 18 Ösel Aquafarm OÜ , Estonia
- 19 Københavns Universitet , Danmark
- 20 ETT Spa , Italy
- 21 Klaipėdos Universitetas , Lithuania
- 22 Plateforme Technologique et de l'innovation de l'aquaculture Europeenne ASBL , Belgium
- 23 Nordfriesische Seemuschel GmbH , Germany
- 24 Wyk 8 Muschelfischereibetrieb GmbH , Germany
- 25 Stiftelsen Voice of the Ocean , Sweden



Policy Linkage:



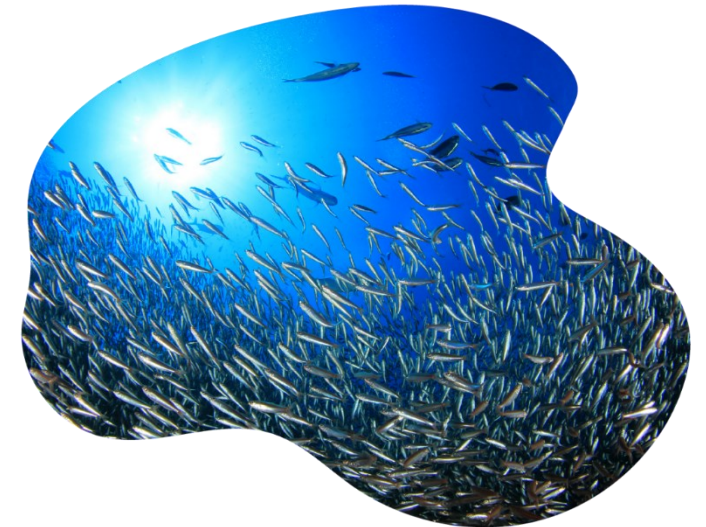
- European Green Deal & F2F Strategies
- Sustainable Blue Economy & EU Strategic Guidelines (COM 2021 – 240 & 236)
- Sustainable EU Algae Sector (COM 2022 – 592)
- EU MSP Platform
- EU4Algae Platform
- Aquaculture Assistance Mechanism
- Aquaculture Advisory Council
- Mission Ocean Charter
- Blue Economy Smart Specialisation
- Horizon Europe Framework Programme



HORIZON-MISS-2021-OCEAN-04-01: Lighthouse in the Baltic and the North Sea basins - Low impact marine aquaculture and multi-purpose use of marine space

AIM

- Show the way to profitable and sustainable seafood farming away from the densely populated coasts, with focus on low trophic level species, no dependence on fossil fuels and sharing space with other offshore economic activities (in accordance with Mission objective 3 as regards low impact and sustainable marine aquaculture and multipurpose use of marine space).
- Implement Mission lighthouse in the Baltic and North sea basins in order to make the Blue economy sustainable, circular and carbon neutral.



INNOVATION ACTION



- European Green Deal & F2F Strategies
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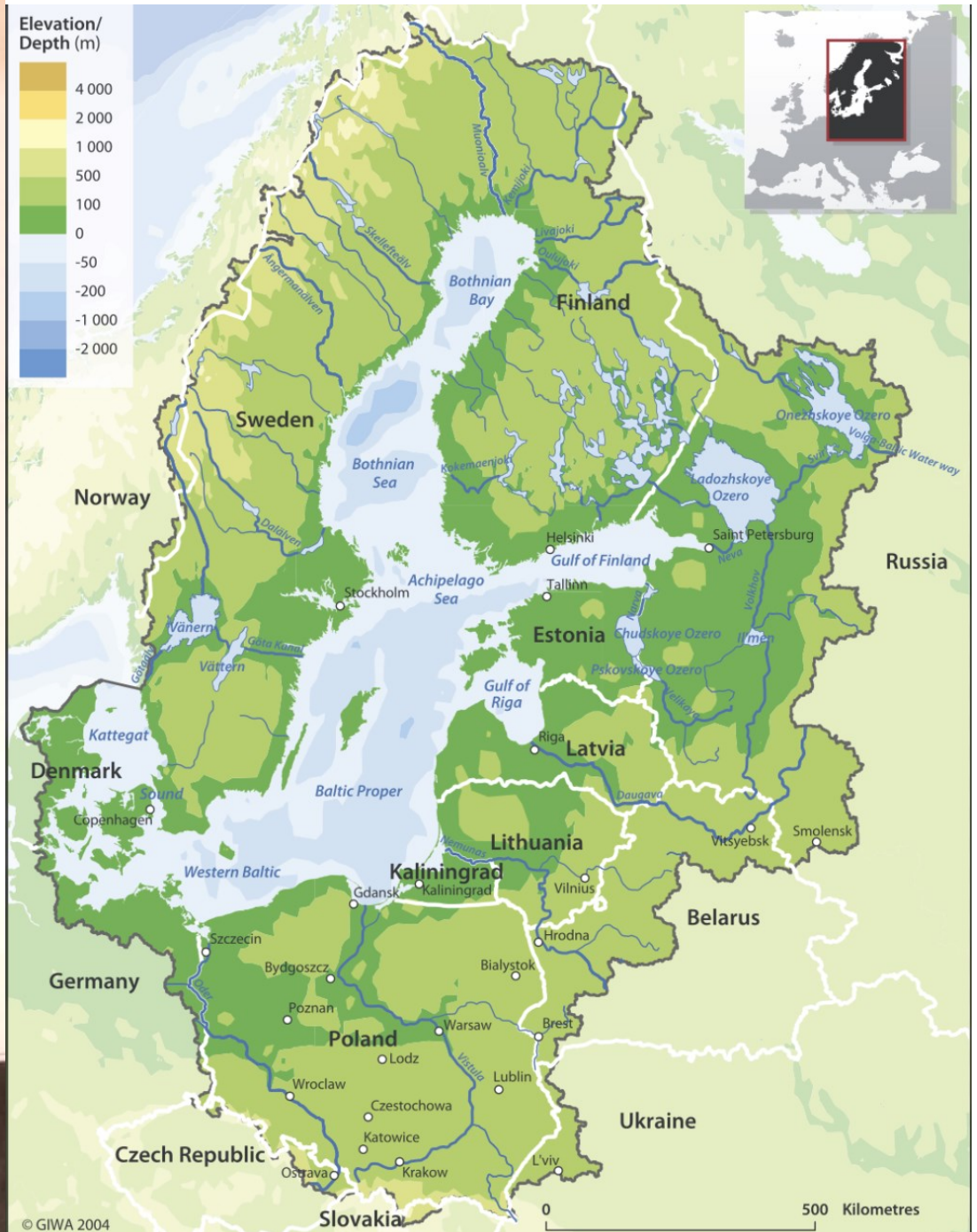
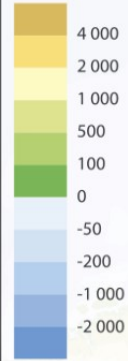
The Norwegian Coastal Current

– Oceanography and Climate

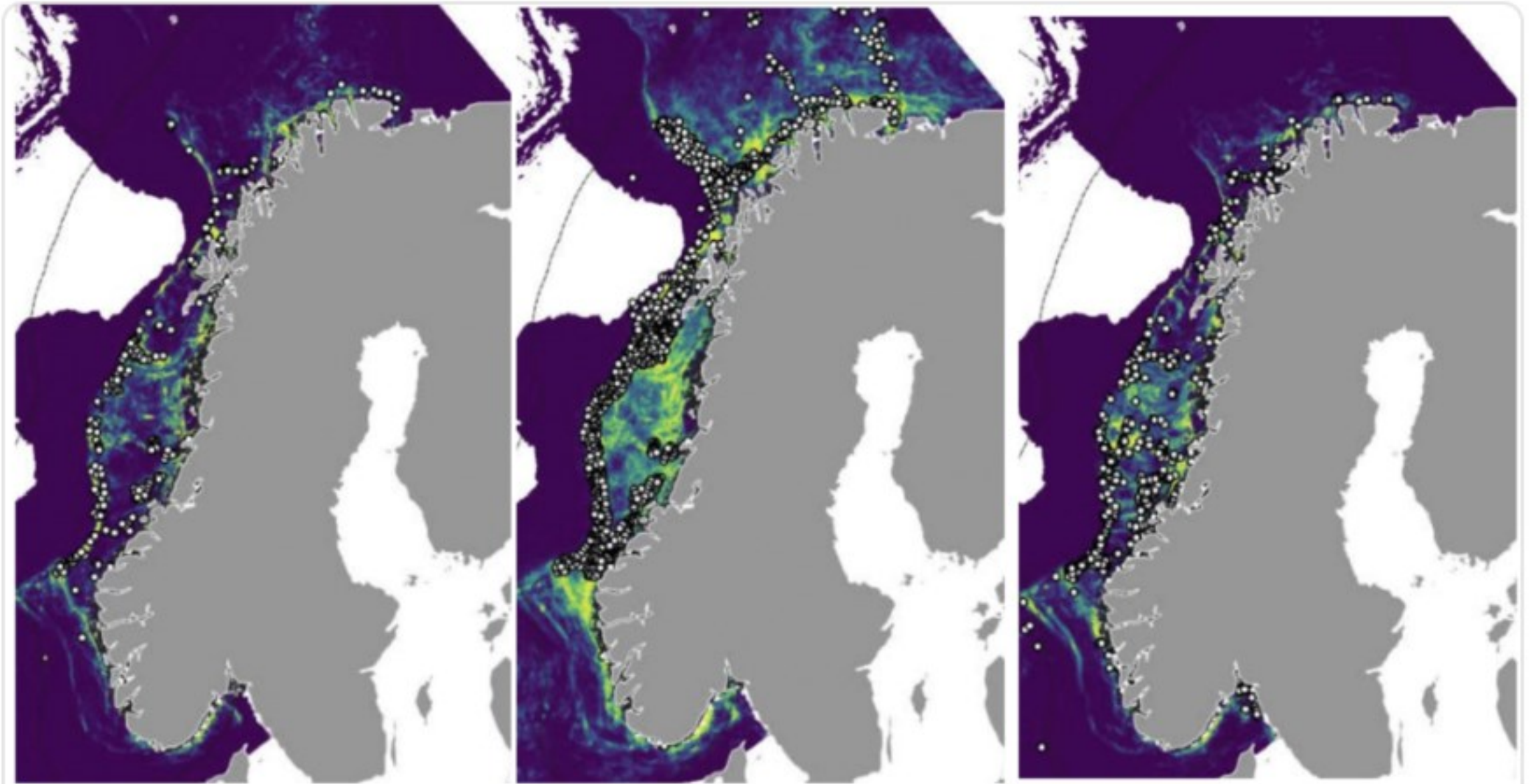
Edited by Roald Sætre

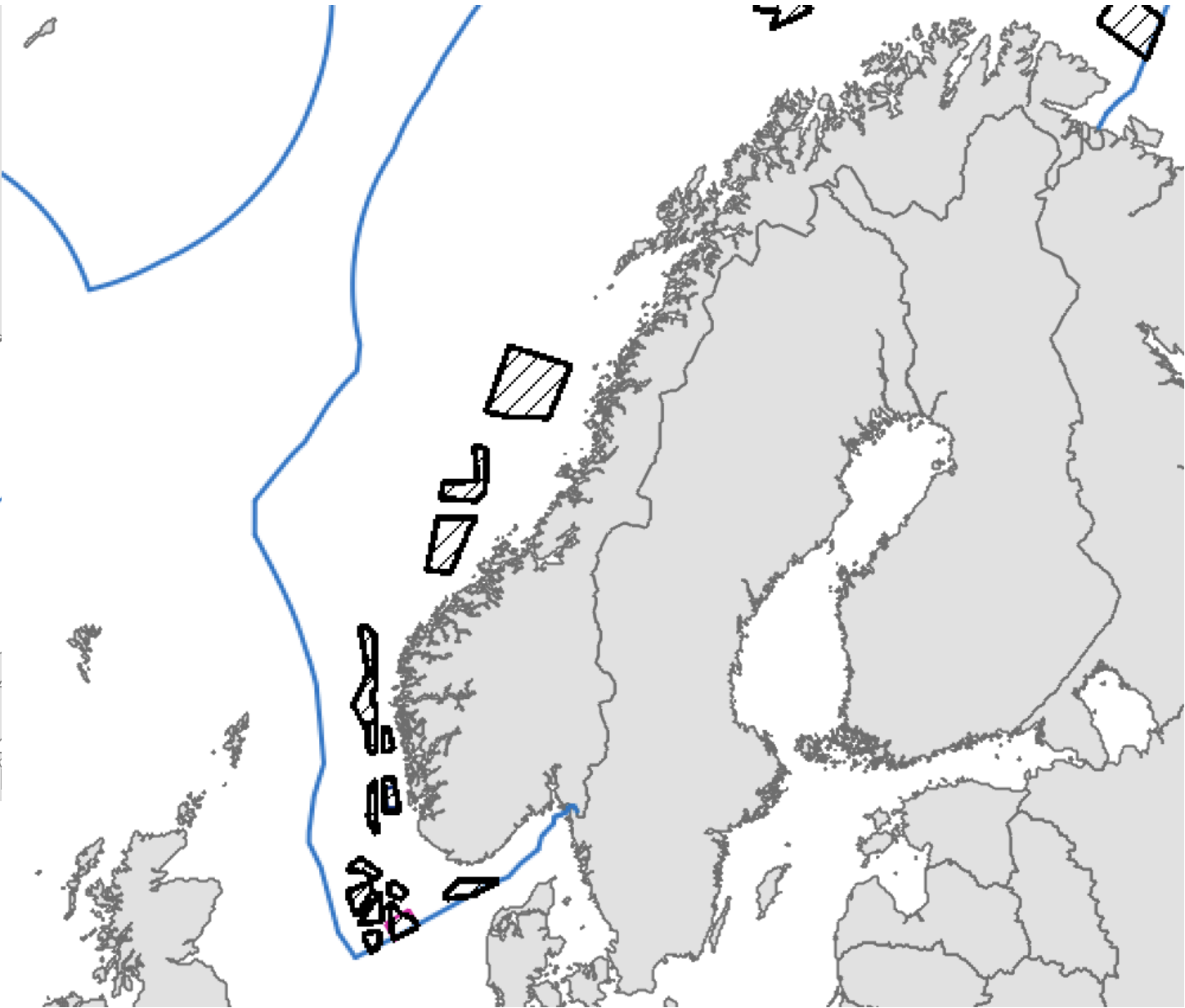
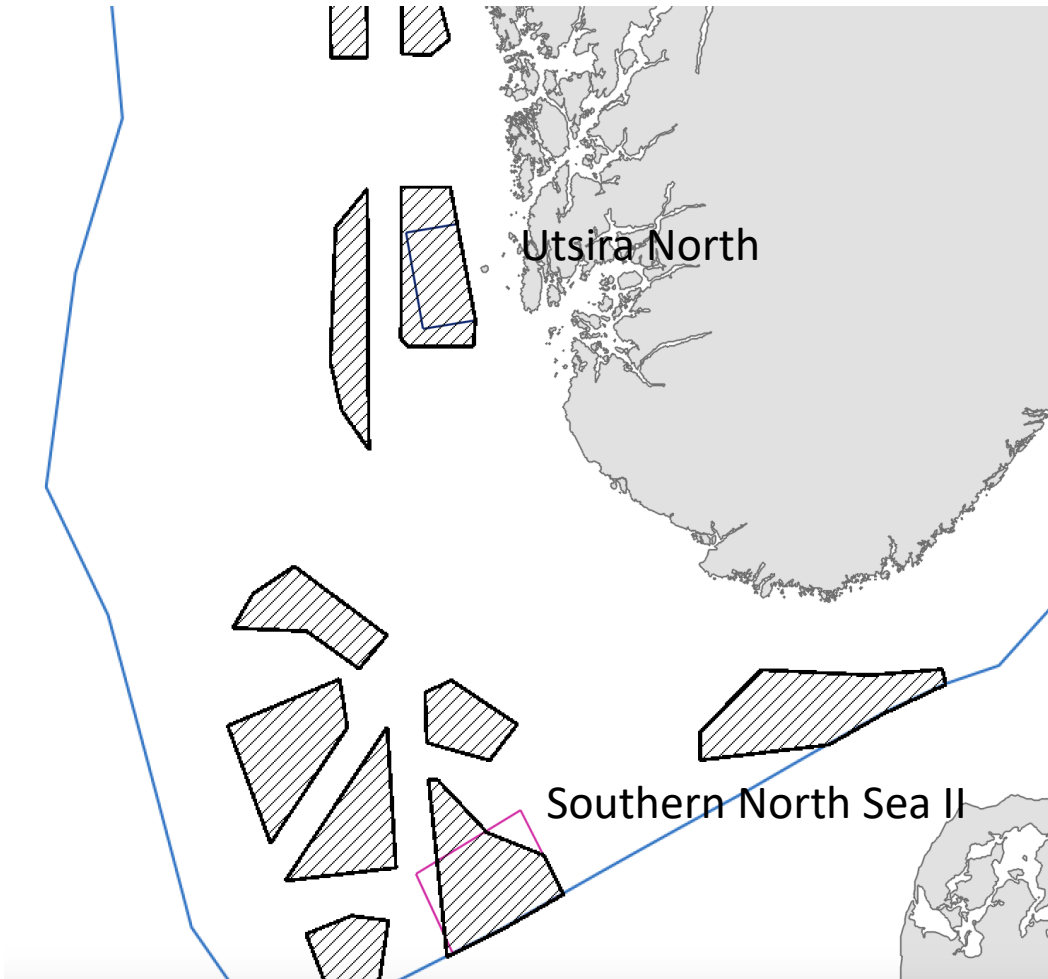
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Elevation/
Depth (m)

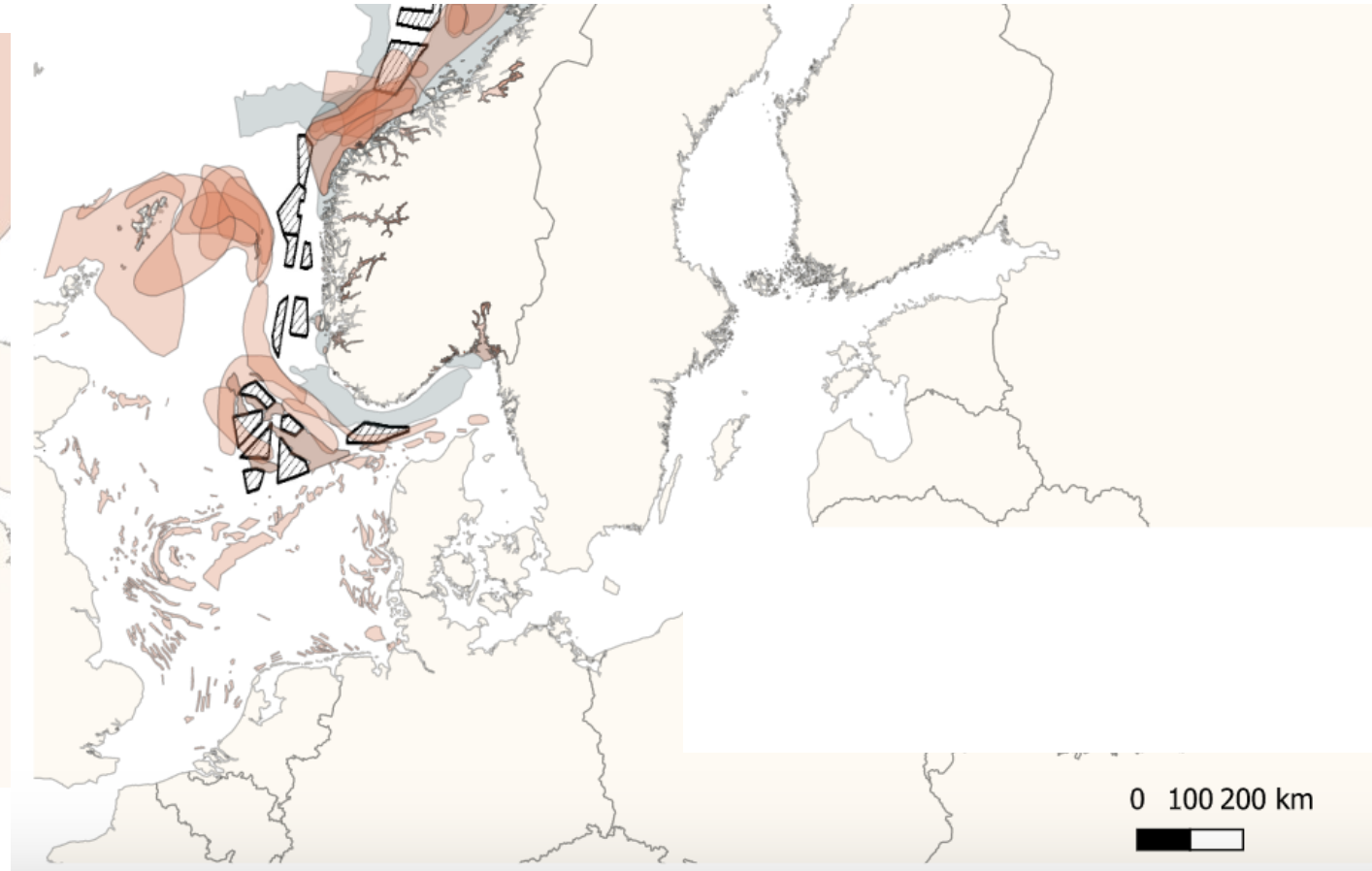
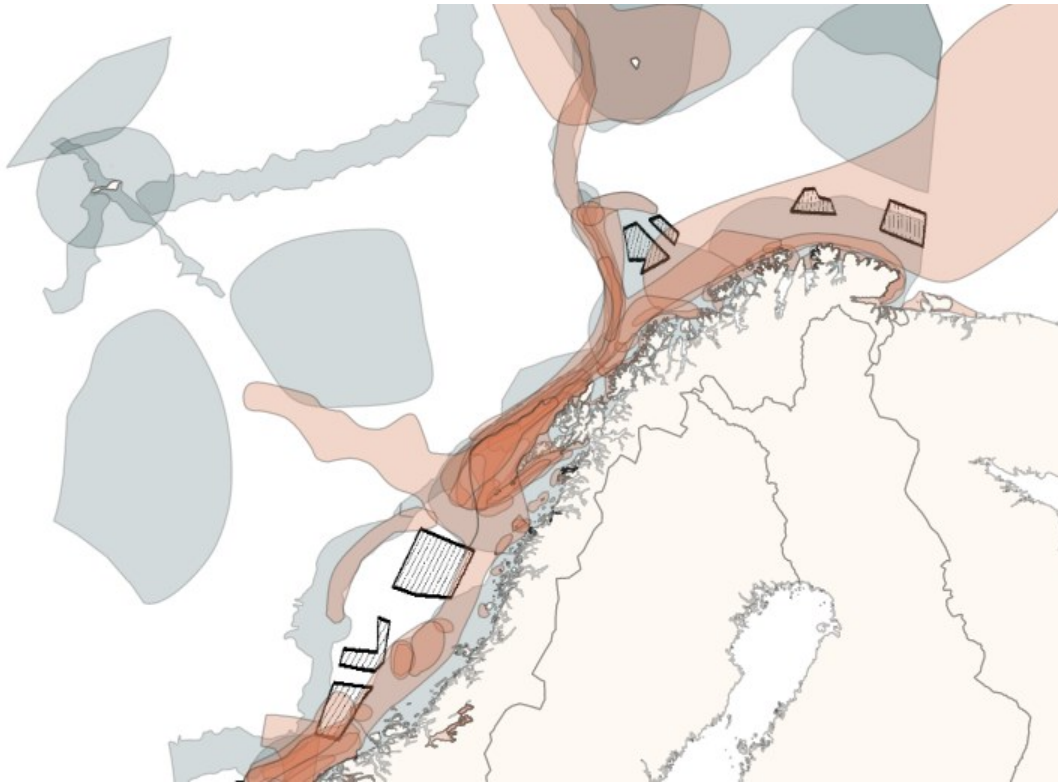


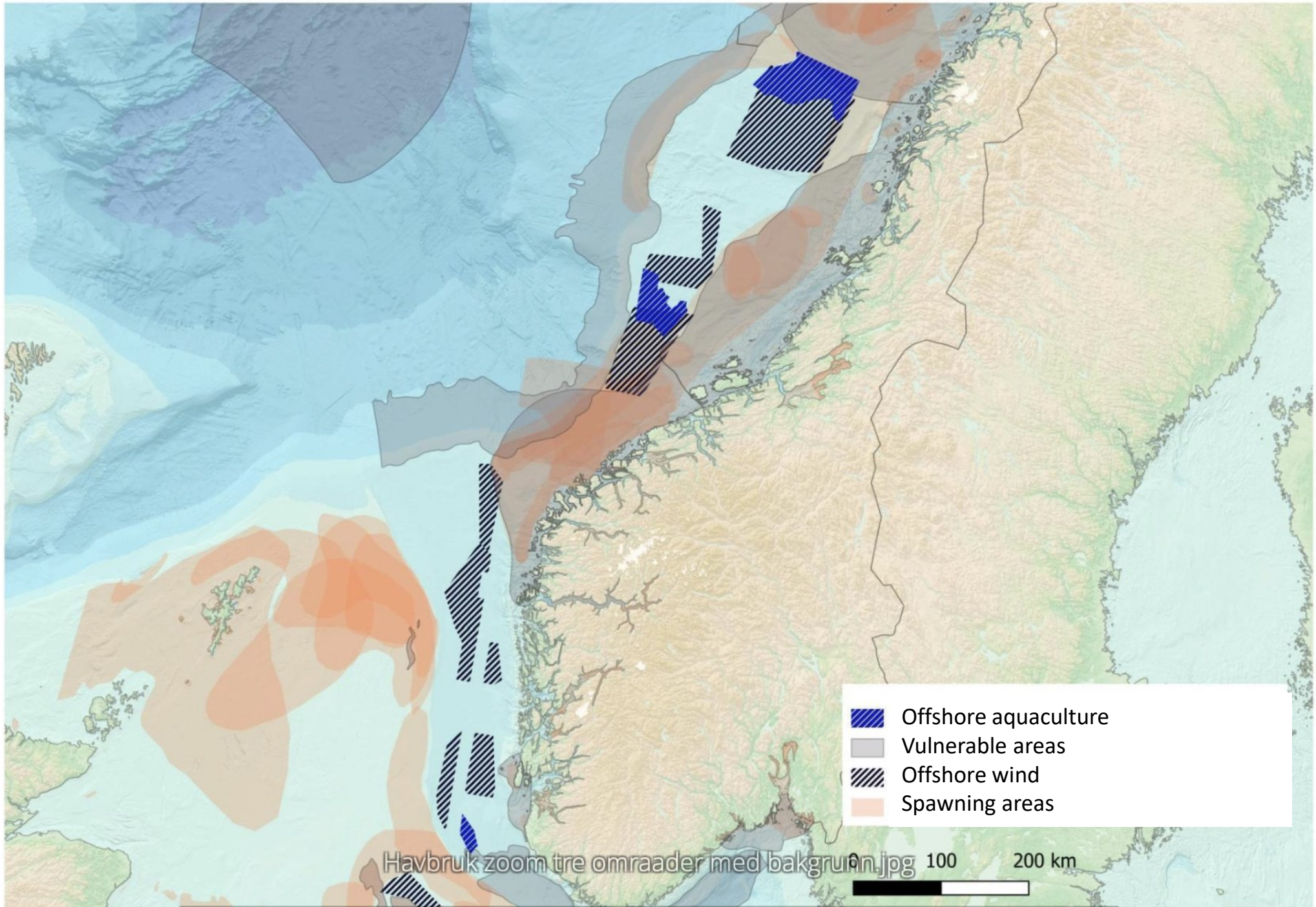
Corals (v) Coral reefs (midt) swamps (r)
From Elena Eriksen m fl. (2021), IMR report

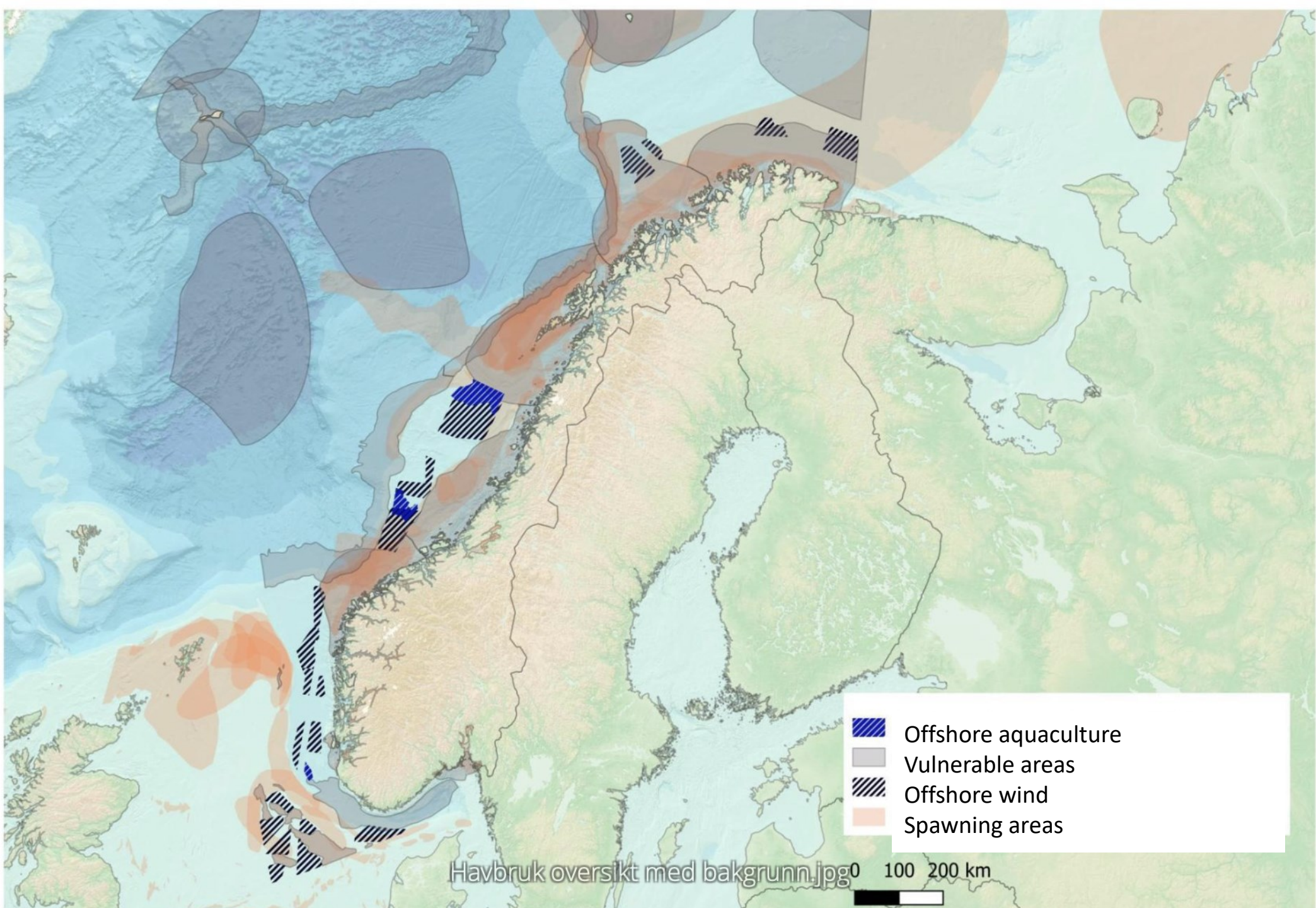




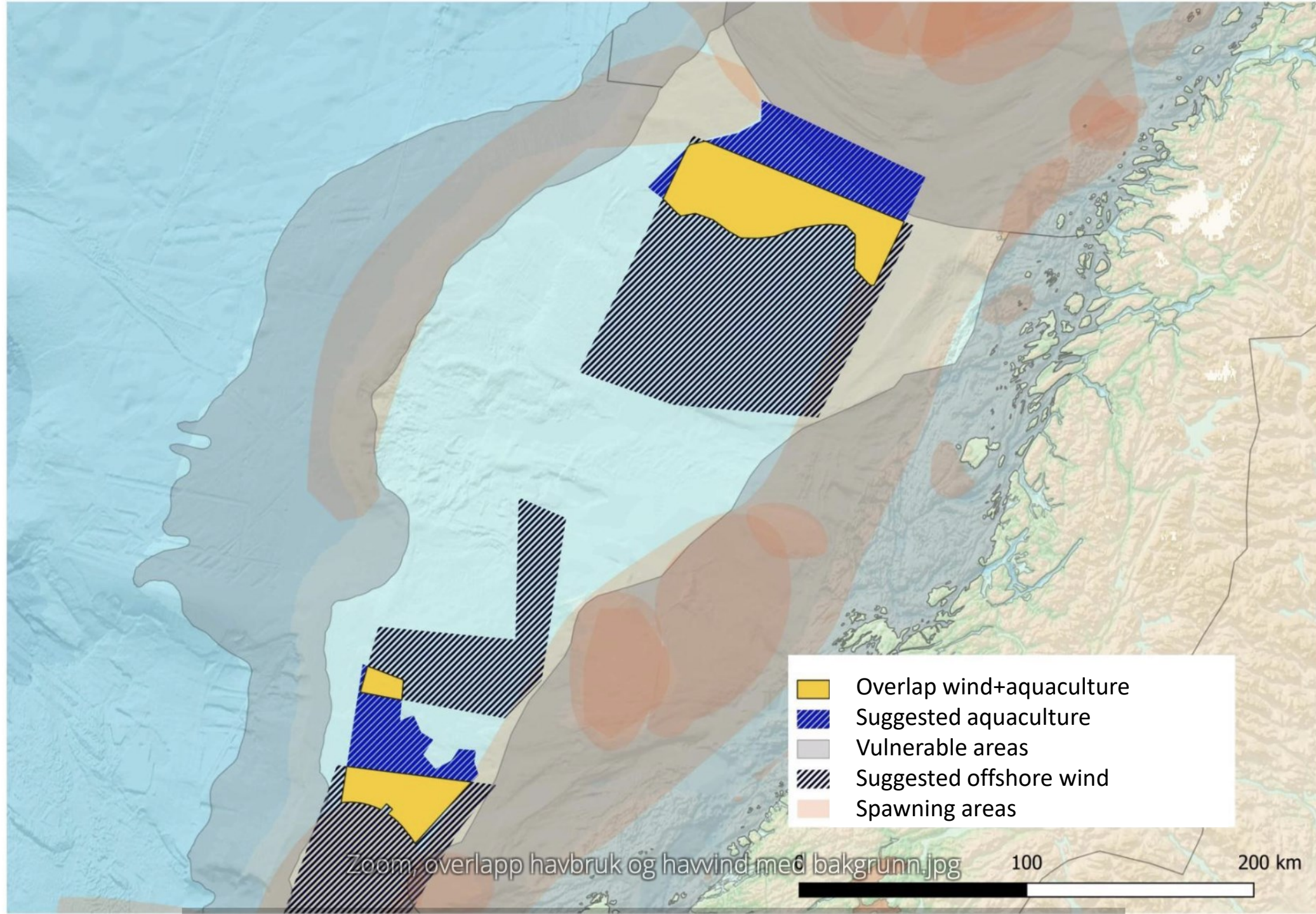
Specially vulnerable areas (grey)
Spawning fields (red)







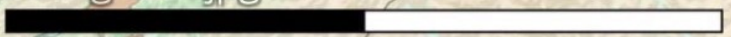
Havbruk oversikt med bakgrunn.jpg 0 100 200 km



- Overlap wind+aquaculture
- Suggested aquaculture
- Vulnerable areas
- Suggested offshore wind
- Spawning areas

Zoom, overlapp havbruk og hawind med bakgrunn.jpg

100 200 km



General advice on offshore wind and aquaculture

- Protect spawning areas
- Define and protect Specially Vulnerable areas
 - Coral reefs?
 - Swamps?
 - Representative areas?
- Possible overlap areas: Multiple Use concepts?

MARCO – MARine CO-operation
Research Council of Norway
Contract 327903



olamur@hi.no



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Photos: Vattenfall, IMR (Erling Svensen)
Video IMR (Hans Kristian Strand)

