

RÅSTOFFTILGANG – RÅSTOFFUTNYTTELSE

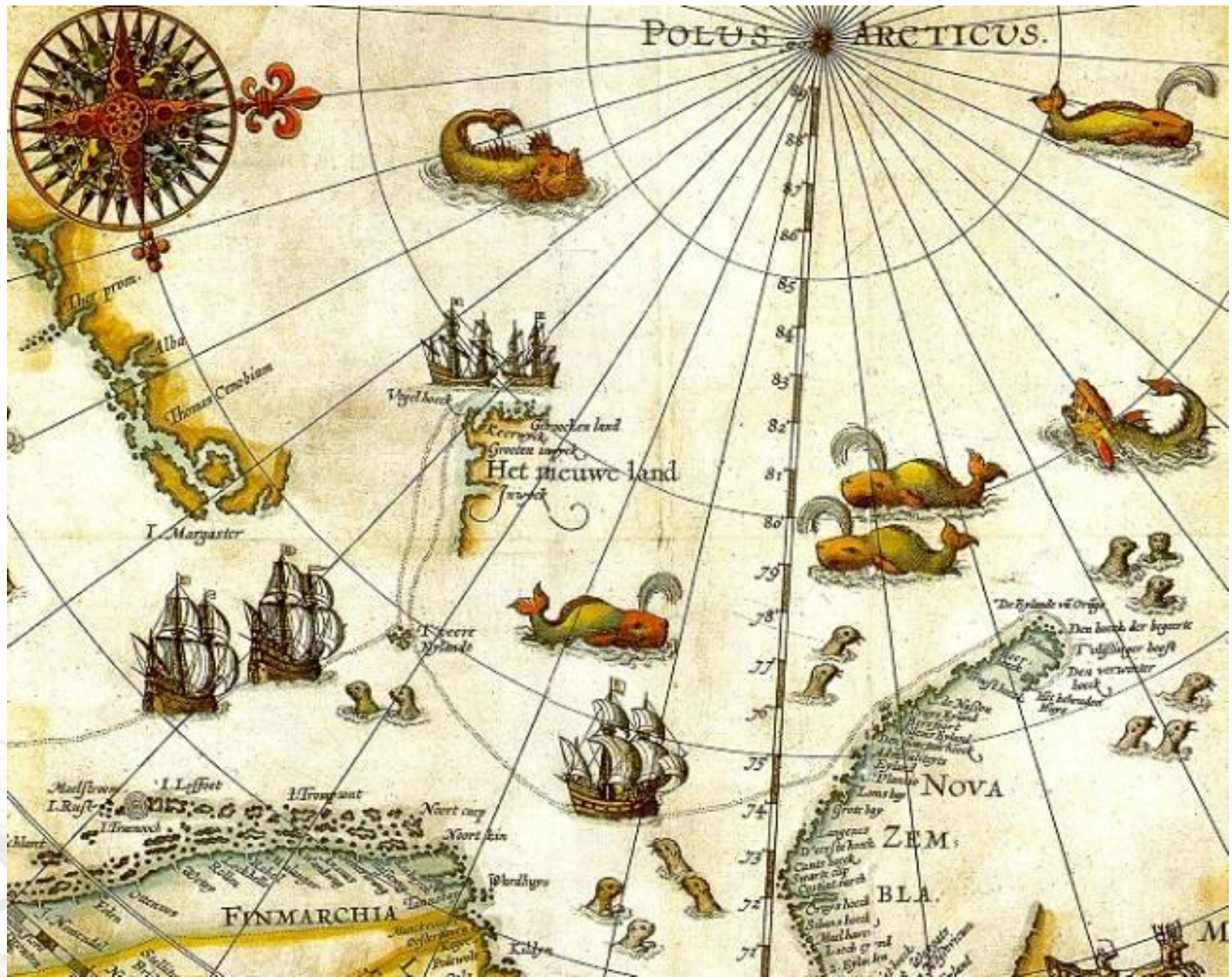
Potensialet i våre havområder

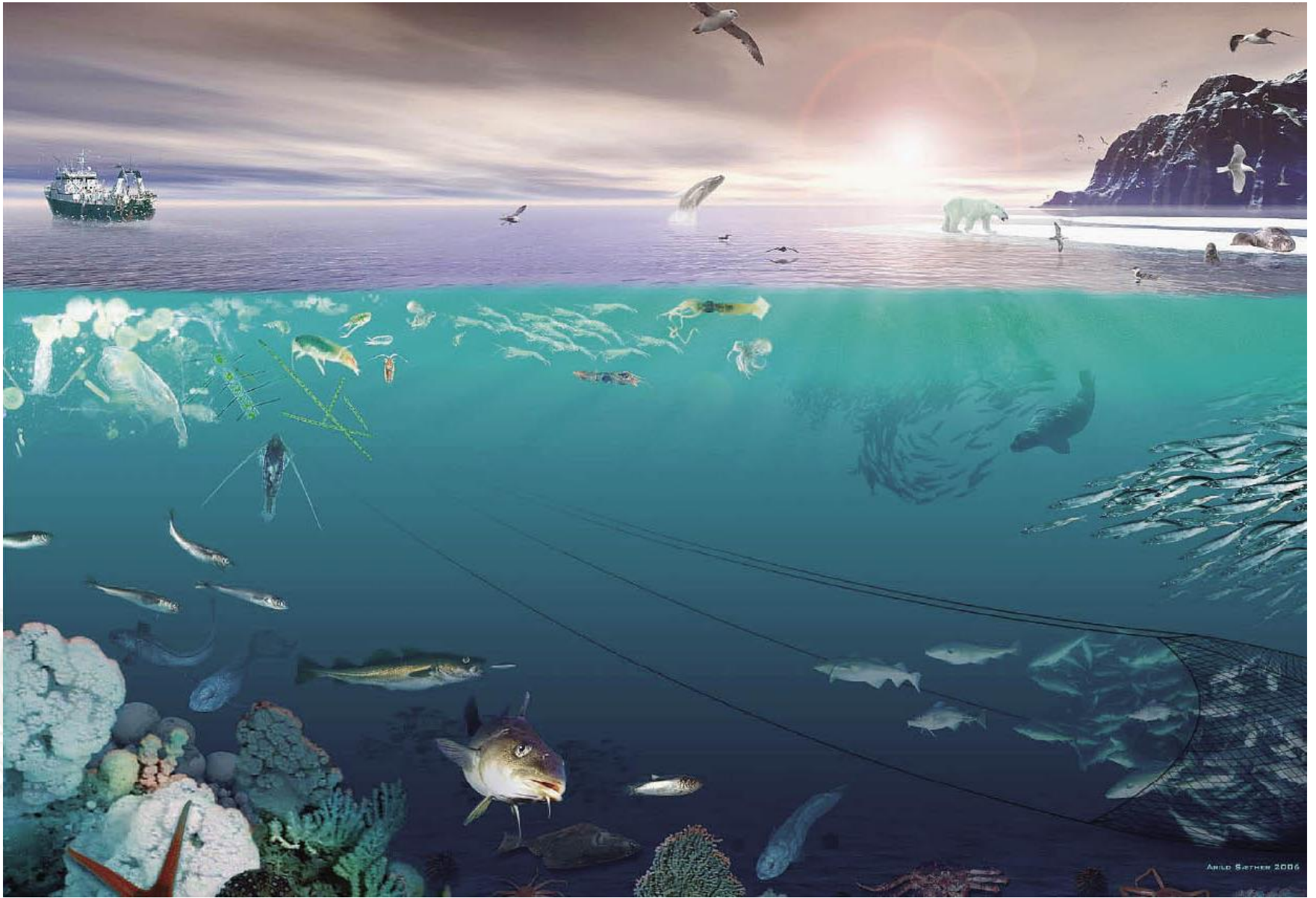
Knut Sunnanå
Seniorforsker, Havforskningsinstituttet

MARING FAGDAG
GARDERMOEN TORSDAG 27.11.2014









Ando Batten 2004





CARTA MARINA ET DESCRIPTIO SEPTENTRIONALIV MERRARVM AC MIRABILIVM RERVM IN EIS CONTENTARVM DILIGENTISSIME ELABORATA ANNO DNI 1539



GRATVS LONGITVDINVS: 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64
MERIDIES



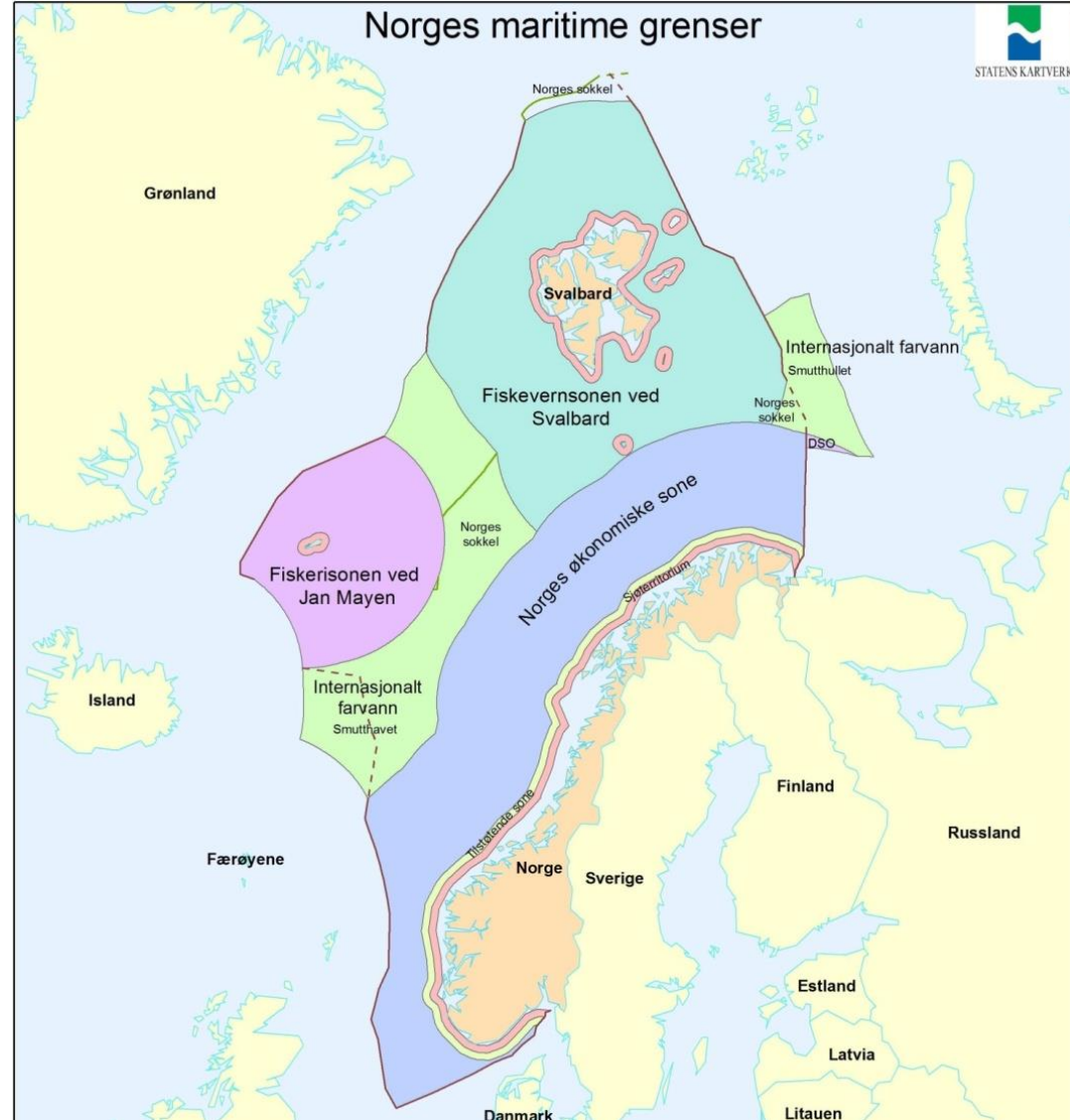
Norge og verden

- Arealer

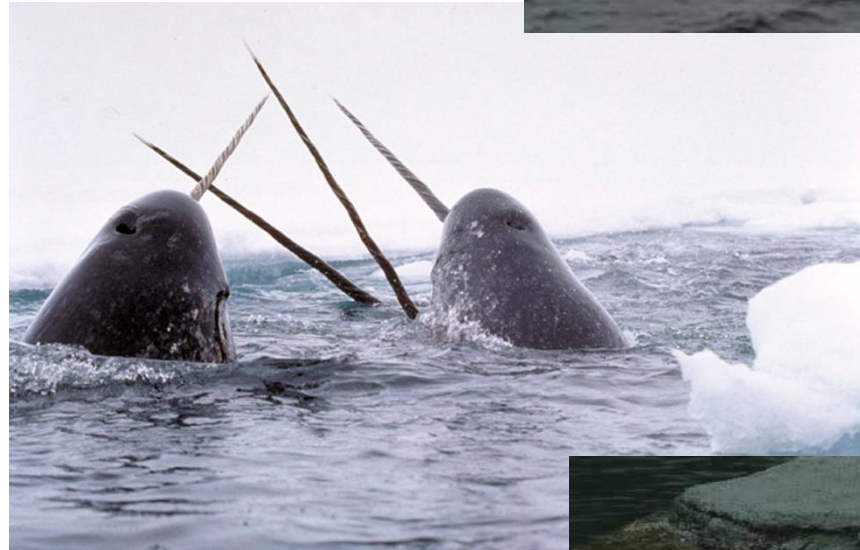
- Verdens havområder:
362 000 000 km²
- Norske havområder:
1 877 000 km²
- Norske landområder:
385 000 km²

- Marin produksjon

- Verdenshavet
200 000 000 000 tonn/år
- Norske havområder
1 500 000 000 tonn/år
- Norsk fangst
2 500 000 tonn/år





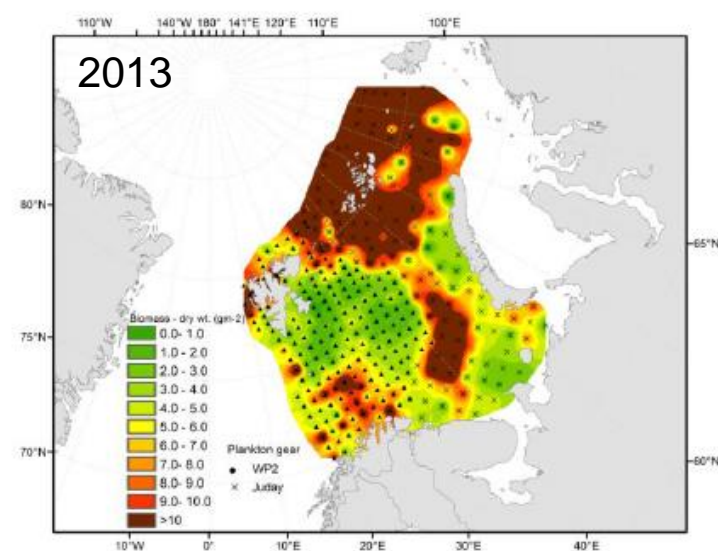
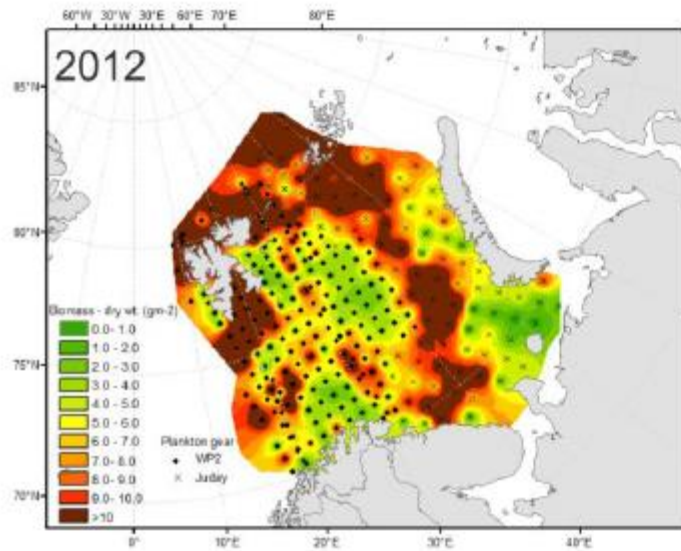
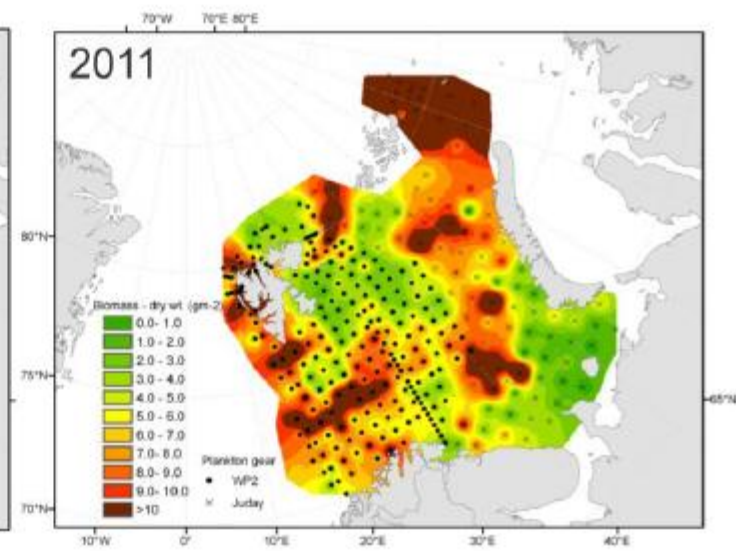
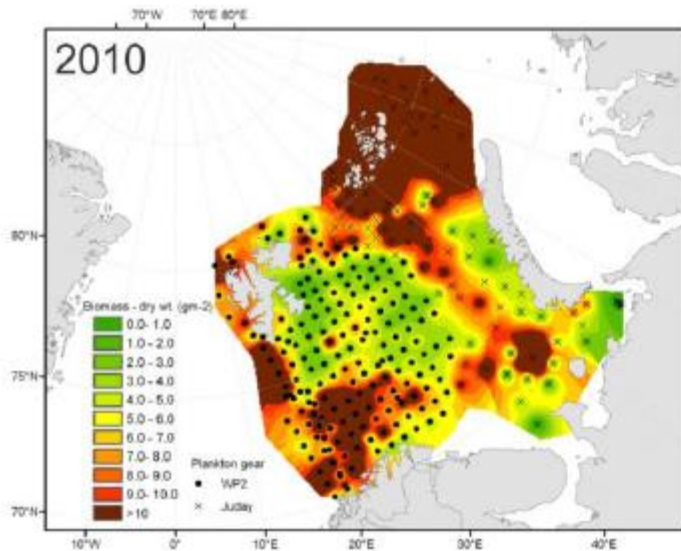






Fordeling av zooplankton

Mengde 50 mill t/år - produksjon 150 mill t/år



Økologi, produksjon og klima

Calanus hyperboreus



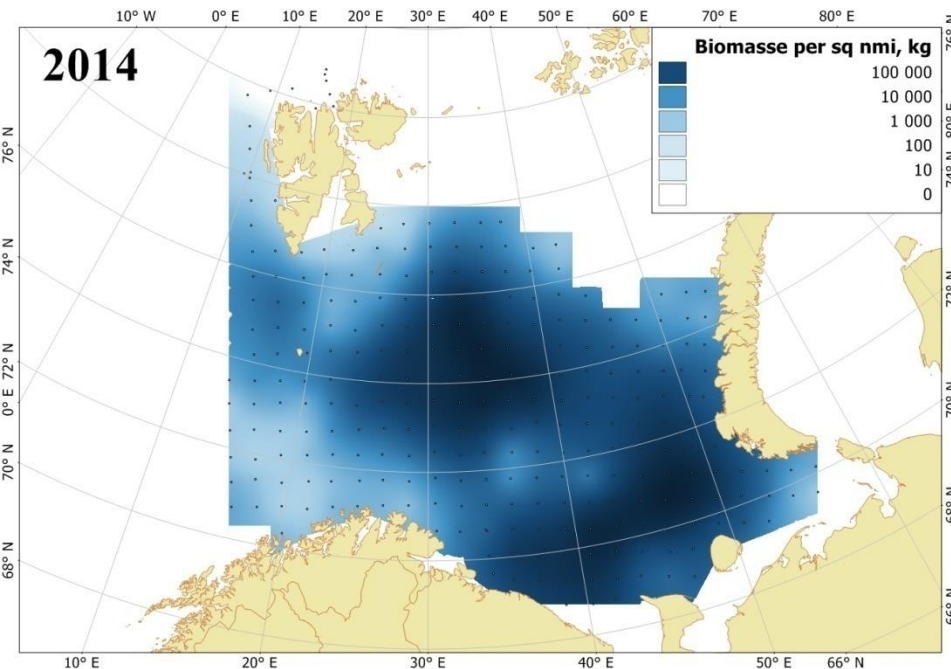
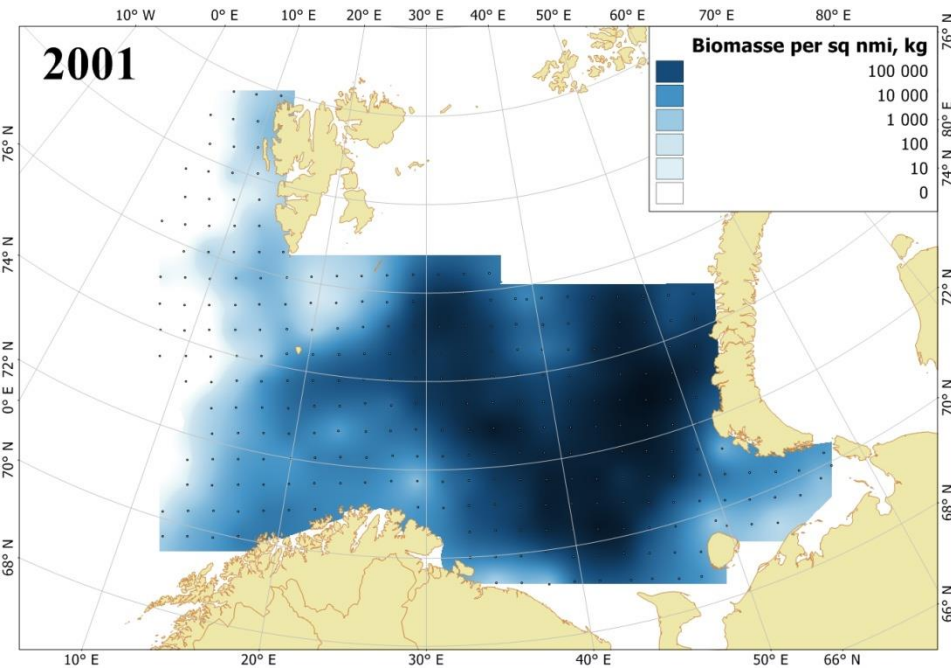
Calanus glacialis



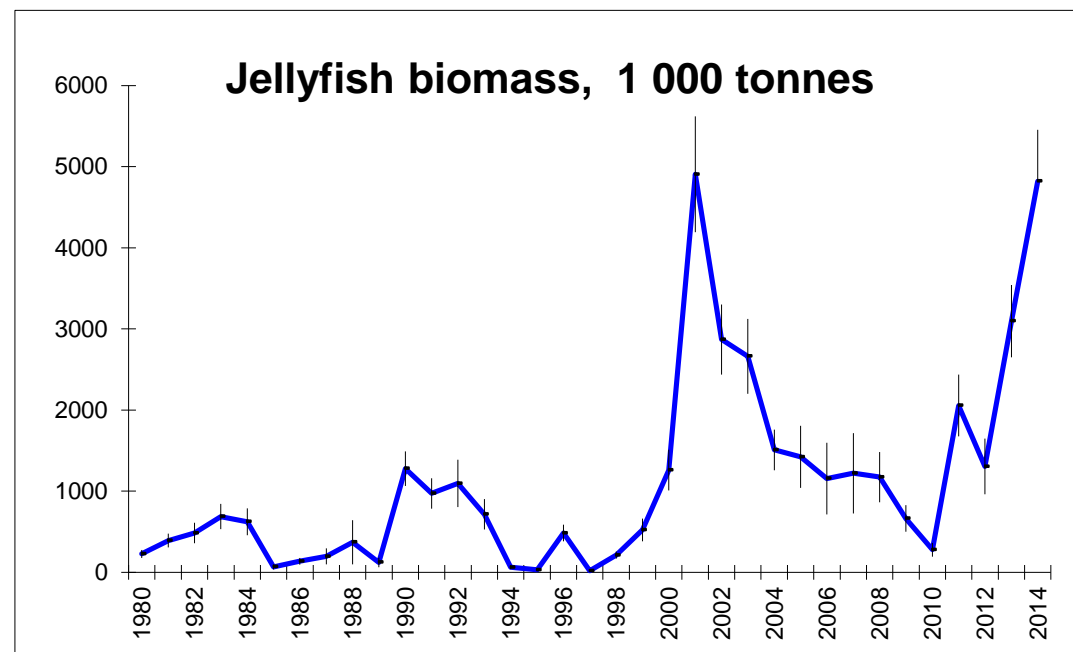
Calanus finmarchicus







Brennmaneter (*Cyanea capillata*)



Fisk og skalldyr – ca 30 mill t

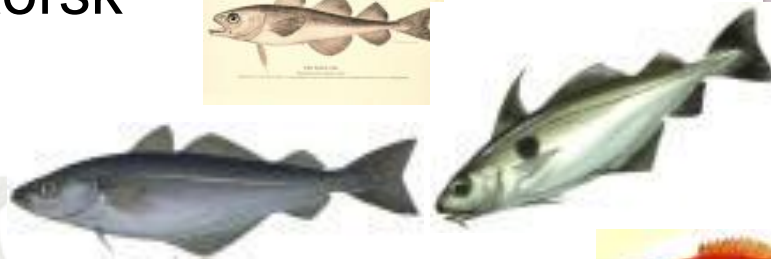
- Hovedressurser

- Torsk
- Sild
- Lodde



- Andre ressurser

- Reker
- Kolmule
- Polartorsk
- Hyse
- Sei
- Uer
- Blåkveite
- Øyepål
- Makrell

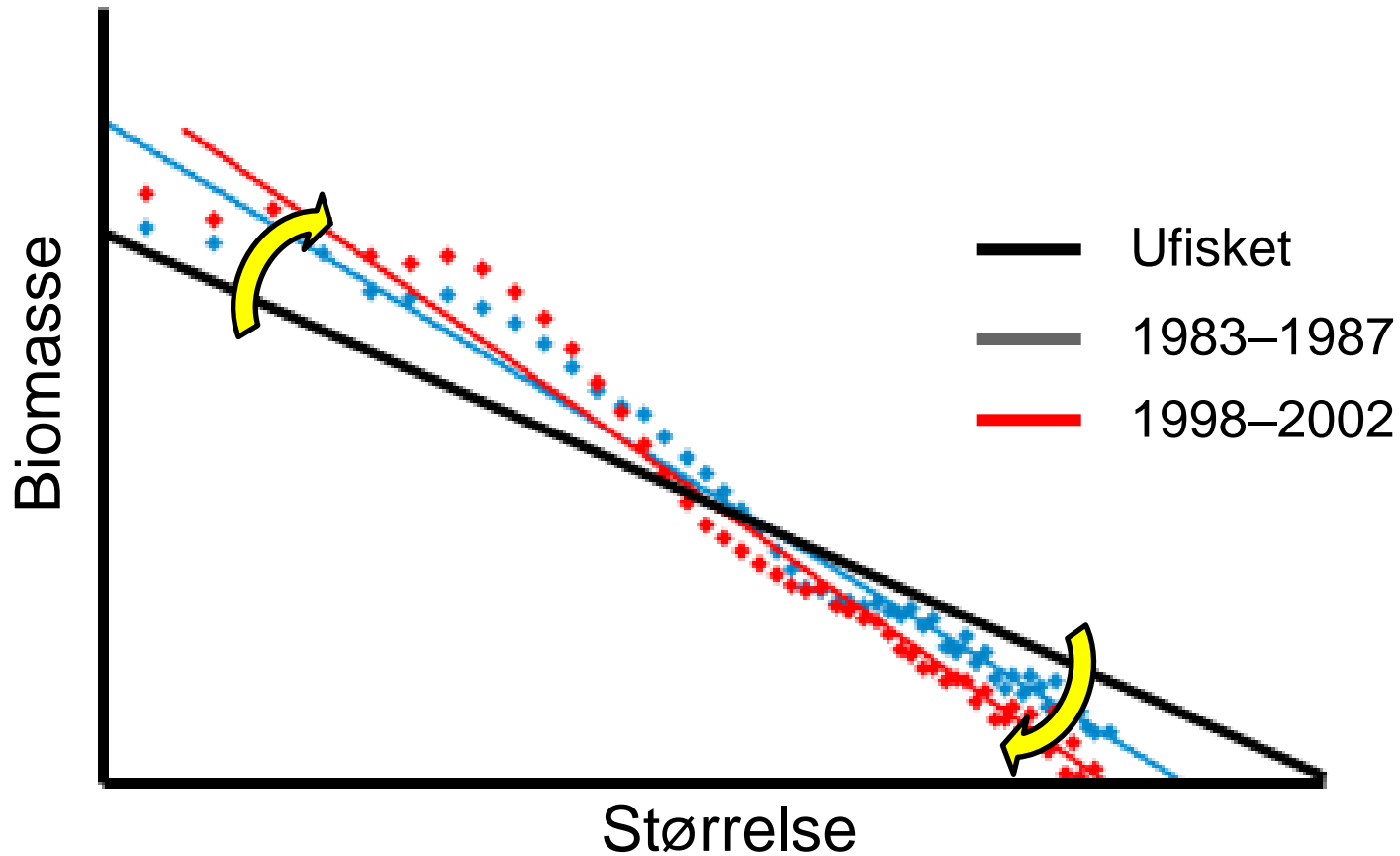


Selektivt fiske og minstemål

- Endrer det naturlige dødelighetsmønster
- Endrer populasjonenes aldersstruktur
- Nedsetter det reproduktive potensiale
- Gir lavere total fangster
- Endrer artssammensetningen
- Fører til unødig utkast
- Skaper ubalanse og destabiliserer
- Kort sagt: Endrer hele økosystemet

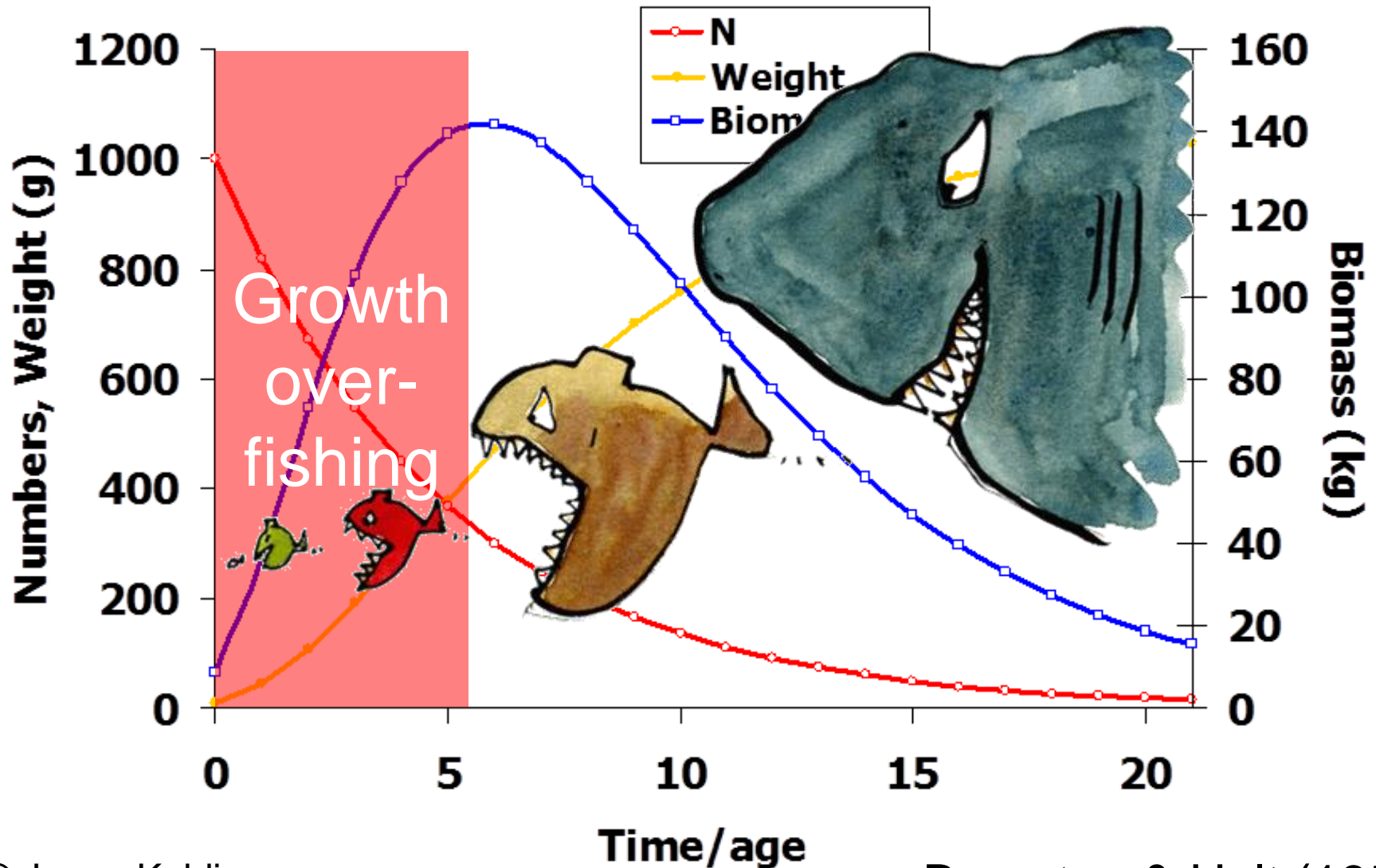
Kan det kalles økosystembasert tilnærming?

Vi har sett det i Nordsjøen

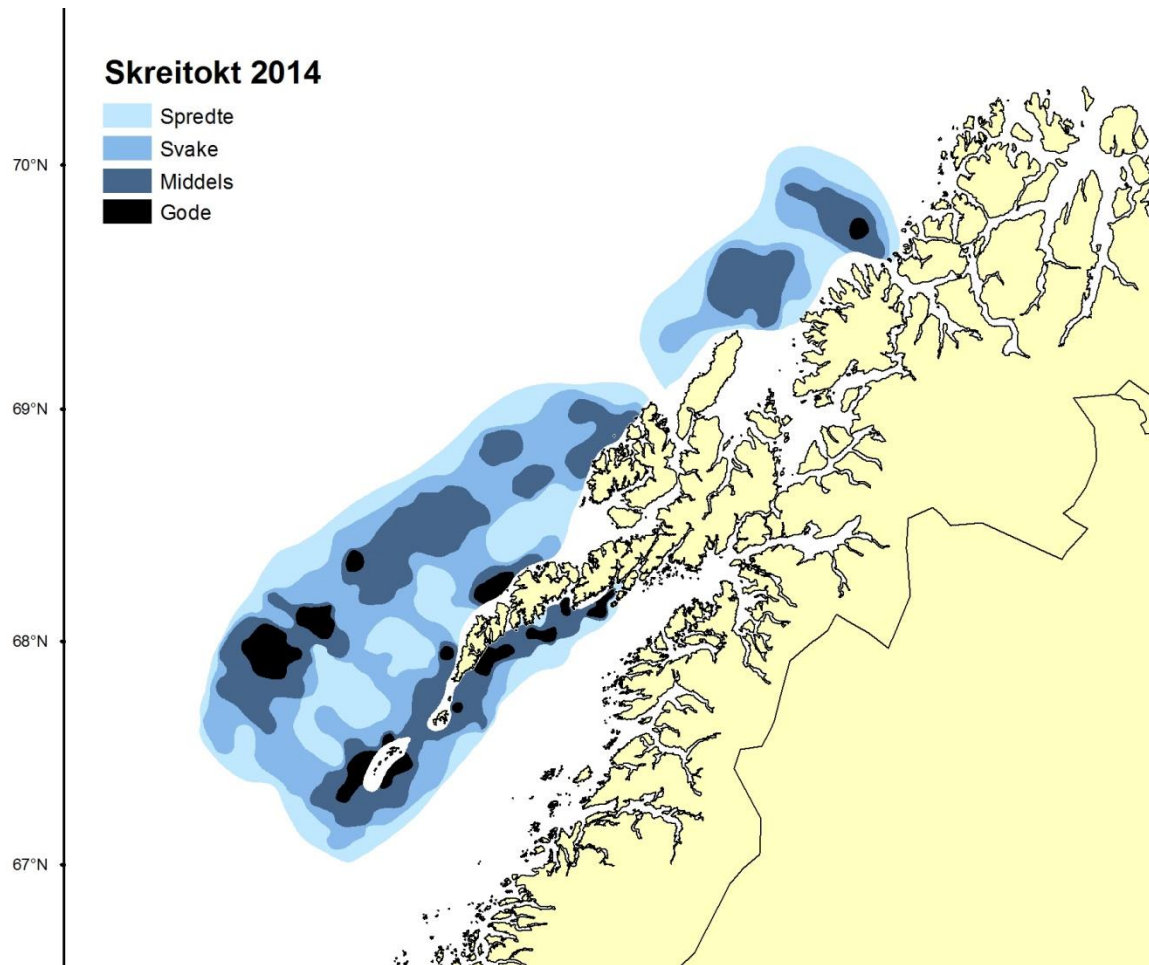


Det blir gradvis mindre stor fisk og mer liten fisk i Nordsjøen

Single species Y/R models

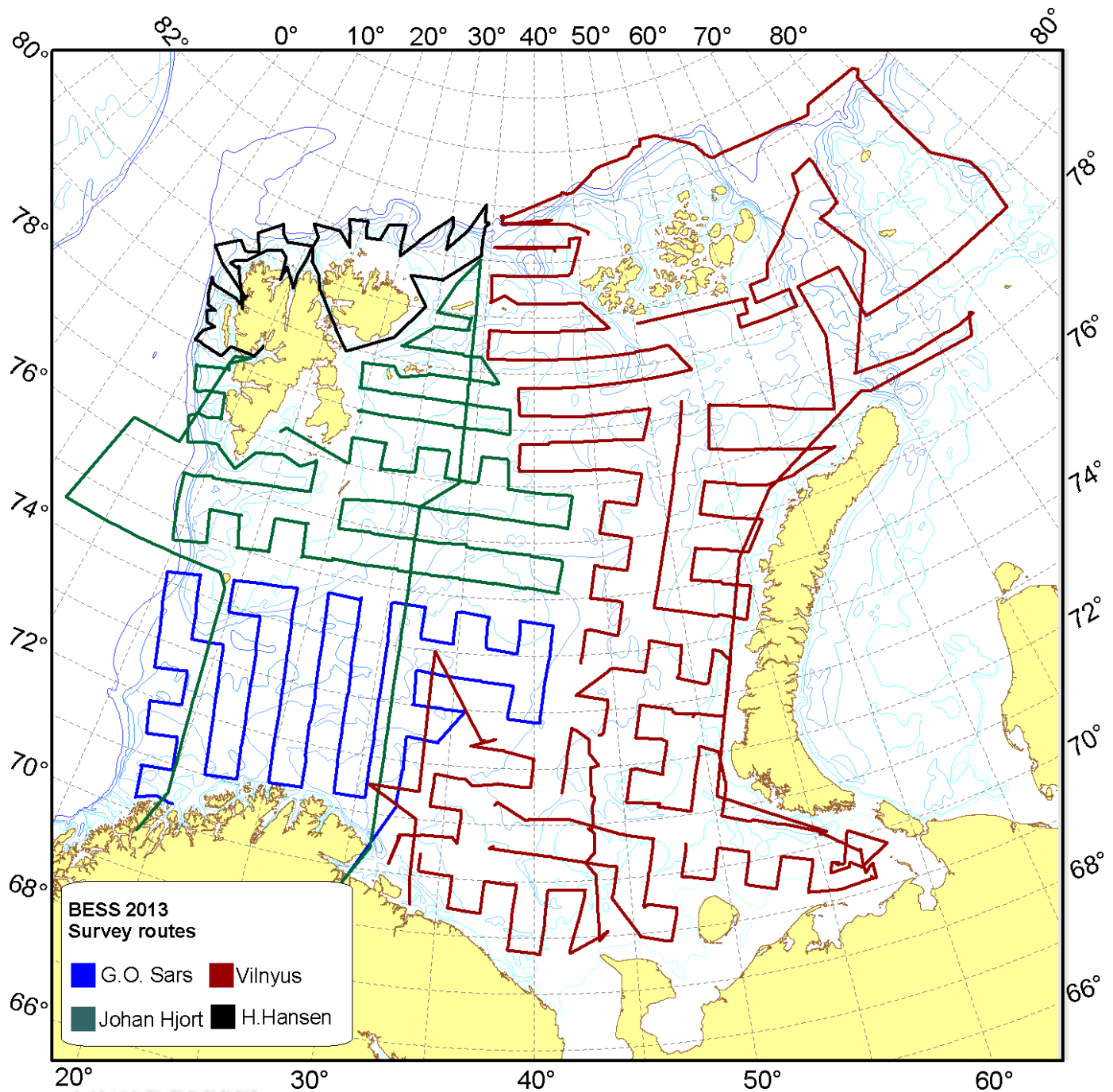


Fordeling av gytemoden torsk



Biokjemisk fabrikk





IMR/PINRO
1
2011
JOINT REPORT SERIES

JOINT



REPORT

Atlas of the Barents Sea Fishes

By

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PINRO, Murmansk

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Bergen Museum, Bergen



Institute of Marine Research - IMR



Polar Research Institute of Marine
Fisheries and Oceanography - PINRO

Somniosus microcephalus (Bloch & Schneider 1801)

Family: Dalatiidae

English name: Greenland shark

Norwegian name: håkjerring

Russian name: полярная акула
(polyarnaya akula)

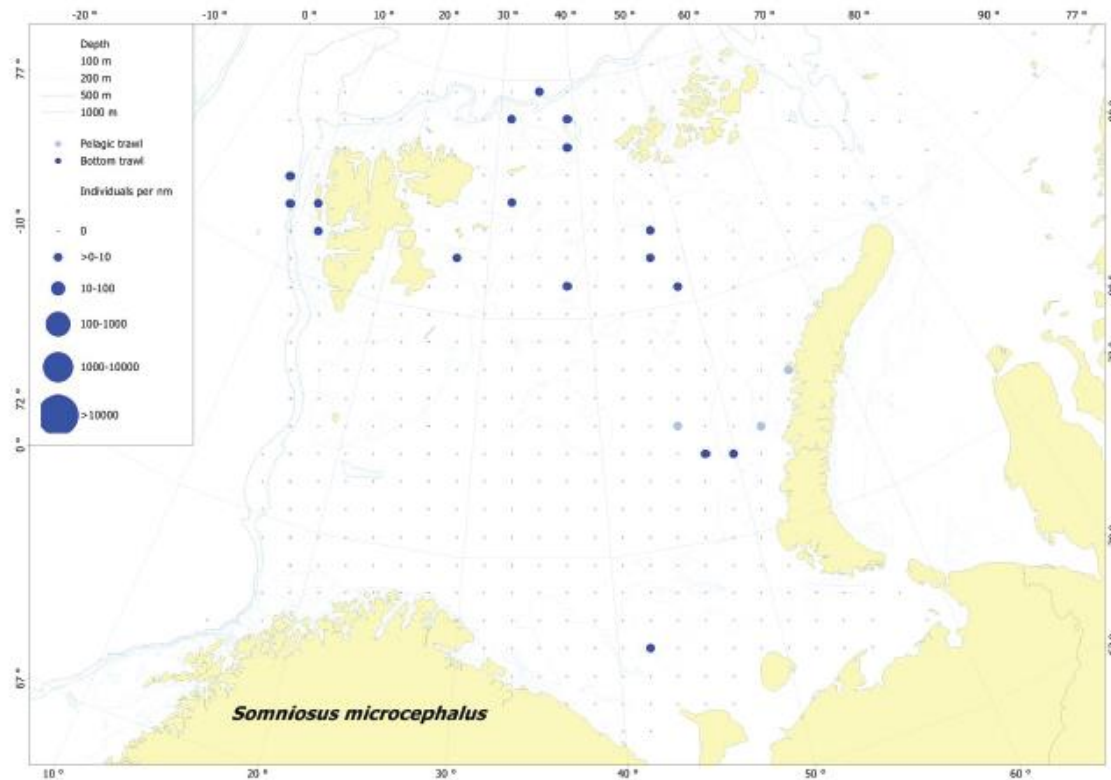


Photo: Andrey Dolgov

Spatial distribution

Known from the British Isles northward in the whole Norwegian and Greenland Sea to the Barents, Kara and White Sea; also in the western North Atlantic and in the South Atlantic and Antarctic.

Found in colder water masses of the surveyed area.



Amblyraja hyperborea (Collett 1879)

Family: Rajidae

English name: Arctic skate

Norwegian name: isskate

Russian name: северный скат
(severnij skat)

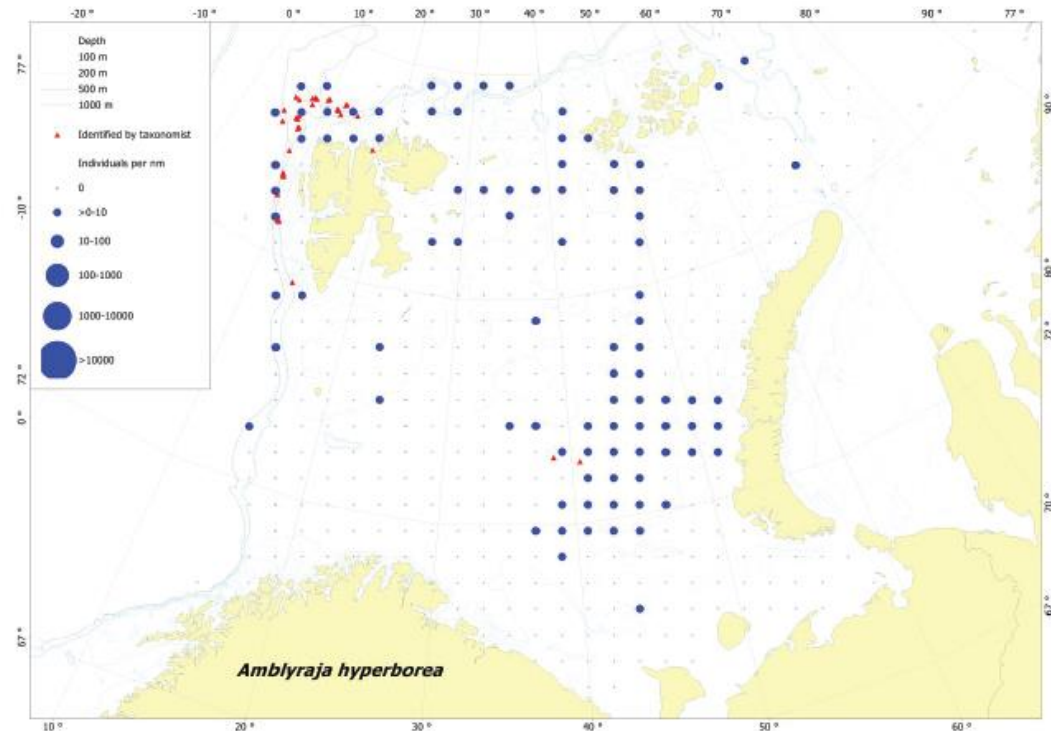


Photo: Thomas. de Lange Wenneck

Spatial distribution

Known from Iceland and the Faroese Islands northward to the Barents Sea and the Svalbard/Spitsbergen archipelago, also in the western North Atlantic, off South Africa, southern Australia and New Zealand, in the Southwest and East Pacific.

Found in deeper waters along the shelf edge towards the Norwegian Sea and Polar basin, and in Arctic water in the deeper parts of the eastern Barents Sea.



Diastobranthus capensis Barnard 1923

Family: Synphobranchidae
English name: basketwork eel
Norwegian name: kappål
Russian name: слитножаберниковый угорь
(slitnozhabrnikoviy ugor)

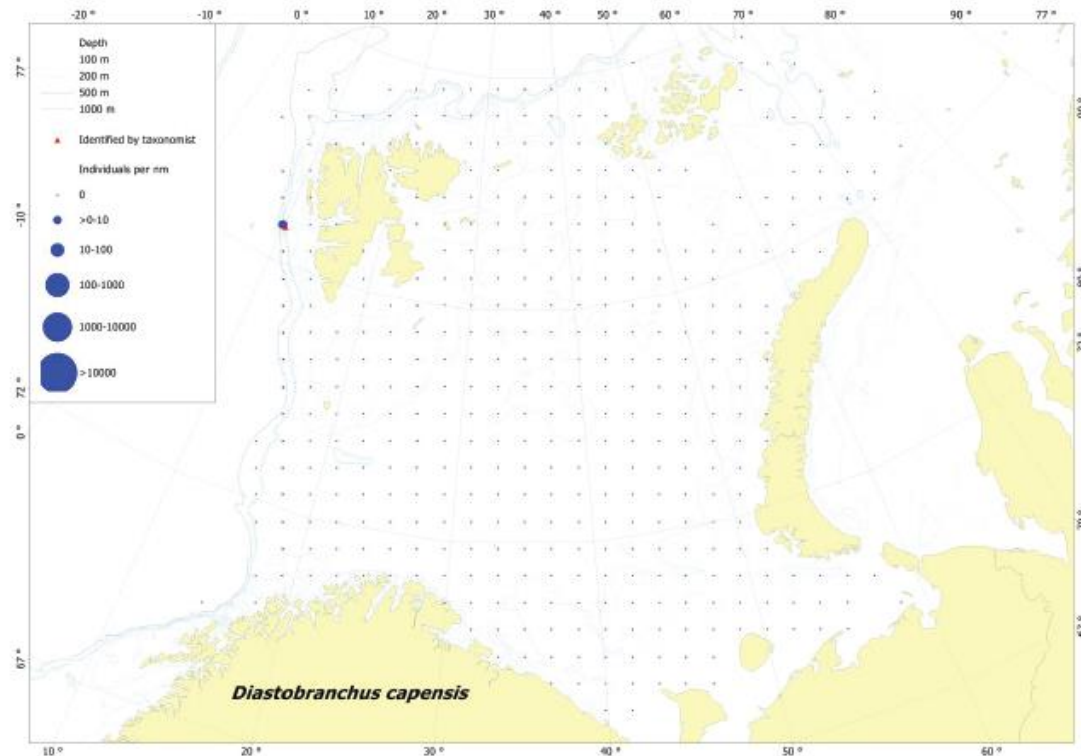


Photo: Gunnar Langhelle

Spatial distribution

Widely distributed in the southern hemisphere, previously caught on the northern hemisphere at Bear Seamount.

The specimen caught west of the Svalbard/Spitsbergen archipelago represents the world's northernmost known record.



Coelorinchus labiatus (Köhler 1896)

Family: Macrouridae

English name: spearsnouted grenadier

Norwegian name: piggskjellet skolest

Russian name: полорыл
(poloryl)



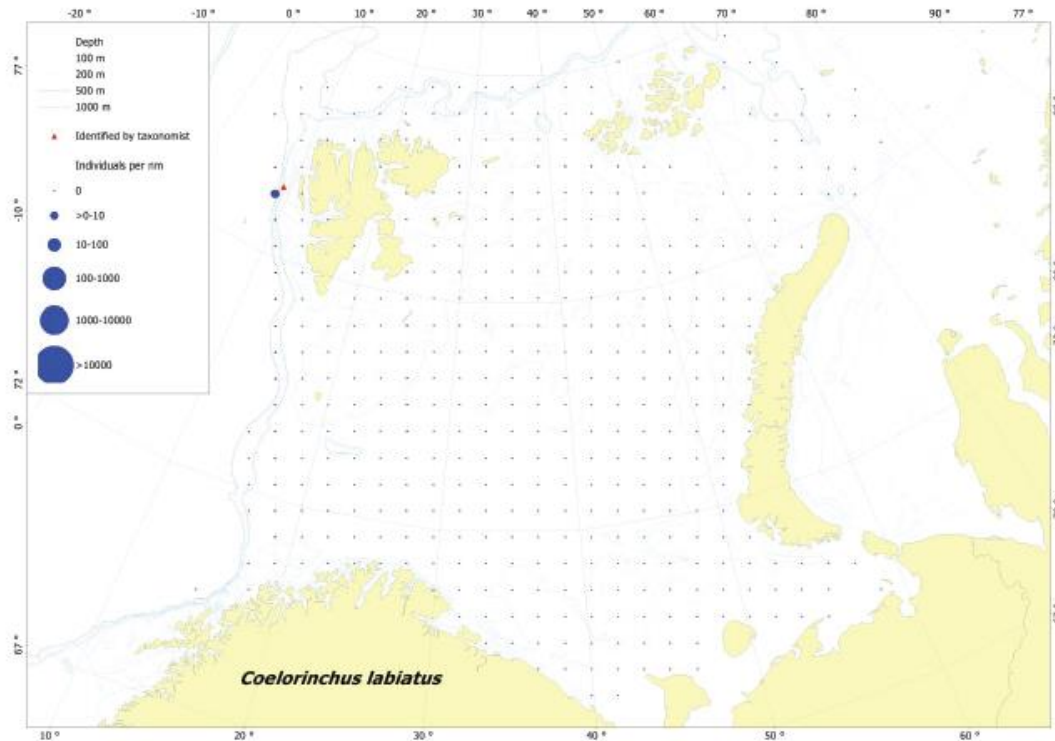
Photo: Rupert Wienerroither

Note on taxonomy: Erroneously synonymized with *Coelorinchus occa* (Goode & Bean 1886), but differs in morphology and distribution area.

Spatial distribution

Known in the eastern North Atlantic from the Canary Islands to north of the British Isles.

In the surveyed area found west of the Svalbard/Spitsbergen archipelago.



Arctogadus glacialis (Peters 1872)

Family: Gadidae

English name: Arctic cod

Norwegian name: istorsk

Russian name: ледовая (черная) треска
(ledovaya (tchernaya) treska)

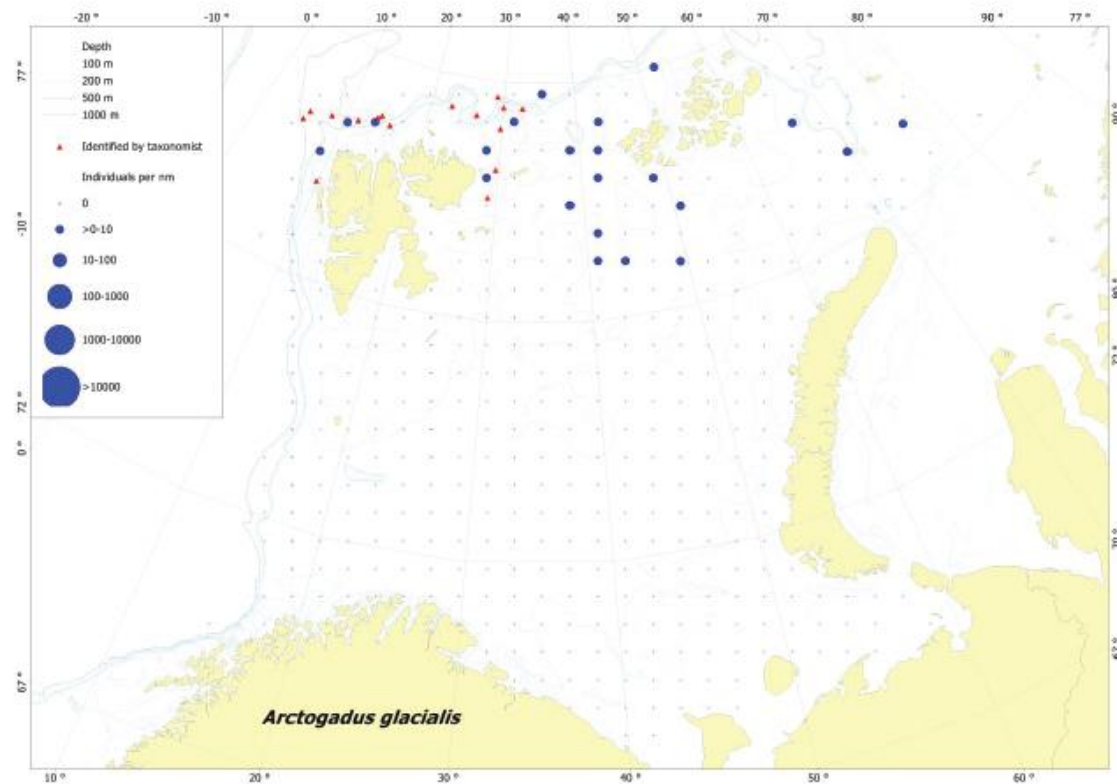


Photo: Thomas de Lange Wenneck

Spatial distribution

Occurs circumpolar in the Arctic.

Found in the northern parts of the surveyed area, off Svalbard/Spitsbergen and Franz Josef Land, close to the slope towards the polar basin.



Gaidropsarus argentatus (Reinhardt 1837)

Family: Lotidae

English name: Arctic rockling

Norwegian name: sølvtangbrosme

Russian name: полярный налим
(polyarniy nalim)

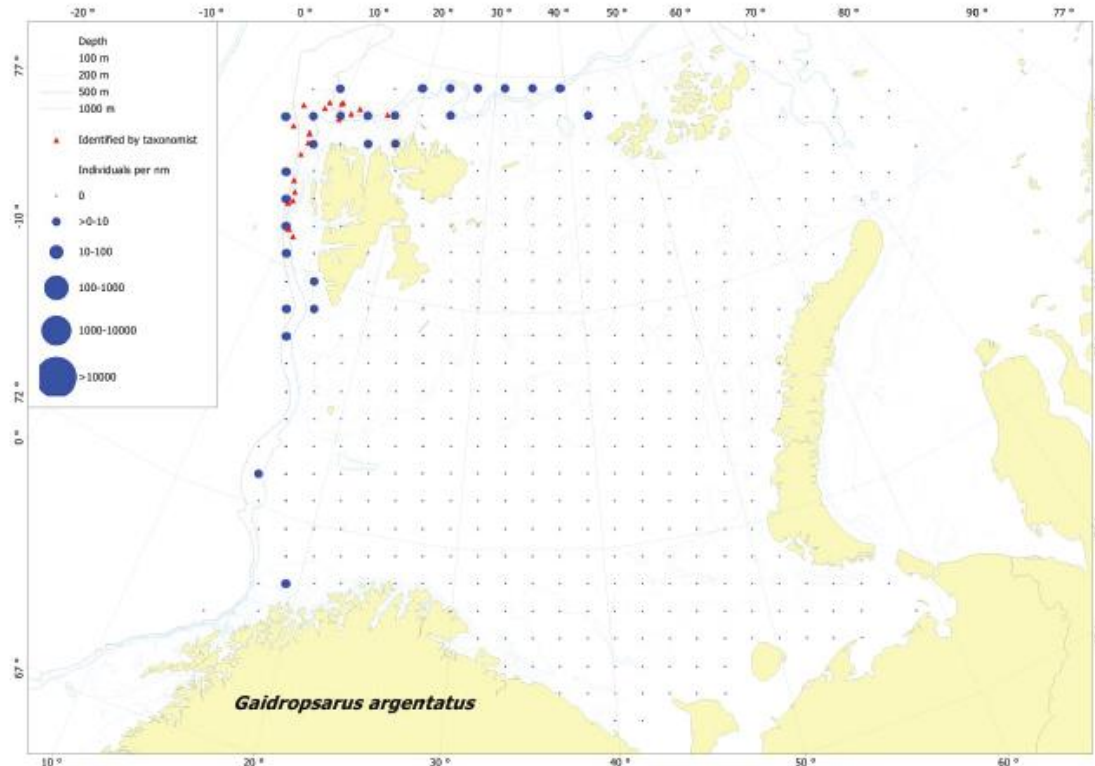


Photo: Thomas de Lange Wenneck

Spatial distribution

Known from off southeastern Greenland, off Iceland and the Faroe Islands to the Norwegian coast and northward to the Barents Sea.

In the surveyed area found along the continental slope between the Norwegian coast and Svalbard/Spitsbergen and eastward to Franz Josef Land.



Gymnocanthus tricuspis (Reinhardt 1830)

Family: Cottidae

English name: Arctic staghorn sculpin

Norwegian name: glattulke

Russian name: арктический шлемоносный бычок
(arktitcheskiy shlemonosniy bytchyok)

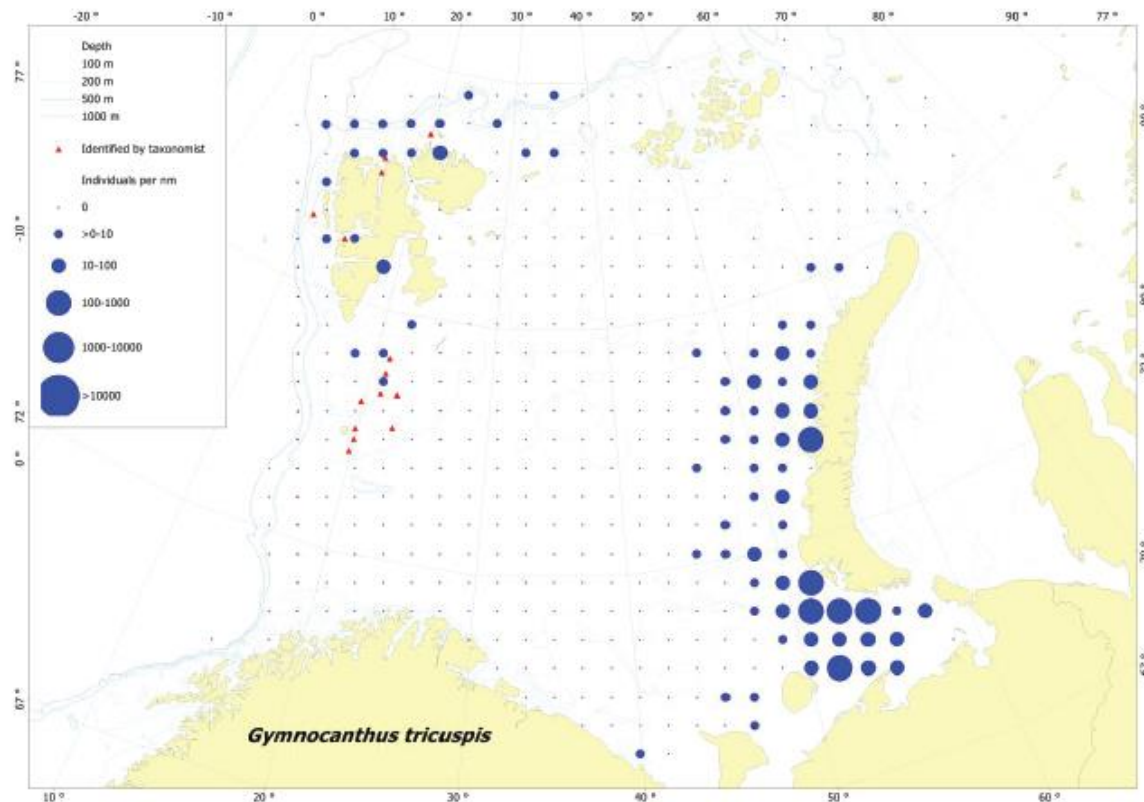


Photo: Thomas de Lange Wenneck

Spatial distribution

Circumpolar in the Arctic, occurs in the Barents and Kara Seas, off Iceland and Greenland and in the western North Atlantic.

In the surveyed area mainly found off Svalbard/Spitsbergen and Novaya Zemlya.



Eumicrotremus spinosus (Fabricius 1776)

Family: Cyclopteridae

English name: Atlantic spiny lumpsucker

Norwegian name: vortekjeks

Russian name: шиповатый круглолопер
(shipovatiy krugloper)

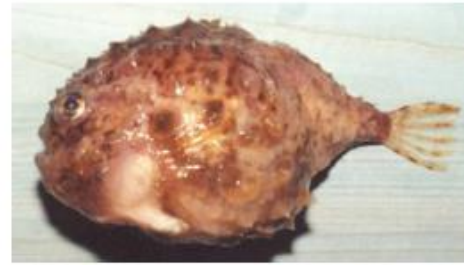
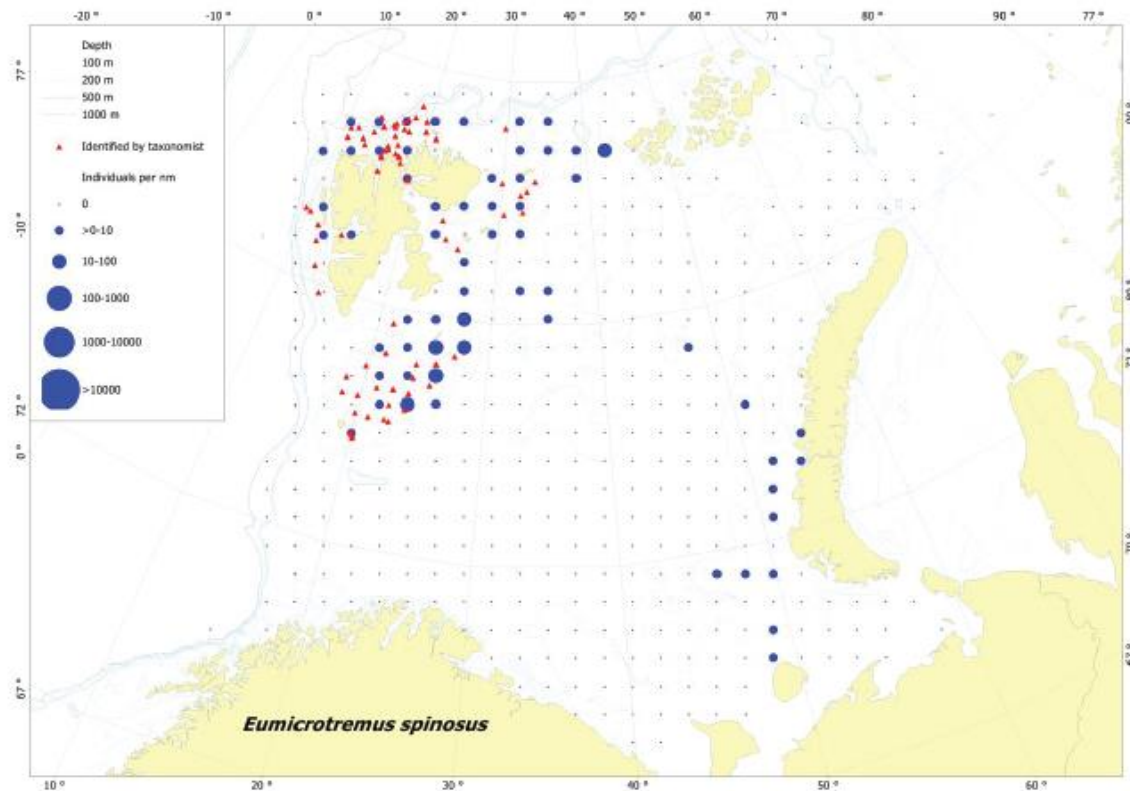


Photo: Andrey Dolgov

Spatial distribution

Known in the Arctic Ocean and the North Atlantic, including the Barents and Kara Seas, off Greenland, Iceland and Jan Mayen.

Found in shallow waters off Svalbard/Spitsbergen and Novaya Zemlya.



Paraliparis bathybius (Collett 1879)

Family: Liparidae

English name: black seasnail

Norwegian name: svart ringbuk

Russian name: полярный паралипарис
(polyarniy paraliparis)

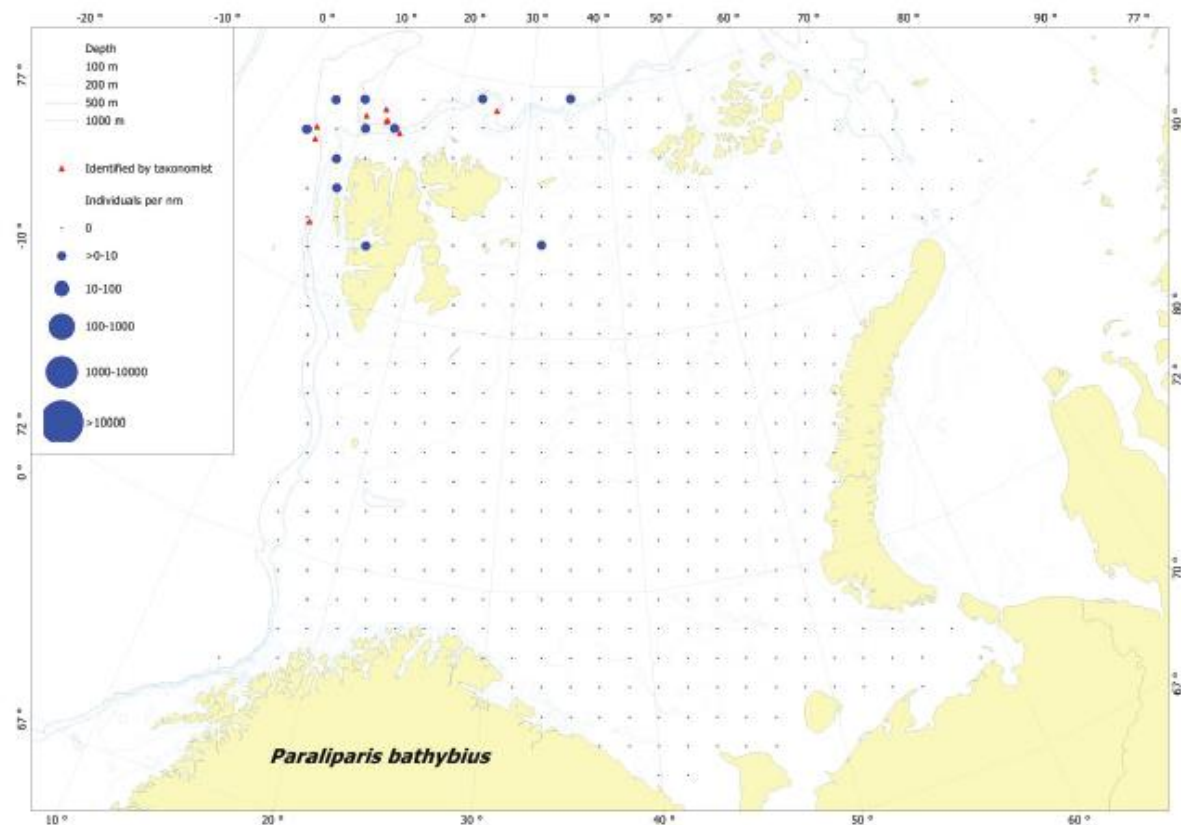


Photo: Thomas de Lange Wenneck

Spatial distribution

Known in the Arctic Basin, the Norwegian and Greenland Sea, as well as in the Baffin Bay.

In the surveyed area mainly found off Svalbard/Spitsbergen.



Lycenchelys kolthoffi Jensen 1904

Family: Zoarcidae

English name: checkered wolf eel

Norwegian name: marmorert ålebrosme

Russian name: пятнистый лиценхел
(piatnistiy litzenkhel)

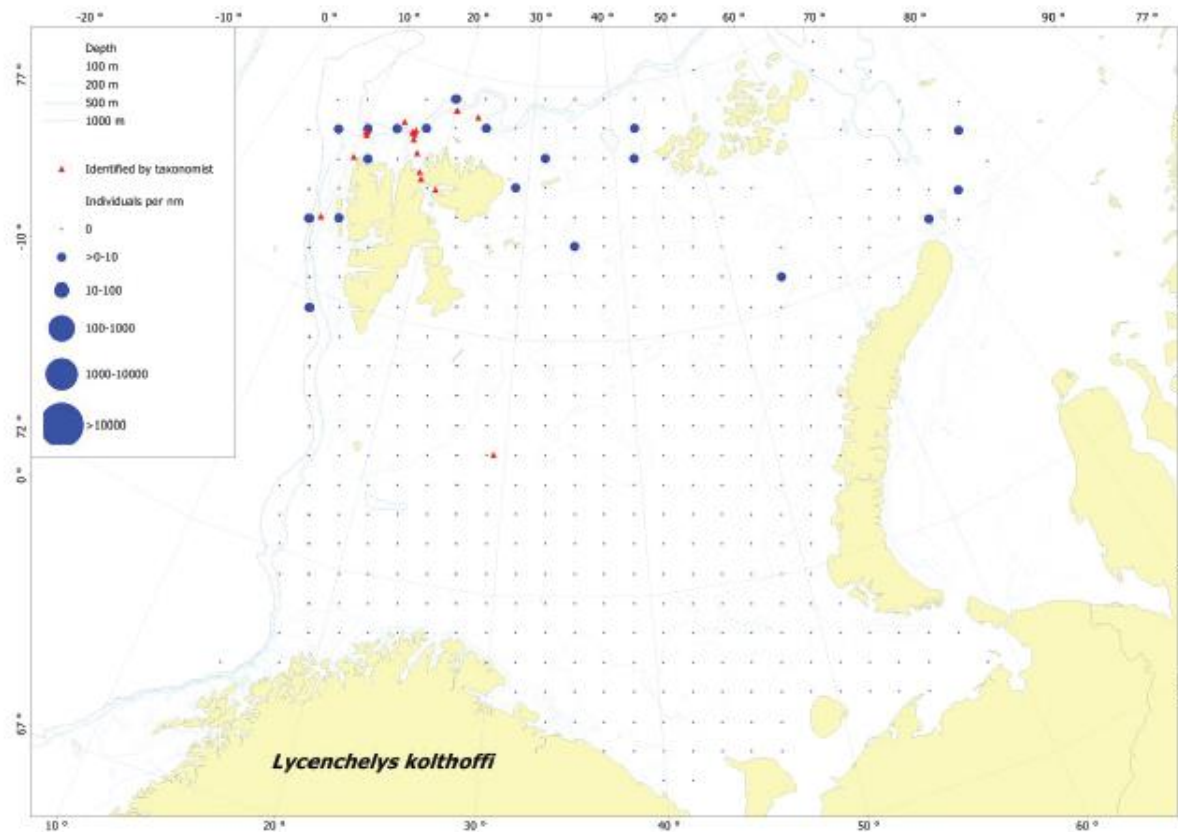


Photo: Thomas de Lange Wenneck

Spatial distribution

Known from the Kara Sea to Greenland and the western North Atlantic.

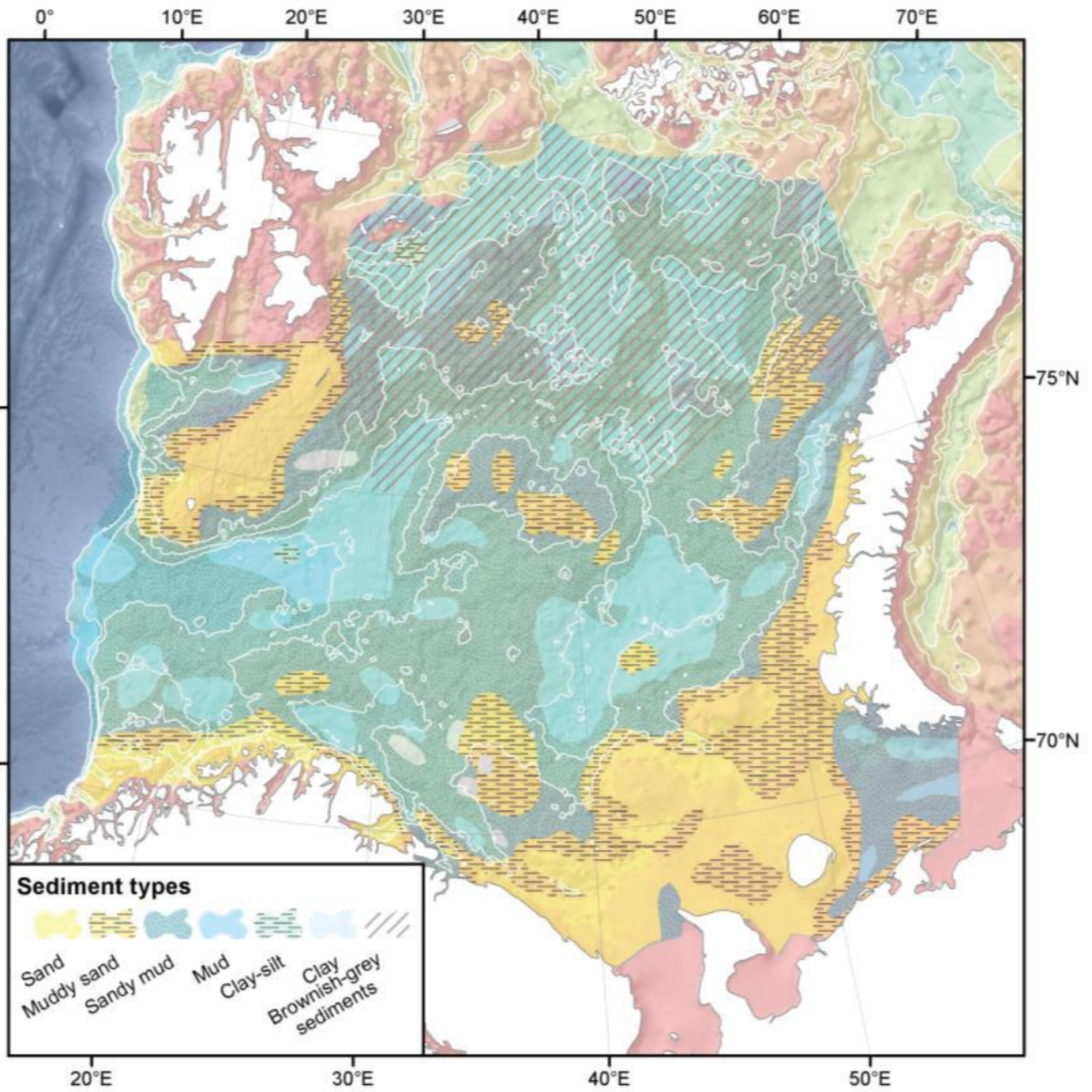
In the surveyed area found mainly north of 77° N.



Forskning på nye ressurser

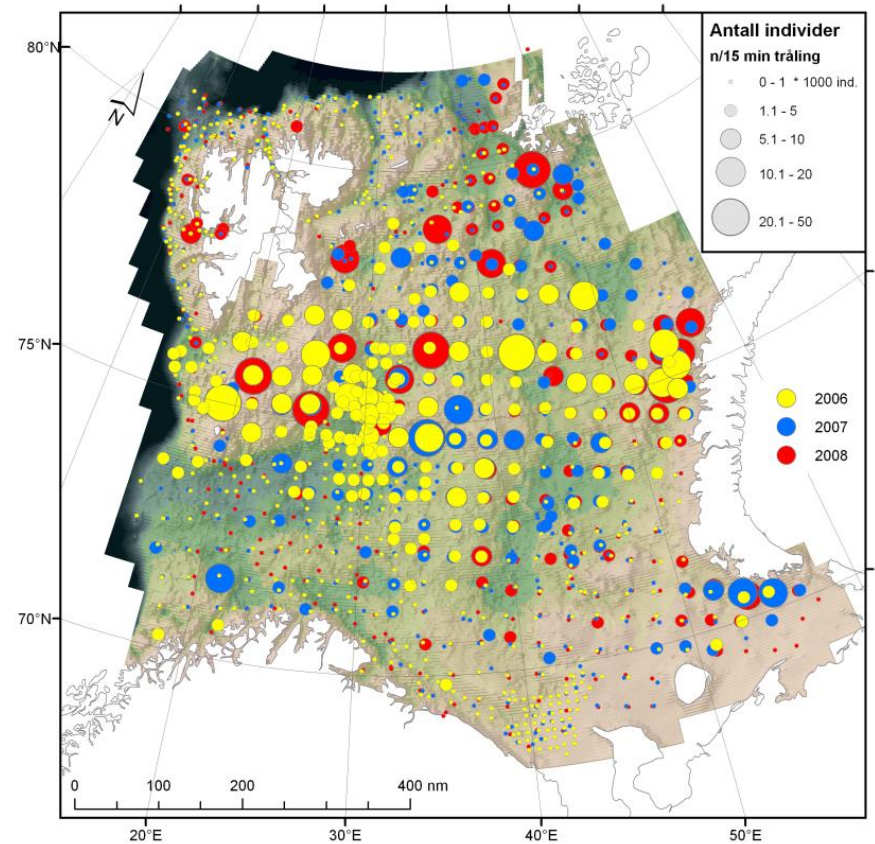
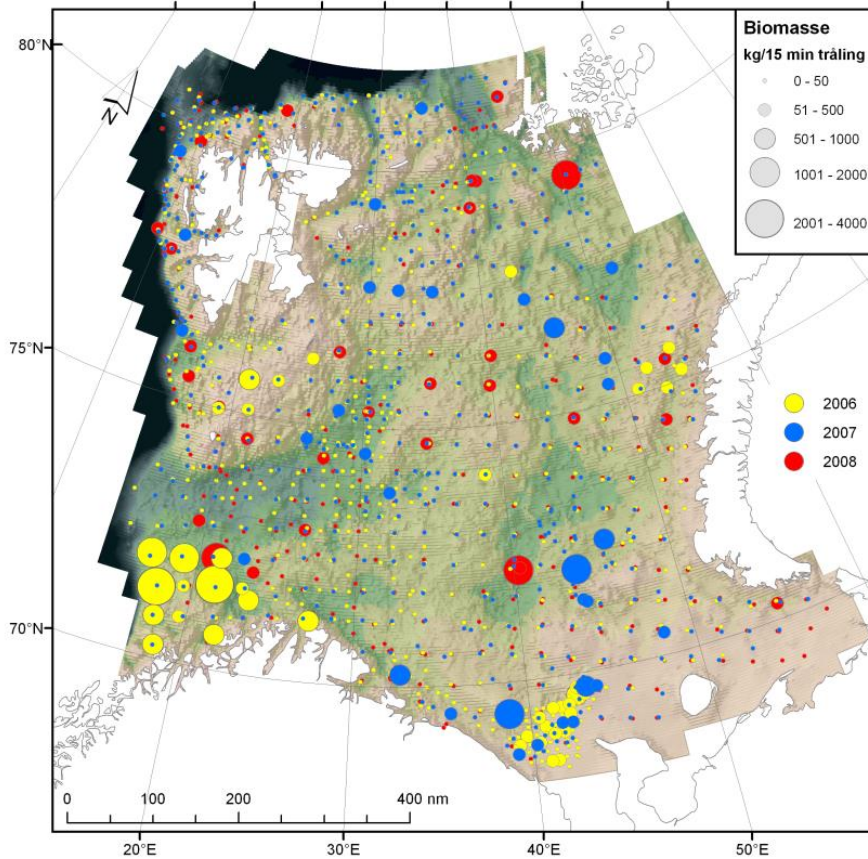
- Gapeflyndre
- Vassild
- Taskekrabbe
- Kråkebolle
- Kongsnegl
- Sjøpølse
- Bifangst



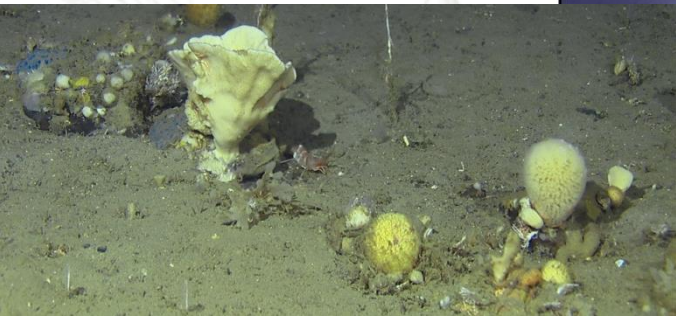
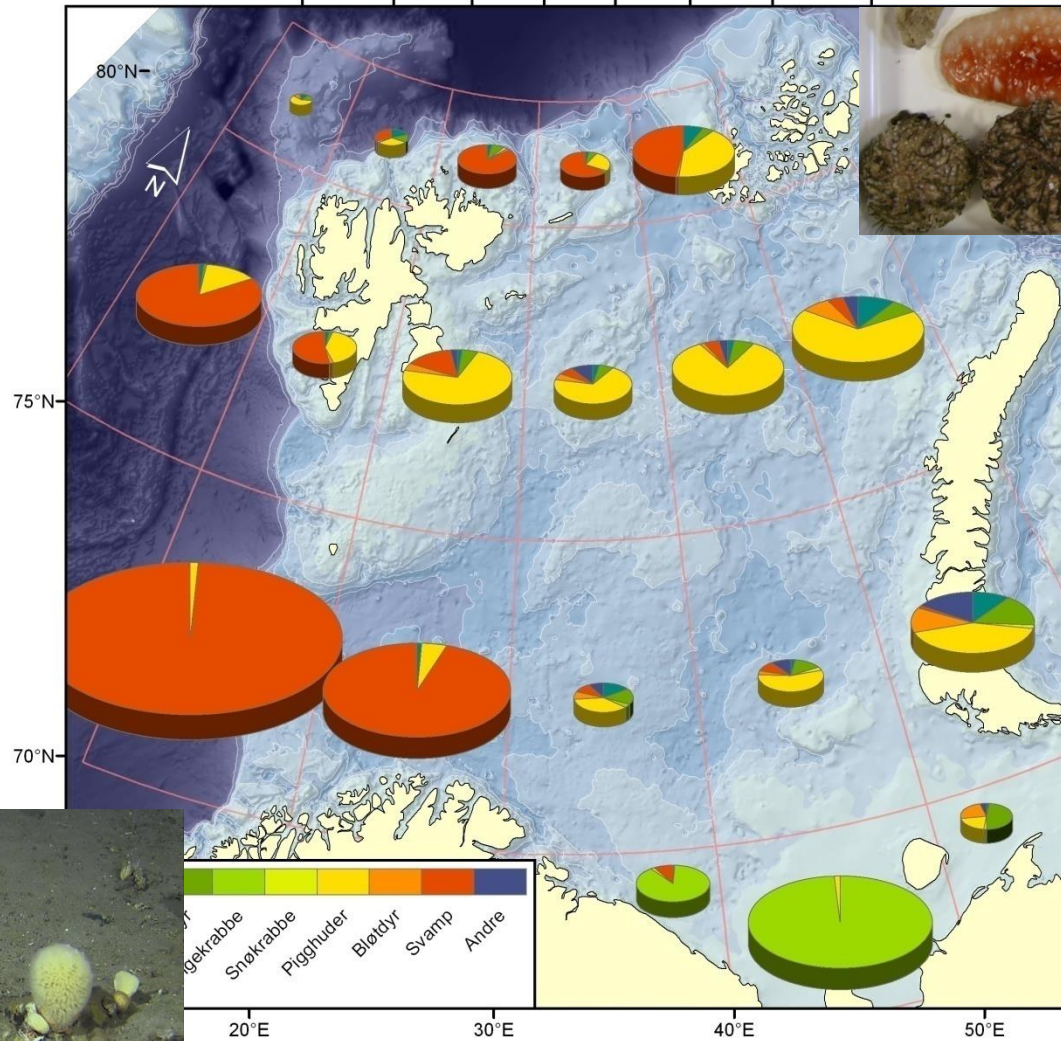


Bunnlevende organismer

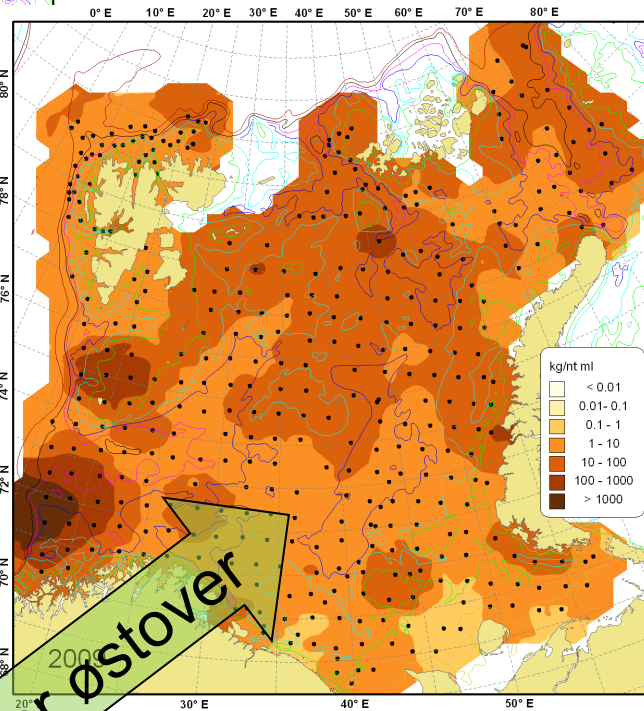
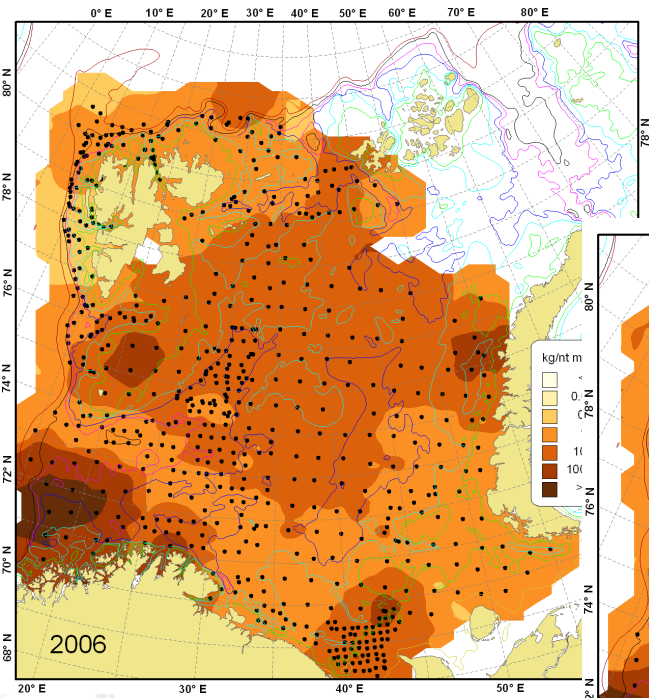
Ca 200 mill tonn



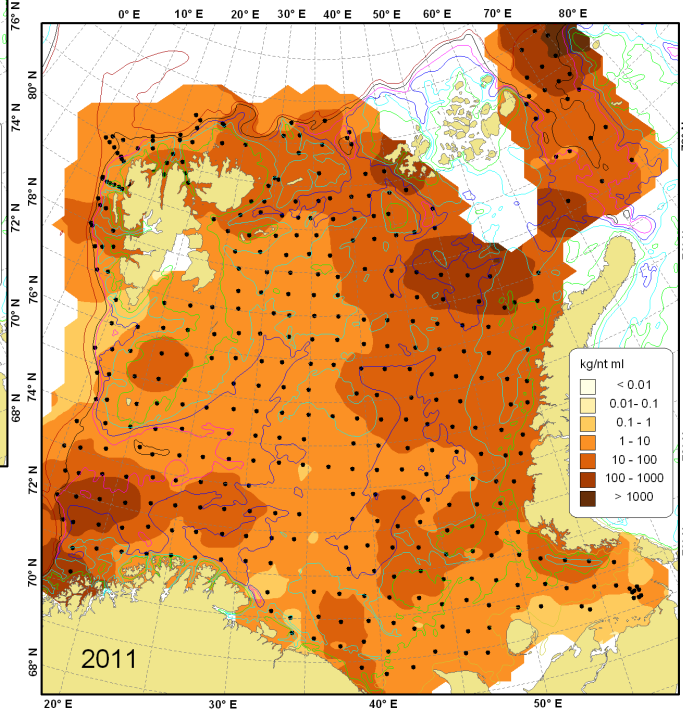
Fordeling av bunnlevende dyregrupper



Biomasse på bunnen

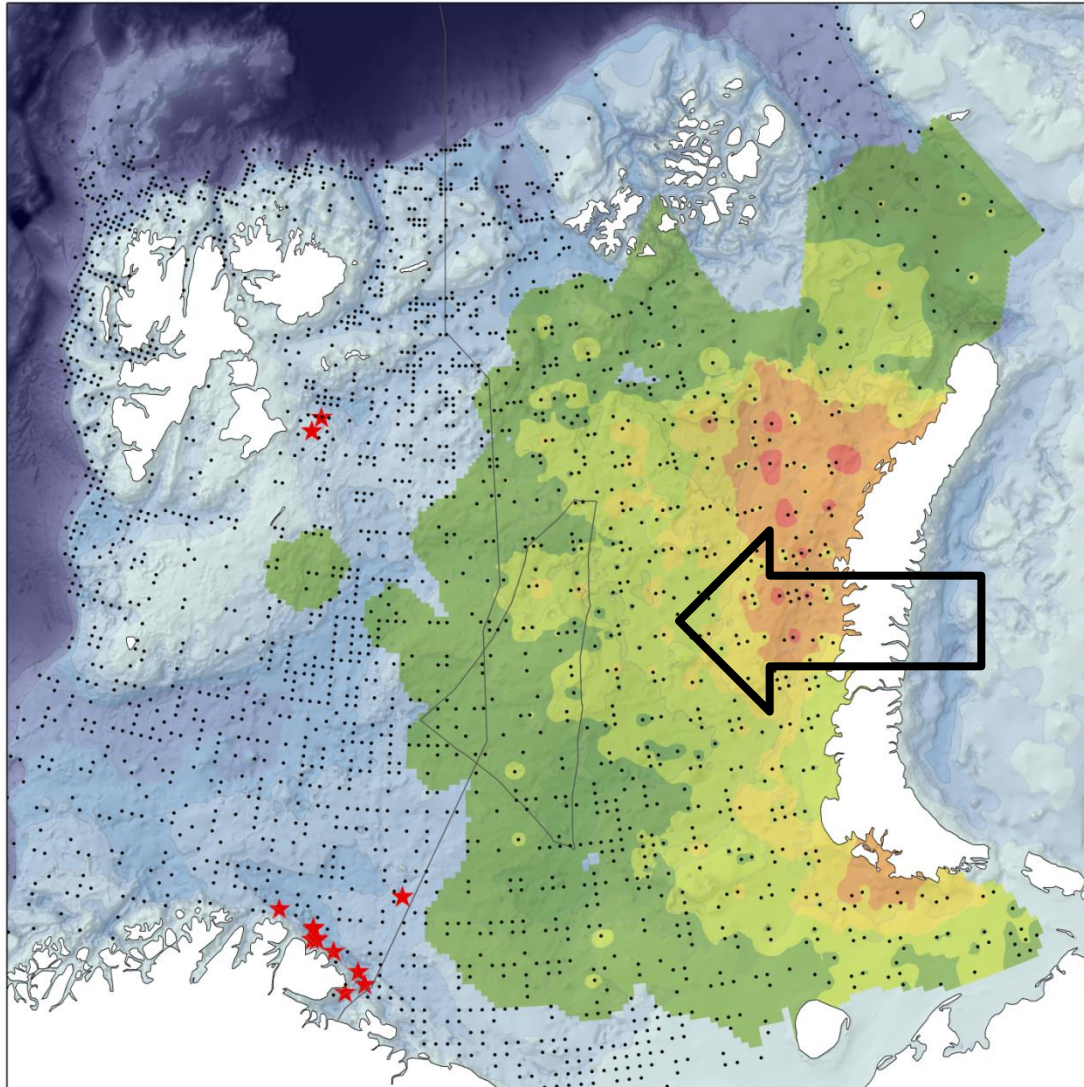


Flytter østover



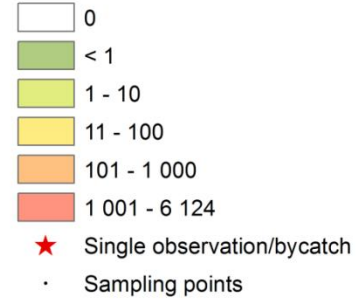
Snøkrabbe

Ca 1 mill tonn

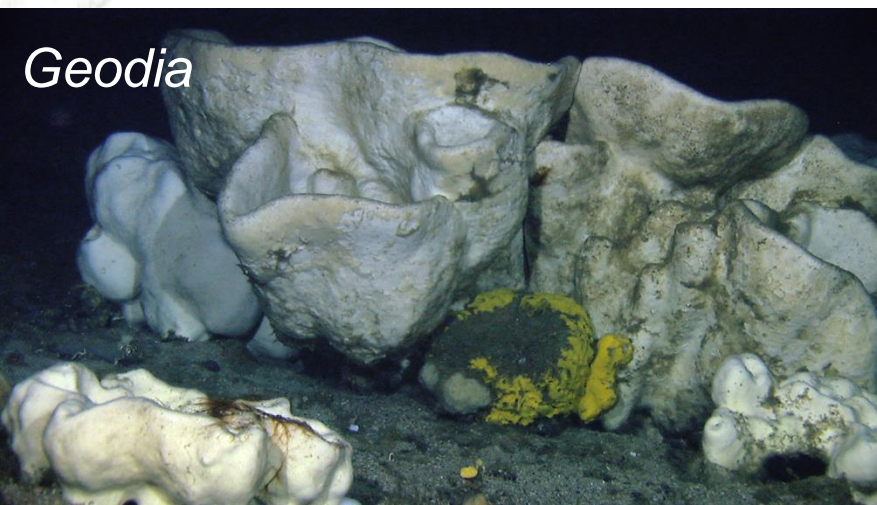
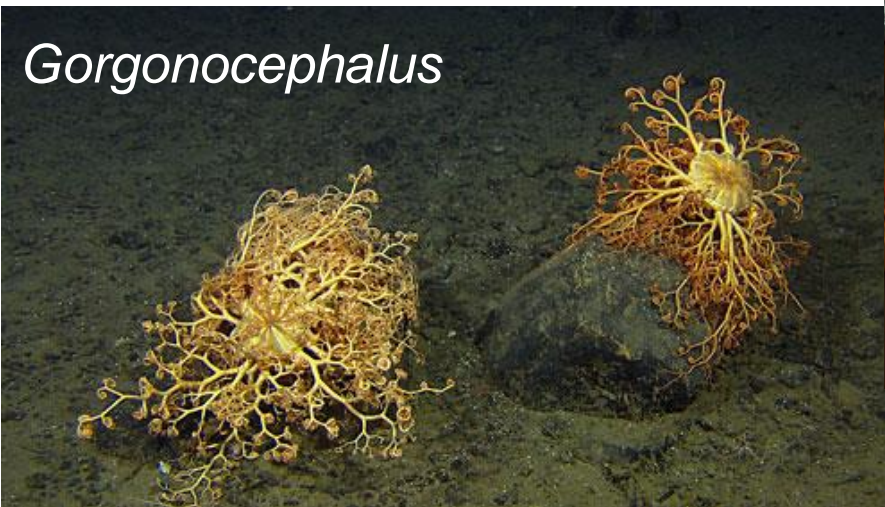


Distribution 2004-2012

Mean numbers per nm



Forvaltning og signal-arter



Naturtypekart – et av hovedproduktene



Modellering baseres på:

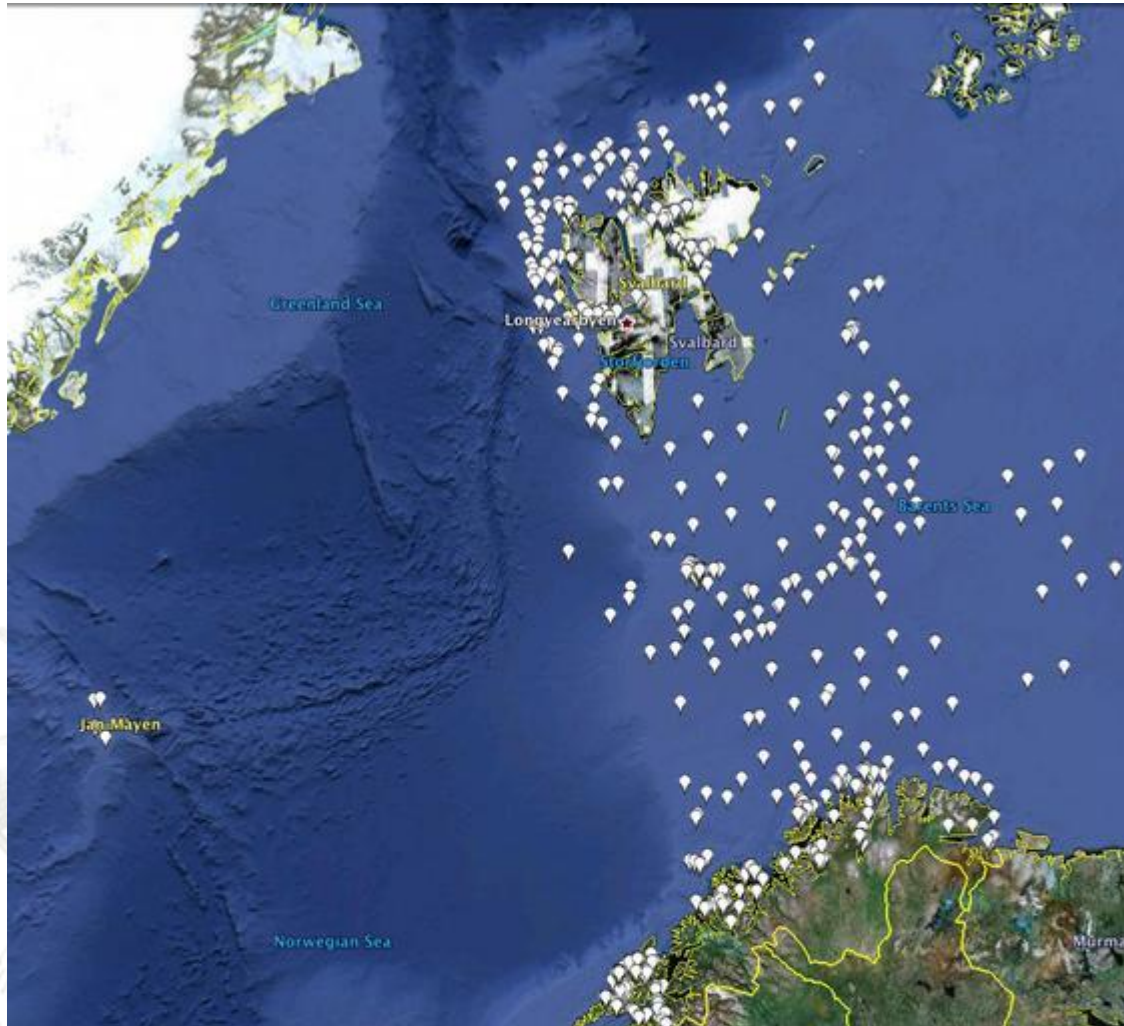
- terrengmodeller, bunnsediment og observasjon fra video

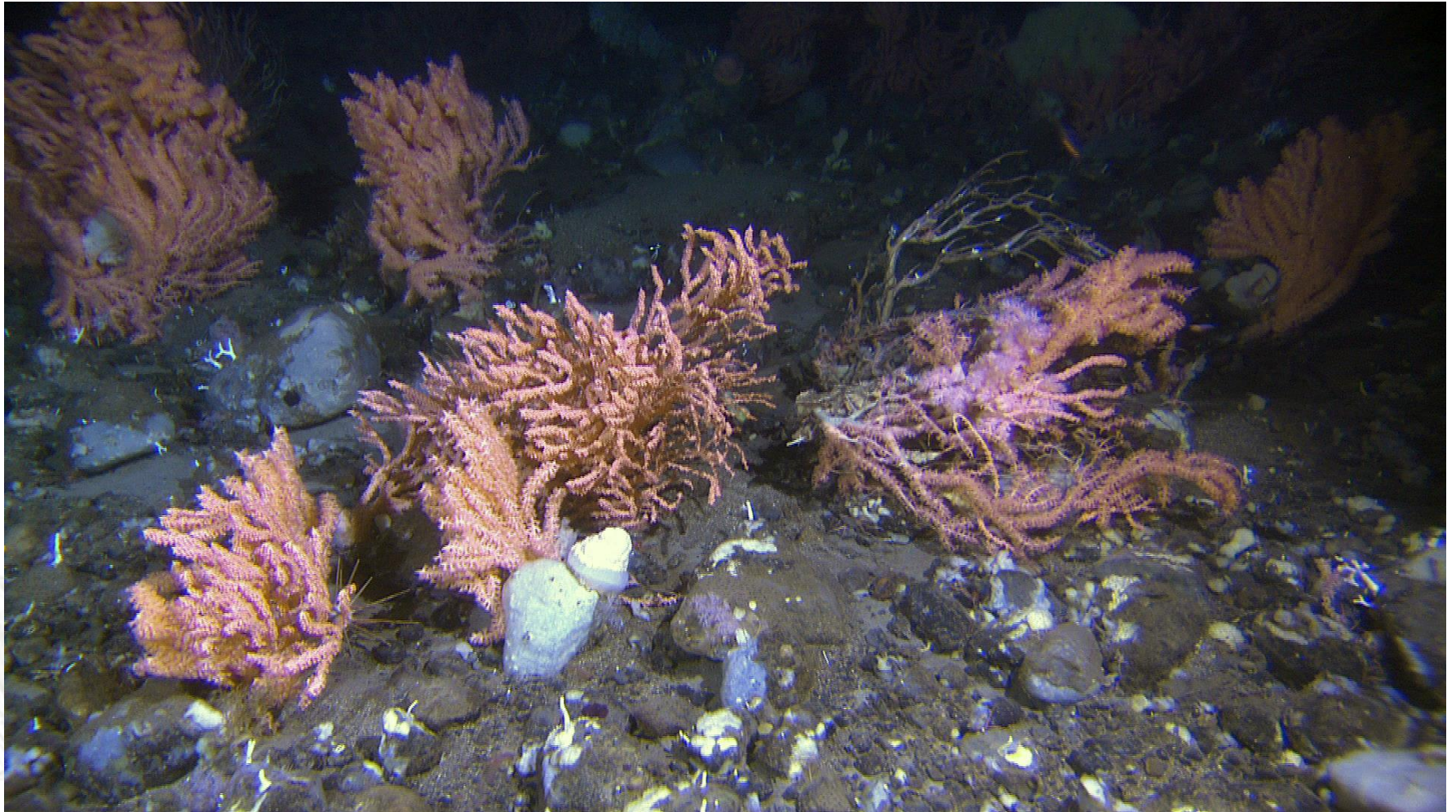
Ferdige naturtypekart dekker:

- Tromsøflaket, Eggakanten, Nordland VII og Troms II

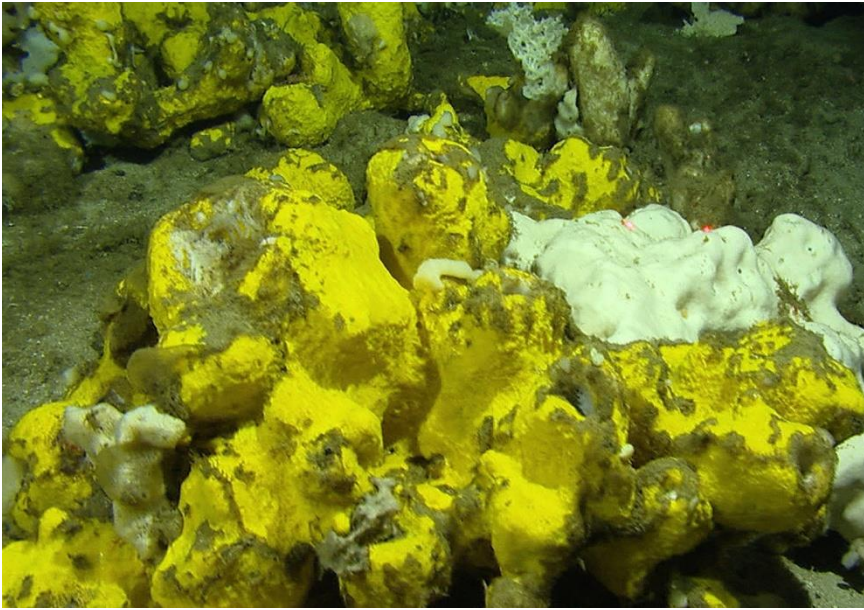
I dette arbeidet har vi:

- definert nye naturtyper
- observert ulike bunnformasjoner og strukturer
- funnet arter/naturtyper som etter internasjonale konvensjoner blir regnet for å være sårbare









Takk for oppmerksomheten!



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