

Norwegian Marine Spatial Planning and the Ecosystem approach

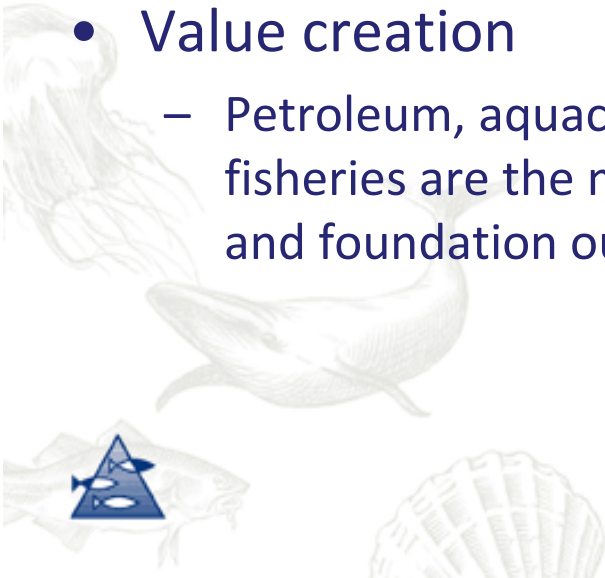
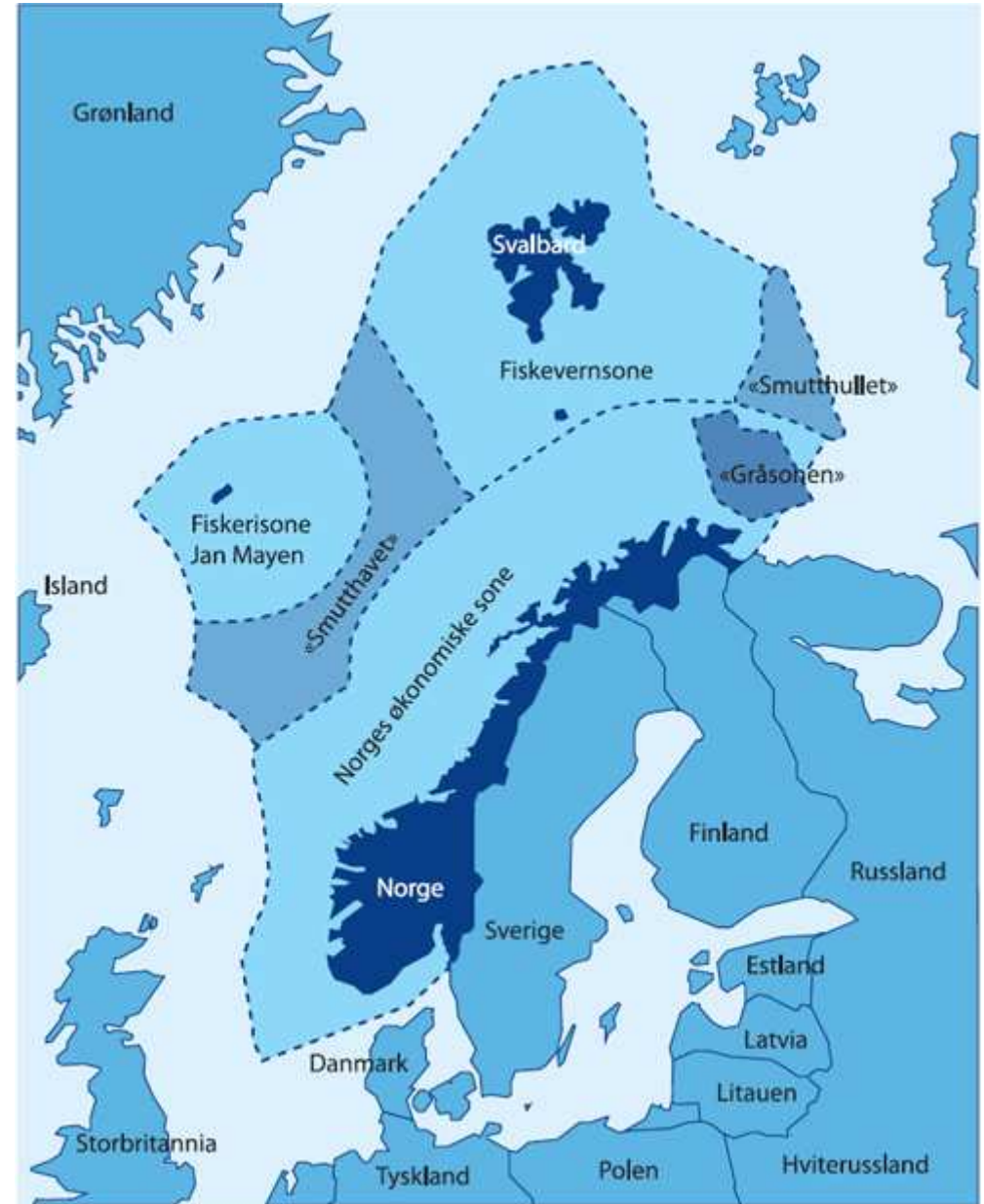
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Photo: T. de Lange Wenneck

Norway; the "ocean state"

- Area
 - Waters under Norwegian jurisdiction: 2,3 million km²
 - **Land territory:** 385 000 km²
- Value creation
 - Petroleum, aquaculture and fisheries are the main exports and foundation our welfare



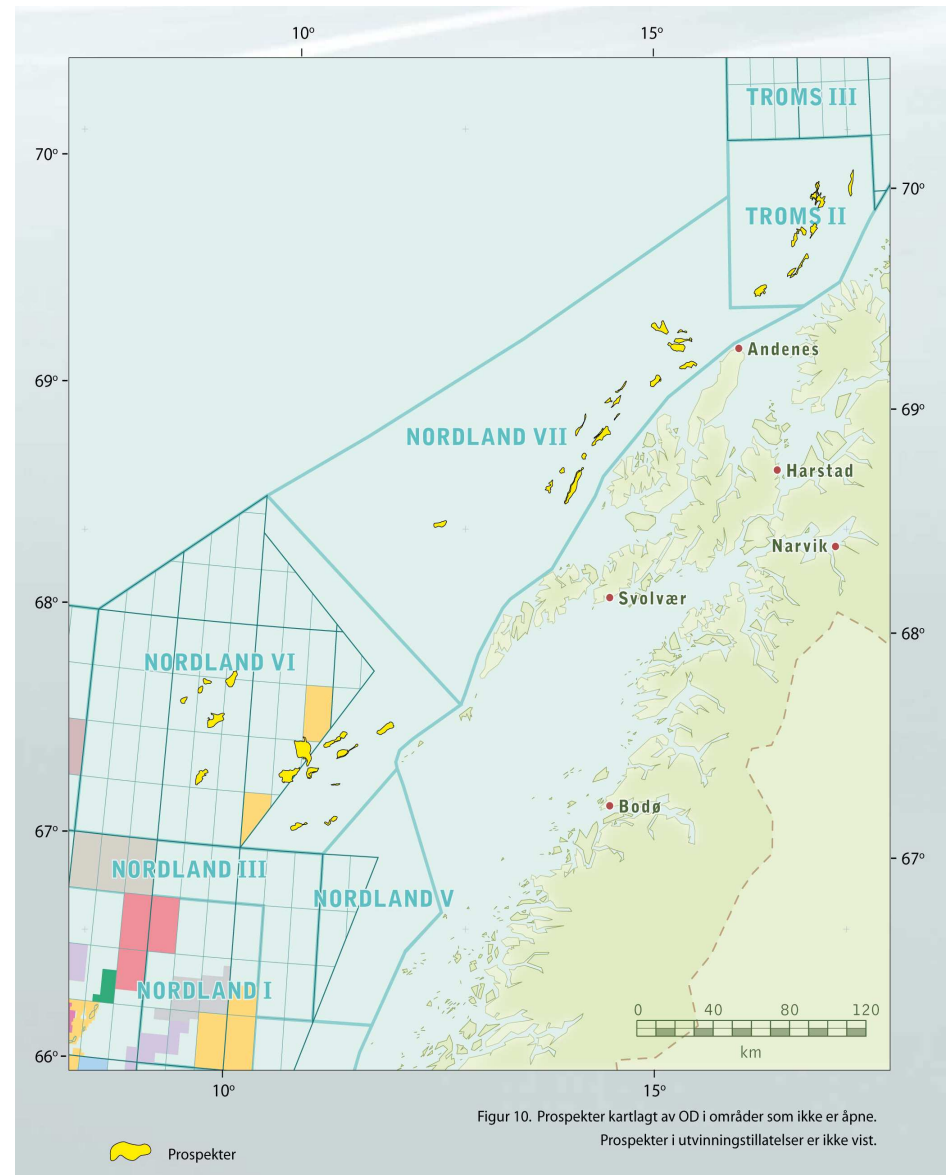
A growing understanding for integrated ocean management

- Response to challenges:
 - Climate change, pollution, increasing economic activity
- ***The cumulative impacts of various uses of and pressures on the marine environment necessitate integrated approaches to its management.***
- Integrated ocean management is addressed through a number of concepts:
 - Marine Spatial Planning, Ocean Zoning, Ecosystem-based ocean management (Ecosystem Approach)etc.

Photo: T. de Lange Wenneck

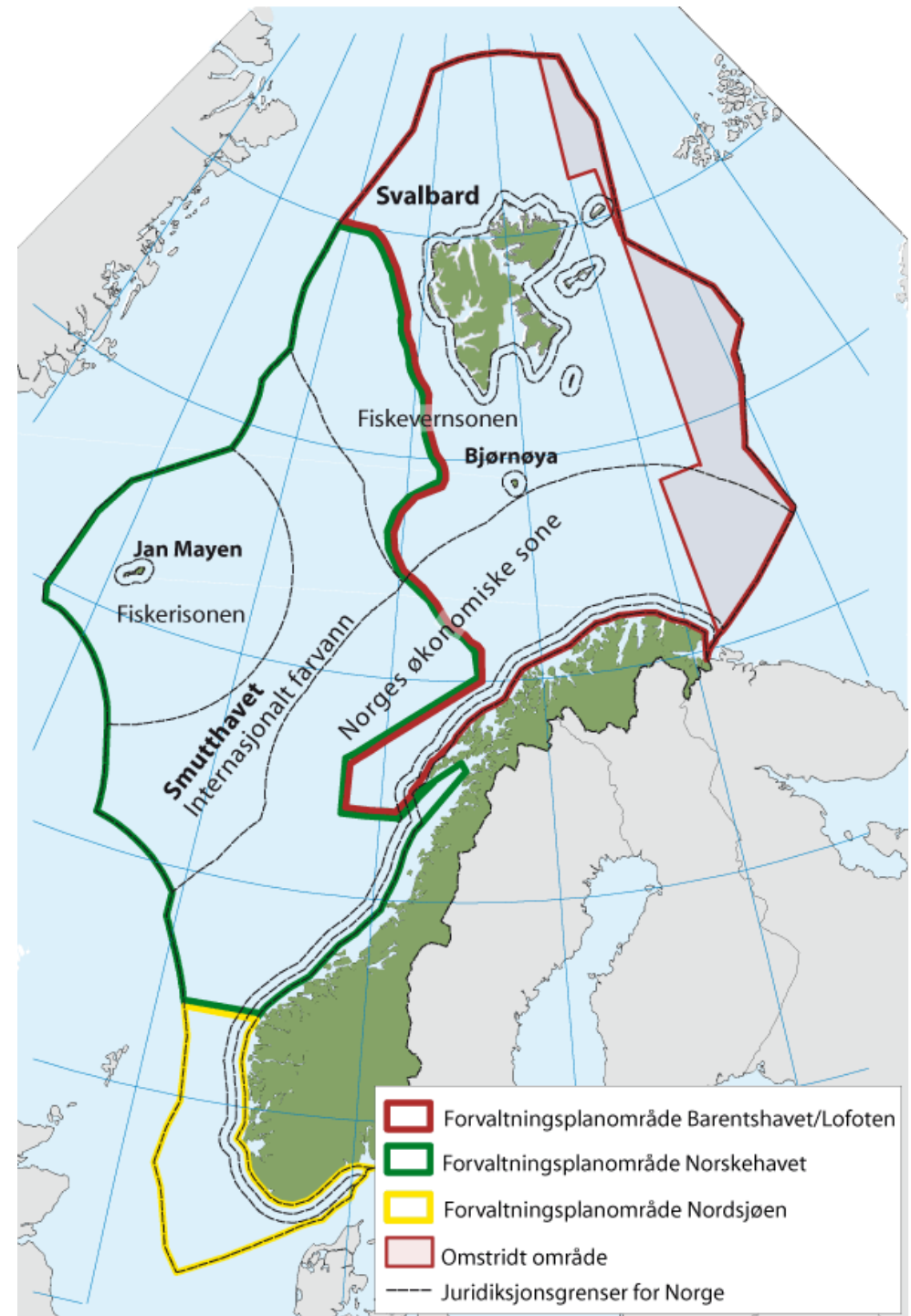
Decline in oil/gas production: need for new fields to fill the gap

- Unexplored areas off Northern Norway
- Most promising at Lofoten – Vesterålen
- Need infrastructure moving northward to access arctic fields
- **Necessitates implementing integrated ocean management in the areas**

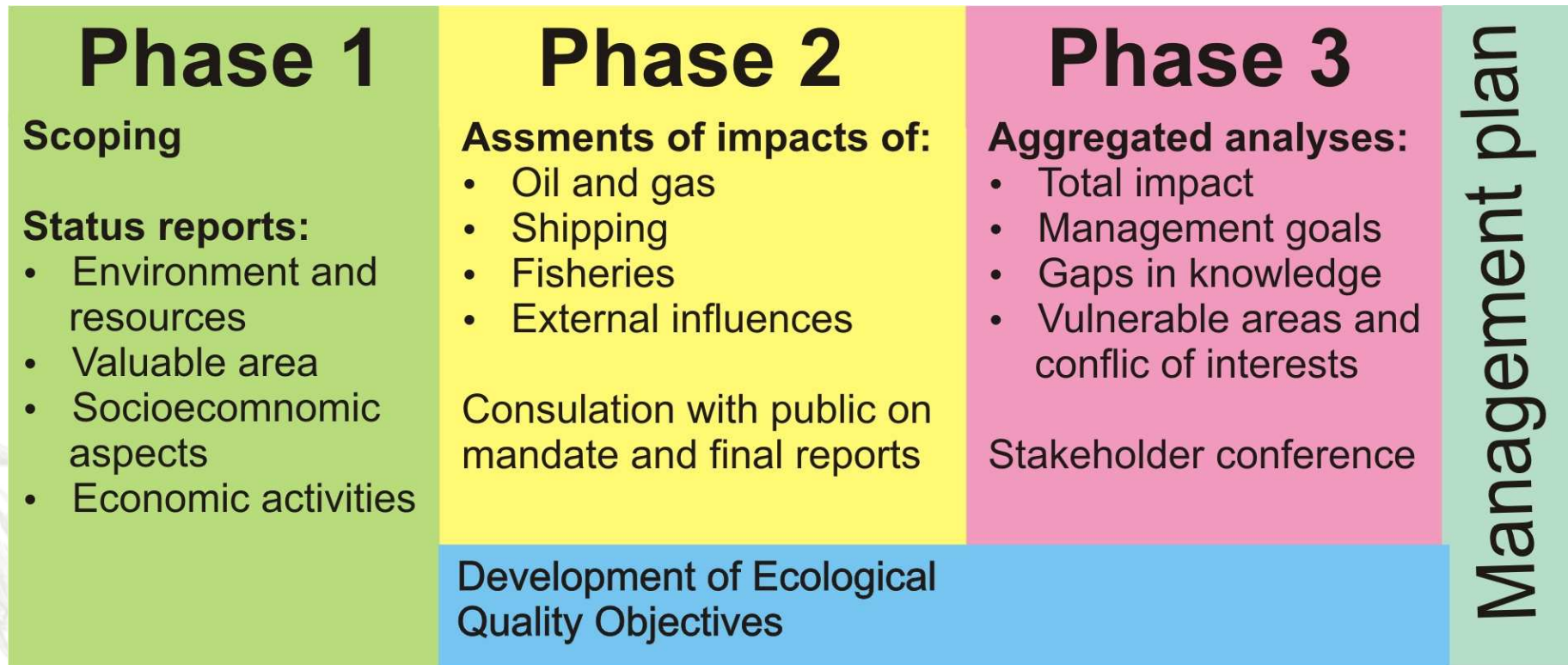


The Norwegian Management plans

- Initiated in 2001
- Barents sea: 2006
 - Revision in 2010/2011
- Norwegian sea: 2009
- North Sea: planned for 2013

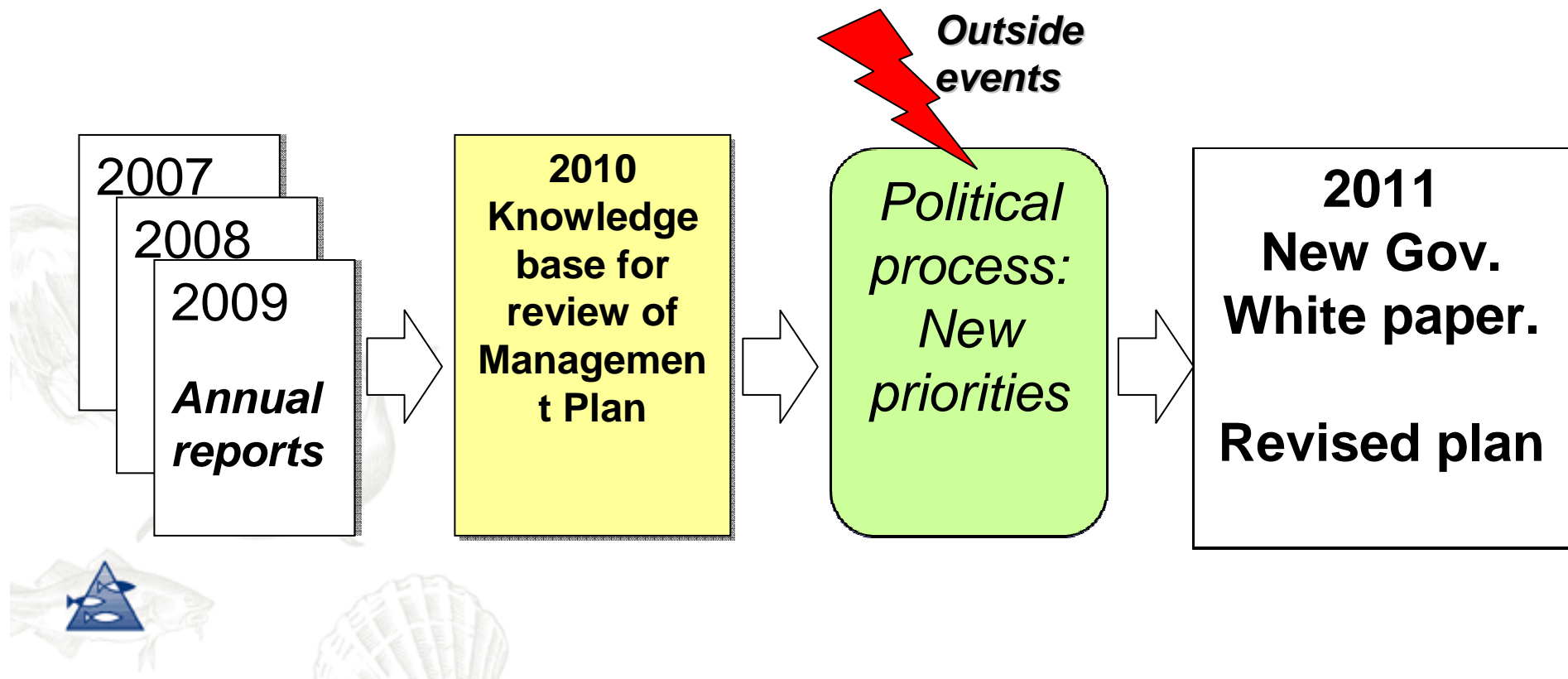
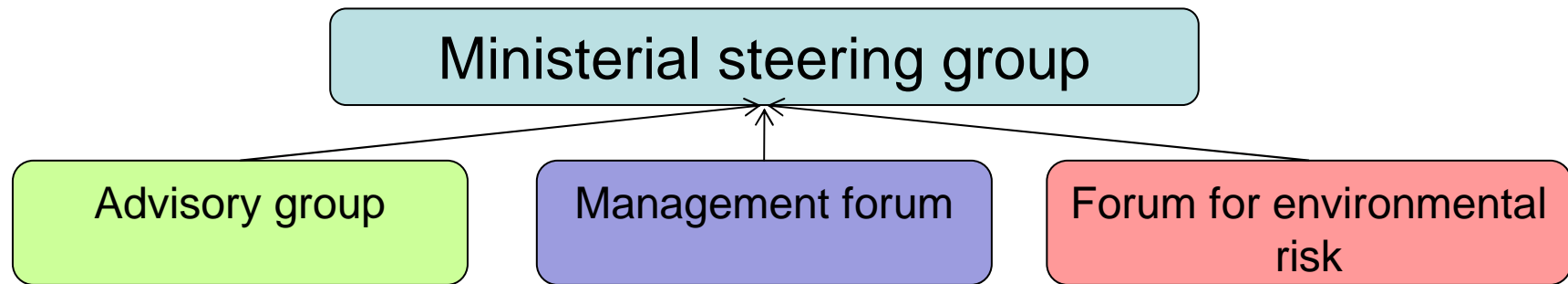


The planning process



From: von Quillfeldt et al 2009

Implementation and review phase

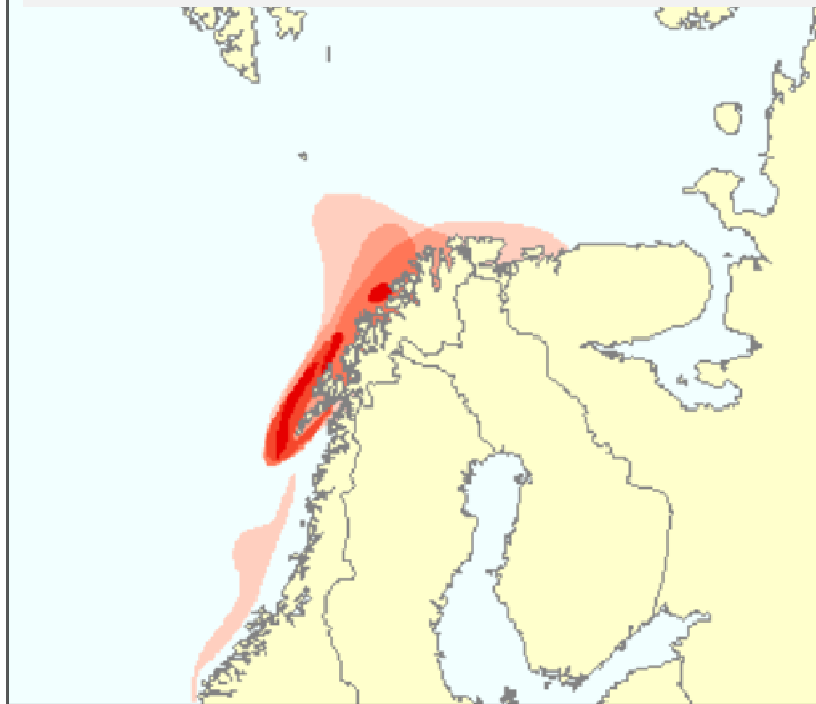


The science behind the plan

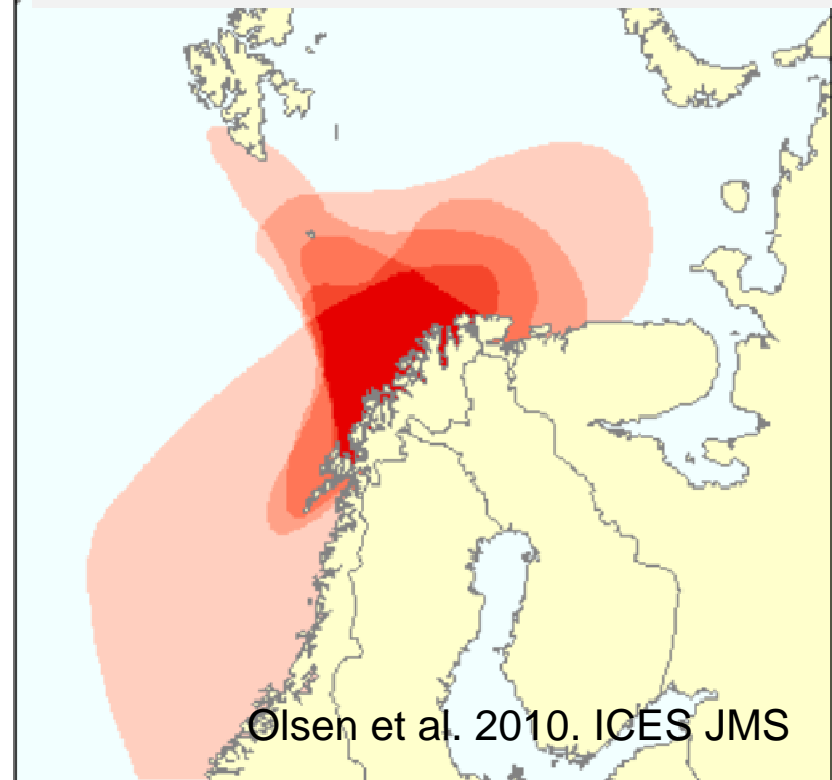


Some areas are more valuable than others

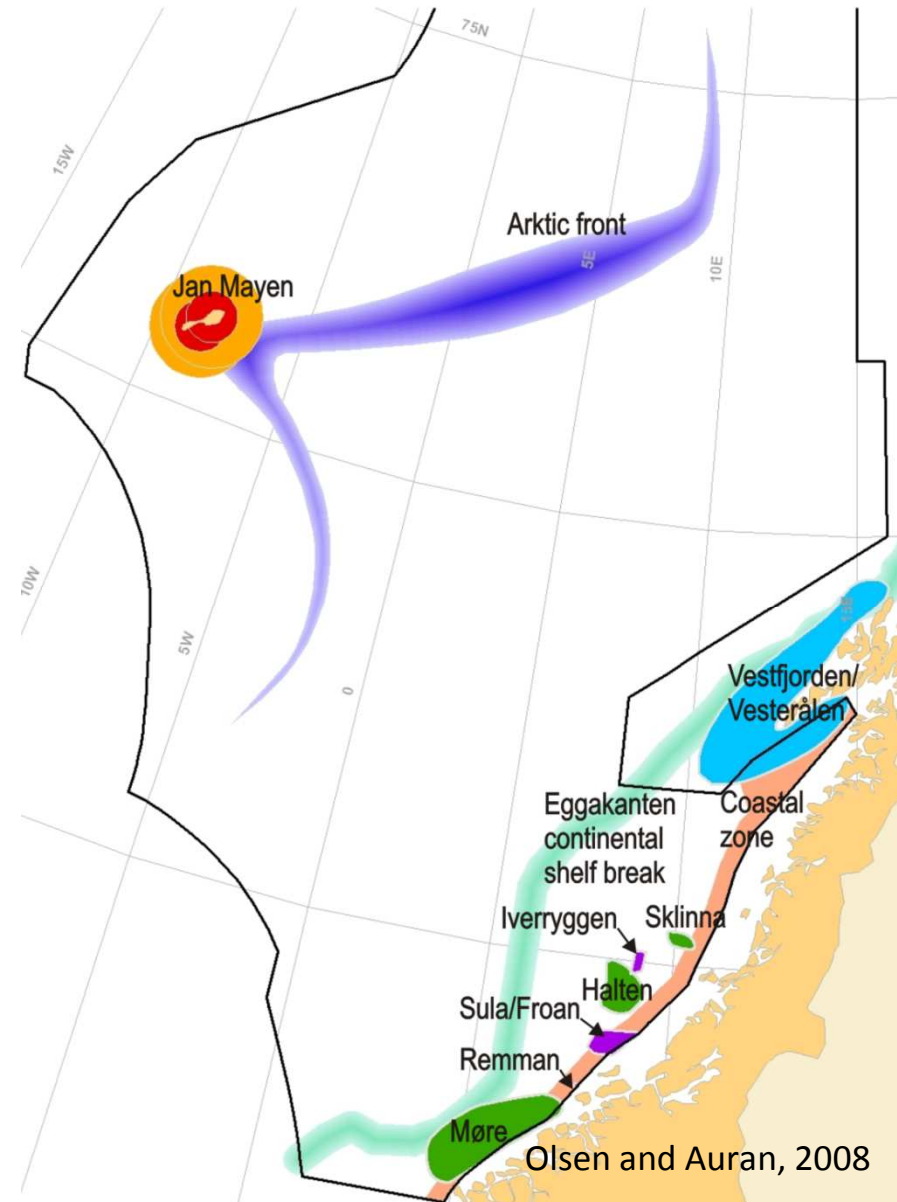
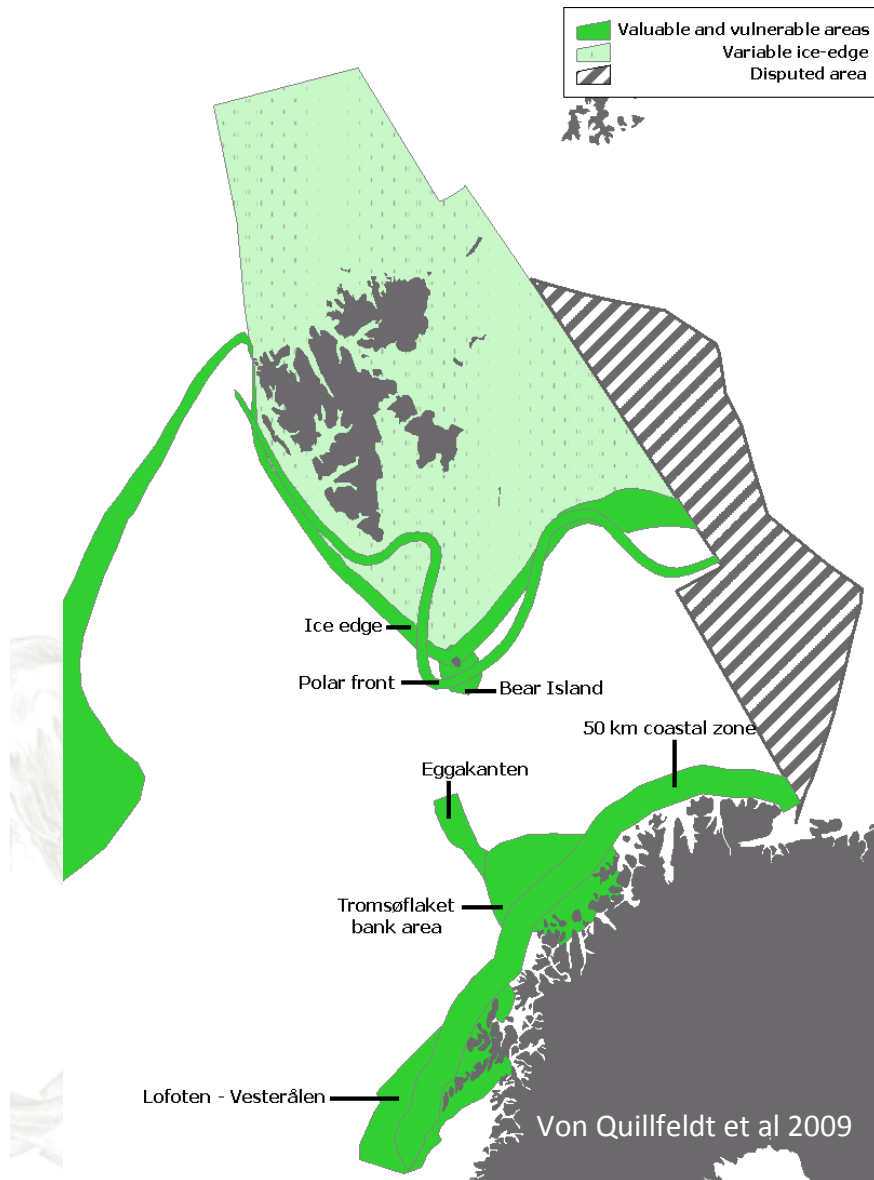
Spawning areas for cod, herring, capelin, haddock and saithe



Larvae areas for cod, herring, capelin, haddock and saithe

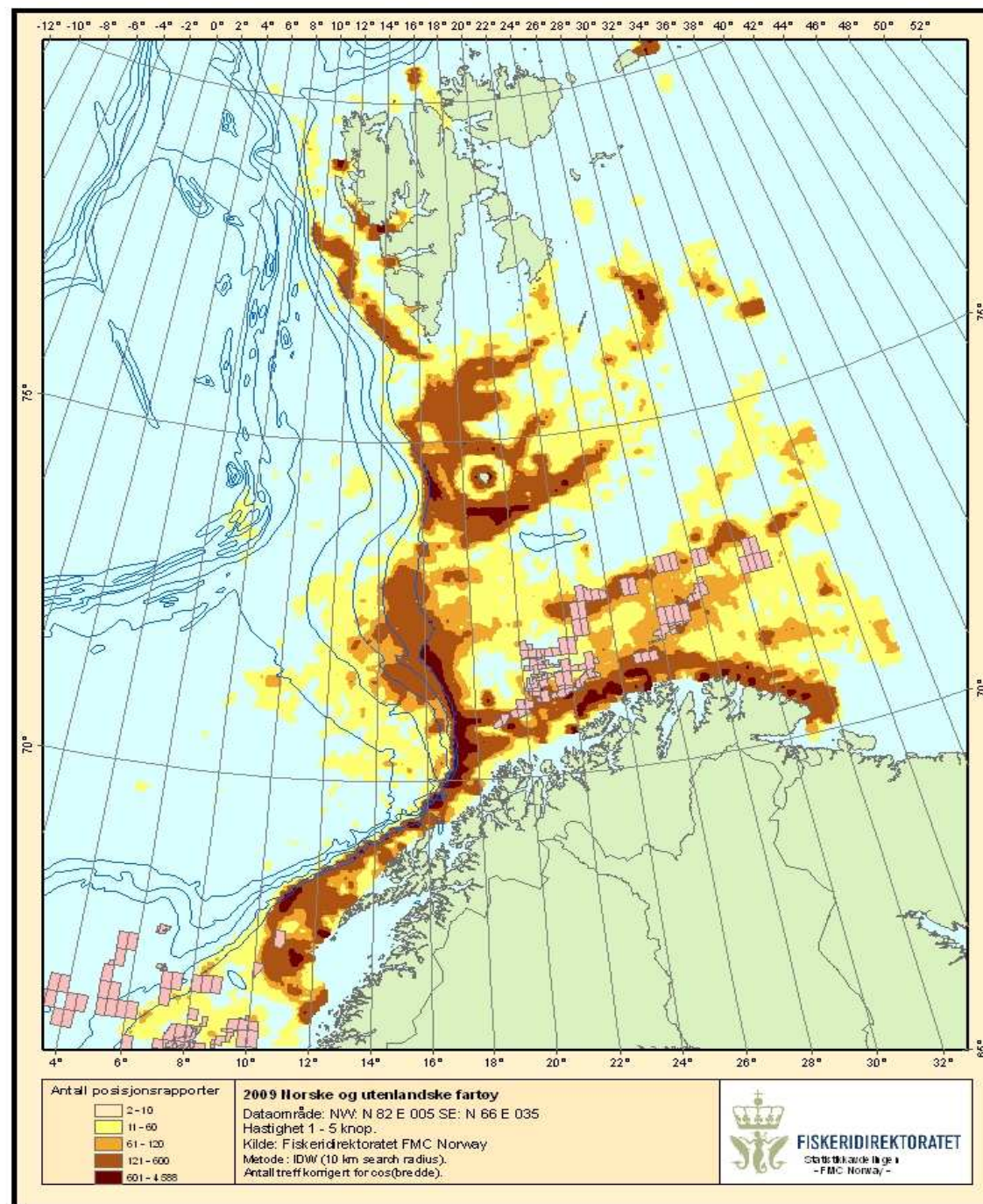


Particularly valuable and vulnerable areas

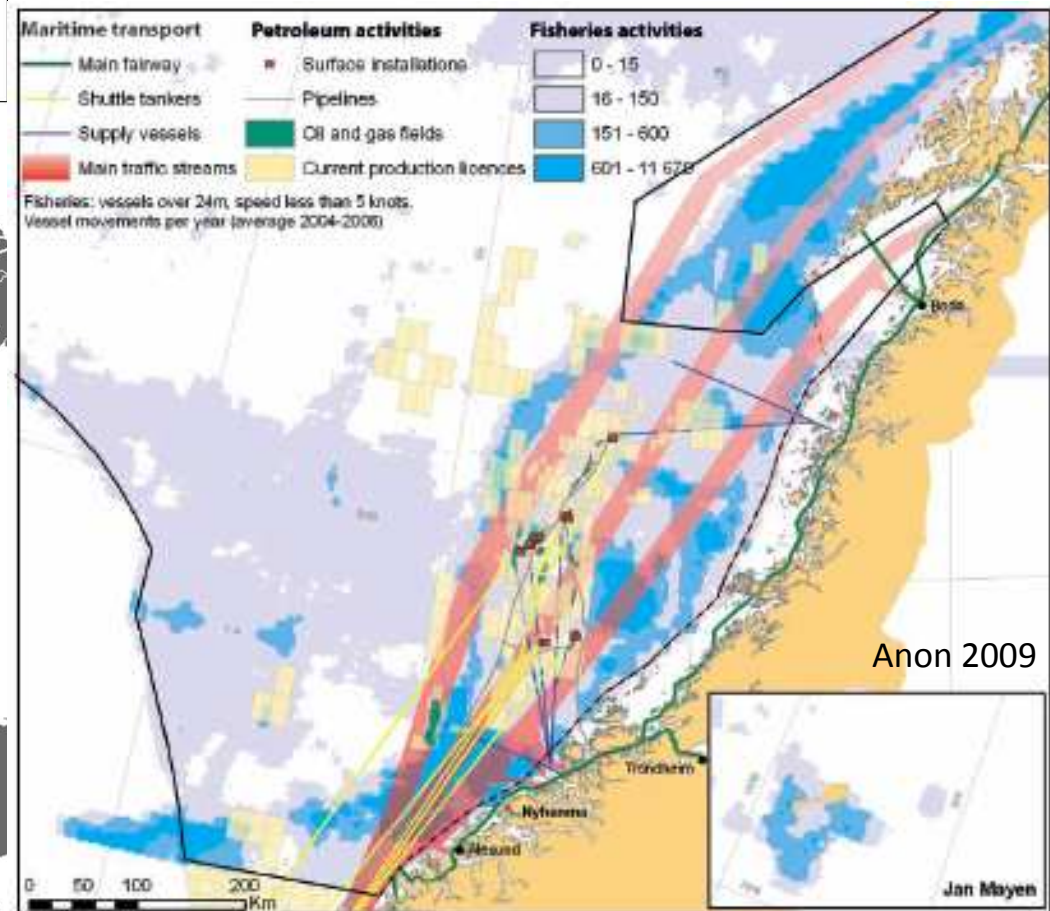
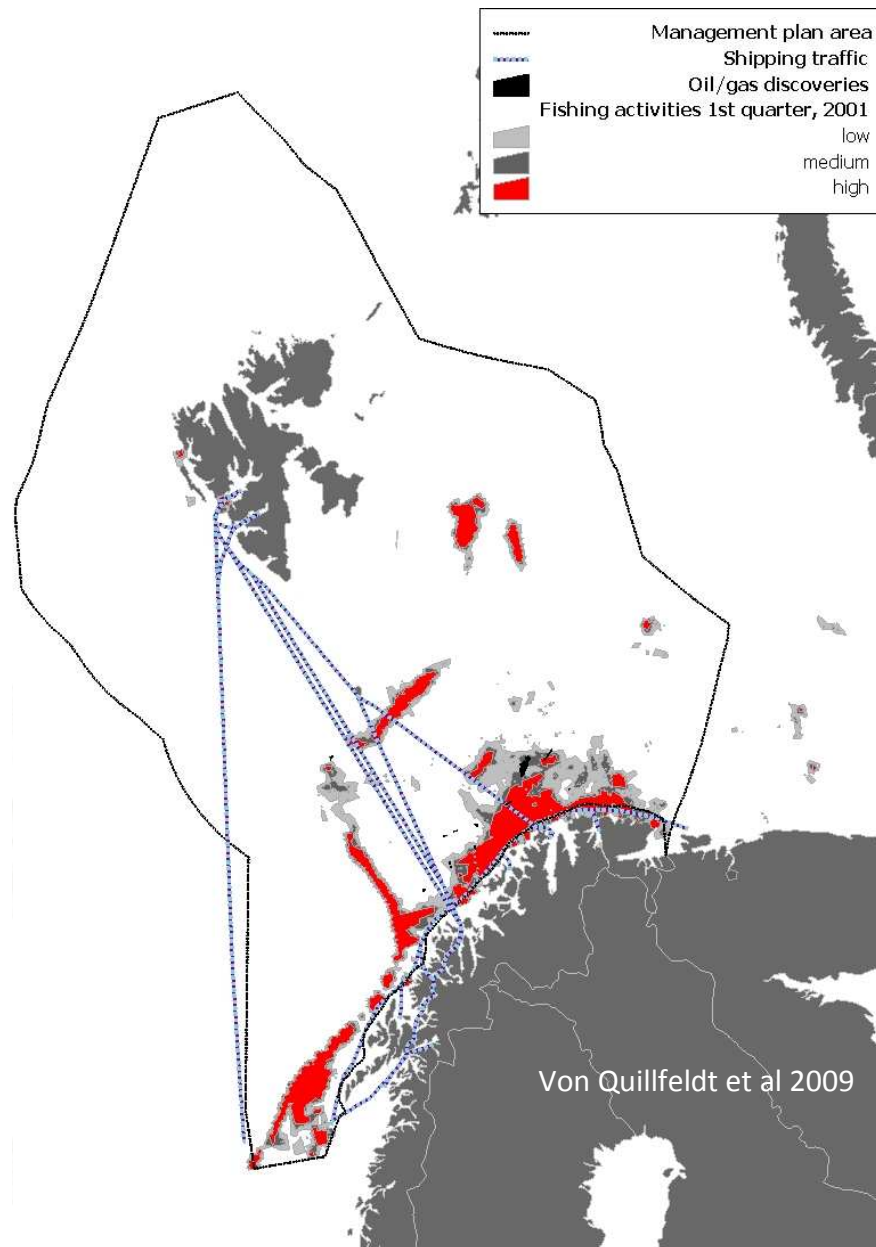


Fishing is the main impact factor, but with area-conflicts with oil/gas

- VMS data for 2009 for vessels >21m
- Pink blocks are areas opened for petroleum activities



Human use of the areas



Future increase in shipping?

2008–2009

St.meld. nr. 15
Interesser, ansvar og muligheter

45



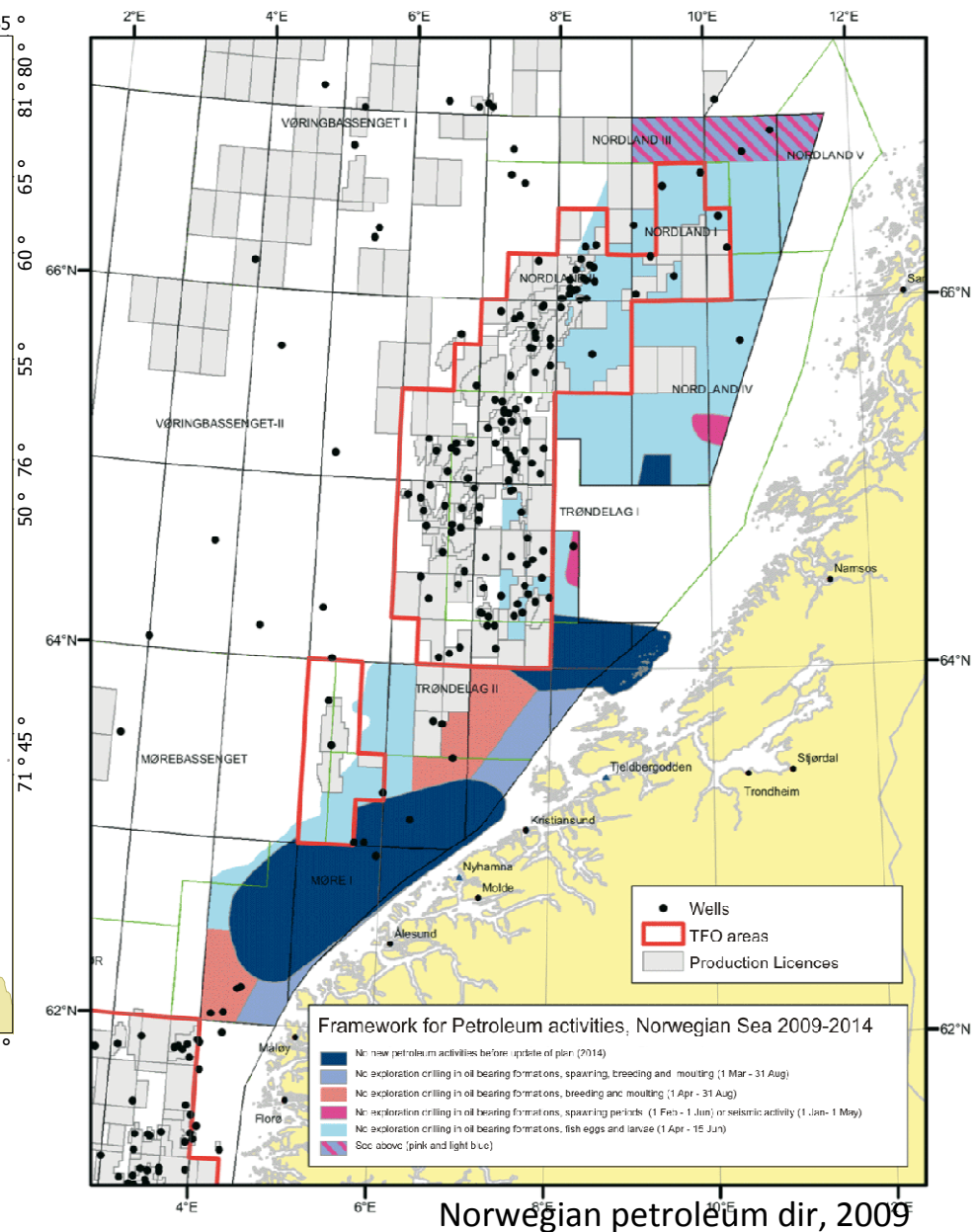
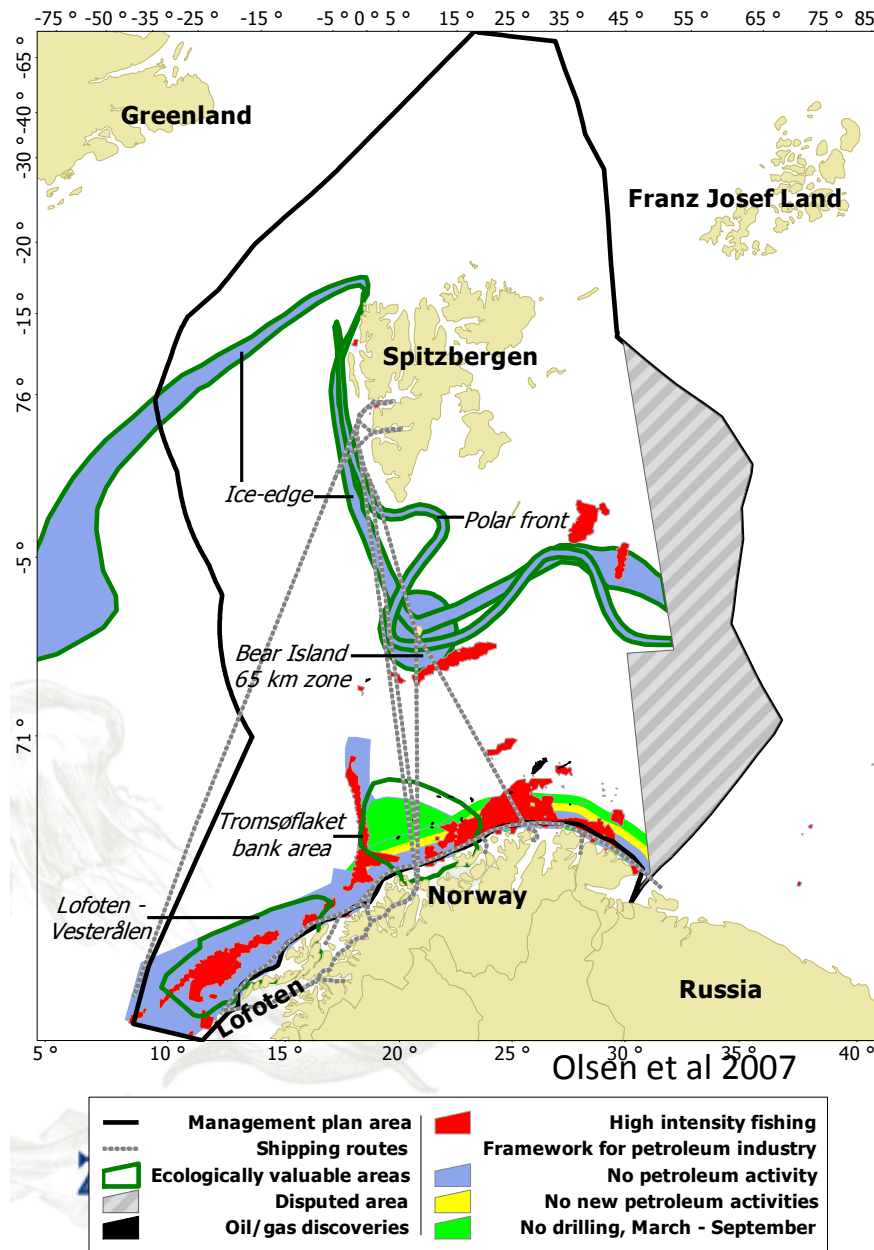
Figur 5.1 Ismelting i nord og transportruter

Central themes

- No legislation specifically for m. plans. Implemented through existing legislation
 - Marine Resource lav (Havressursloven) has been designed with this in mind
- New meeting places for advisors, managers and stakeholders
- Annual reporting of status (ecosystem, human use) and state of knowledge
- Development of an indicator-based reporting system (ecosystem state)
- Assessment of environmental risk
- Routing system for shipping
- Area-based management framework for petroleum

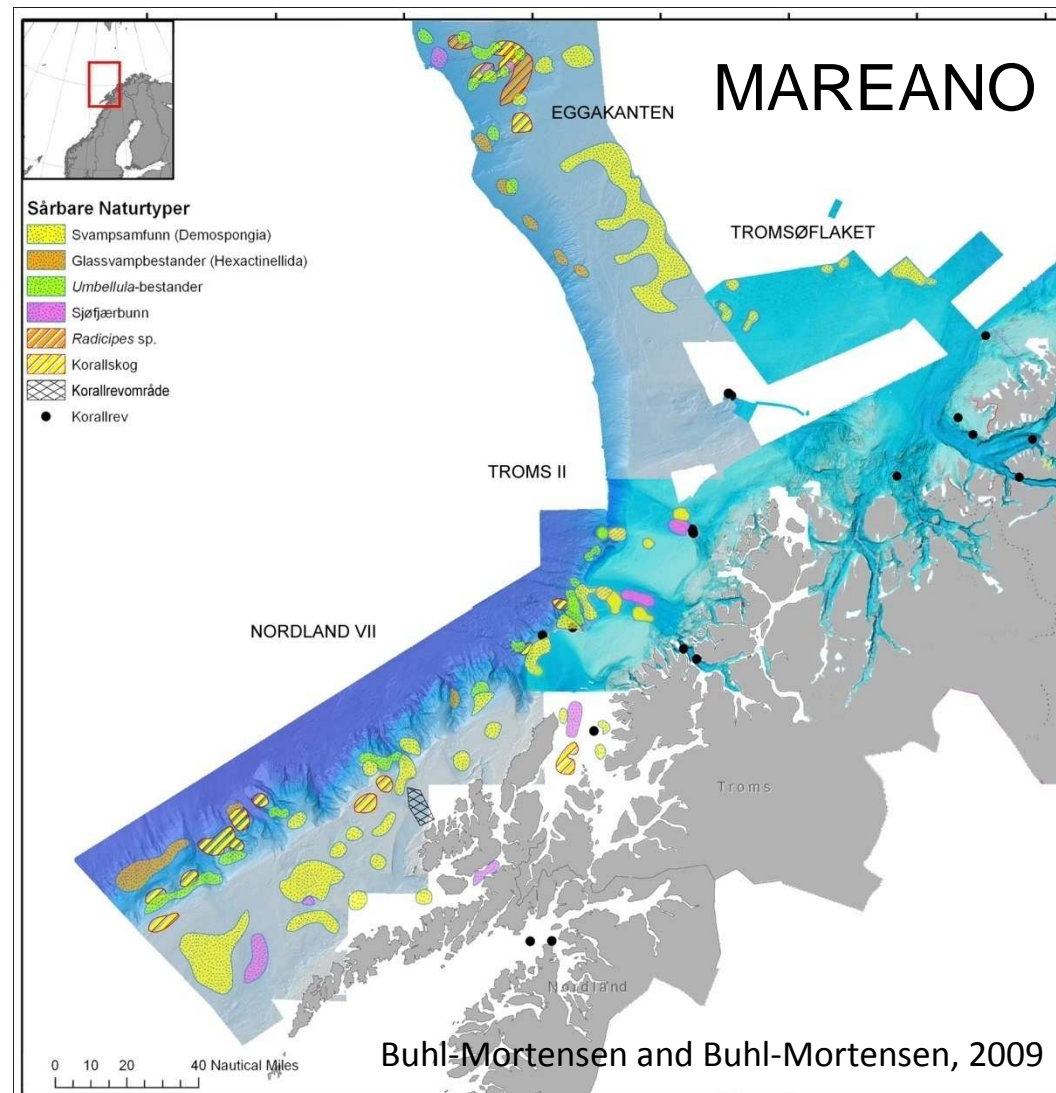
Photo: T. de Lange Wenneck

Area-based management frameworks

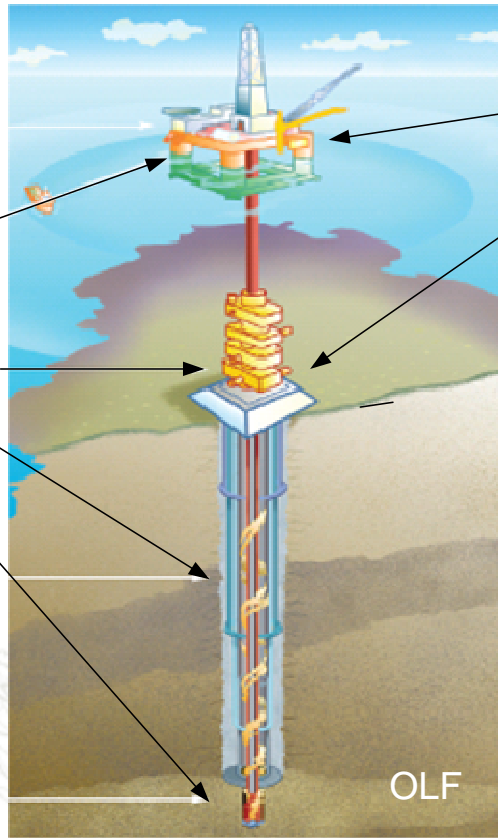


Revision of the Barents Sea plan (2010/2011) – new knowledge

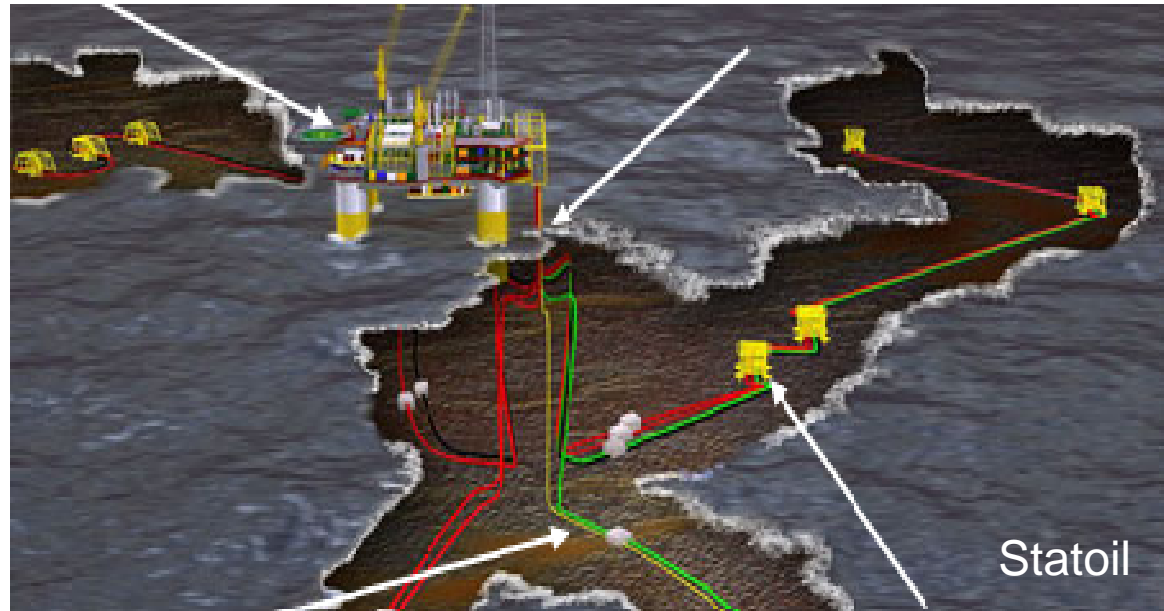
- MAREANO seabed mapping project
- Identification of vulnerable nature types (OSPAR)
- + many other projects



Risks associated with oil/gas production



Exploration
drilling



Production

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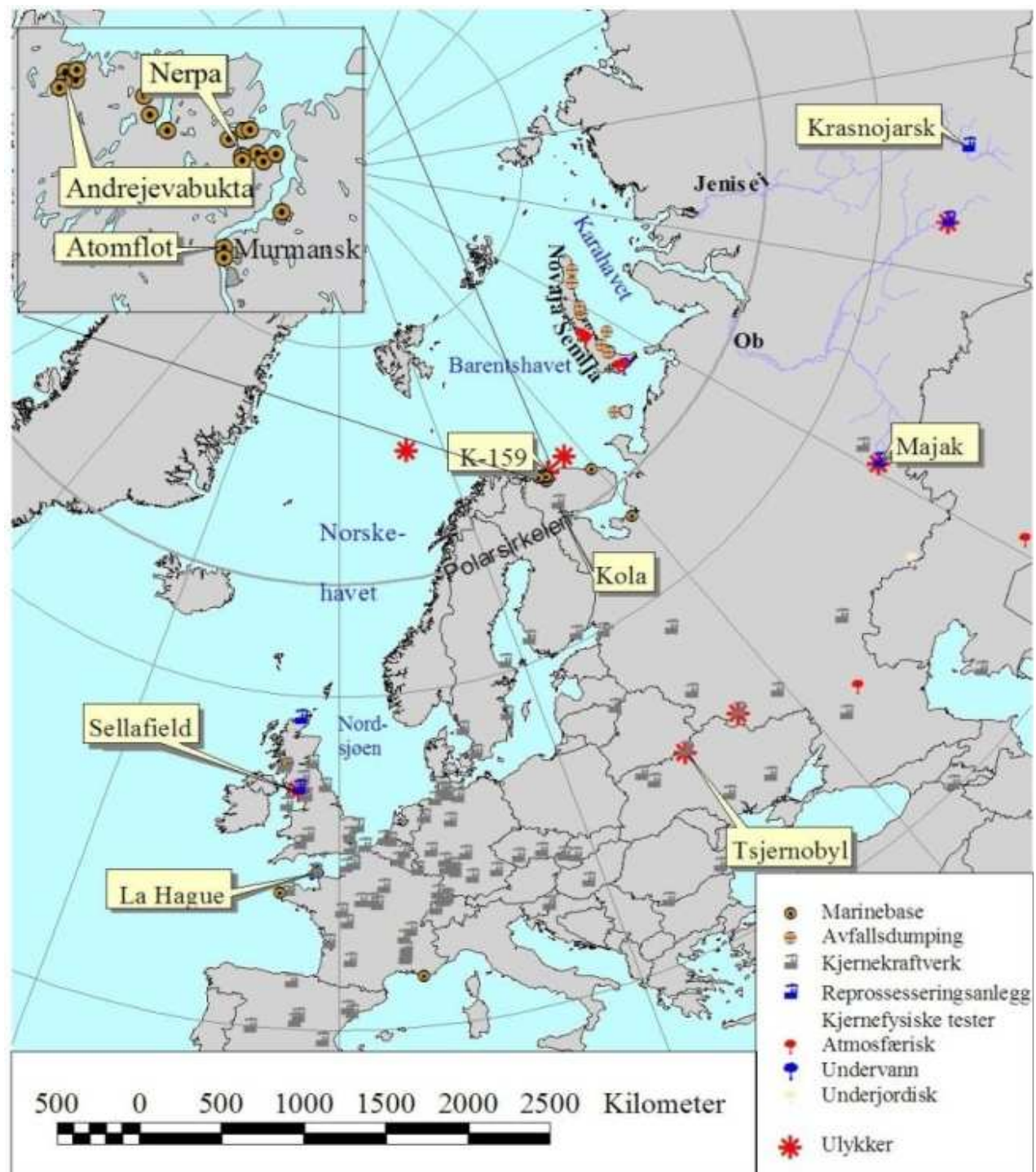


A large offshore oil rig is engulfed in a massive fire at night. A bright, intense fireball rises from the rig, illuminating the surrounding area. A support vessel is visible to the left of the rig, and another vessel is partially visible on the right. The water in the foreground is dark, reflecting the light from the fire.

New Events: Deepwater horizon blowout

- Duration: 87 d
- Total spill: 779 036 m³
- Spill rate: 8426–9857 m³d⁻¹

Radioactive pollution



Key Scientific challenges for Norway's plans

- Effects of climate change and ocean acidification
- Environmental risks and consequences of human activities
- Effect of fisheries on benthic habitats
- Better understanding of trophic interactions in the system
- Defining and setting value to ecosystem components and habitats
- Assessing vulnerability, cumulative impacts and cumulative vulnerability

Photo: T. de Lange Wenneck

Potential for improvements

- STRUCTURAL / ORGANIZATIONAL:
 - Based on science, but need transparency and peer review
 - Improve sectoral cooperation, especially at ministerial level
 - Identifying and clarifying disagreements (between sectors) to improve decision-making and enhancing the scientific ethos
- SCIENTIFIC
 - Socioeconomic effects are not assessed although they are instrumental in the decision-making process
 - Economic impact on communities, region and nation should be better assessed
 - Ecosystem services should be assessed
 - **Communication of uncertainties!**

Photo: T. de Lange Wenneck

Concluding remarks

- The applicability of the Norwegian management plans to other countries can be questioned.
 - Norway is a small, homogenous and rich country.
 - Its central administration is highly concentrated and by international standards well coordinated.
 - Its research institutions are well funded and have substantial capacity to carry out the research for Integrated oceans management.
- Even under these conditions implementing MSP has been challenging!

Thank you for your attention!



Photo: T. de Lange Wenneck