

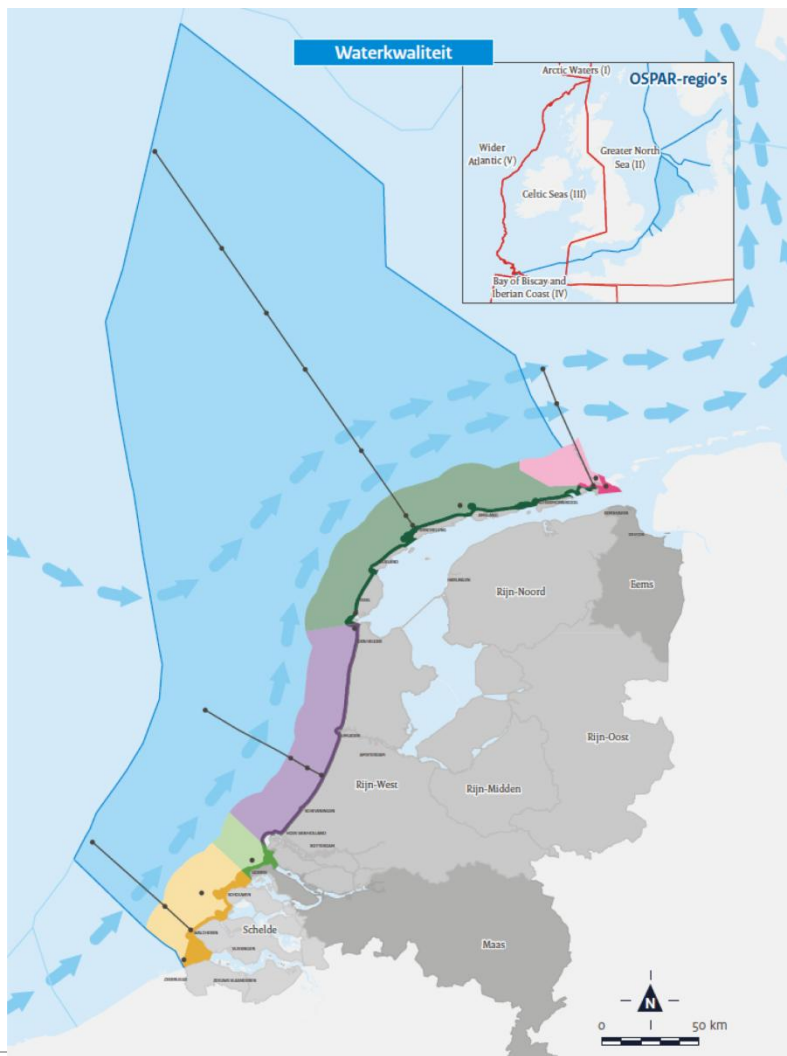


Aan de toekomstige minister van de Noordzee

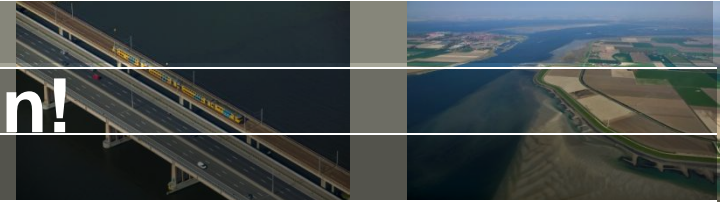
Peter M.J. Herman

10 oktober 2016

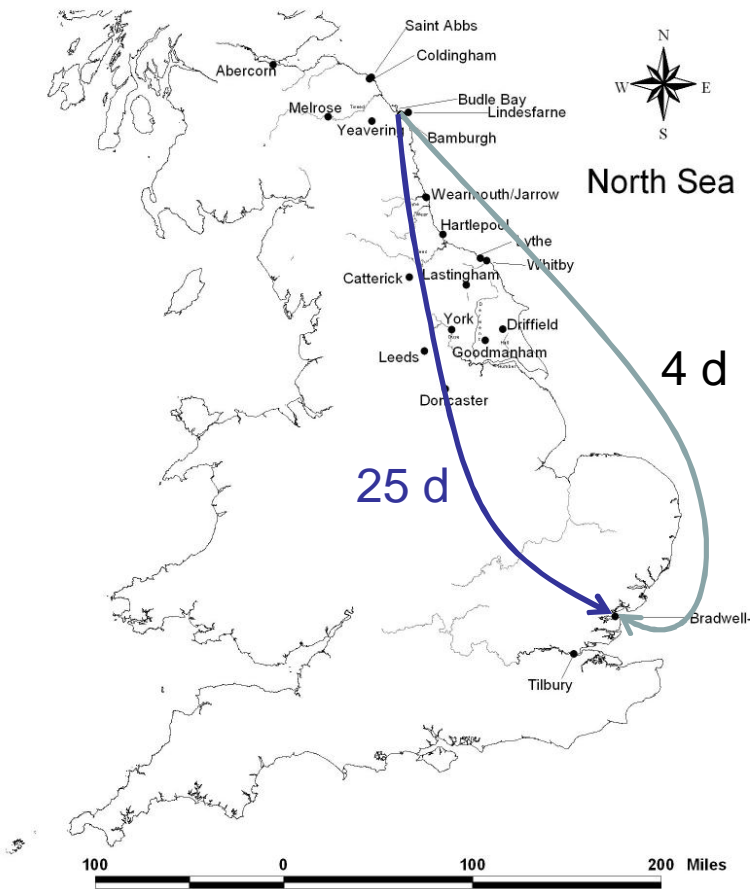
Gefelicteerd!



Wat heeft de zee veel te bieden!



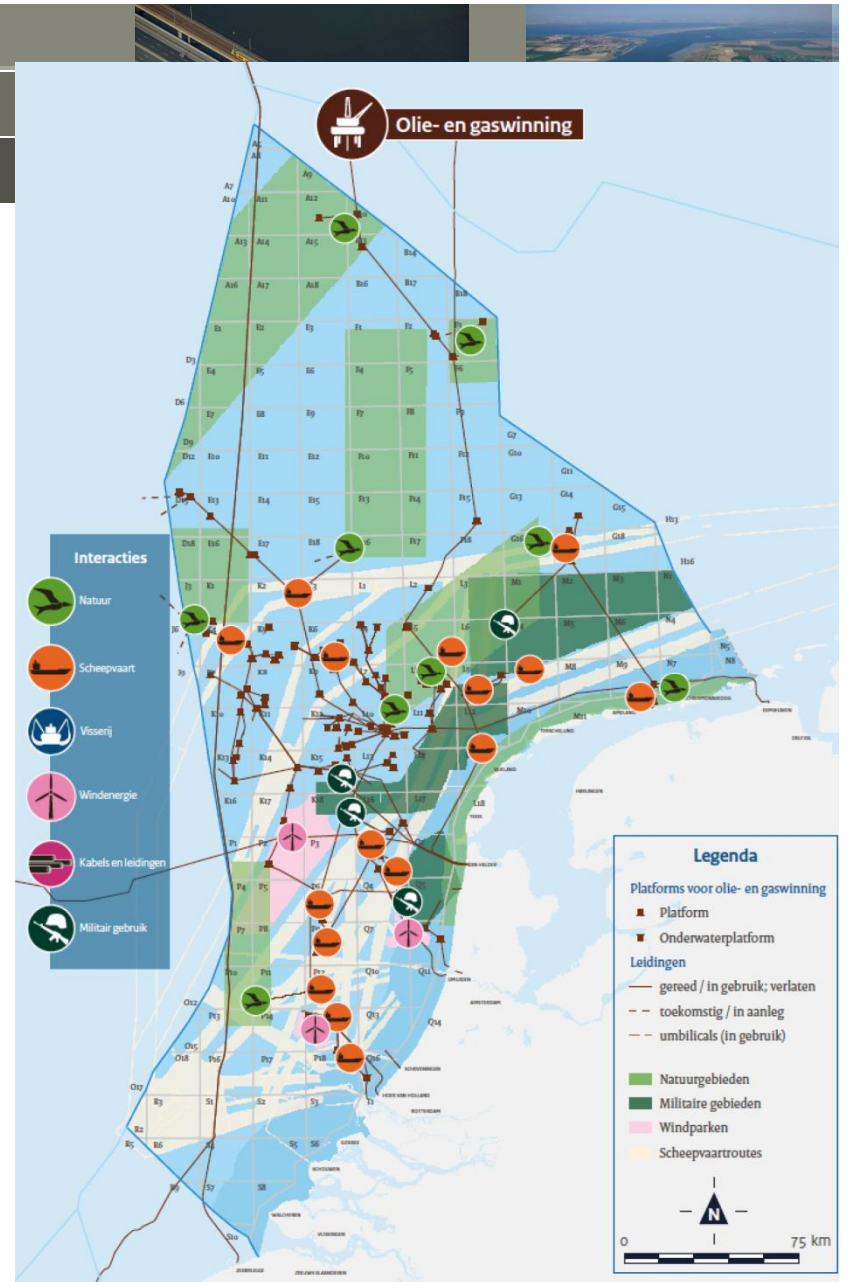
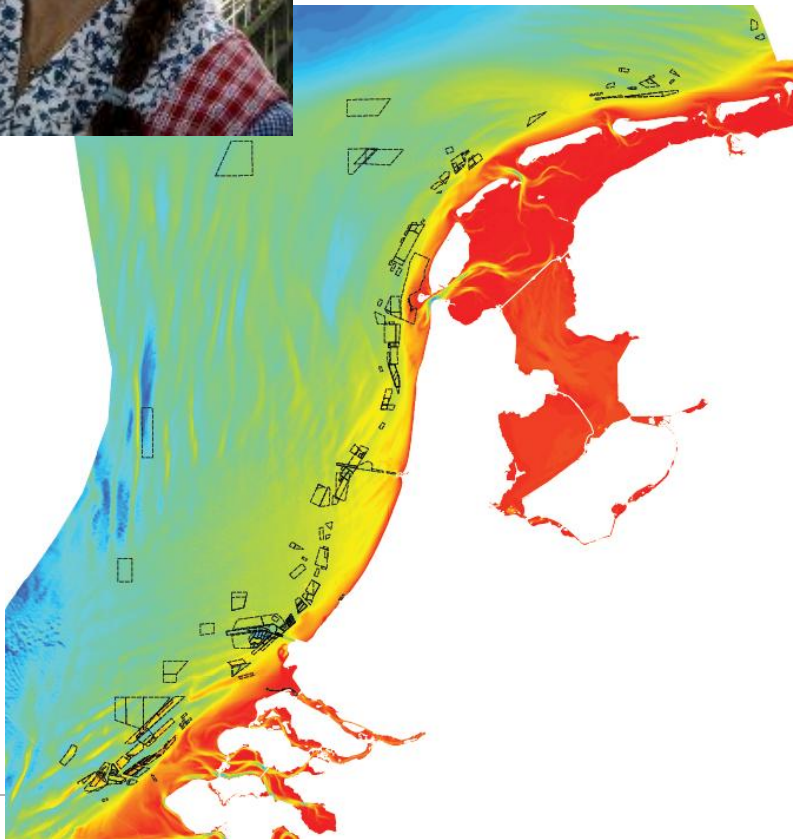
Reistijd 7^e eeuw, Saxon state



Dobson 2005. The Heroic Age

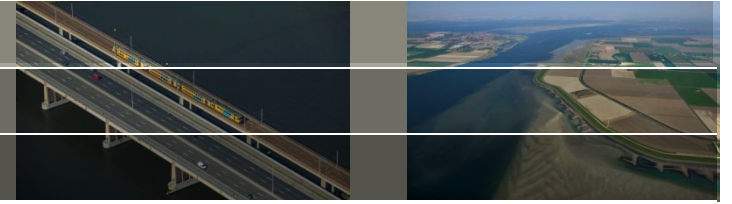
Hanze netwerk





Deltares

Ecosysteemdiensten



Transport, handel

Voedselproductie

Minerale bronnen

Energiebronnen

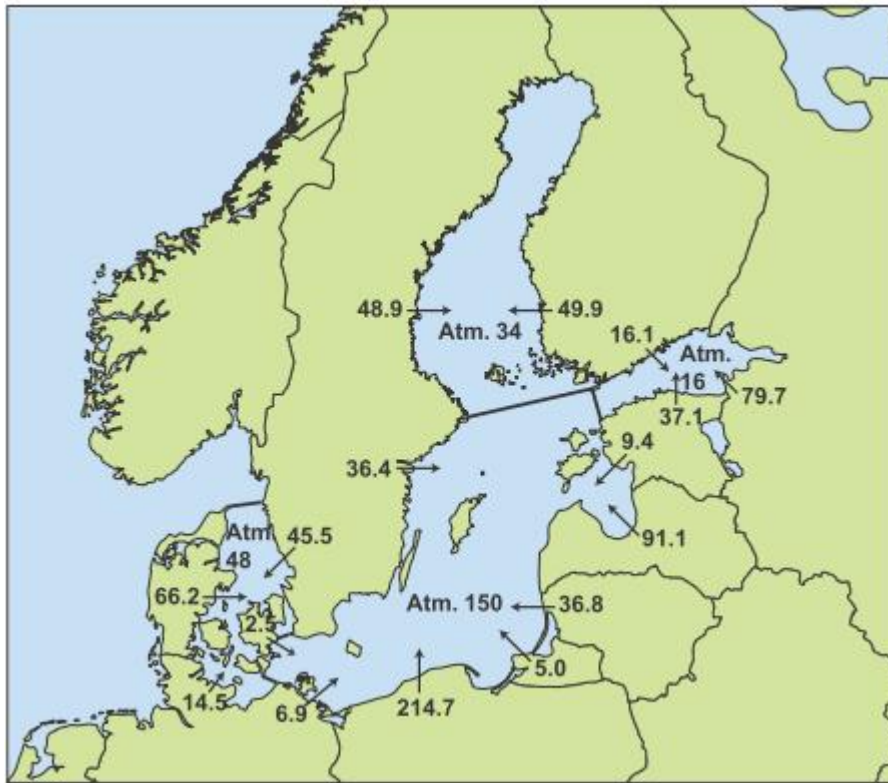
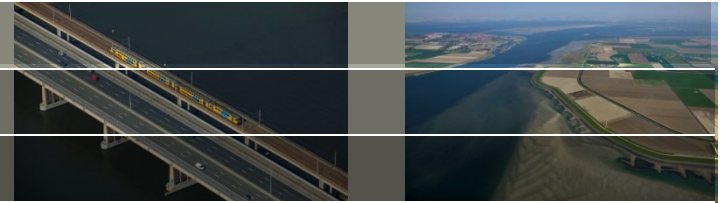
Buffering: nutriënten, CO₂, temperatuur

Kustbescherming

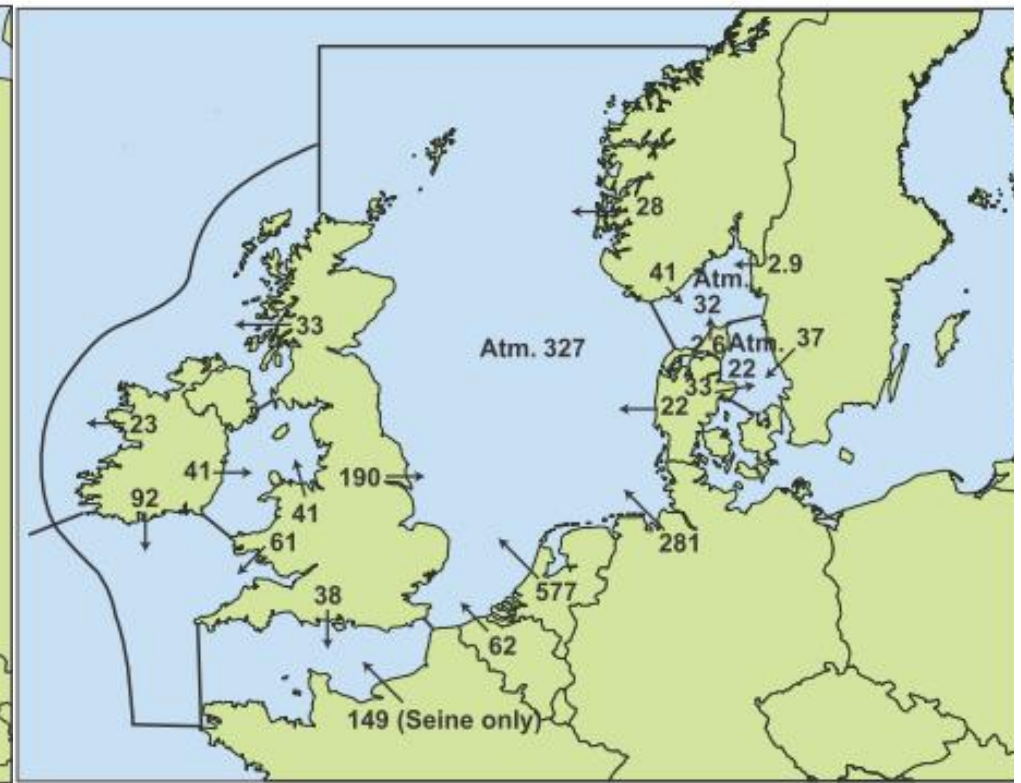
Culturele en belevingsdiensten

...

Groot maar niet onuitputtelijk



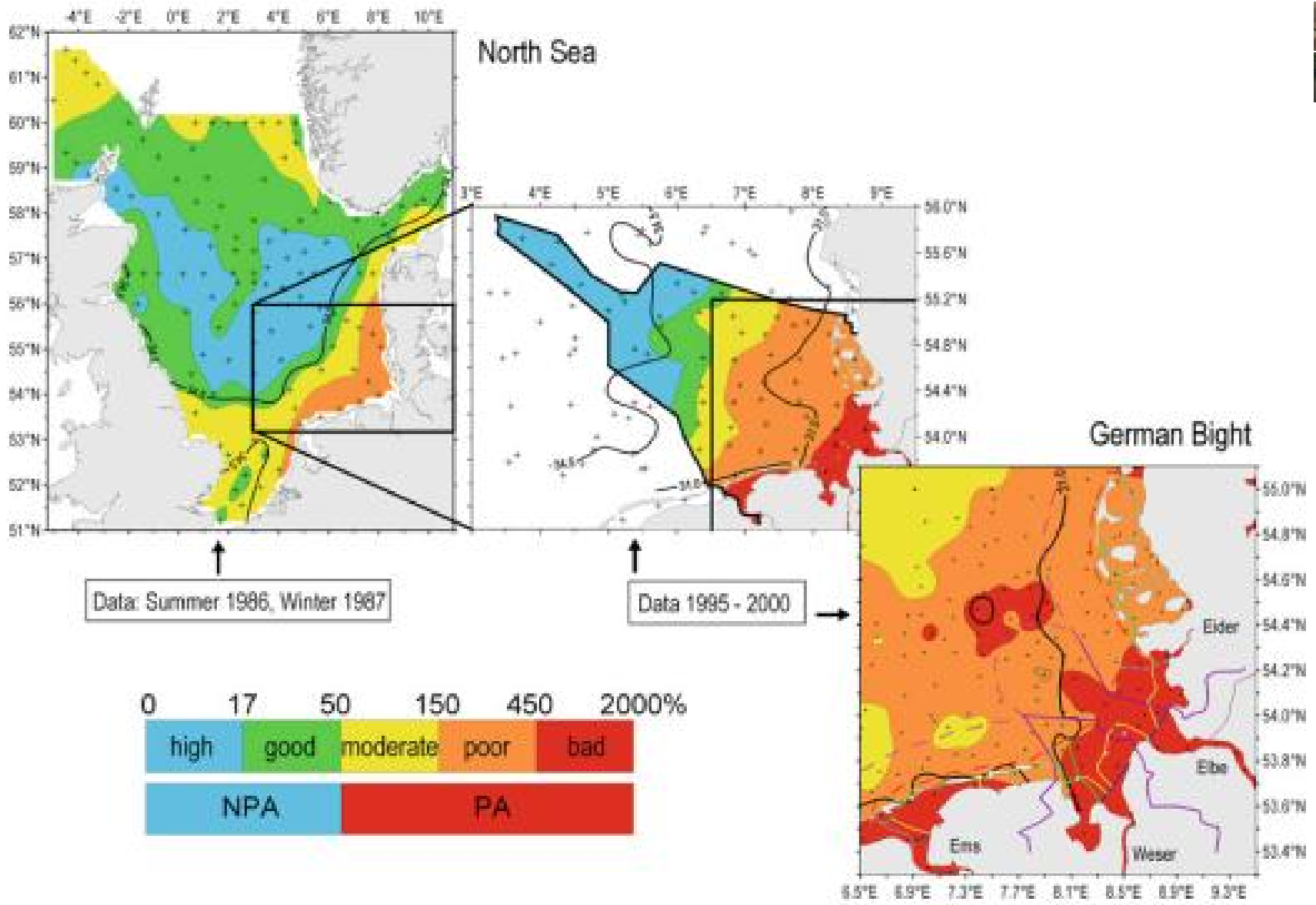
Totaal Oostzee (ex atm.): 761



Nederland: 577

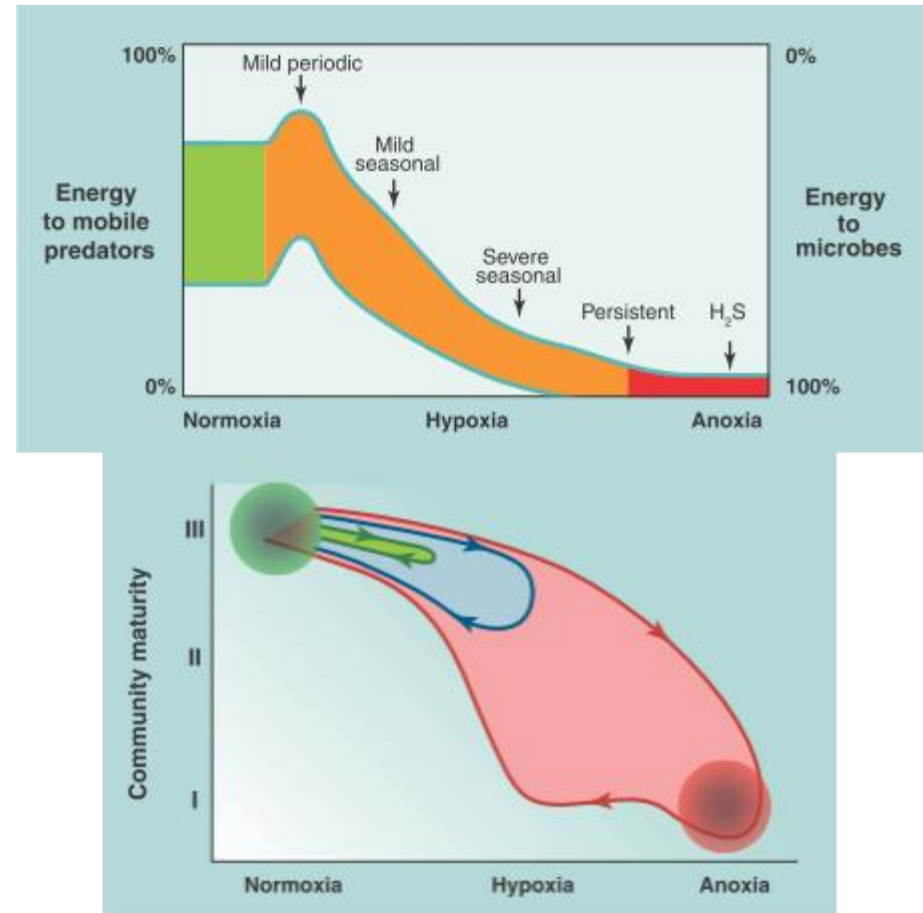
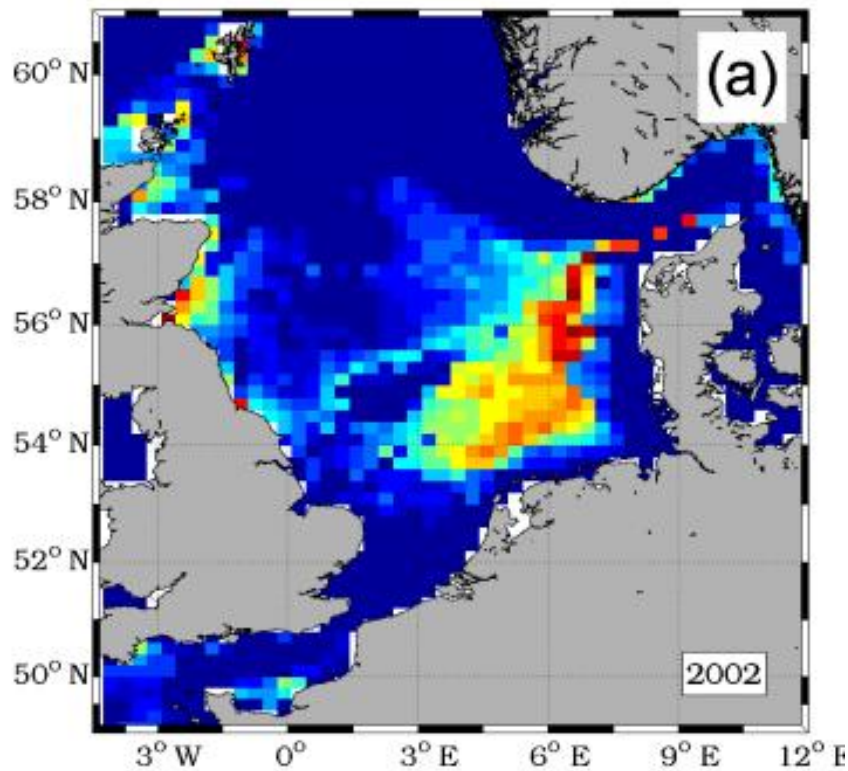
Stikstofbelasting 1995 (1000 t N/jaar)

Aertjeberg et al. 2001



Klimaatverandering – stratificatie – nutriënten?

O₂ deficiency index

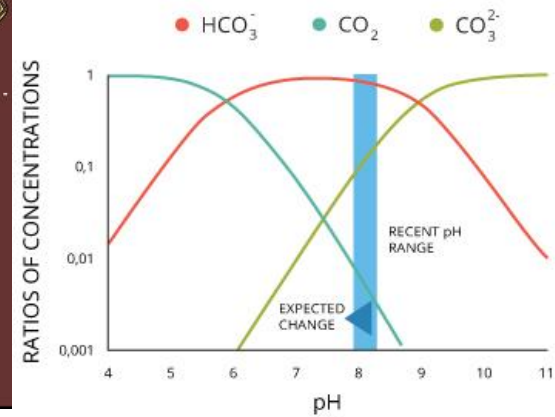
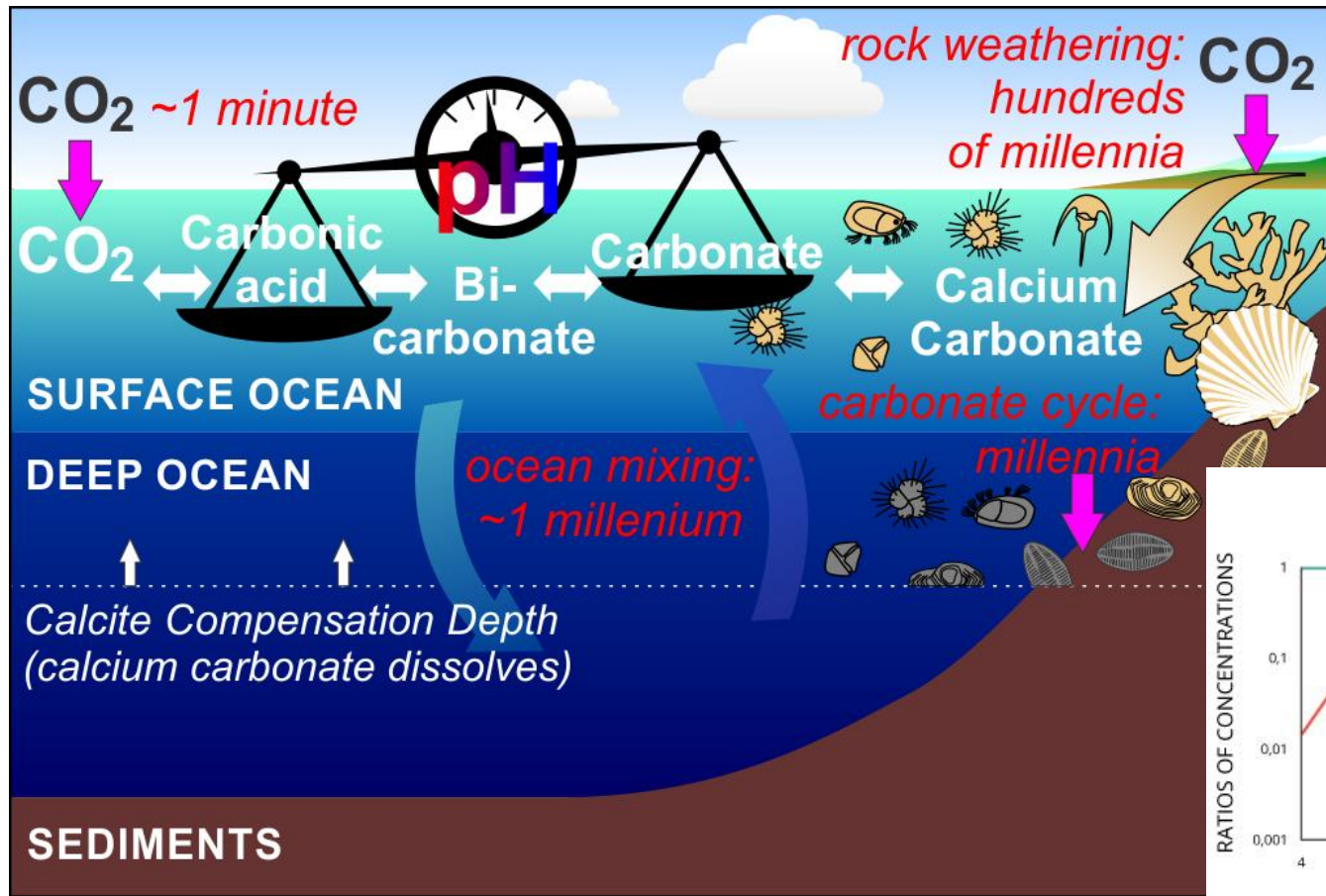
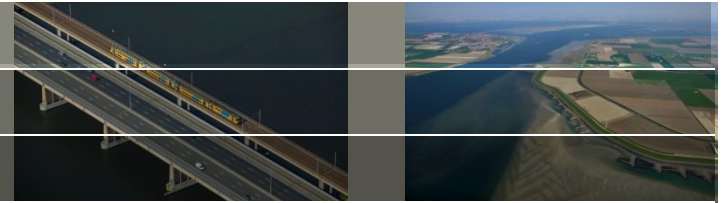


Diaz & Rosenberg 2008. Science

Grosse et al. 2016. Biogeosciences

Deltares

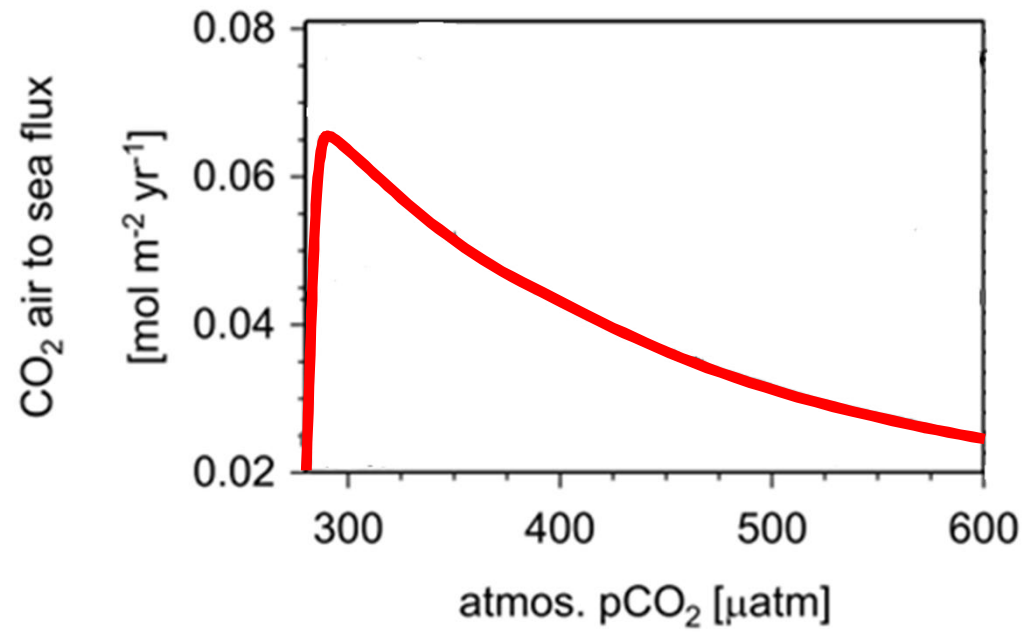
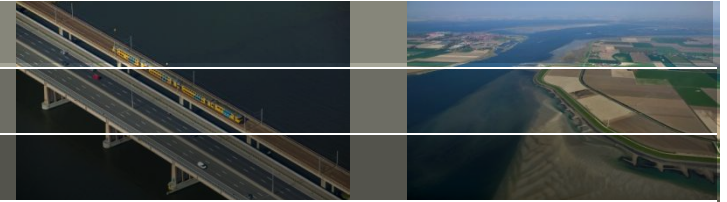
CO₂ buffering



H.Lee Scepticalscience.com

Deltares

Afname buffercapaciteit



Thomas et al. 2007

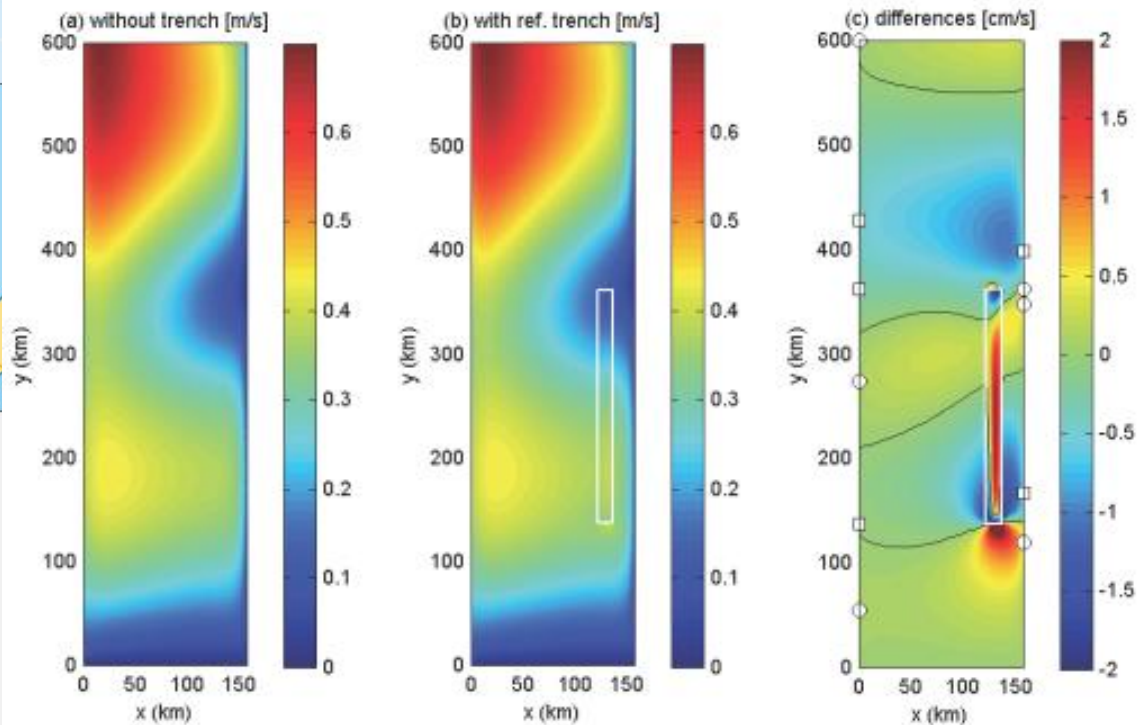
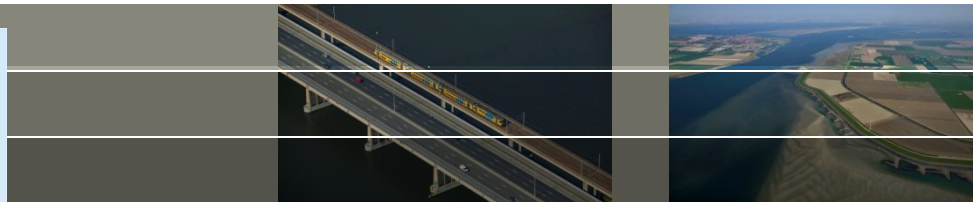
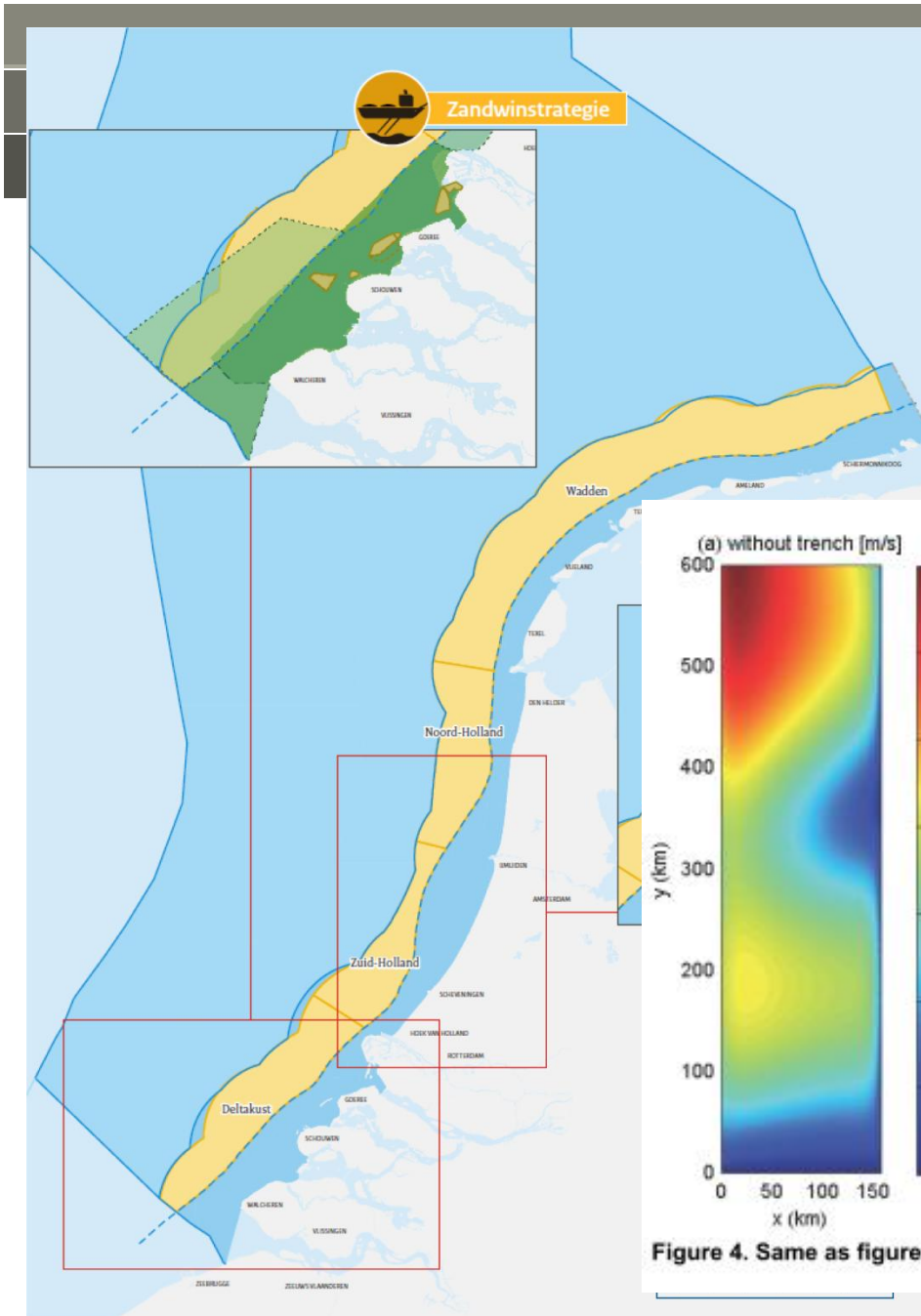
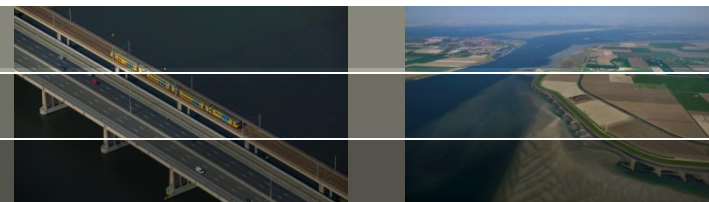








Figure 4. Same as figure 3, but now showing the amplitudes of the (depth-averaged) along-basin flow.

Successen uit het verleden...



Soort	Bestandsontwikkeling	Toegestane aanlandingen 2015 (x 1000 ton)	Advies toegestane aanlandingen 2016 (x 1000 ton)
Haring		445.3	555.1
Tong		11.9	11.9
Schol		128.4	159.2*
Tarbot		2.4	1.9
Griet		2.7	2.6
Kabeljauw		35.1	40.4



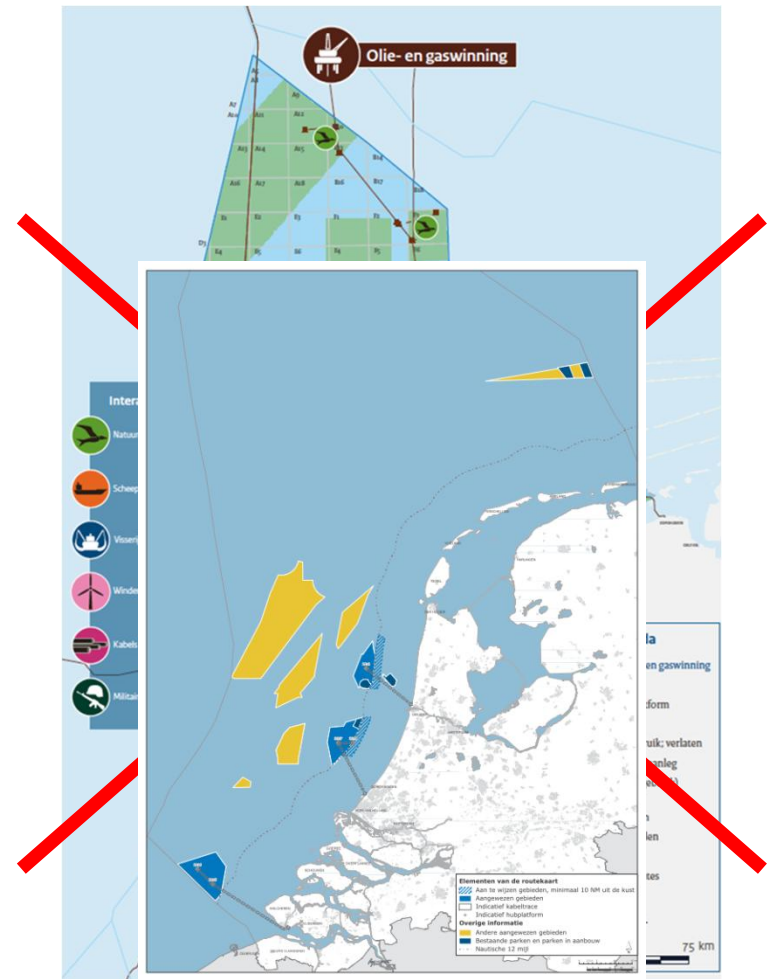
... geven doortastendheid voor de toekomst!

Het thema is 'VERANDERING'

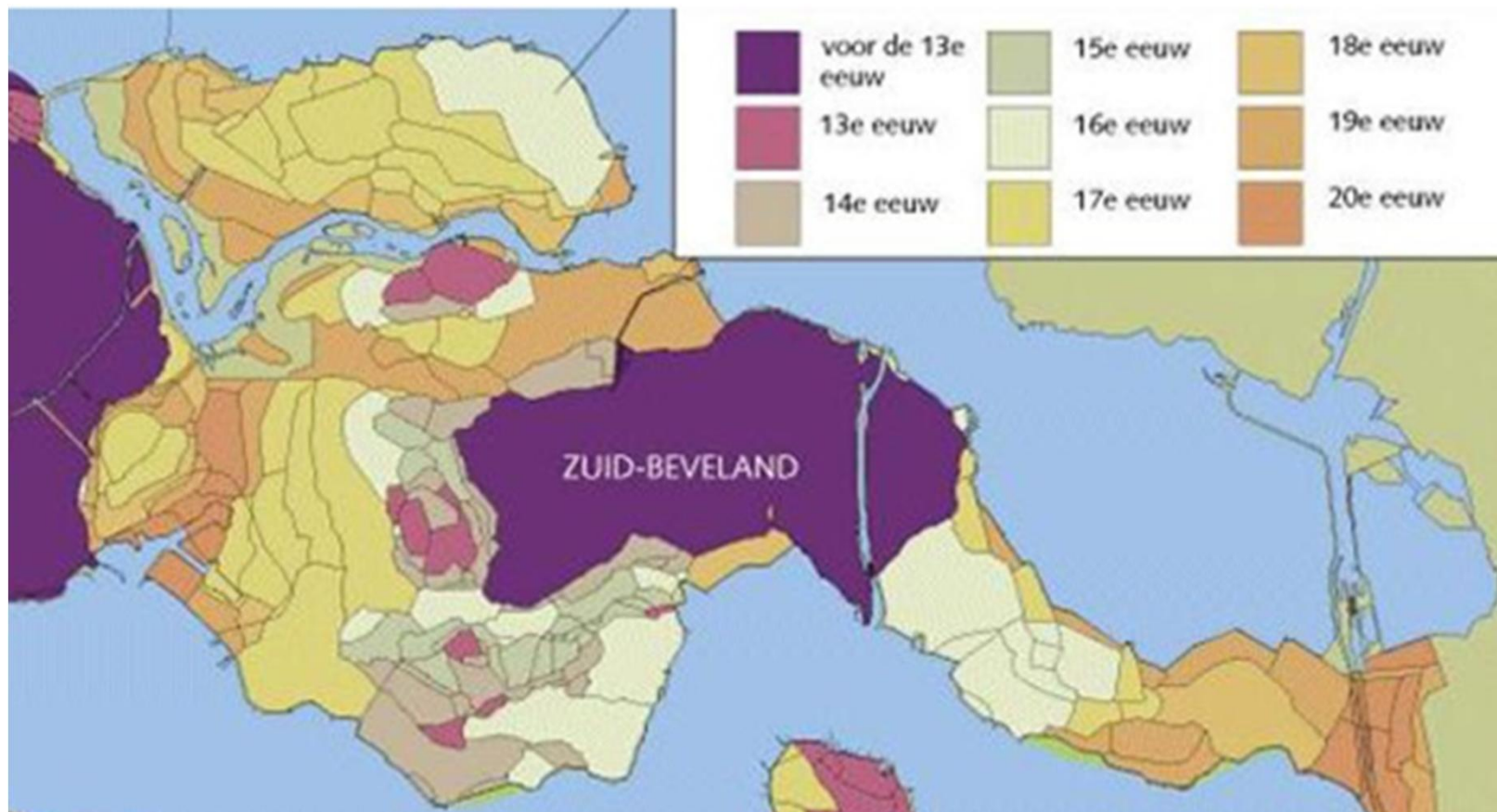
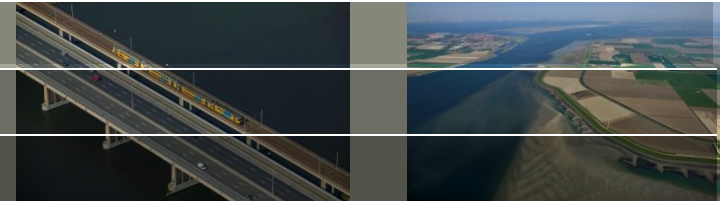
- Demografisch
- Economisch
- Druk op natuurlijke hulpbronnen
- Klimaat en ecosysteem
- Energietransitie: koolstofarme samenleving

Natuurlijk gaat u voor hernieuwbaar

- Energie-intensieve exploitatie
- Vervuilende schepen
- Energie-intensief transport
- ...

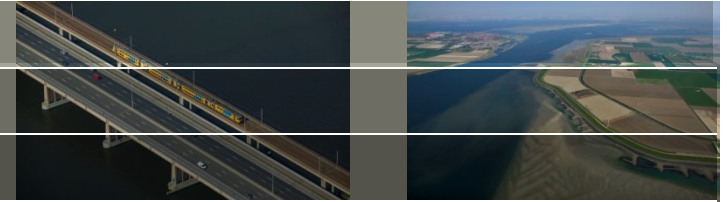


Richting aan innovatie

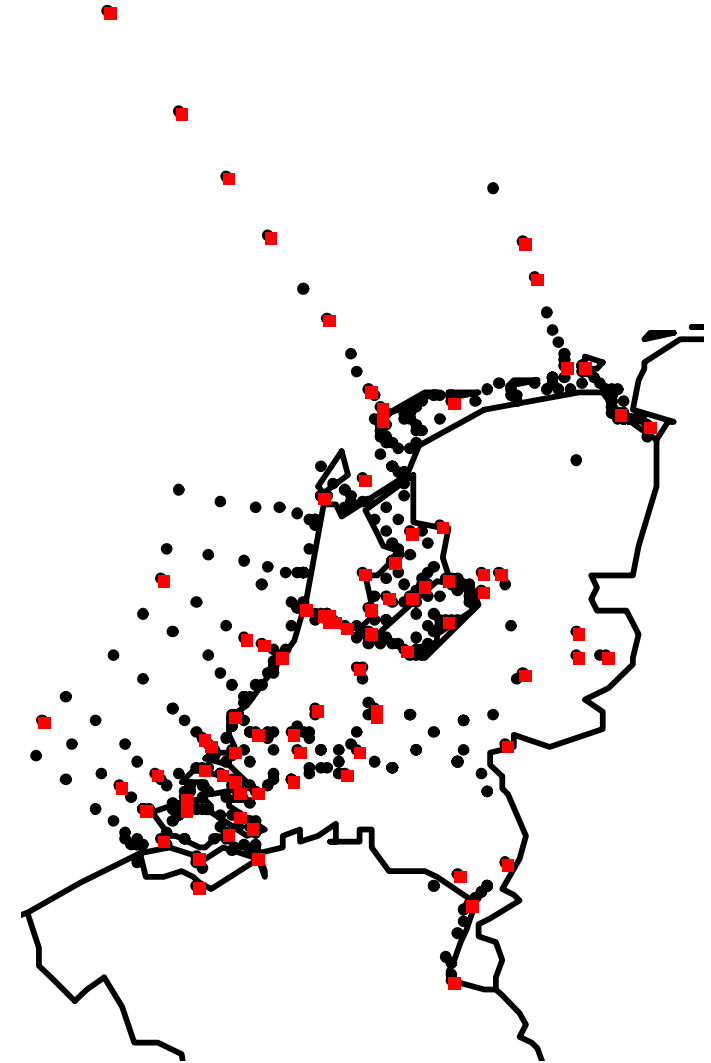


-> 'Meer bereiken met minder doen'

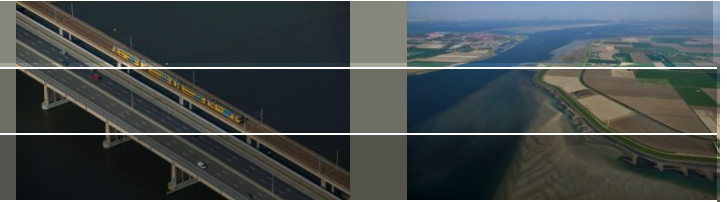
Monitoren en aanpassen



- Vragen staan centraal:
 - Effecten van opwarming, verzuring, invasies, nutriëntenbeleid,... op ecosysteem
 - Aanpassingsvermogen en limieten van het ecosysteem
 - Kritisch evalueren van innovaties en bestaande praktijk
 - Voorspellend vermogen voor tijdige adaptatie
- Geen meten zonder weten: ingewonnen gegevens interpreteren
- Technologische ontwikkeling volgen/sturen

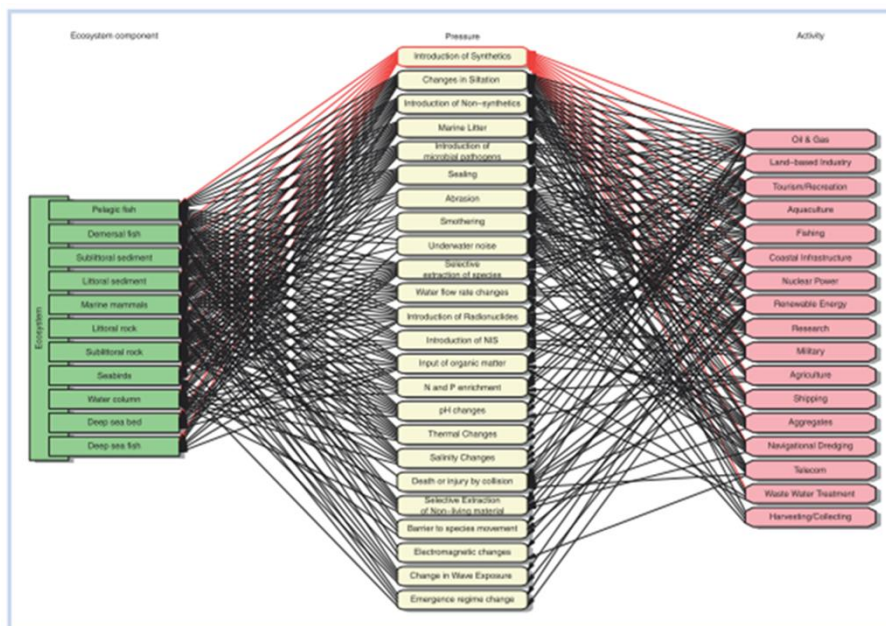


Integreren



Ecosysteembenadering is maatgevend: optimaliseren van gebruik binnen de grenzen van goed en duurzaam ecologisch functioneren

Multi-actor, multi-pressure effecten op multi-indicator systeem -> horrendogram



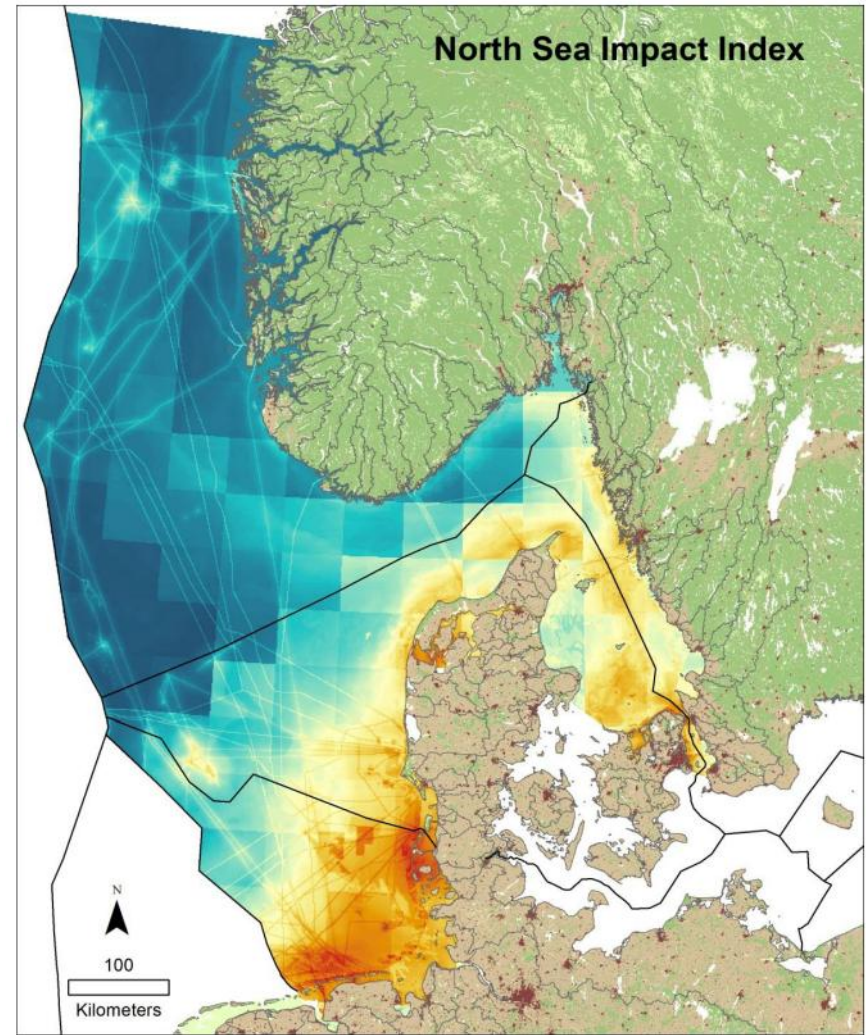
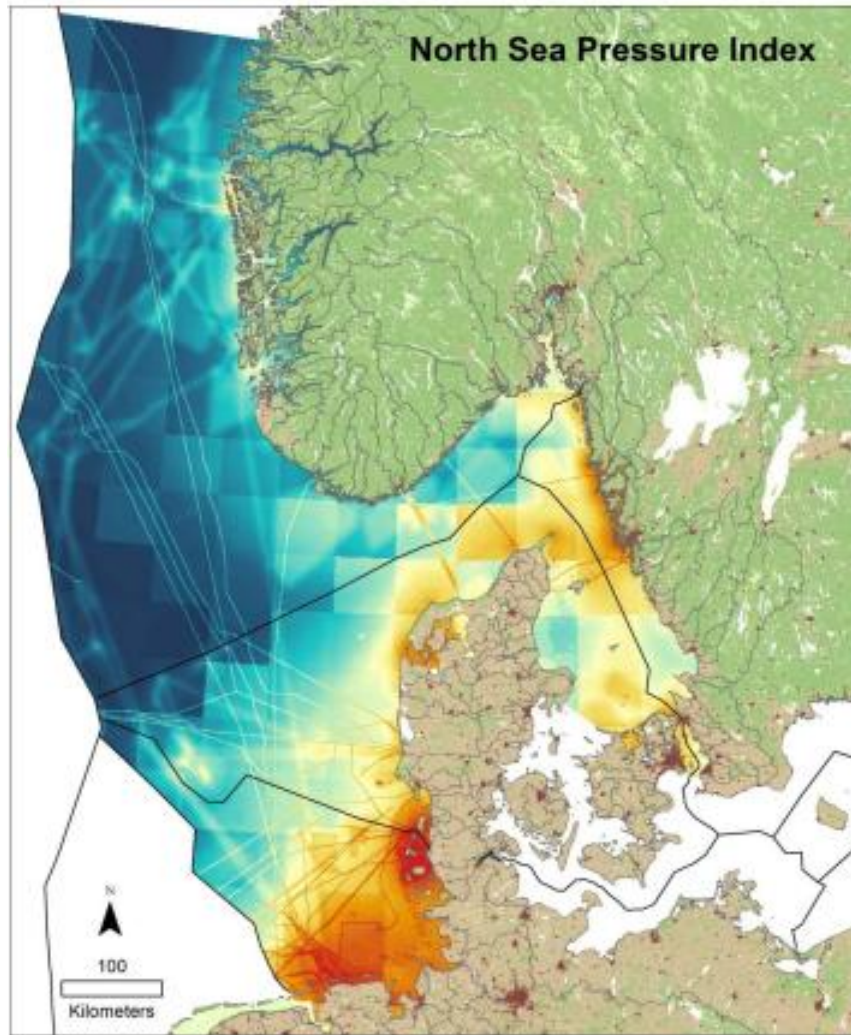
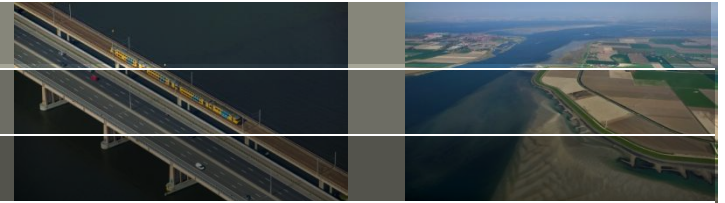
Tamis et al. 2015

Snoeien

- Indicatoren -> diensten
- Processen -> wegen, modelleren
- Drukken -> groeperen, correleren, differentieel uitdrukken

Ruimtelijk projecteren

Oostelijke Noordzee

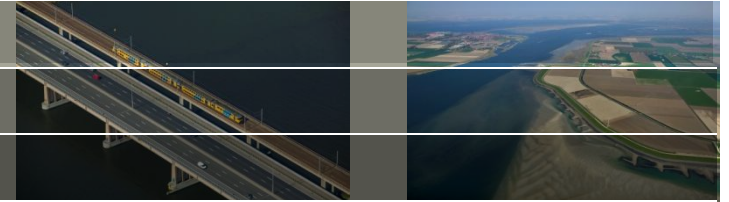


Andersen et al. 2015

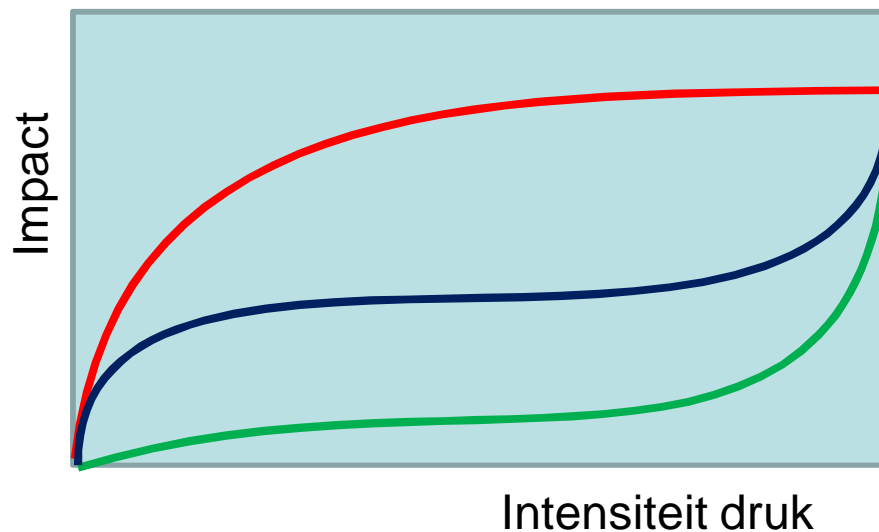
10 oktober 2016

Deltares

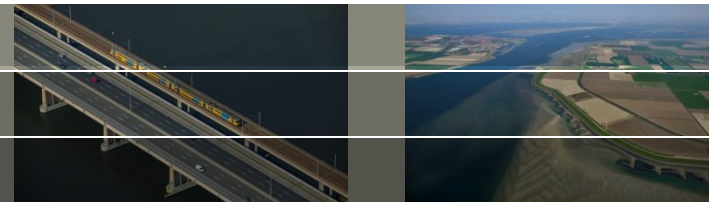
Dilemma's



- Gewichten geven prioritering + afweging nut/impact
- Cumulatie geeft prioritering voor aandachtszones
- Nieuwe vragen:
 - Overall een beetje druk, of differentiëren in de ruimte?
 - Welke functies combineren goed, welke slecht?

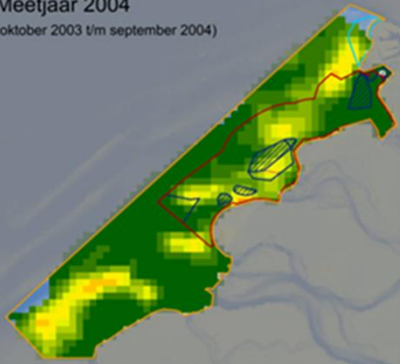


Bescherming en visserij



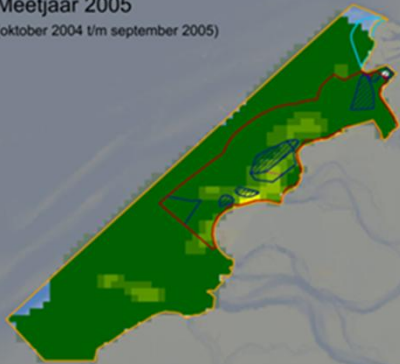
Meetjaar 2004

(oktober 2003 t/m september 2004)



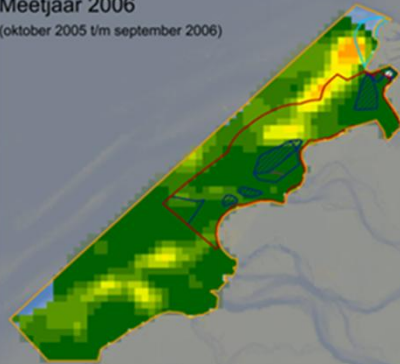
Meetjaar 2005

(oktober 2004 t/m september 2005)



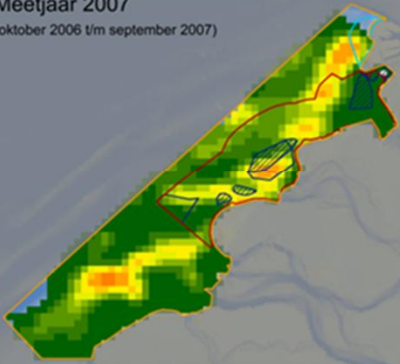
Meetjaar 2006

(oktober 2005 t/m september 2006)



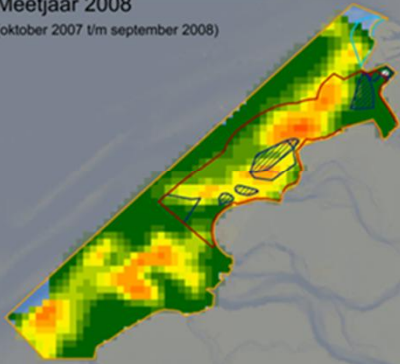
Meetjaar 2007

(oktober 2006 t/m september 2007)



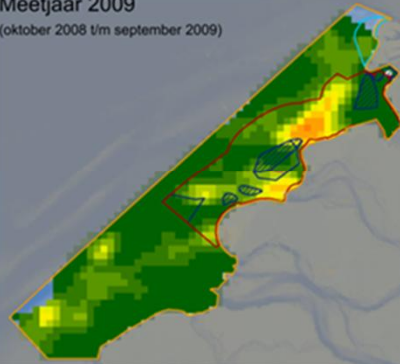
Meetjaar 2008

(oktober 2007 t/m september 2008)



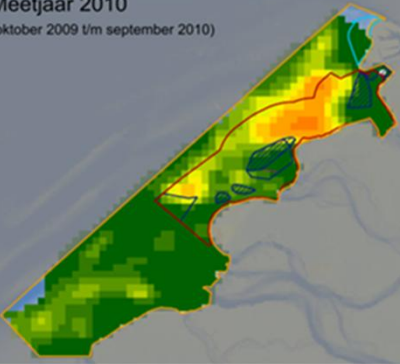
Meetjaar 2009

(oktober 2008 t/m september 2009)



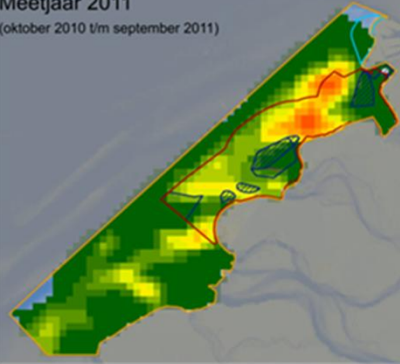
Meetjaar 2010

(oktober 2009 t/m september 2010)



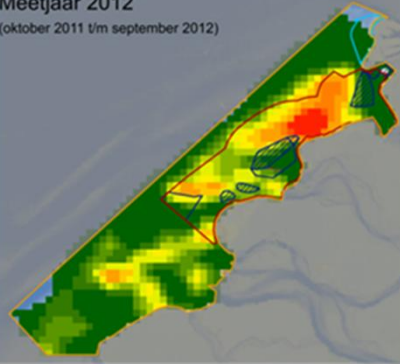
Meetjaar 2011

(oktober 2010 t/m september 2011)

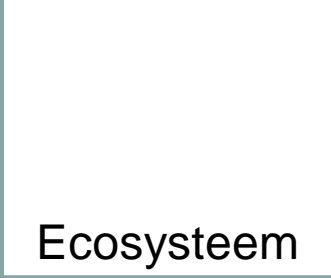
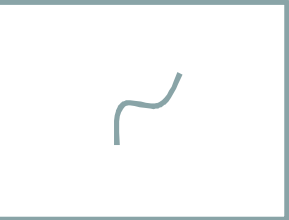
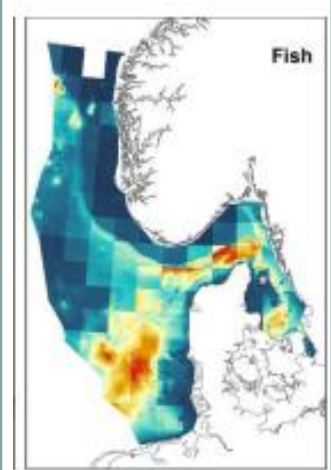
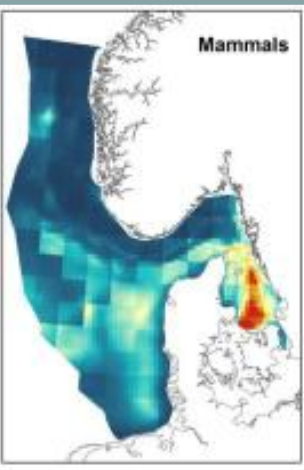
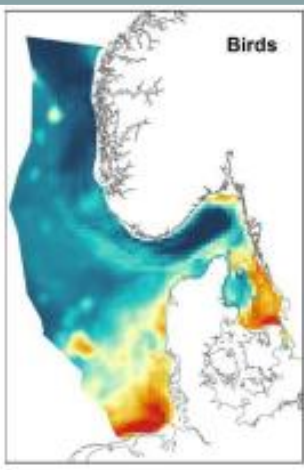
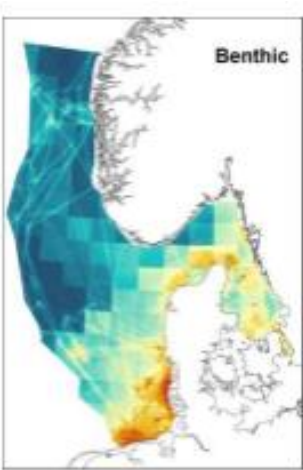
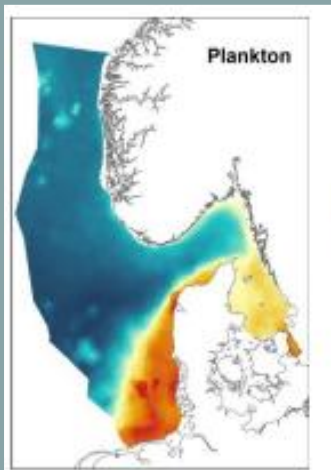
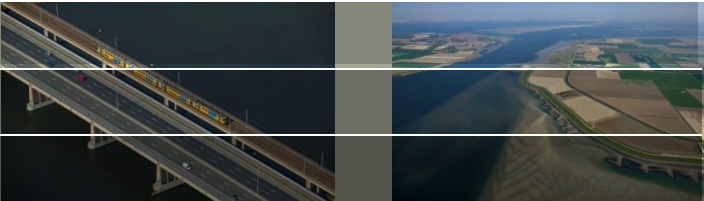


Meetjaar 2012

(oktober 2011 t/m september 2012)



Governance

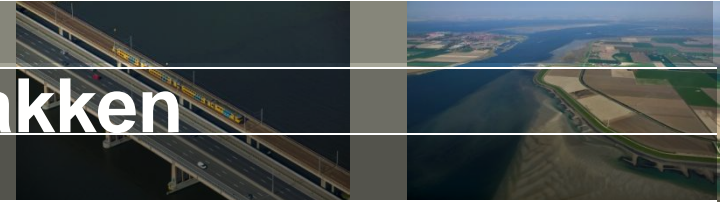


Ecosysteem

Natuur

Vis

Niemand kan een taartpunt bakken



Fysisch niet te isoleren

Ecosysteem verbonden met naburige sectoren en hun beleid

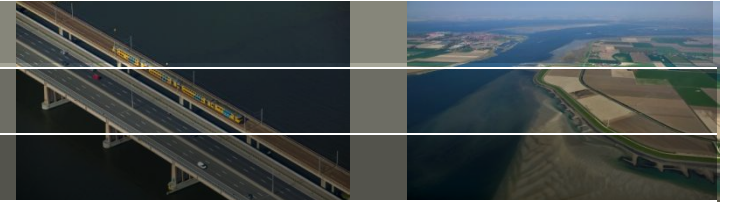
Exploitatie (bv. wind, scheepvaart) verbonden of te verbinden

Natuurbescherming: biodiversiteit op Noordzeeschaal belangrijk

-> Hoe wordt OSPAR als HELCOM?

- Gezamenlijke doelstellingen
- Gemeenschappelijke monitoring
- Solidaire toepassing

Ik wens u tot besluit...



De juiste governance omgeving om
Integraal ecosysteem-gebaseerd en
Innovatief beleid te voeren in
Een veranderende wereld met
Toenemende druk en
Tegenstelling van belangen in
Een gulle zee die
Grenzen kent