

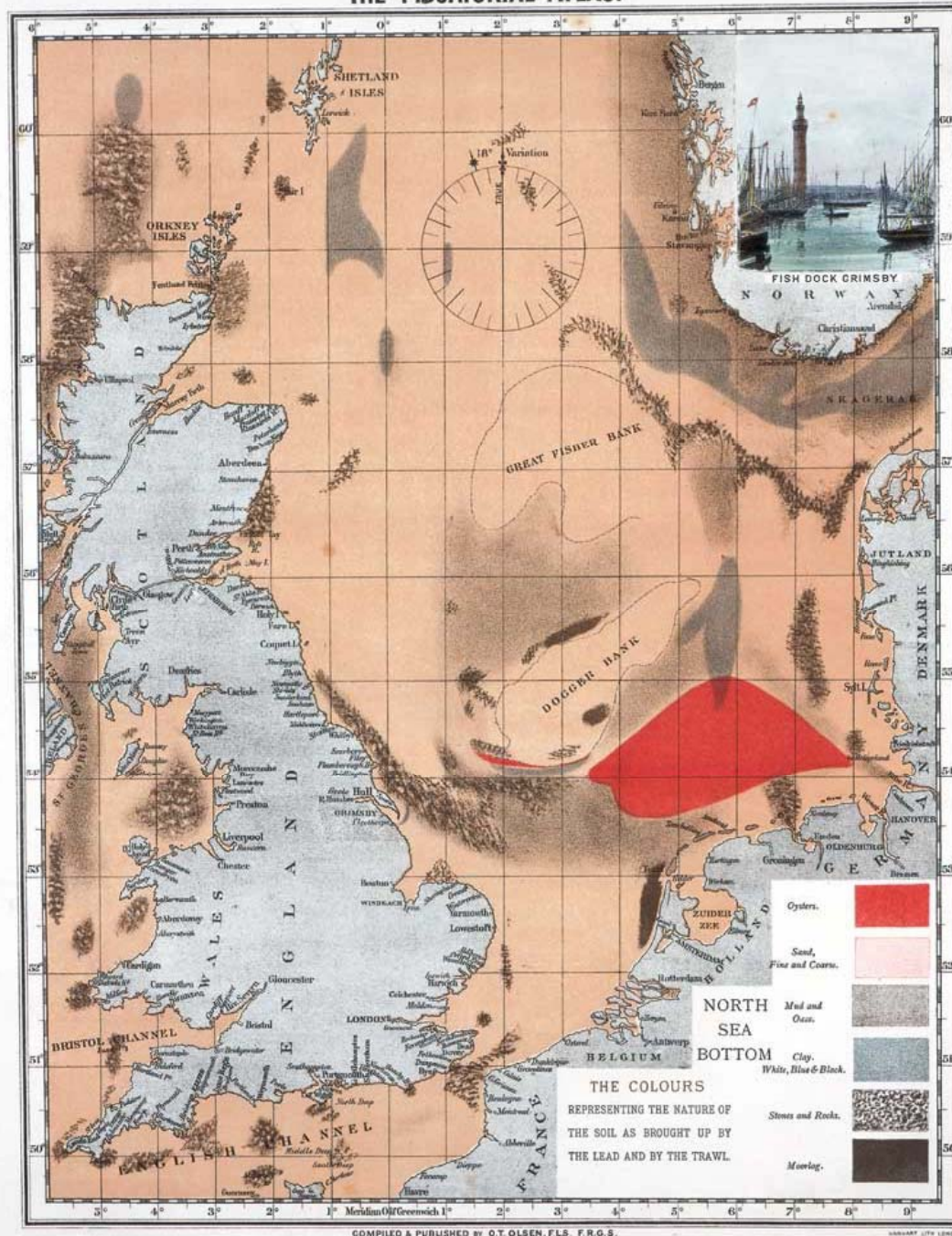
IMARES

MPAs in the North Sea: many maps but little protection

Han Lindeboom



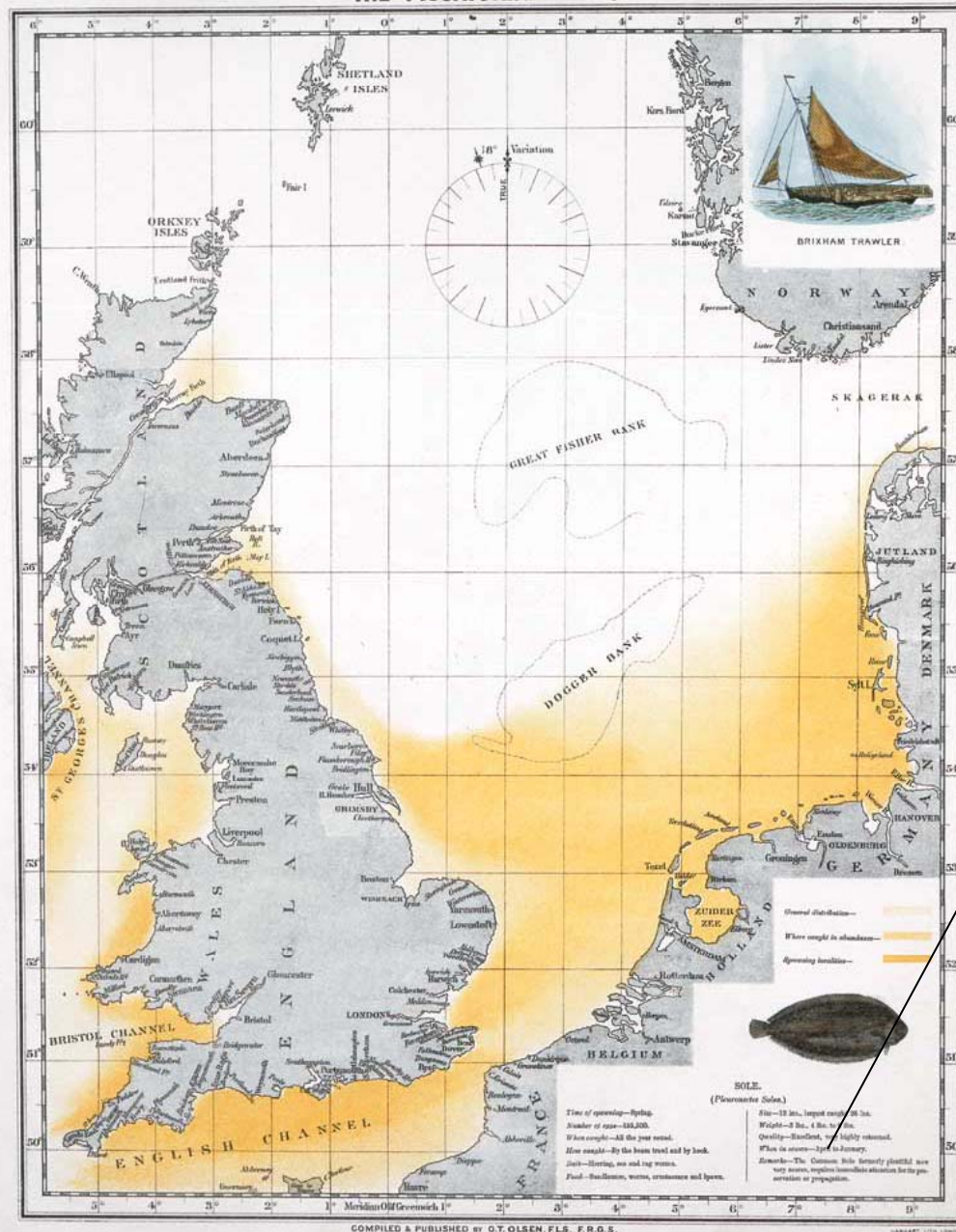
THE PISCATORIAL ATLAS.



The North Sea in 1880

Olsen,
Piscatorial Atlas (1883)

THE PISCATORIAL ATLAS.



The sole

The Common Sole formerly plentiful now very scarce, requires immediate attention for its preservation or propagation. (Olsen, 1883)

Die Überfischung der Nordsee

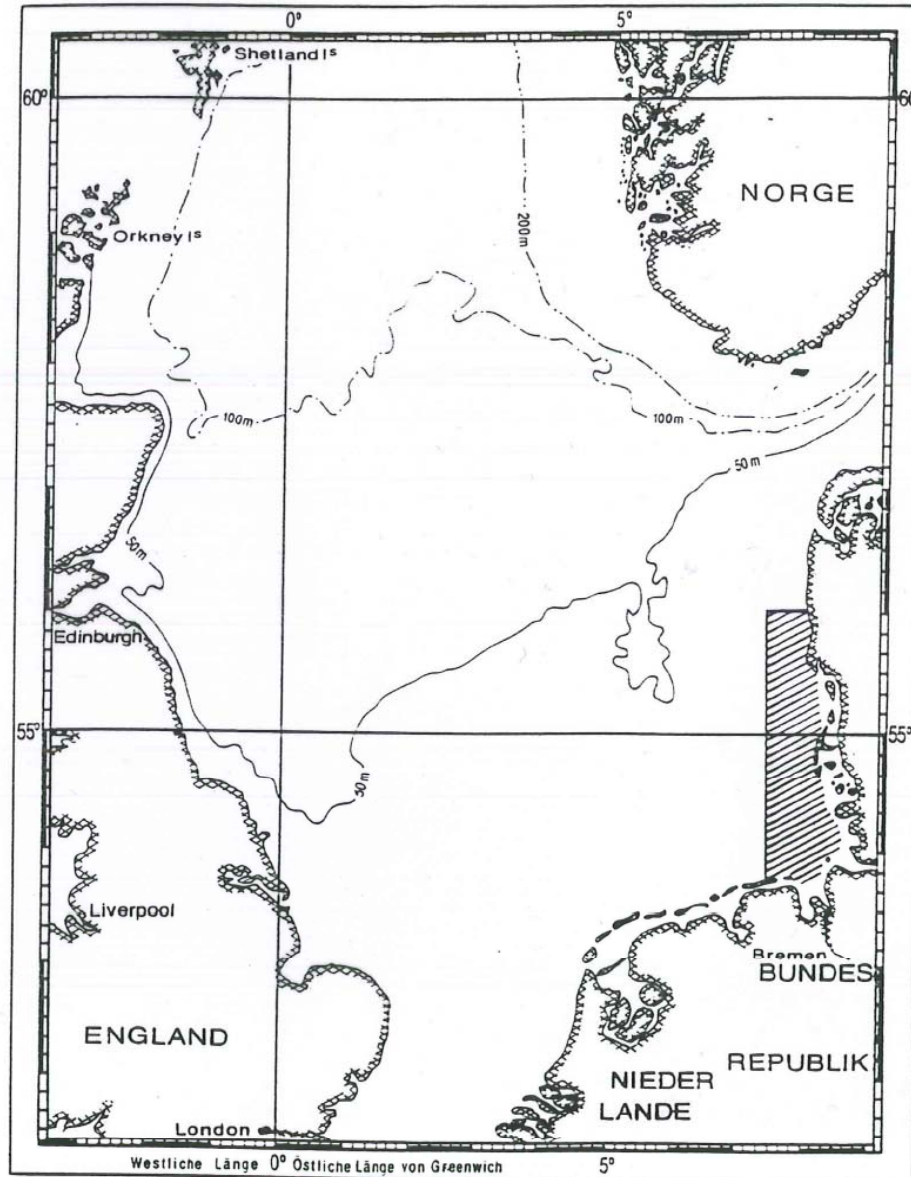
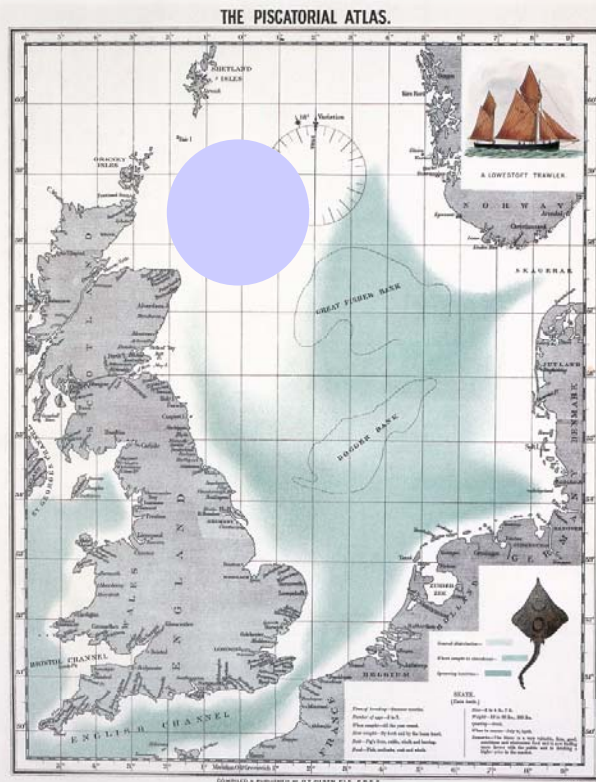


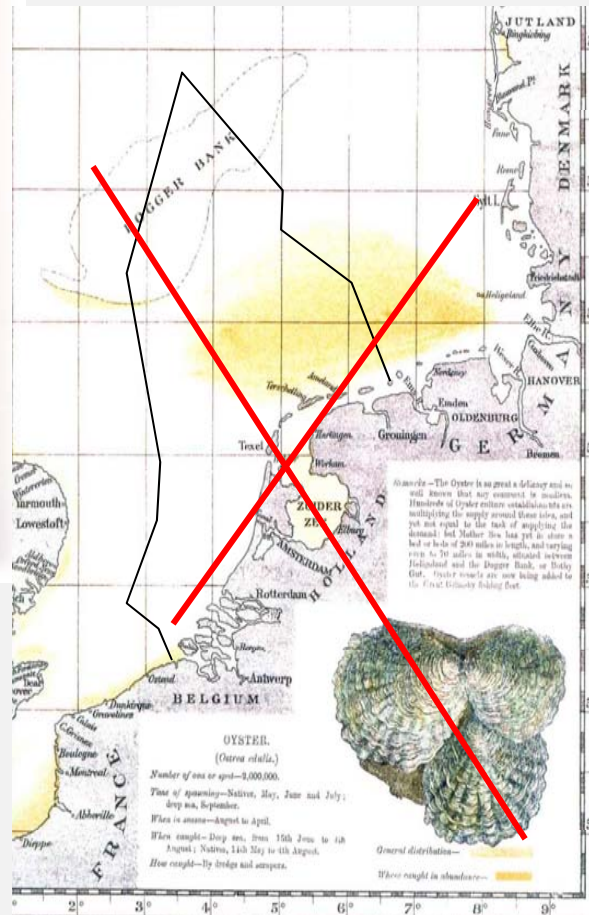
Abb. 3

Das von England vorgeschlagene Schongebiet in der Deutschen Bucht

MPA suggested
by the UK in the
German Bight
around 1900



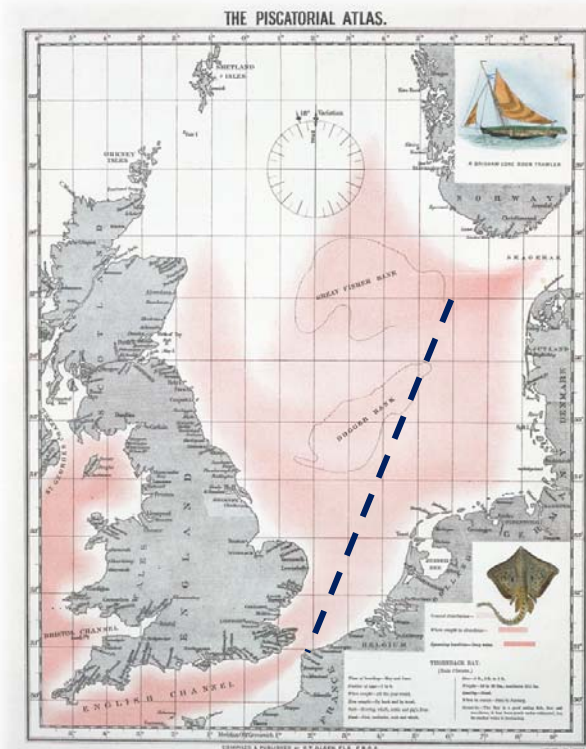
Skate



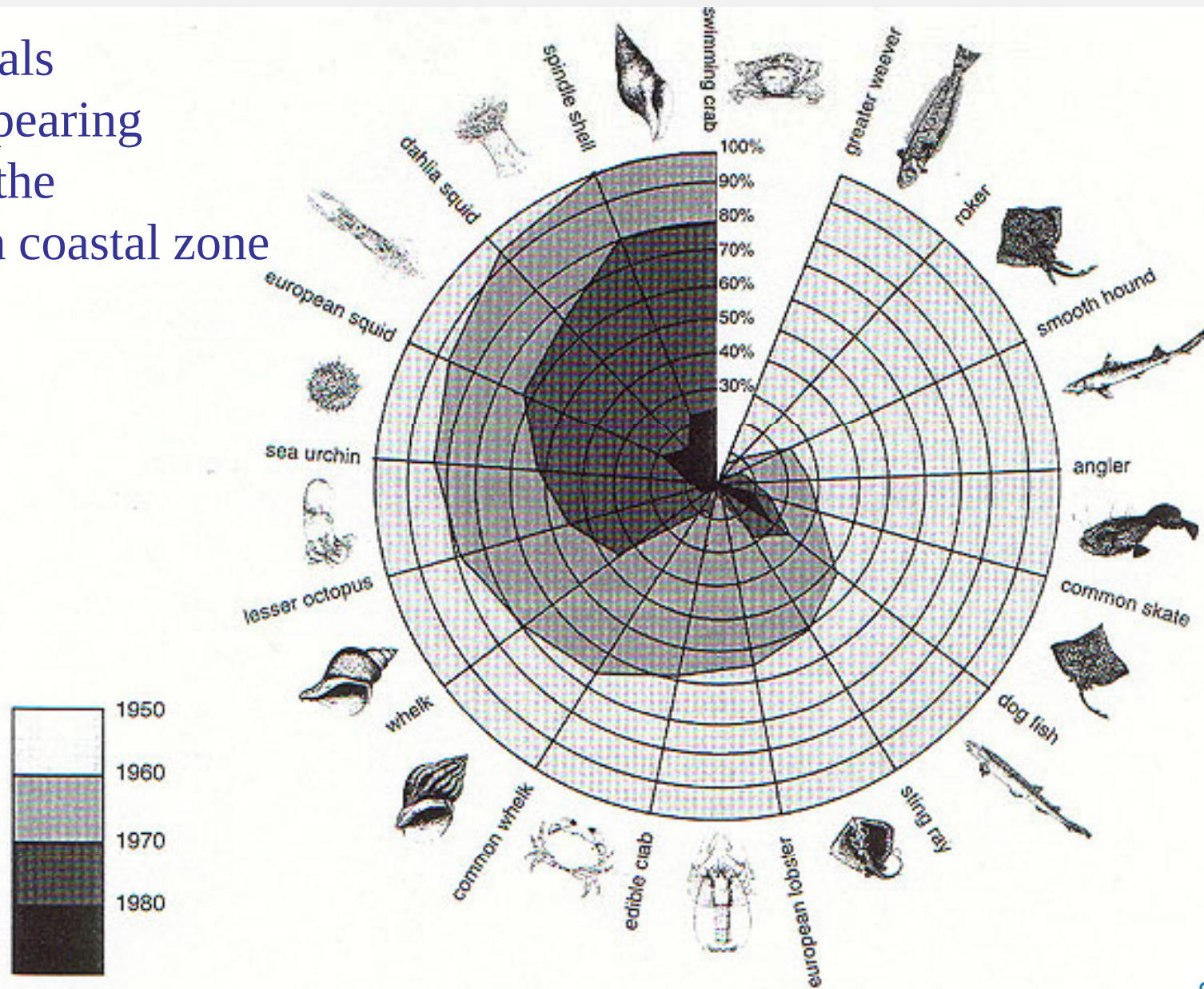
Oyster

Olsen, Piscatorial Atlas (1883)

Thornback Ray



Animals disappearing from the Dutch coastal zone



(Philippart)



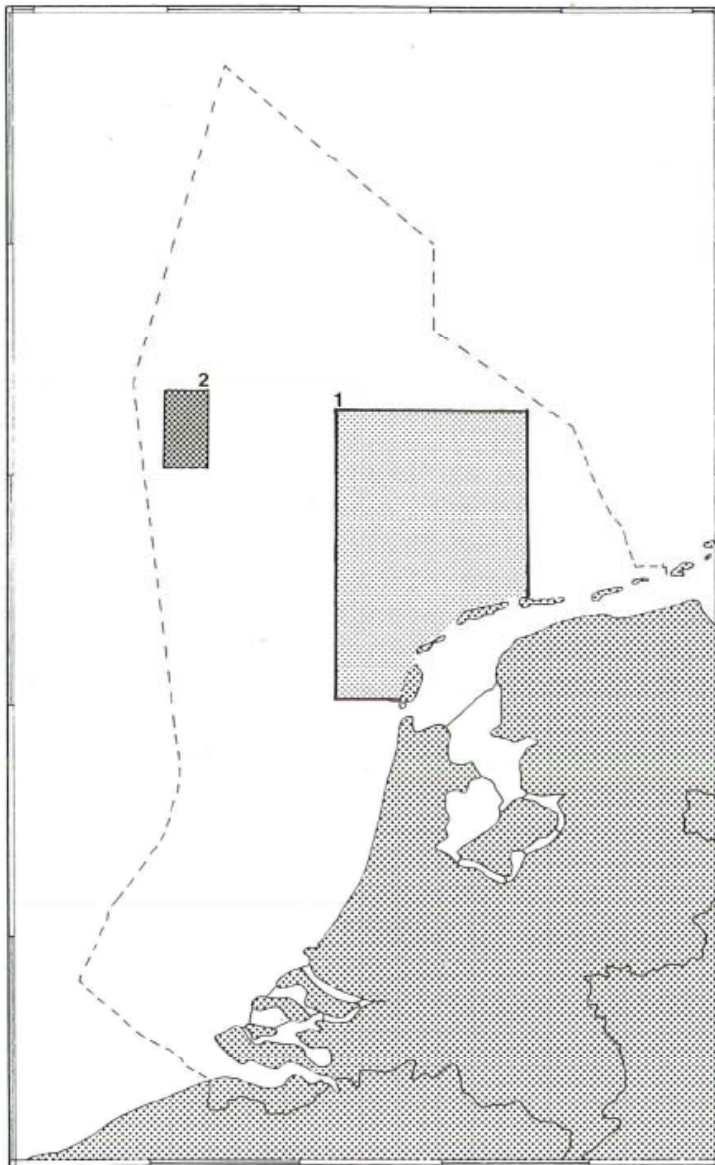


Fig. 7.1. Alternatief 1: Gebieden binnen de Nederlandse sector van de Noordzee die voor een beschermde status in aanmerking komen: 1 Het gebied direct ten noordwesten van de Waddeneilanden. 2 De Klaverbank.

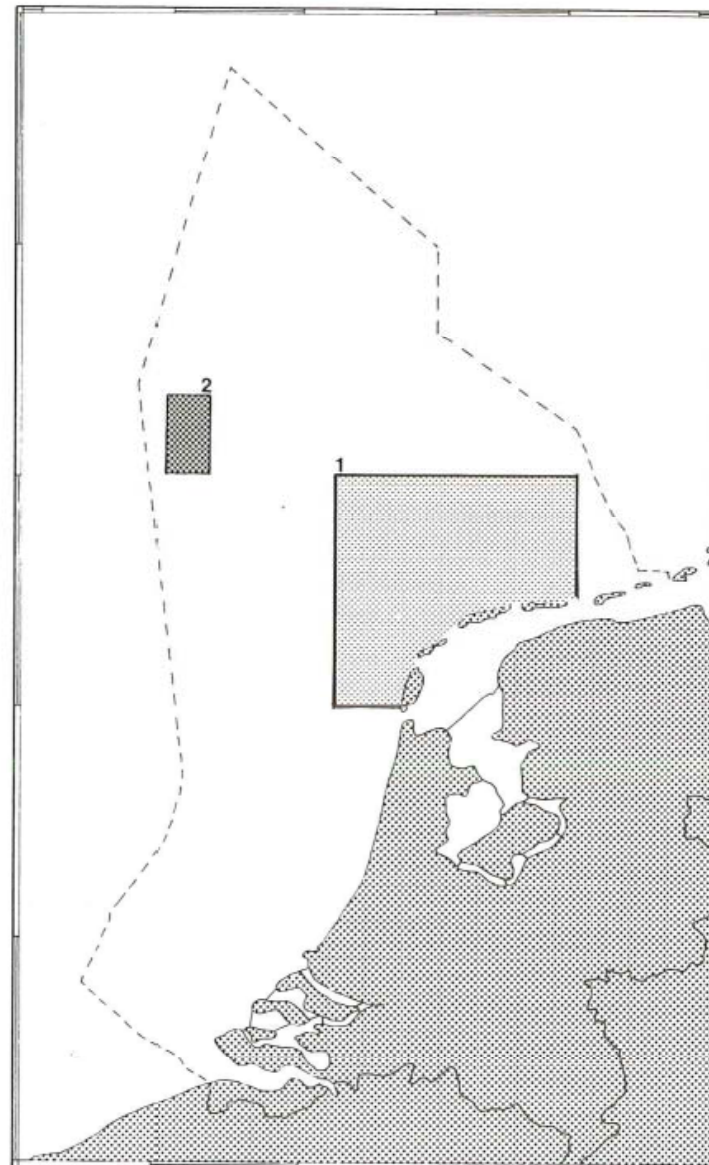


Fig. 7.2. Alternatief 2: Gebieden binnen de Nederlandse sector van de Noordzee die voor een beschermde status in aanmerking komen: 1 Het gebied direct ten noordwesten van de Waddeneilanden. 2 De Klaverbank.

NATUURGEBIEDEN op



**More protection
needed**

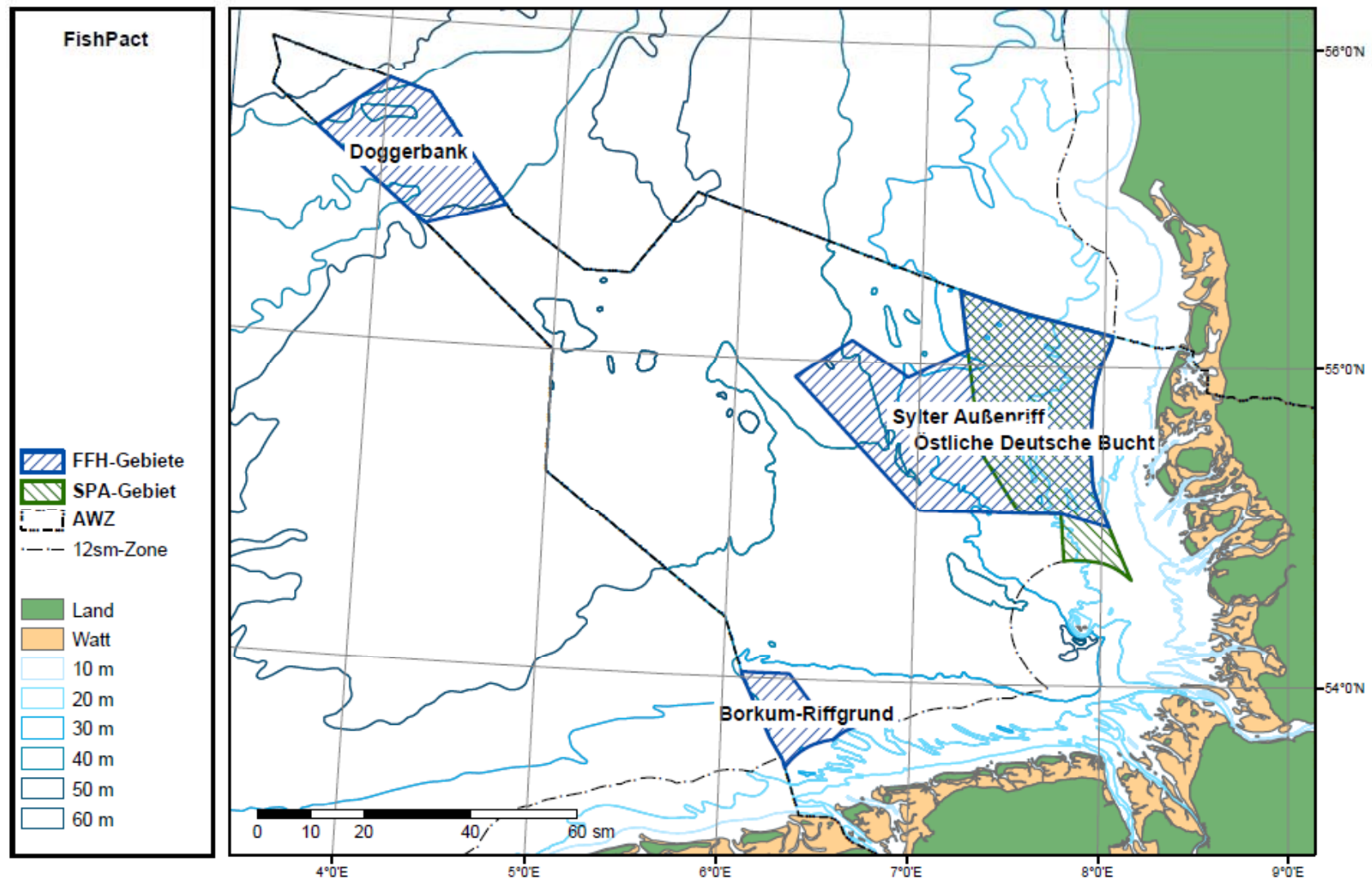


Abb. 1: Lage der Natura 2000 Schutzgebiete nach FFH-Richtlinie (blau) und EU-Vogelschutzrichtlinie (SPA, grün) in der Deutschen AWZ der Nordsee

Criteria applied in the Netherlands:

Habitat Directive:

Sand banks, Reefs, sub-marine structures

Species: sea mammals, fish

Bird Directive:

Species and occurrence of 1% of the population

OSPAR:

Threatened and important species and habitats

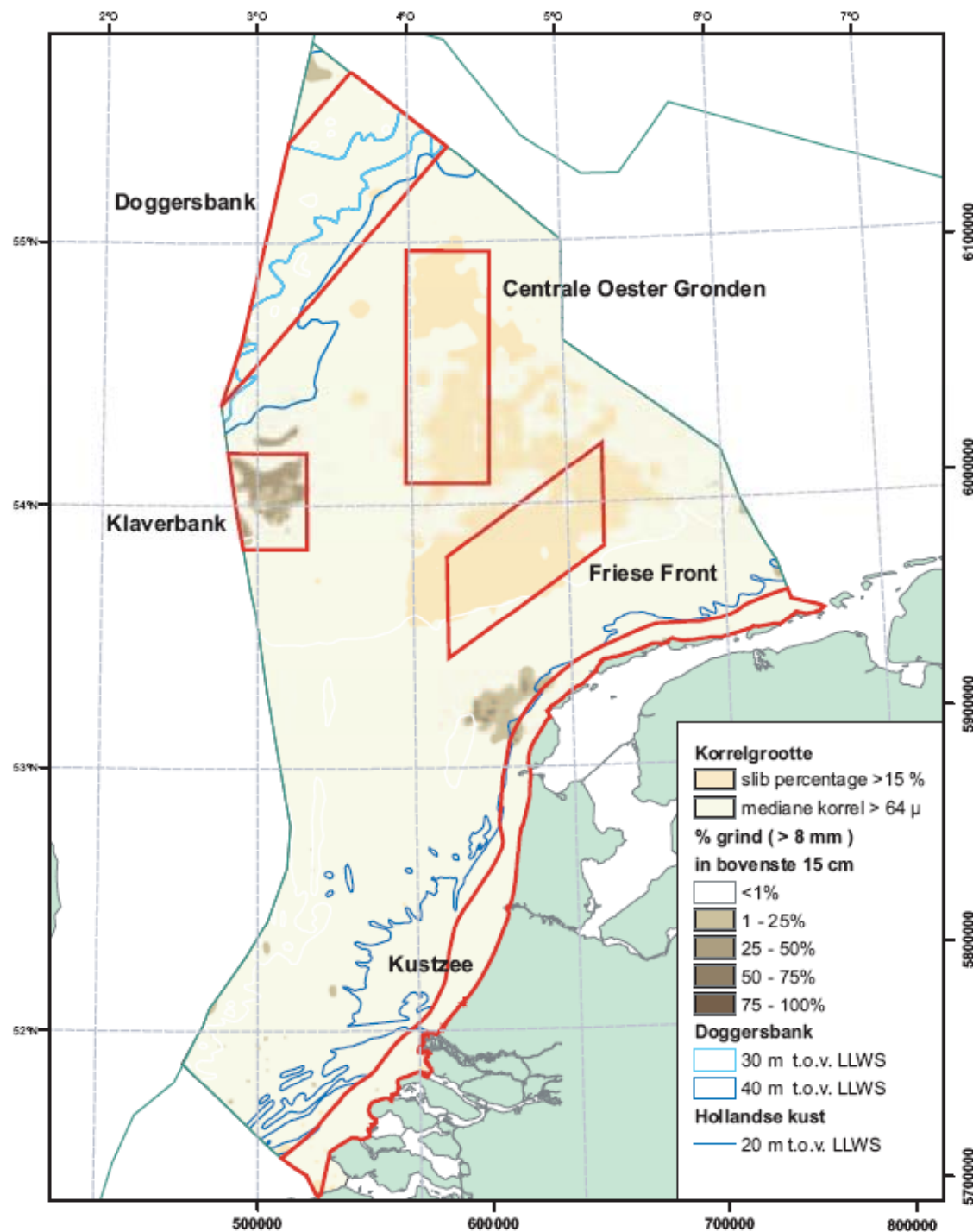
Ecological importance, High biodiversity,

Representatively, vulnerability, naturalness

Link up with areas on the German, UK and Belgium Shelf.



Sediment characteristics



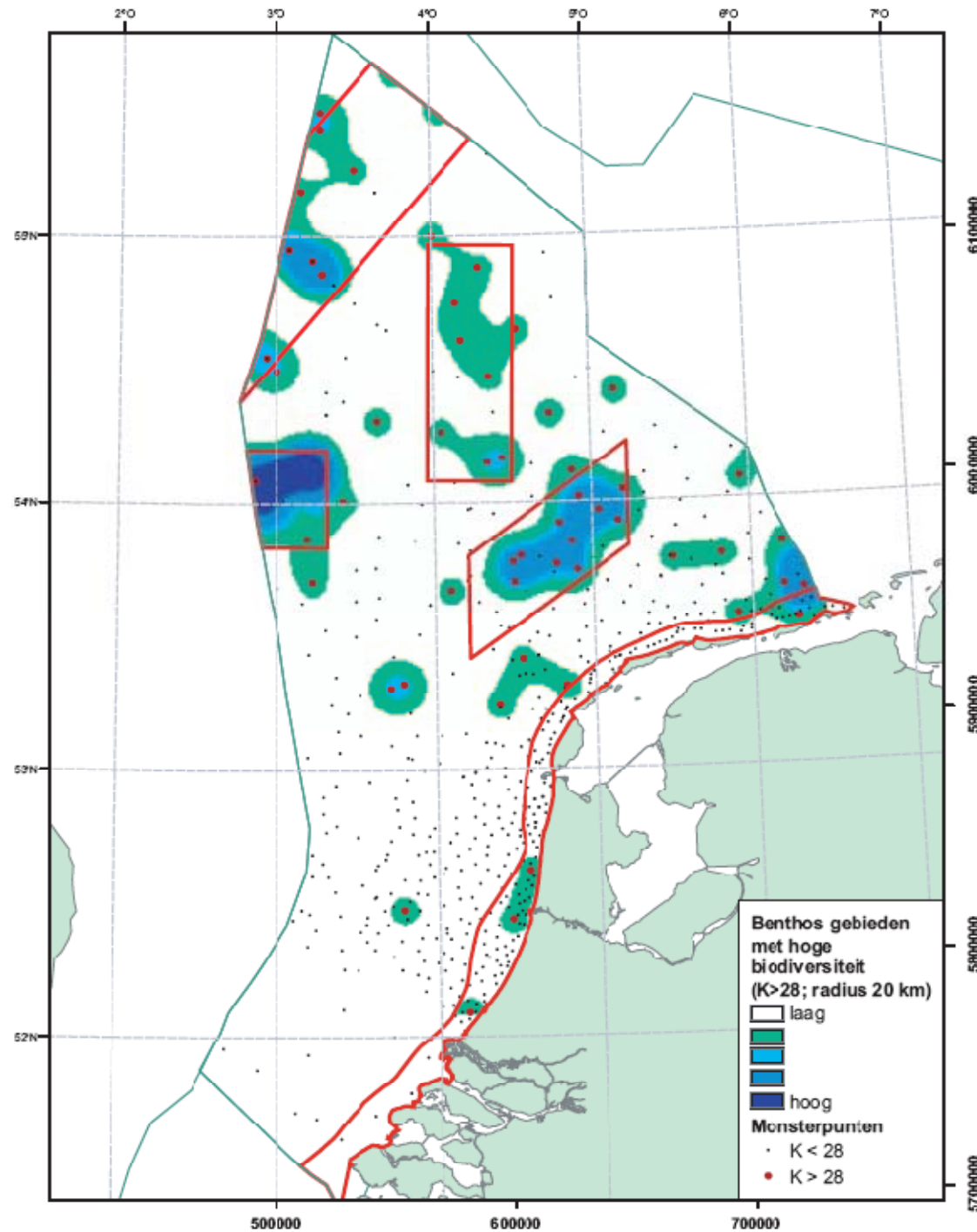
Data: TNO, RWS

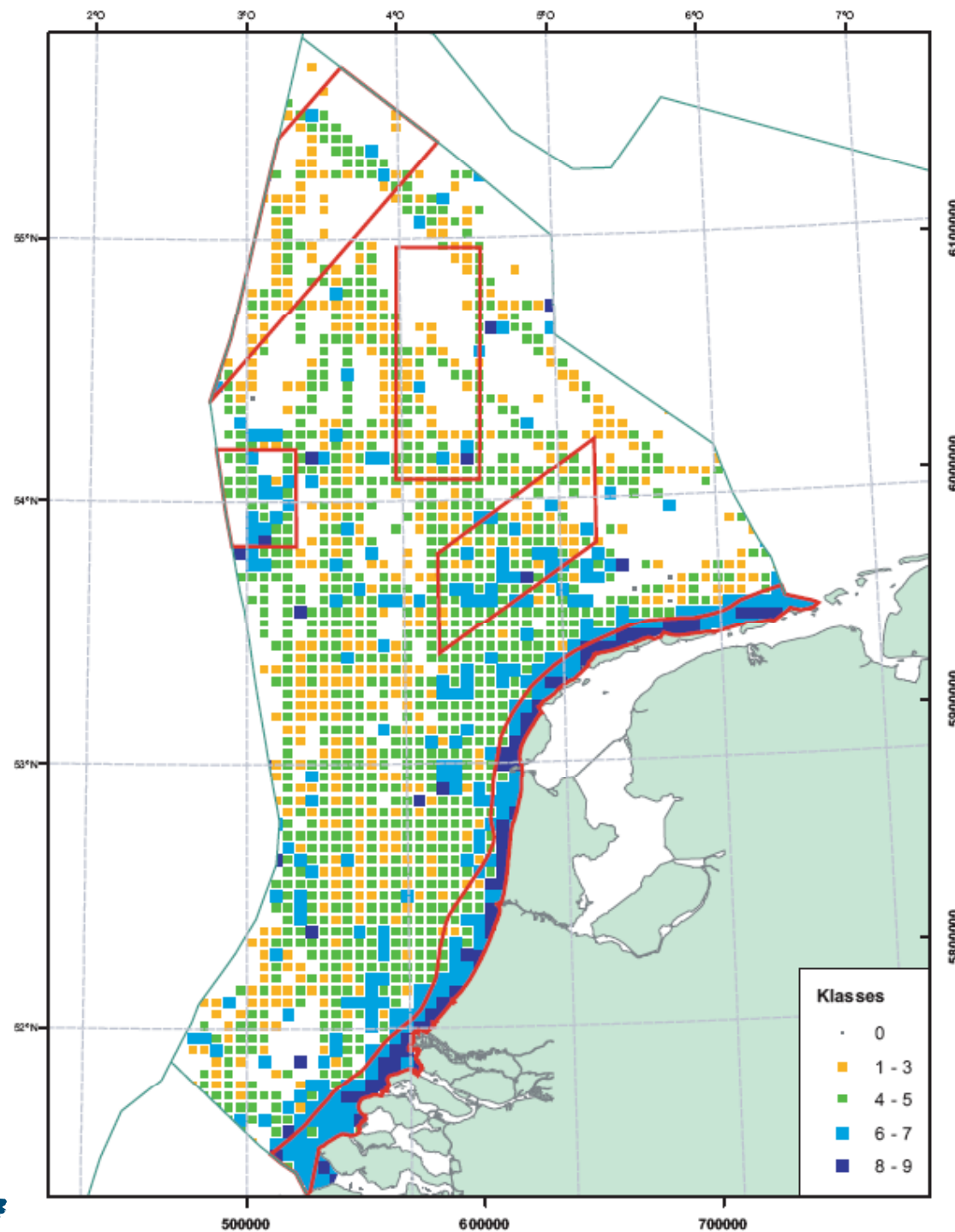


Benthic fauna



Data: Royal. NIOZ

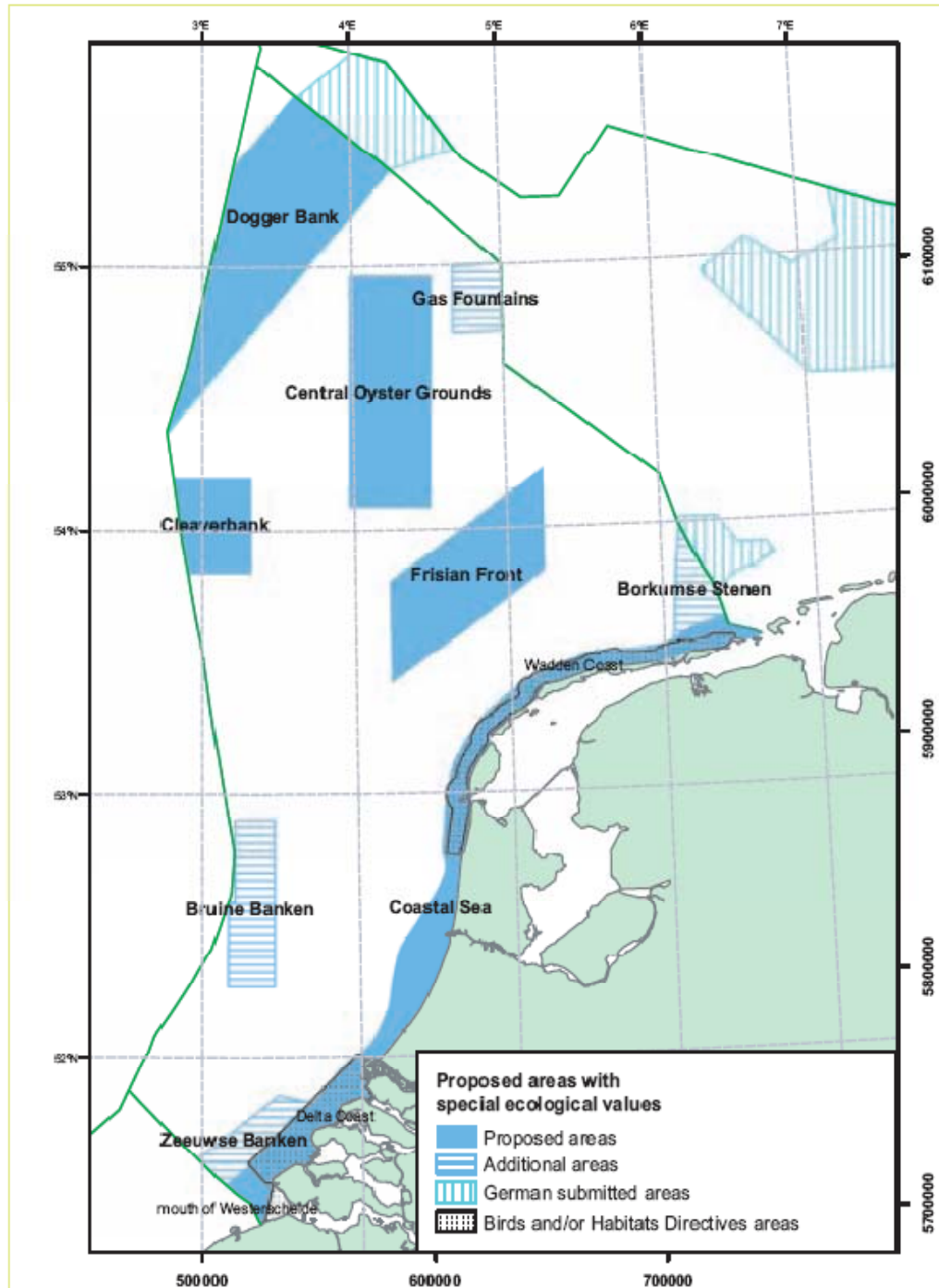




Birds
Annual mean

Data
RIKZ/ESAS

Proposed areas with special ecological values



Lindeboom et al., 2005



Dutch MPAs based upon:

Occurrence of sand banks, reefs, benthic fauna, birds
Not of fishes or sea mammals

Final choice based upon Habitat and Bird Directives
Not OSPAR criteria

Boundaries determined by:

Occurrence of habitat characteristics, and benthic fauna

Straight boundaries

Practical considerations

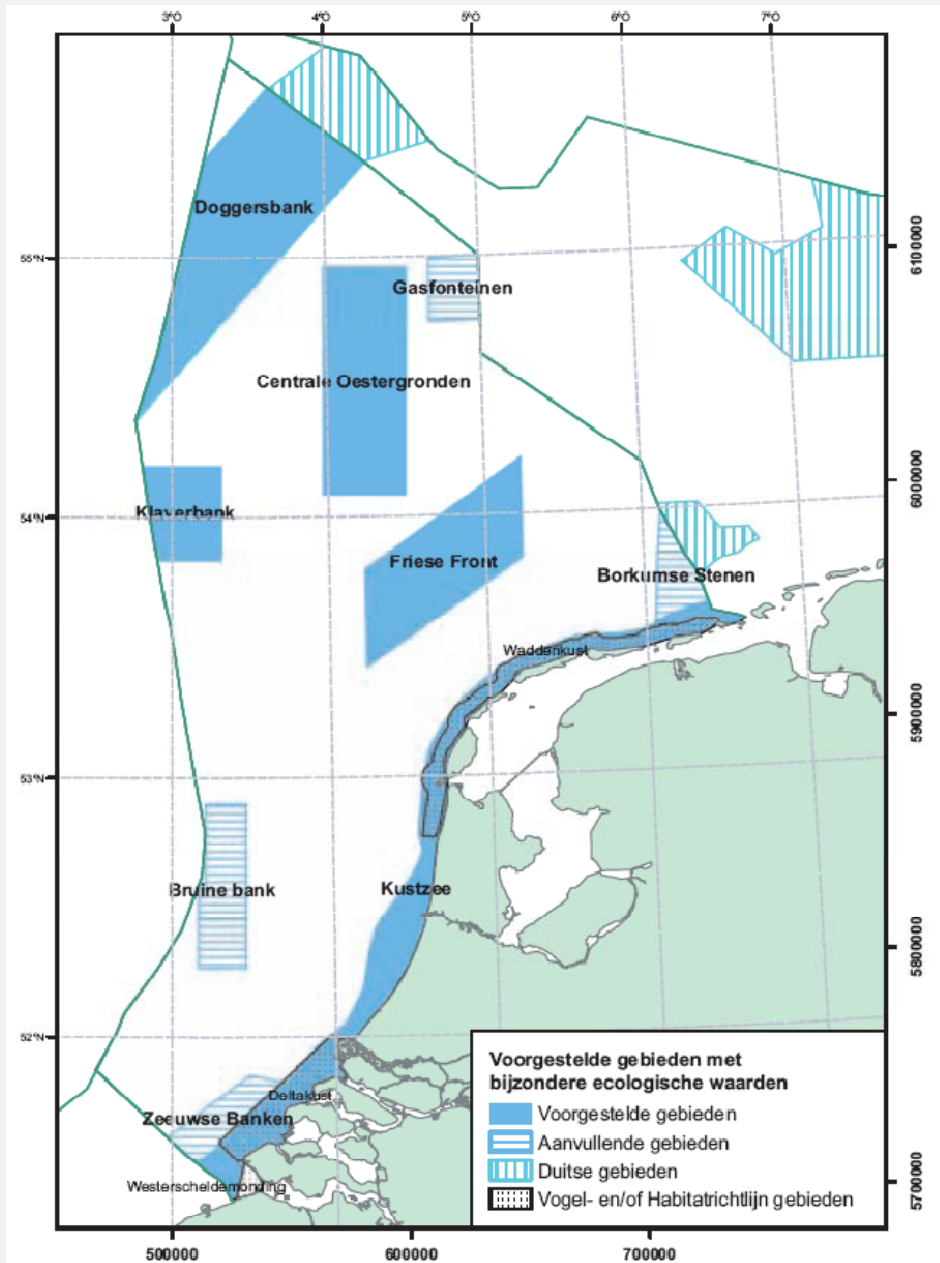
link with Germany and UK (?),

20m line for the coast,

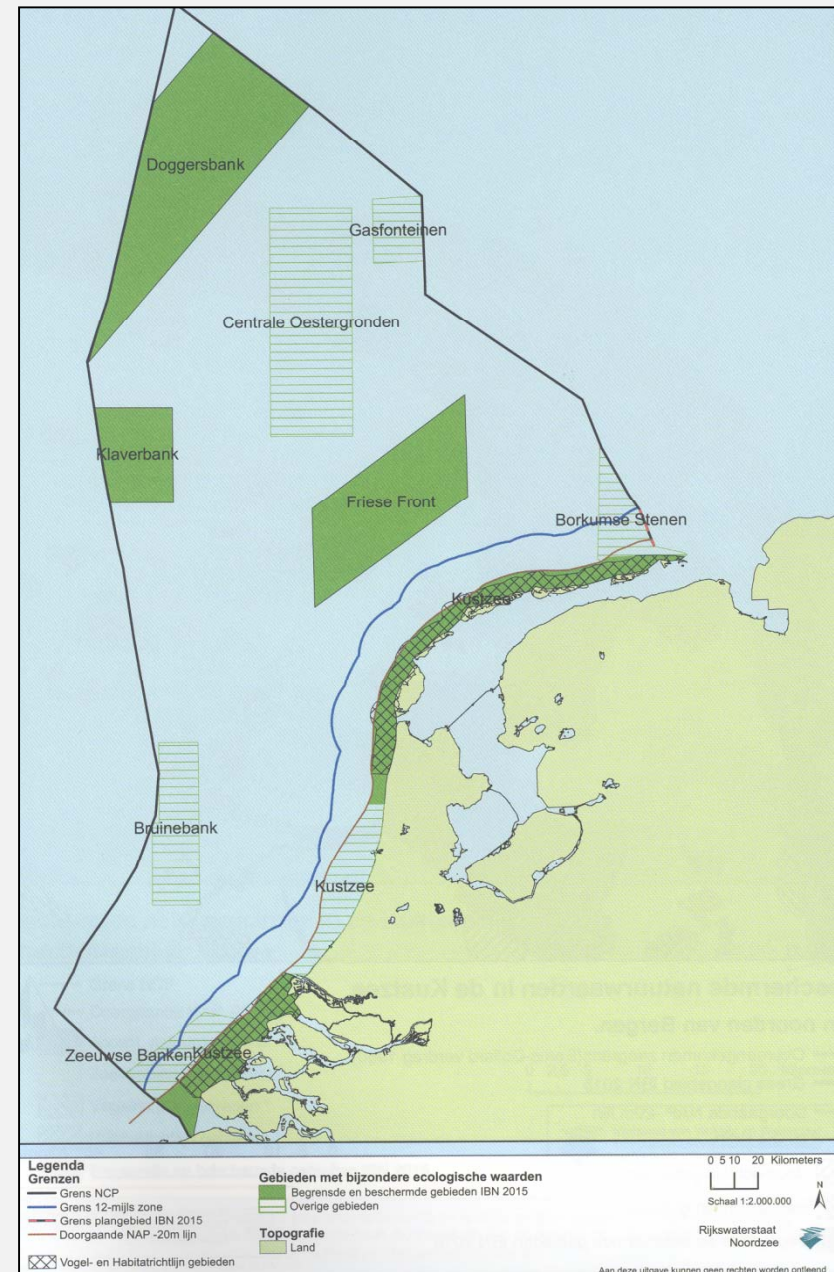
exclusion of central coastal zone

Some areas need more research: Gas seeps, Borkum stones,
Brown bank, Zeeuwse bank





(Lindeboom et al., 2005)

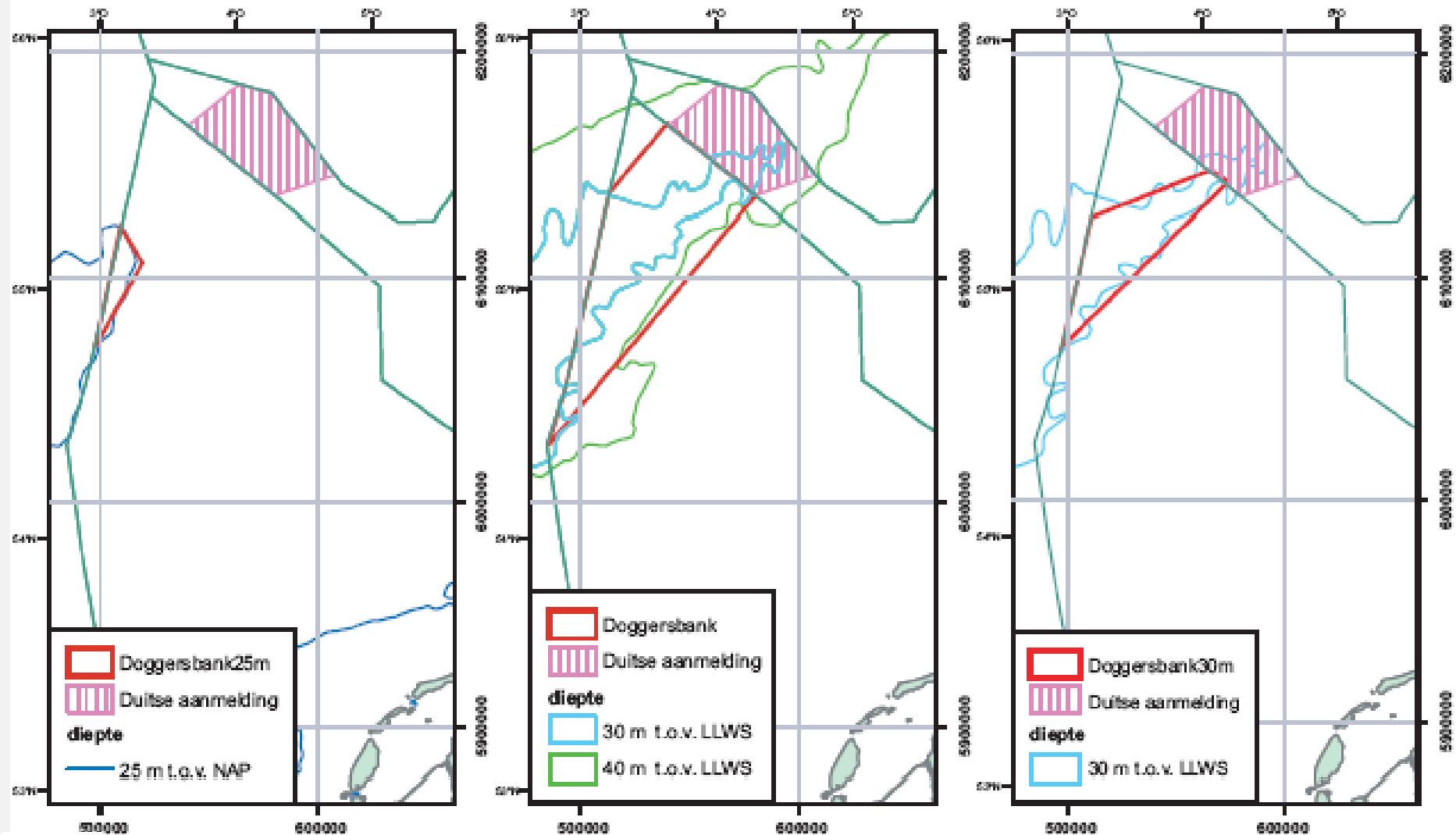


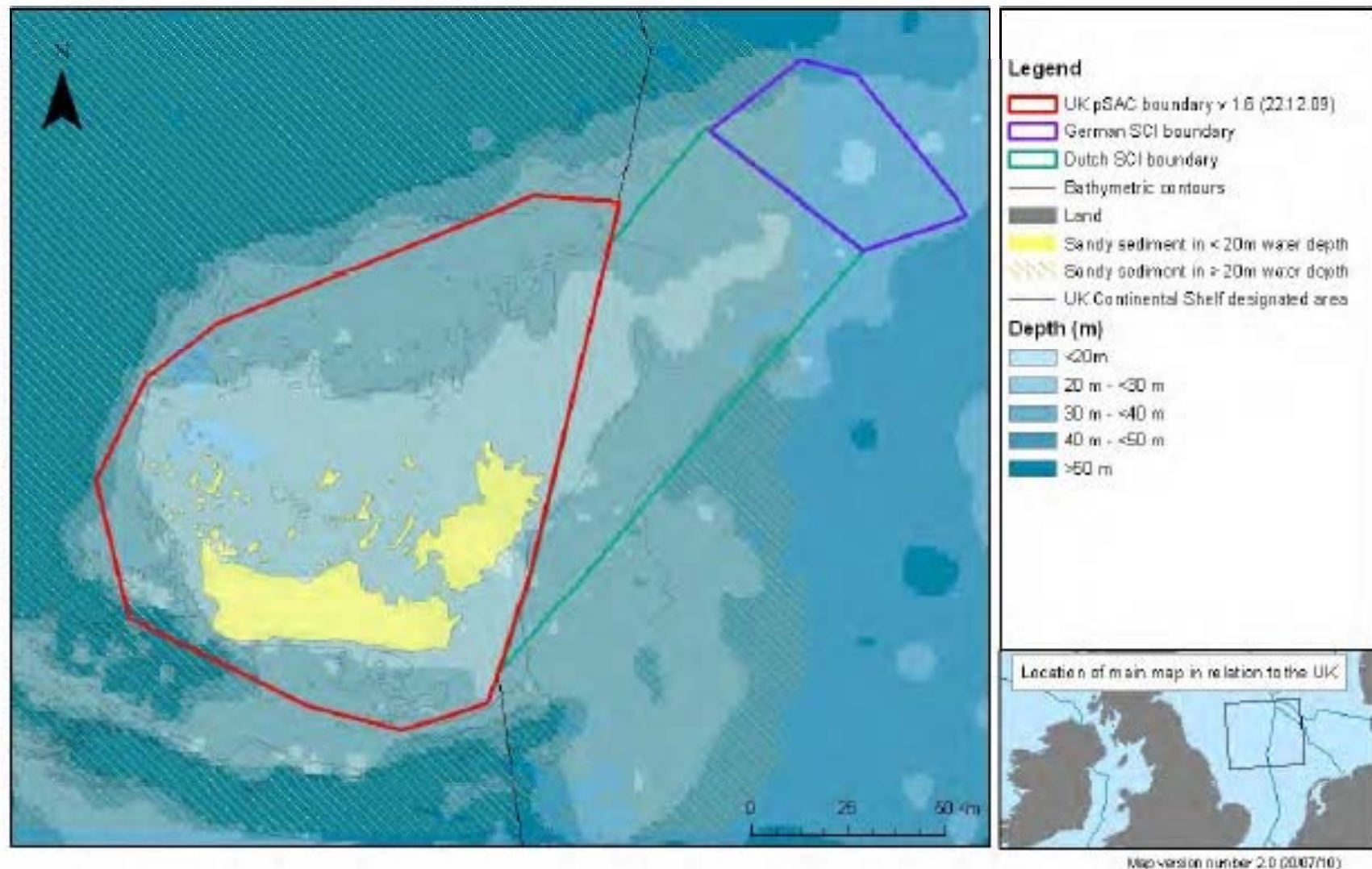
Bron: Integraal Beheerplan Noordzee 2015

Integrated Management plan North Sea 2015



Doggerbank

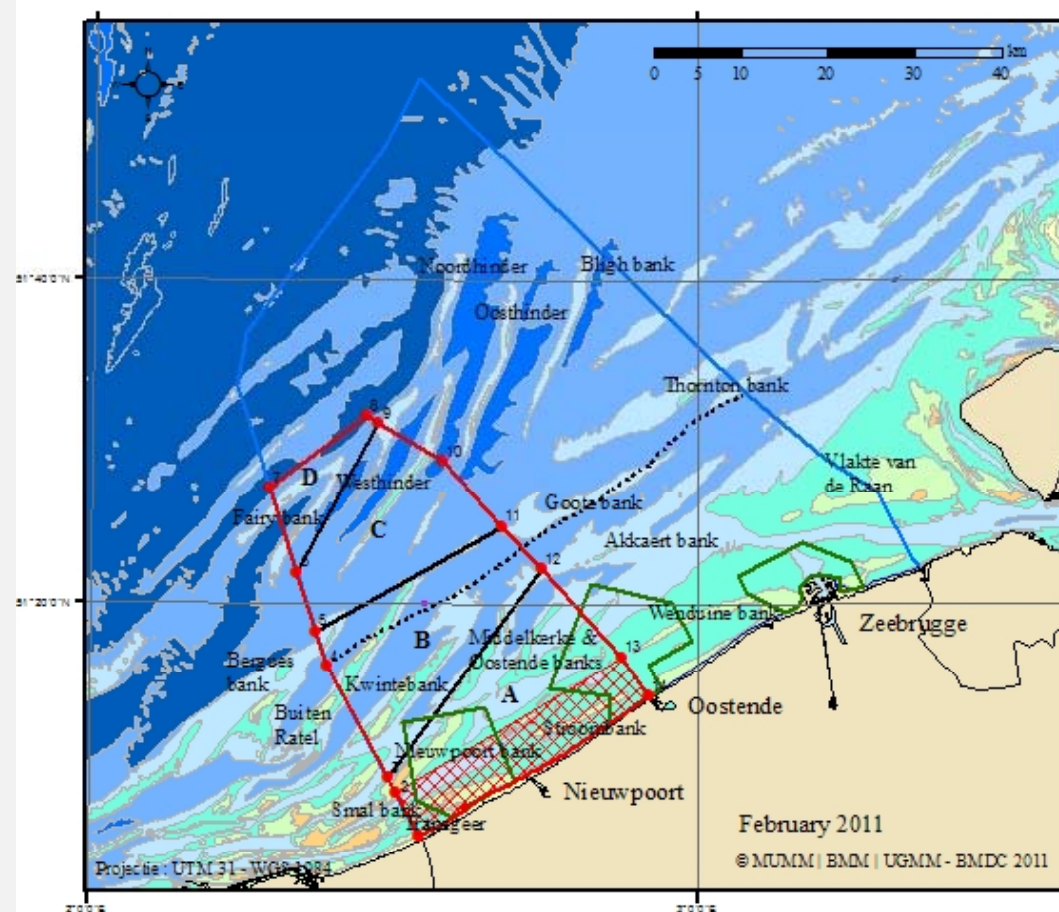




Map projected in WGS84 (Zone 31N). World Vector Shoreline © US Defense Mapping Agency. Seabed habitat derived from BGS 1:250,000 seabed sediment maps © NERC and SeaZone bathymetry © British Crown and SeaZone Solutions Limited. All rights reserved. Products Licence No. P04042006.003. Bathymetry © The GEBCO Digital Atlas published by the British Oceanographic Data Centre on behalf of IOC and IHO, 2003. NOT TO BE USED FOR NAVIGATION. The exact limits of the UK Continental Shelf are set out in orders made under section 1(7) of the Continental Shelf Act 1964 (© Crown Copyright). Map copyright JNCC.

Figure 2. The location of the UK Dogger Bank possible SAC alongside the Dutch and German Dogger Bank SCI boundaries.

JNCC, 2010



— Gebied van Communautair Belang (Habitatrichtlijn 92/43/EEG) "Uitbreiding Trapegeer-Stroombank"
Zones

A. Complex van zandbanken met dominantie van het *Abra alba* biotoop (1110) en *Lanice conchilega* aggregaties (1170)

B. Zandbanken met dominantie van de *Nephtys cirrosa* en *Ophelia limacina* biotopen (1110)

C. Complex van zandbanken met dominantie van de *Nephtys cirrosa* en *Ophelia limacina* biotopen (1110) en van grindbedden (1170)

D. Zandbanken met dominantie van de *Ophelia limacina* en *Nephtys cirrosa* biotopen (1110)

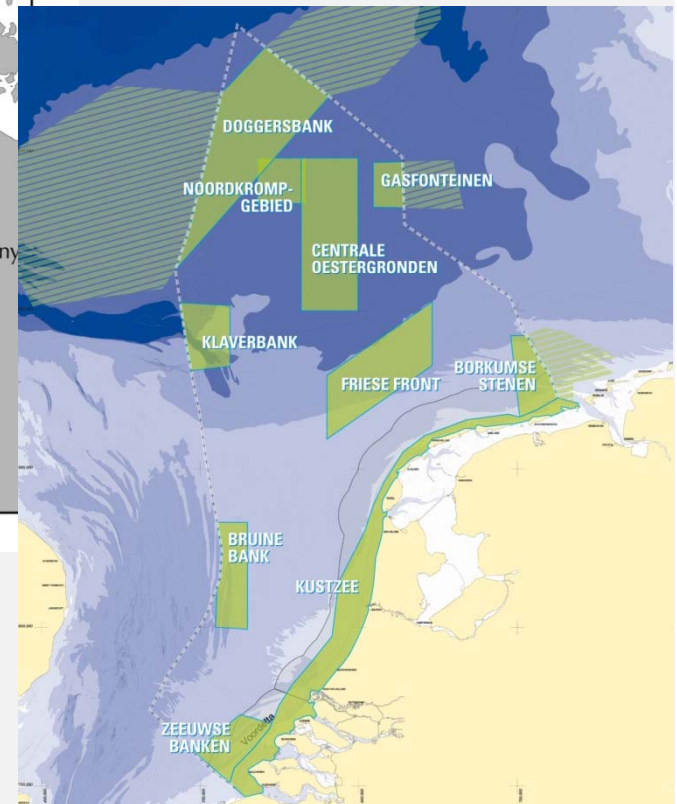
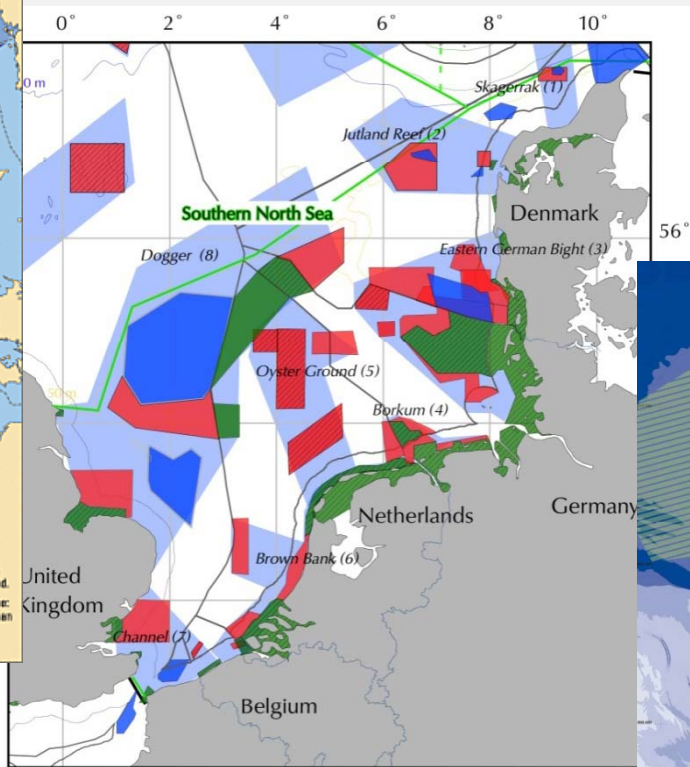
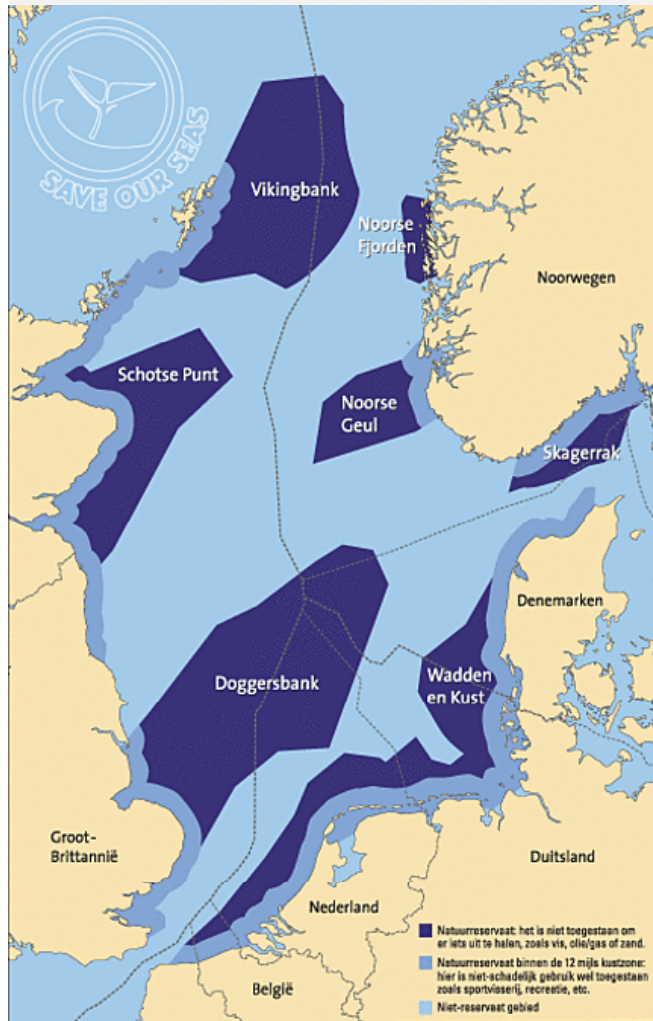
▨ Speciale Zone voor Natuurbehoud - Trapegeer Stroombank

▭ Speciale Beschermingszones (Vogelrichtlijn 79/409/EEG)

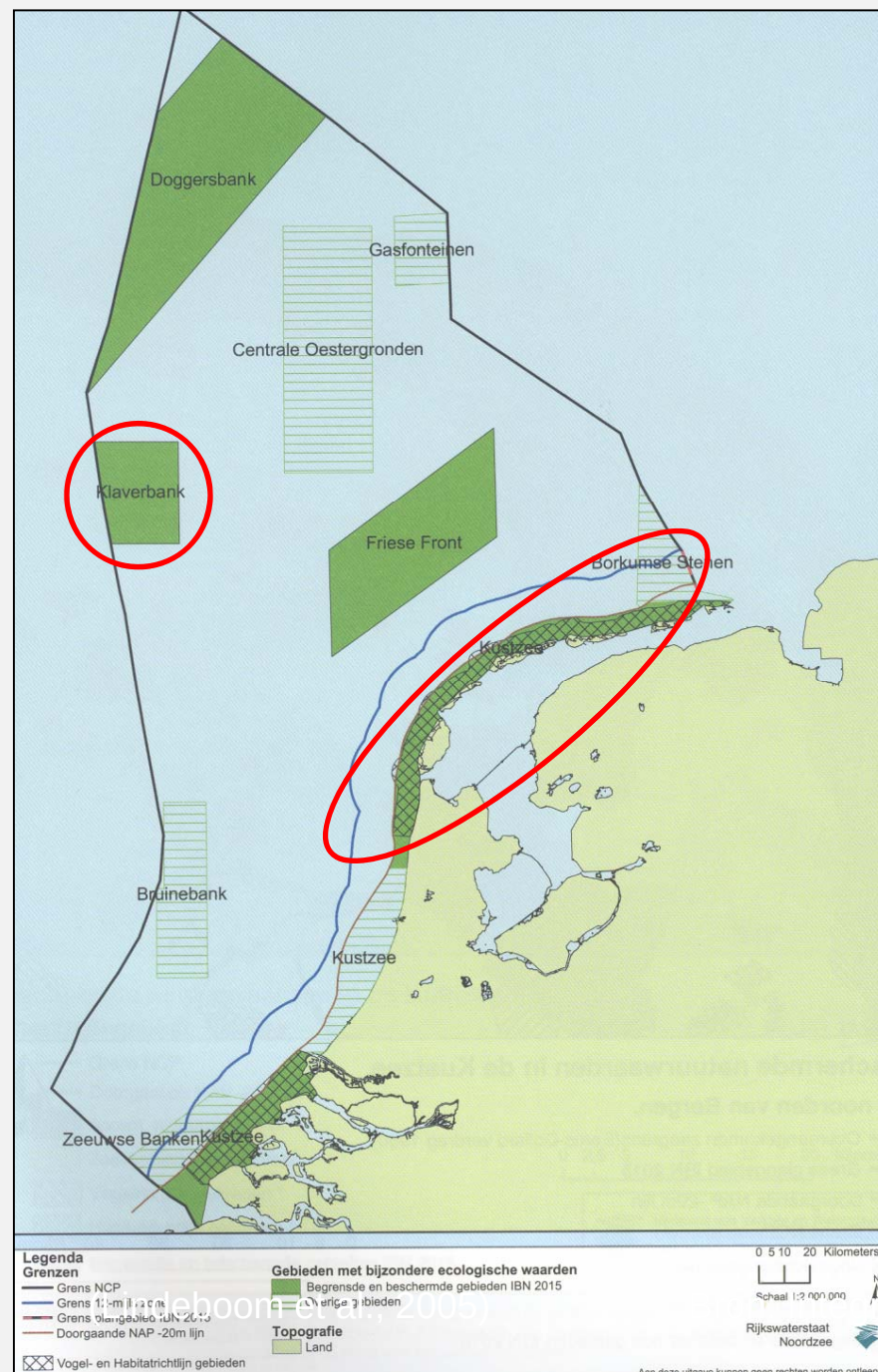
— Belgische Zeegebieden

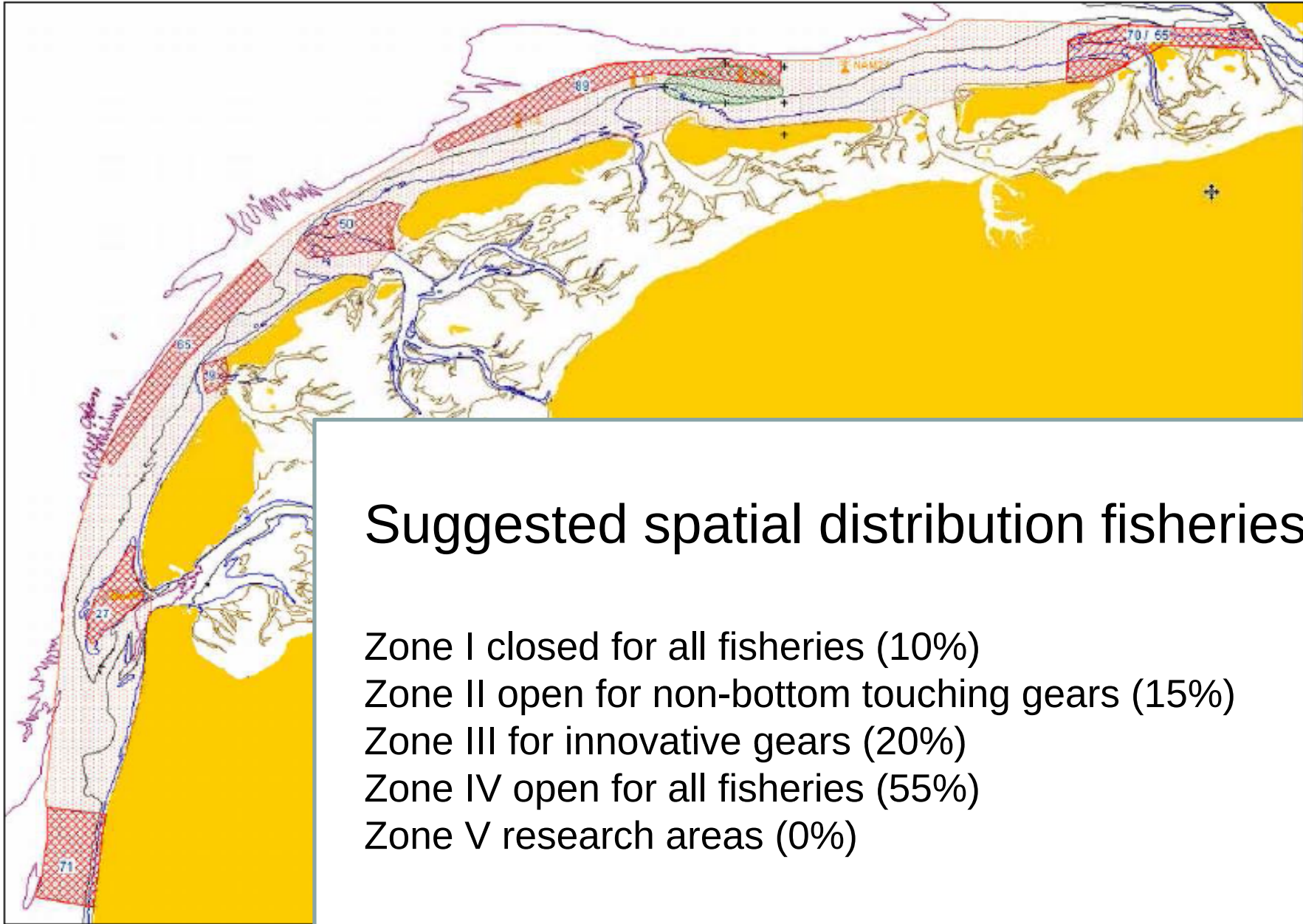
..... 12 nmiles limit

Proposals NGO's



	Doggersbank	Klaverbank	Centrale Oestergronden	Friese Front	Kustzee	Borkumse Stenen	Zeeuwse Banken
Waarden							
Bodem fauna			Noordkromp	Noordkromp			?
Vogels		Mogelijk		Grote Mantelmeeuw	Diverse soorten		Kleine Mantelmeeuw
Vissen	Stekelrog	?	?	?		?	?
Zeezoog dieren							
Impacts							
Huidige Situatie	Visserij	Visserij	Visserij	Visserij	Visserij	Visserij (Scholbox)	Visserij
				Scheepvaart	Scheepvaart	Scheepvaart	Scheepvaart
				Olie- en gas?	Wind	zandwinning	Zandwinning
				Defensie?	Schelpen		
					Baggerstort		
					Ow.suppl.		
					sportvisserij		
Impacts							
Nieuwe	Olie/gas	Olie/gas	Olie/gas	Olie/gas	Olie/gas	?	?
Activiteit	K&L		K&L		K&L	?	?
Ten		Zandw??			Schelpdier-kweek		
					Landaanwin?		
					?		
Impacts							
Nieuwe					Wind ??		Diepe zandw ??
Act.met					Diepe zandw		



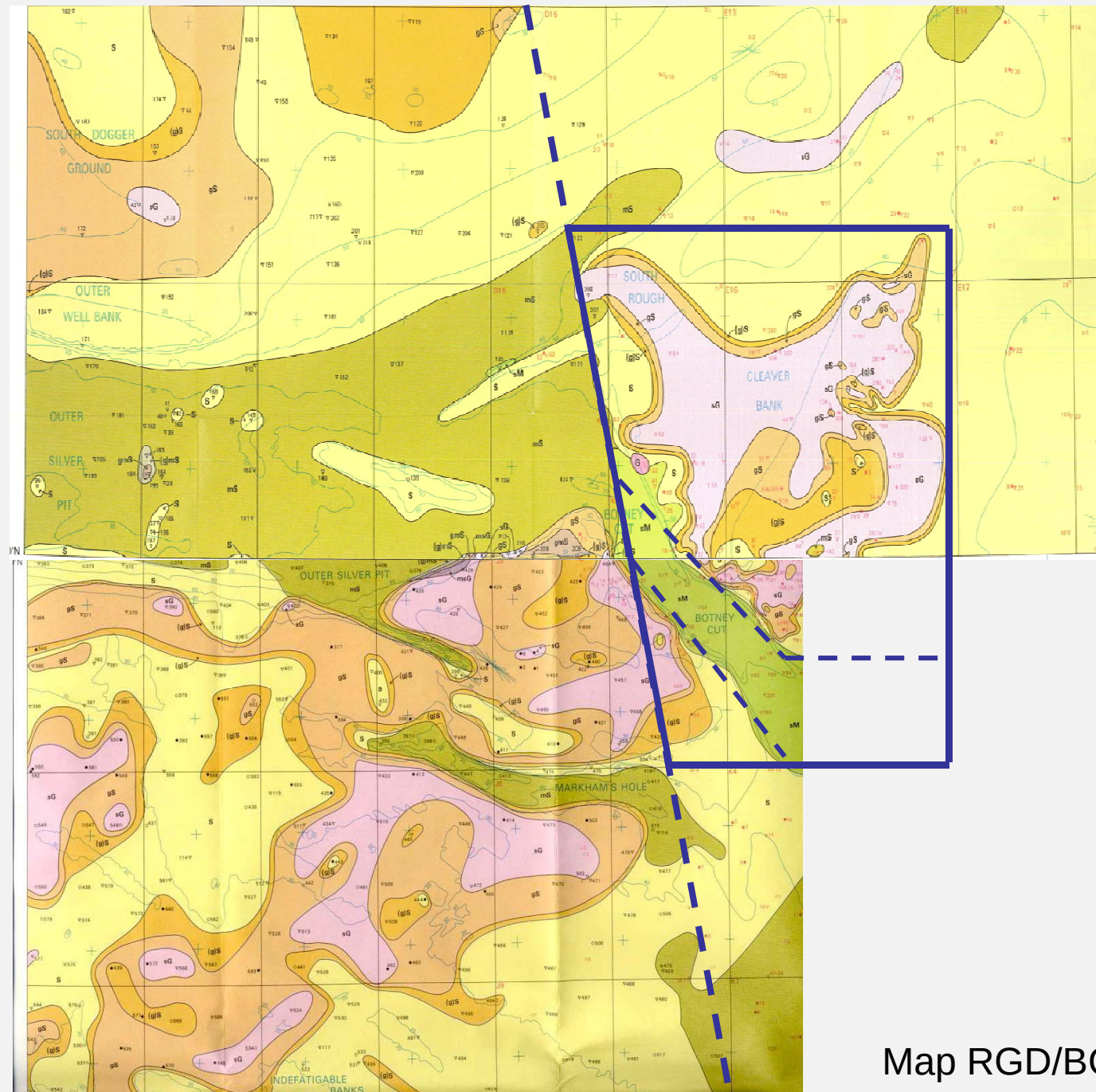


Suggested spatial distribution fisheries

- Zone I closed for all fisheries (10%)
- Zone II open for non-bottom touching gears (15%)
- Zone III for innovative gears (20%)
- Zone IV open for all fisheries (55%)
- Zone V research areas (0%)

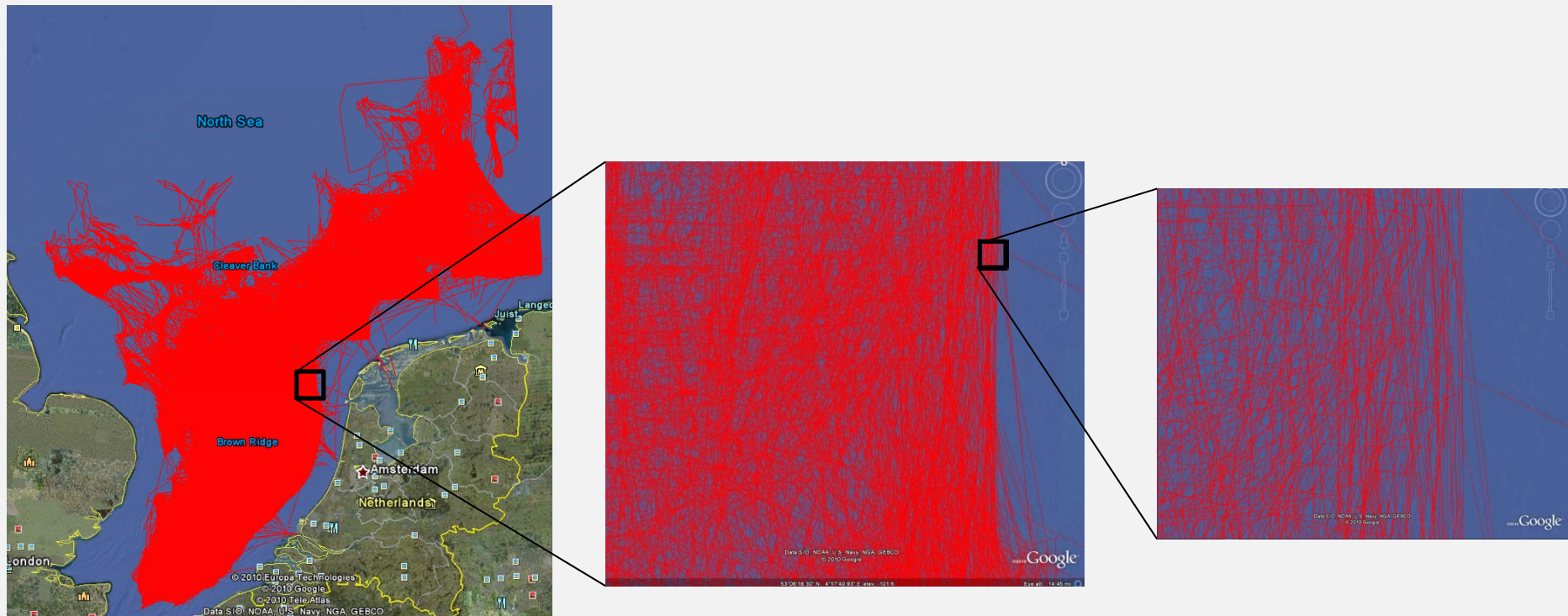


Figure 5.2: Two options for an area to be protected at the Cleaverbank. On the left the gravel area including the Botney Cut, where a high biodiversity of benthos is found. On the right only both gravel areas are protected.



Map RGD/BGS

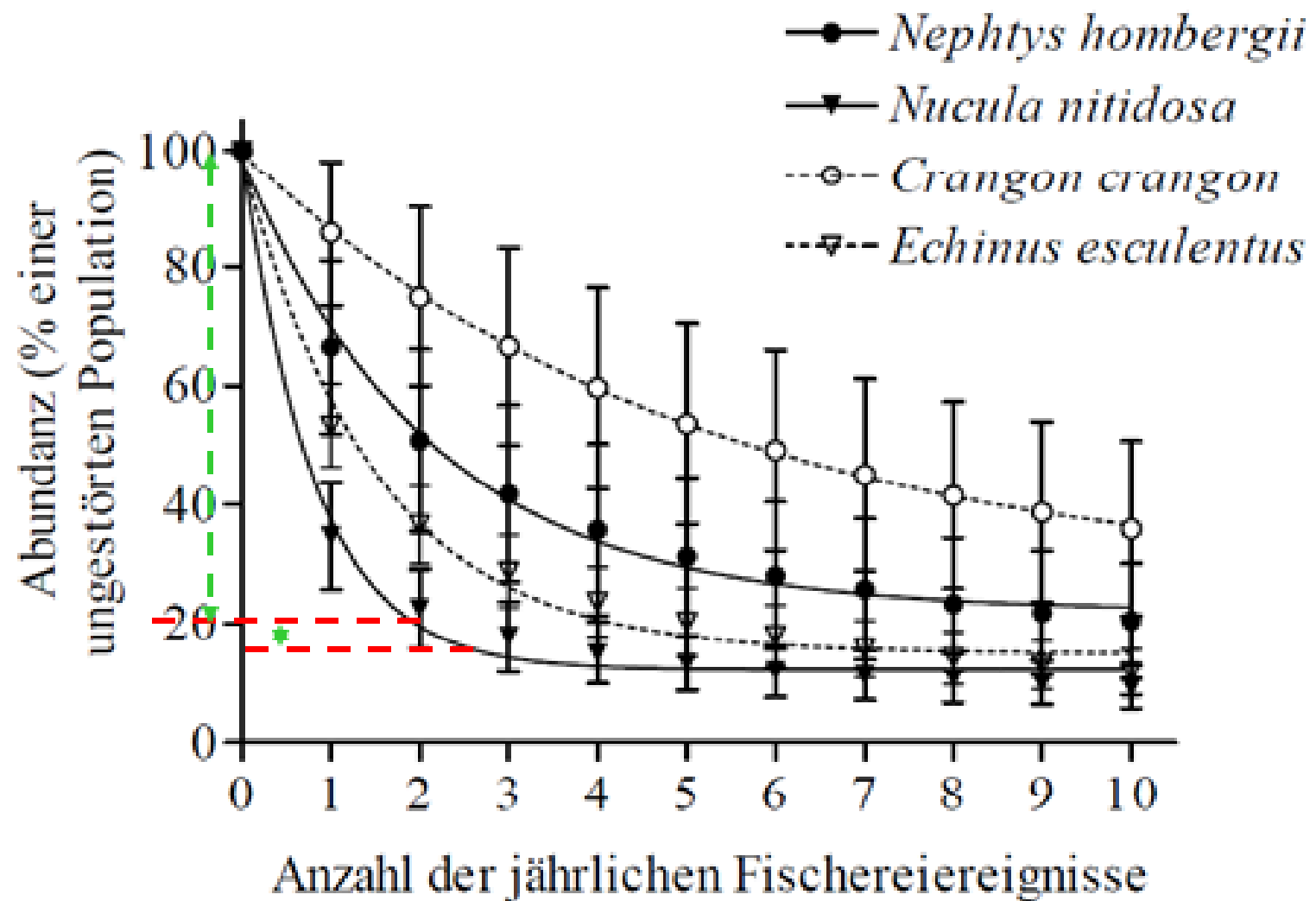
Scaling



Dutch beam trawl fleet (>300HP) in 2009 (VMS 2 hour fixes)



Repeated fisheries and translocation

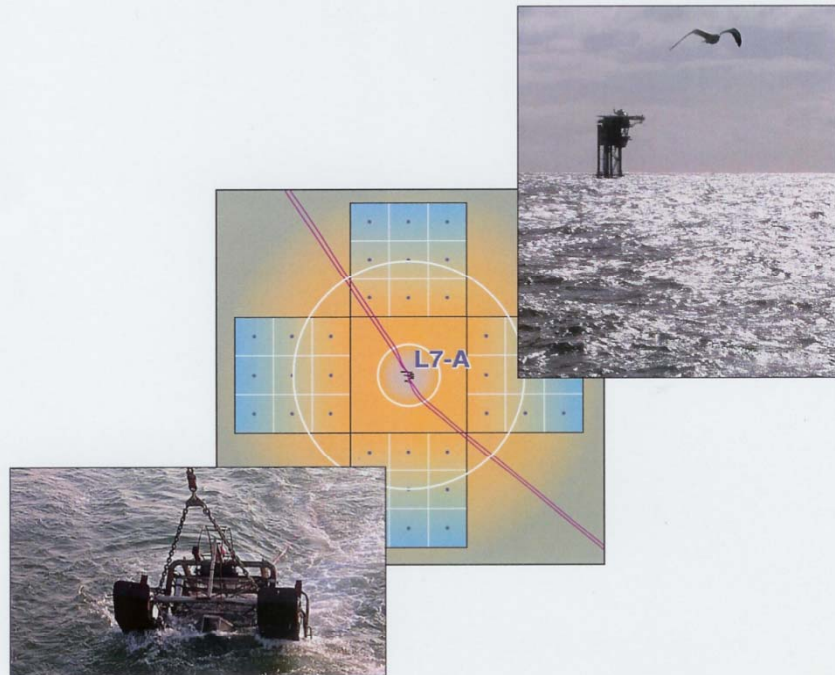


EMPAS

Schroeder et al., 2008

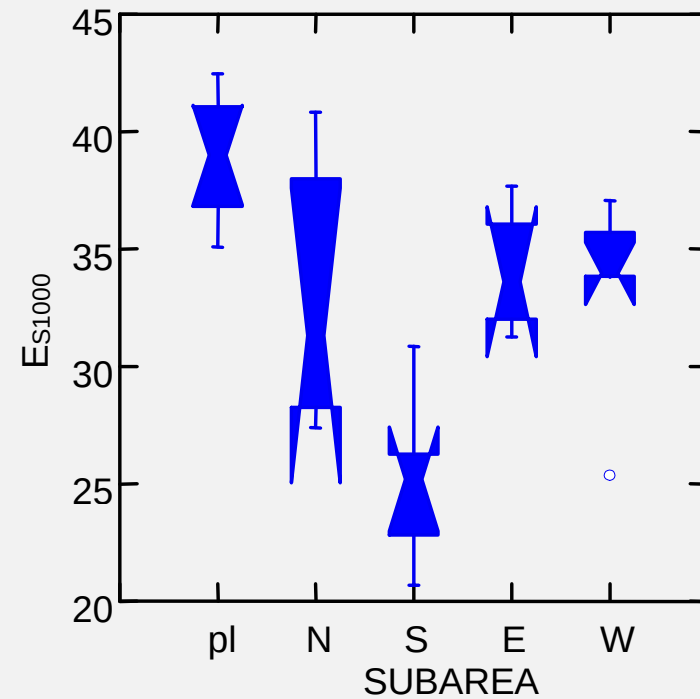
LONG TERM CLOSURE OF AN AREA TO FISHERIES AT THE FRISIAN FRONT (SE NORTH SEA): EFFECTS ON THE BOTTOM FAUNA

Magda J.N. Bergman, Gerard C.A. Duineveld, Marc S. S. Lavaleye

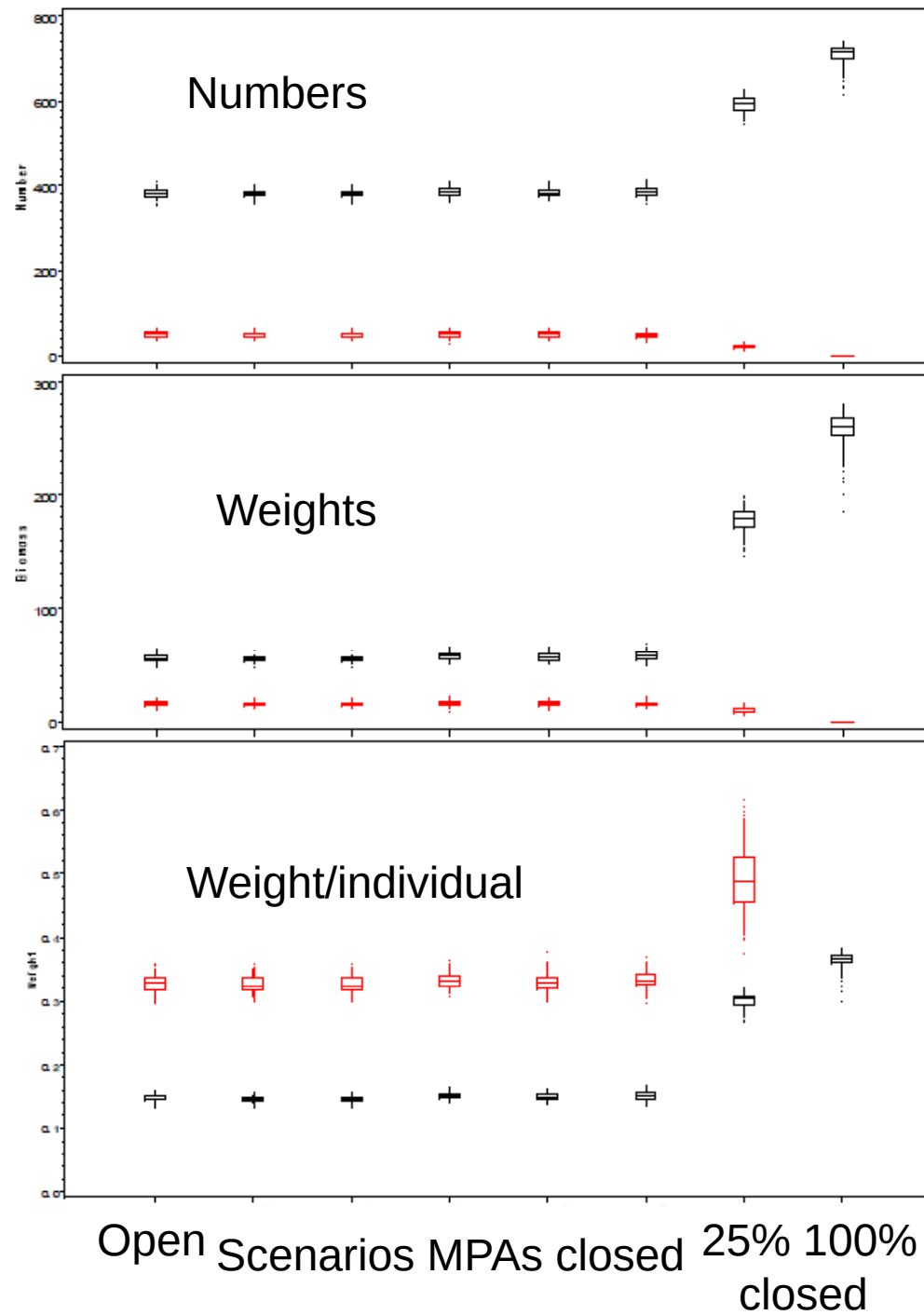


Koninklijk Nederlands Instituut voor Onderzoek der Zee

Will it work ?



Bergman et al., 2005



Effects upon landings

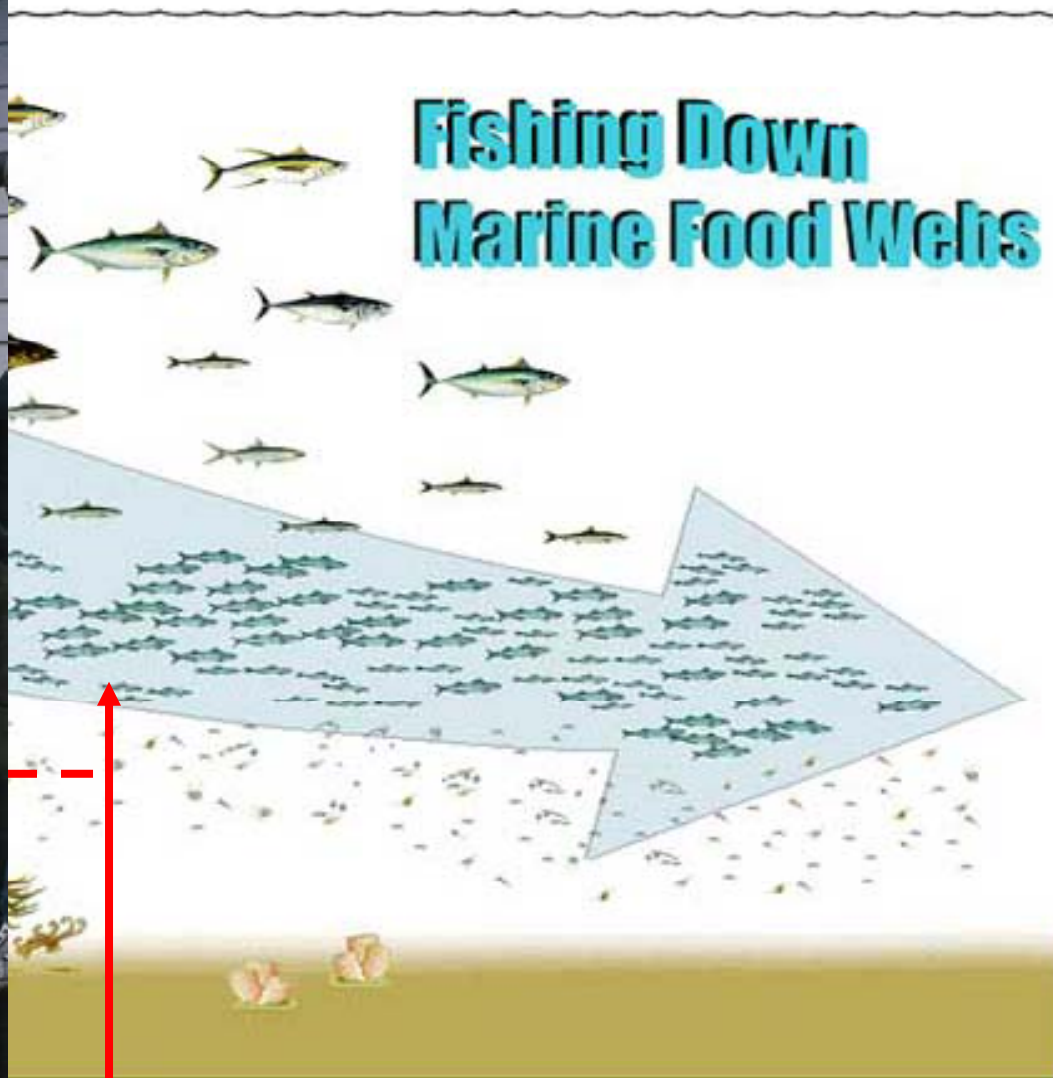
Stock black

Catch red

Dekker et al., 2009



5
4
3
2



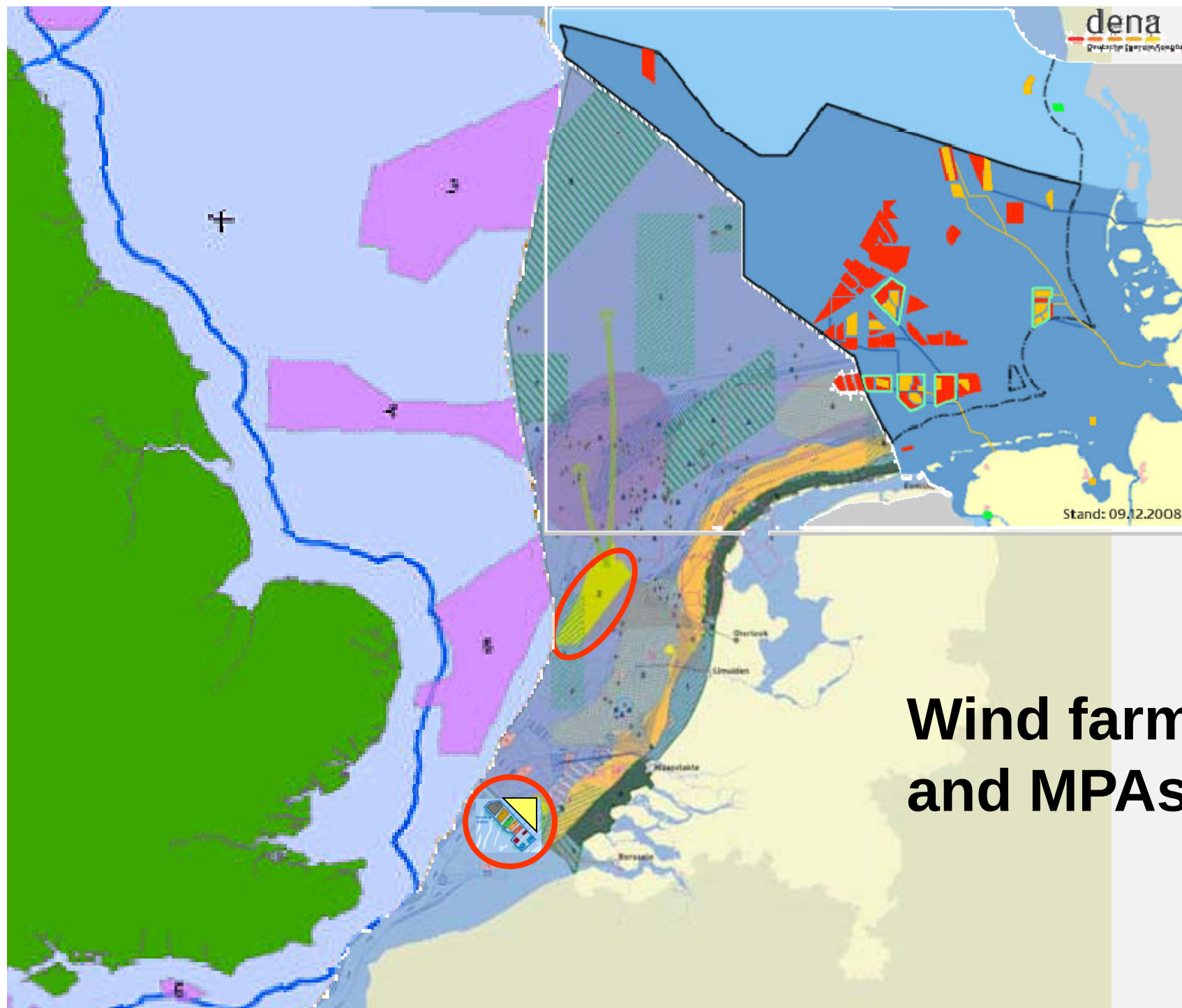
Pauly, 2007

Visibility



Invisibility

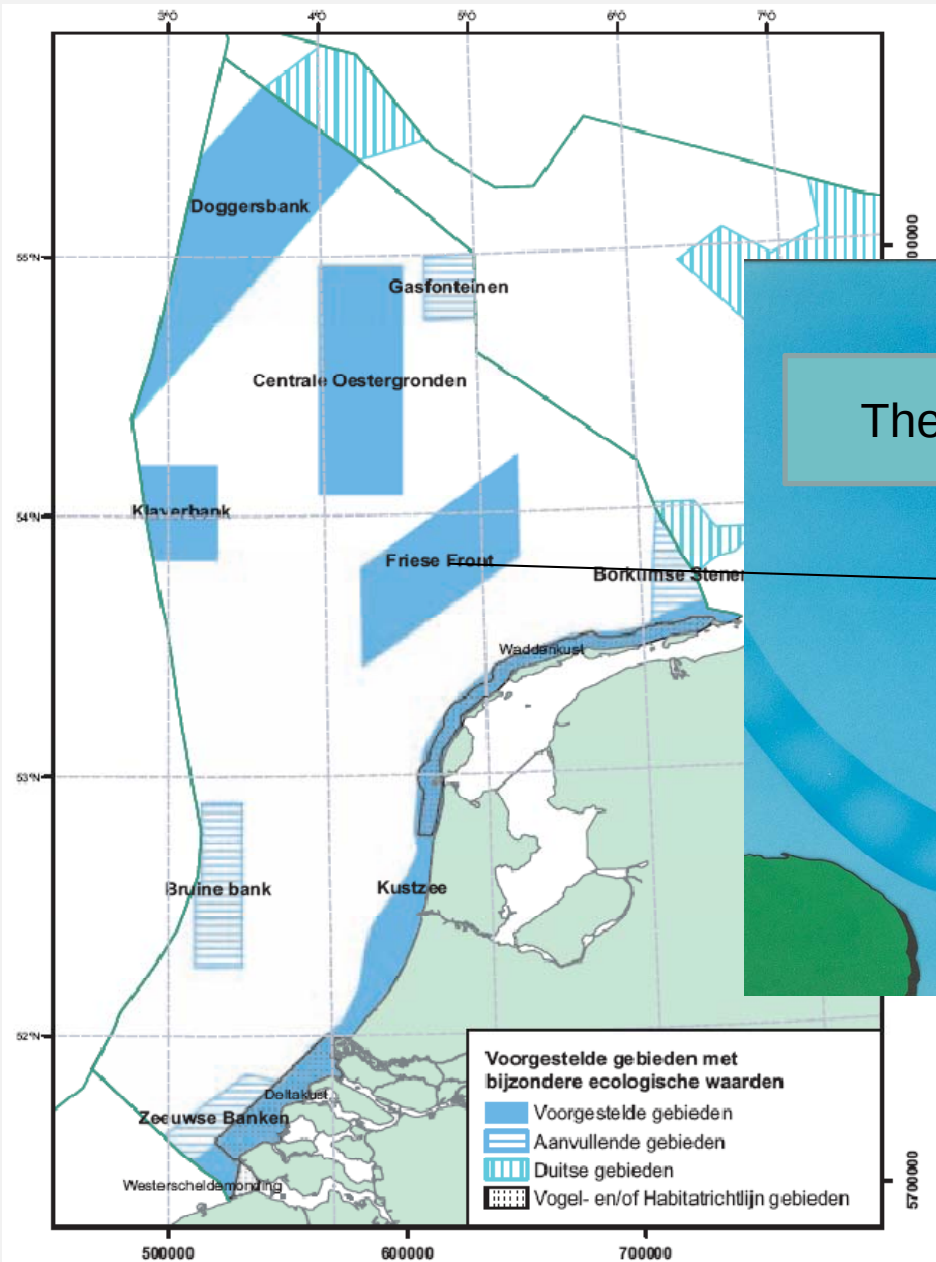




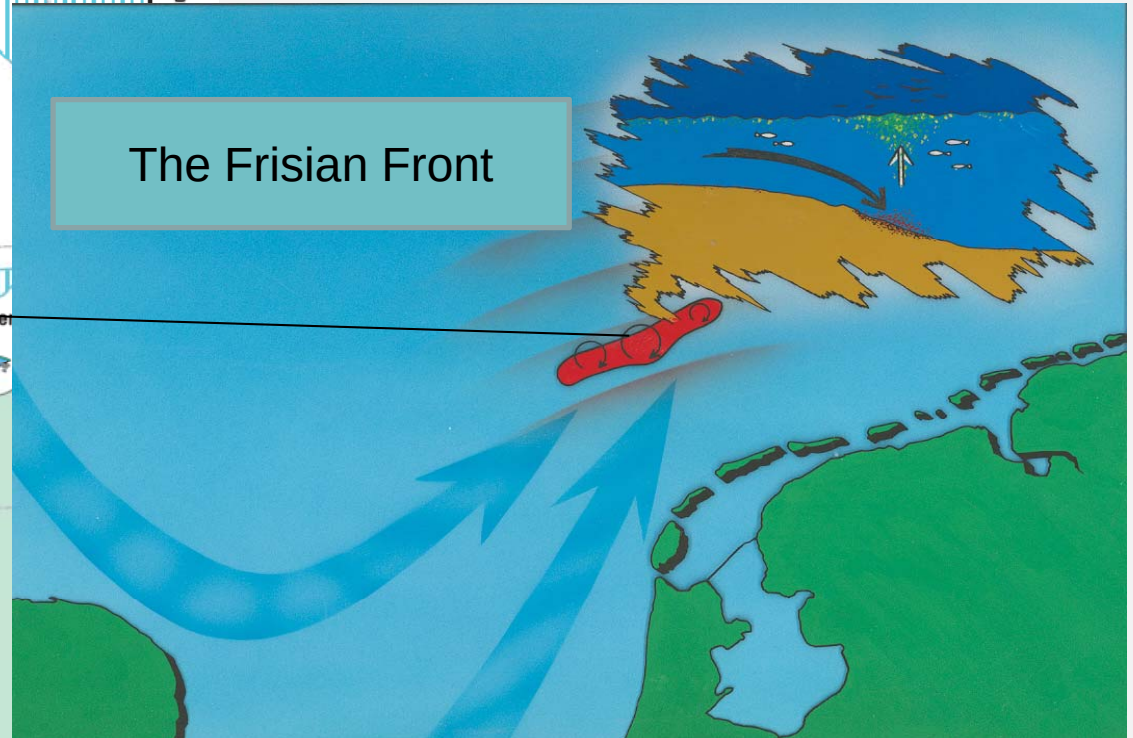
**Wind farms
and MPAs?**



Are we protecting
real ecosystem values?



The Frisian Front



The background of the slide is a photograph of ocean waves. The waves are dark blue and green, with white foam from the breaking crests. The perspective is from a low angle, looking across the water towards the horizon.

Research needed to answer questions concerning:

scaling ecosystem targets biodiversity

effect fisheries fragmentation no take zones

coherent networks turning wind turbines

conservation status ecosystem approach

functional biodiversity monitoring economics

larger and older fish HBD implementation

social acceptance

.....

.....

Conclusion

Offshore MPAs in the North Sea:

>100 years thinking about it

>20 years working on it

> 10 years drafting it

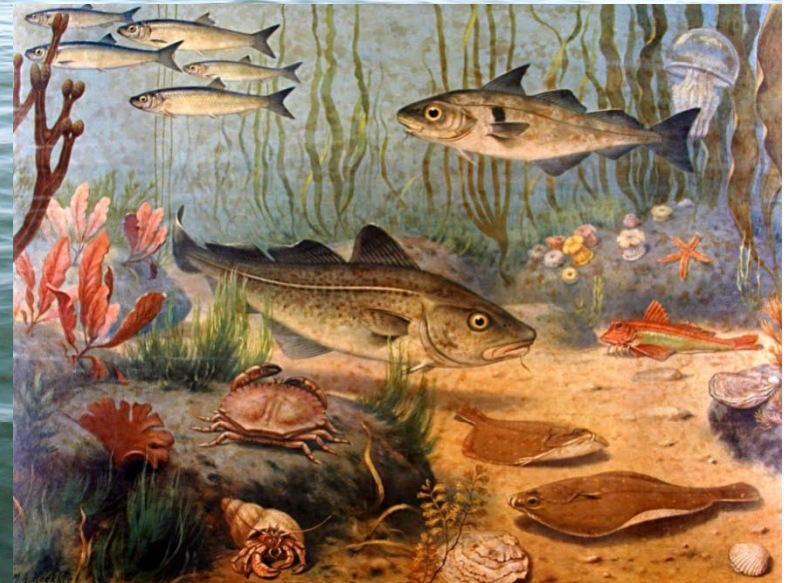
>3 years compromising on it

0 years protecting it



And the future ?

We will hear more about it today



Thank you

