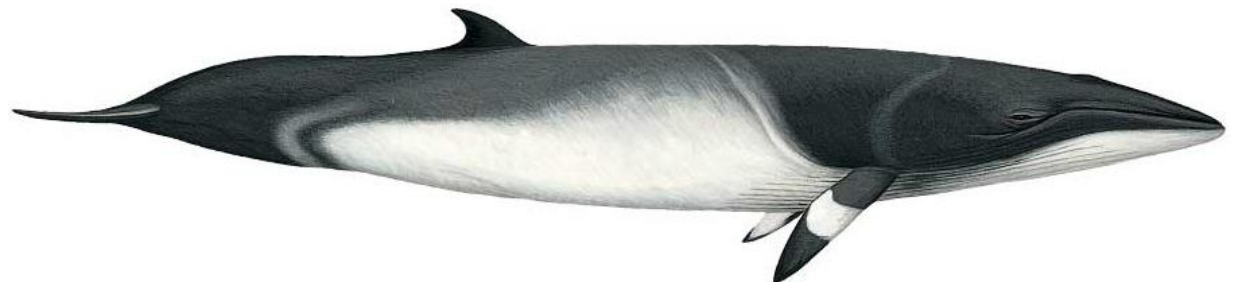


# Het gaat goed met de zeezoogdieren, of toch niet?

Hoe de juiste keuzes maken?

Geert Aarts, Steve Geelhoed, Sophie Brasseur & Jessica Schop

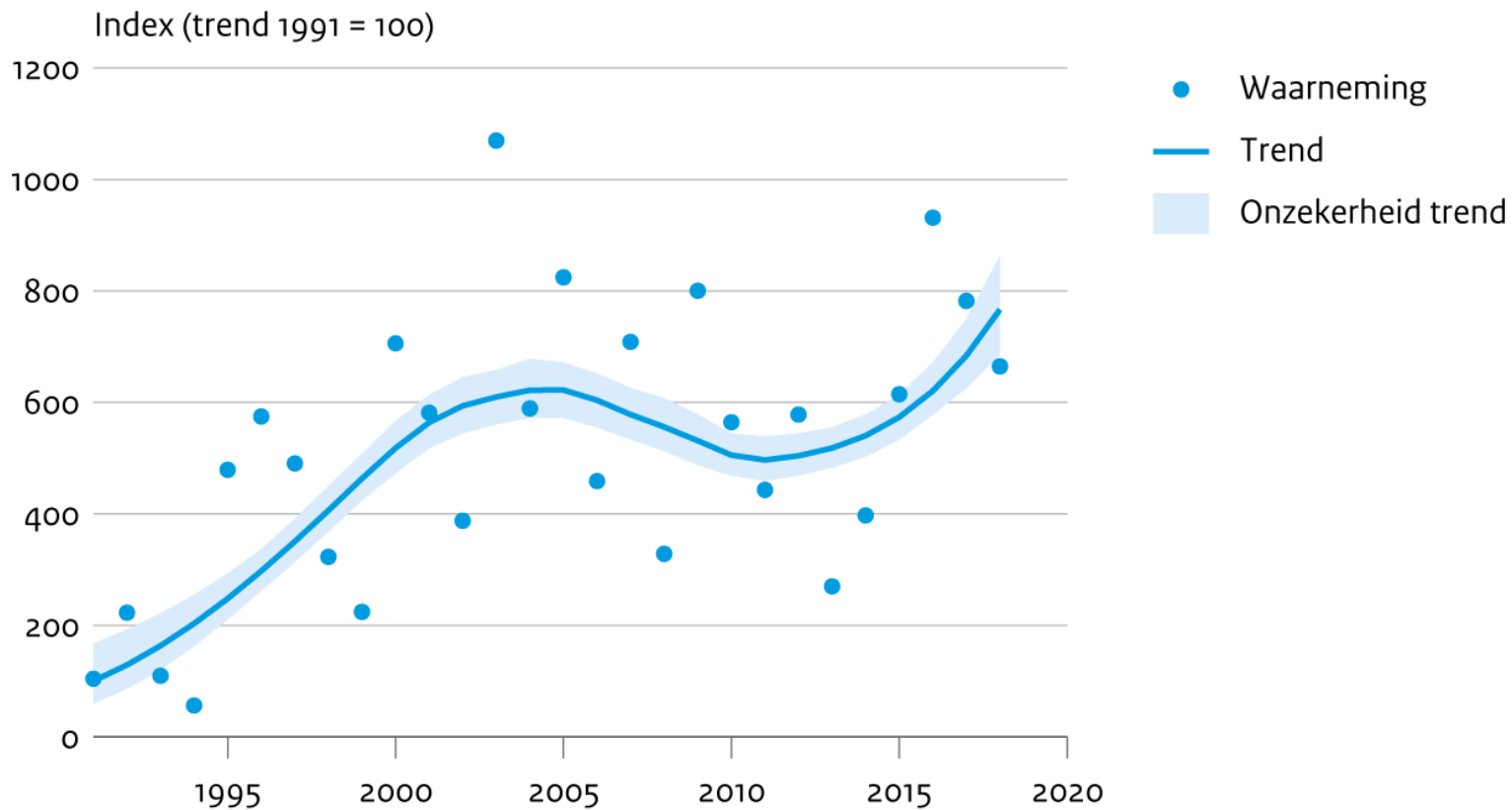


# Populatie ontwikkeling: Bruinvis



**NCP**

## Bruinvissen in Nederlandse Noordzee

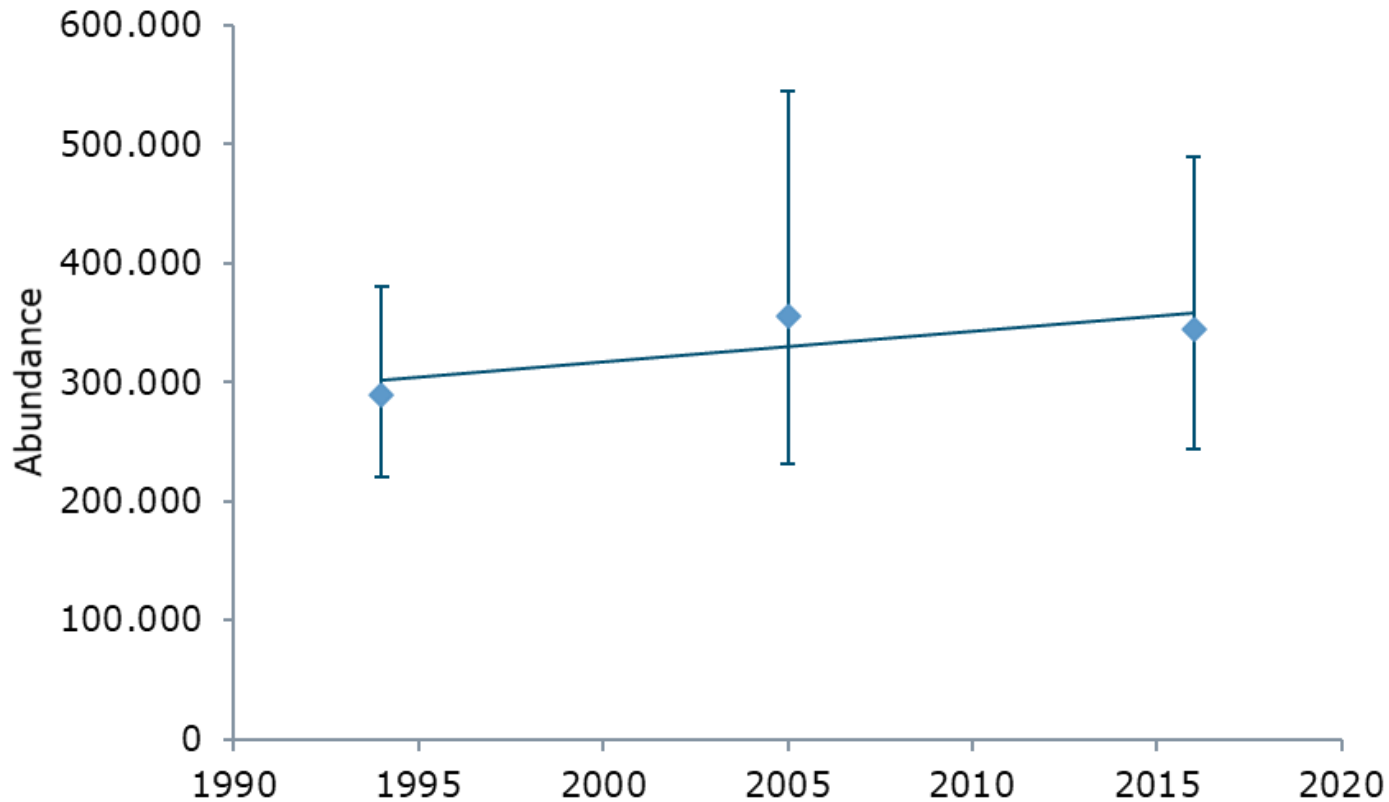


# Populatie ontwikkeling: Bruinvis

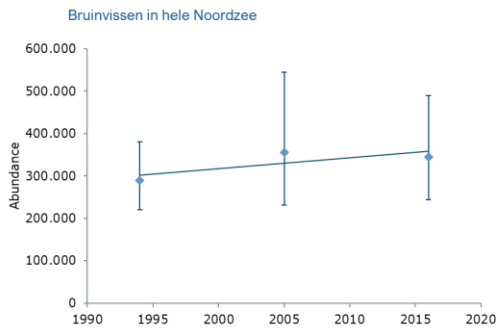
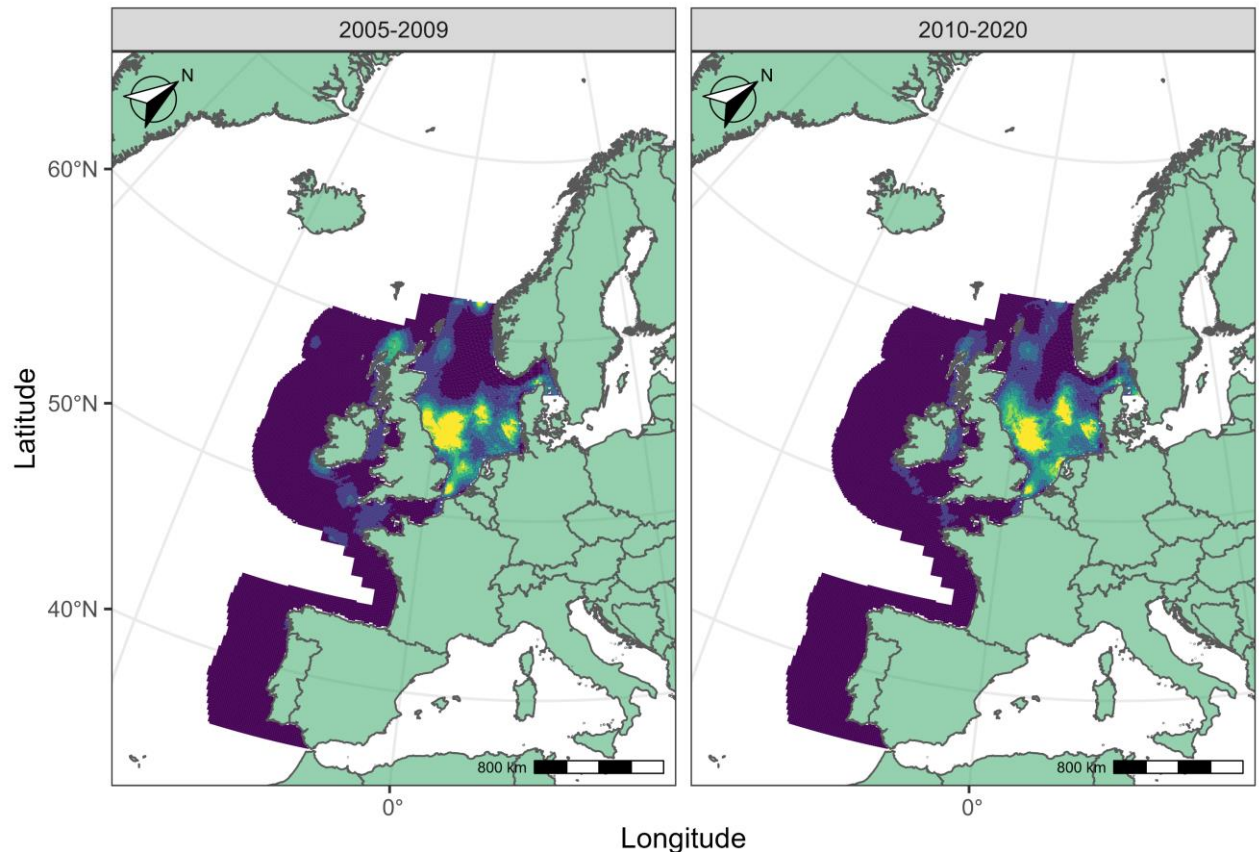


## Noordzee (internationaal)

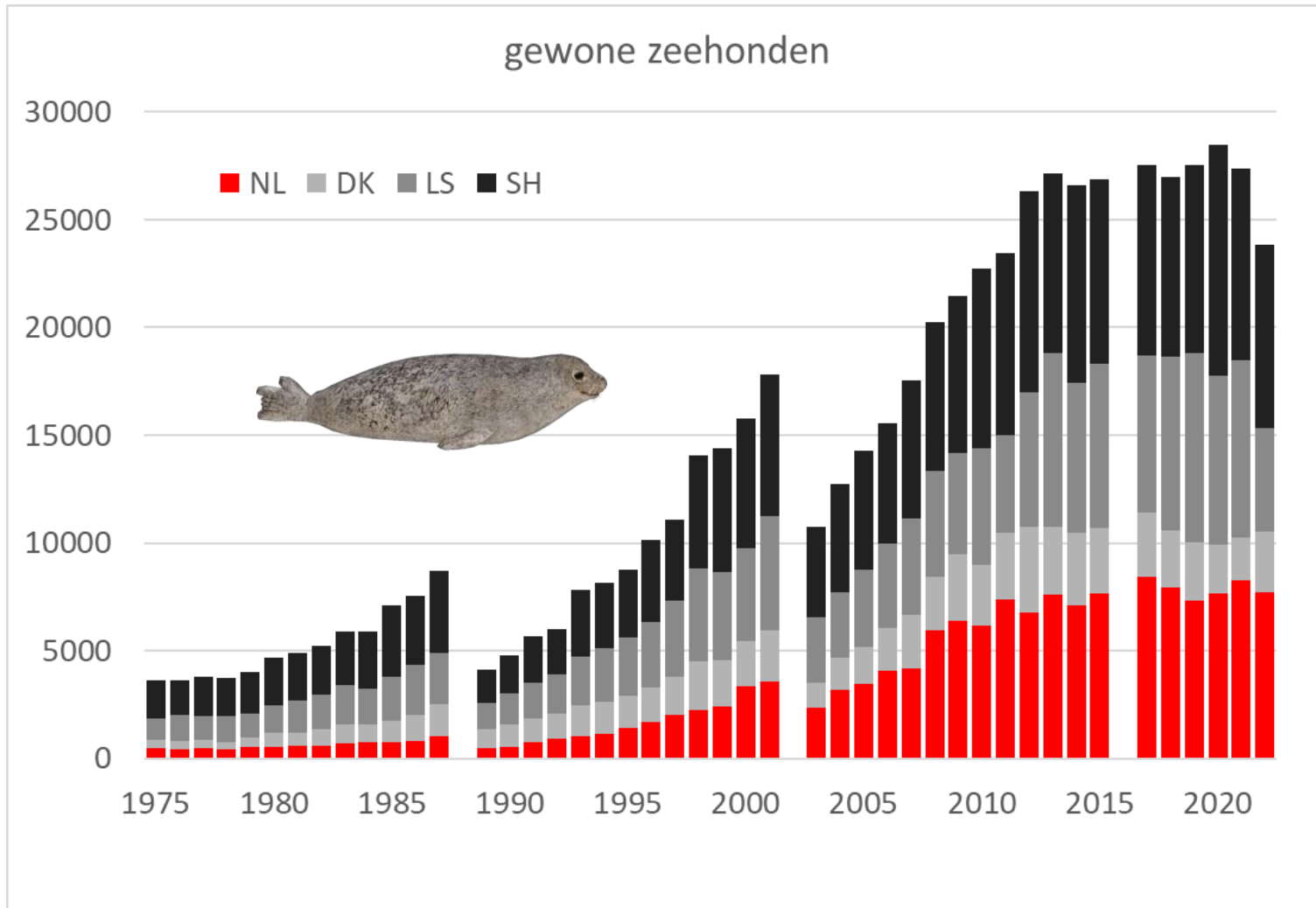
Bruinvissen in hele Noordzee



# Populatie ontwikkeling: Bruinvis



# Populatie ontwikkeling: Gewone zeehond



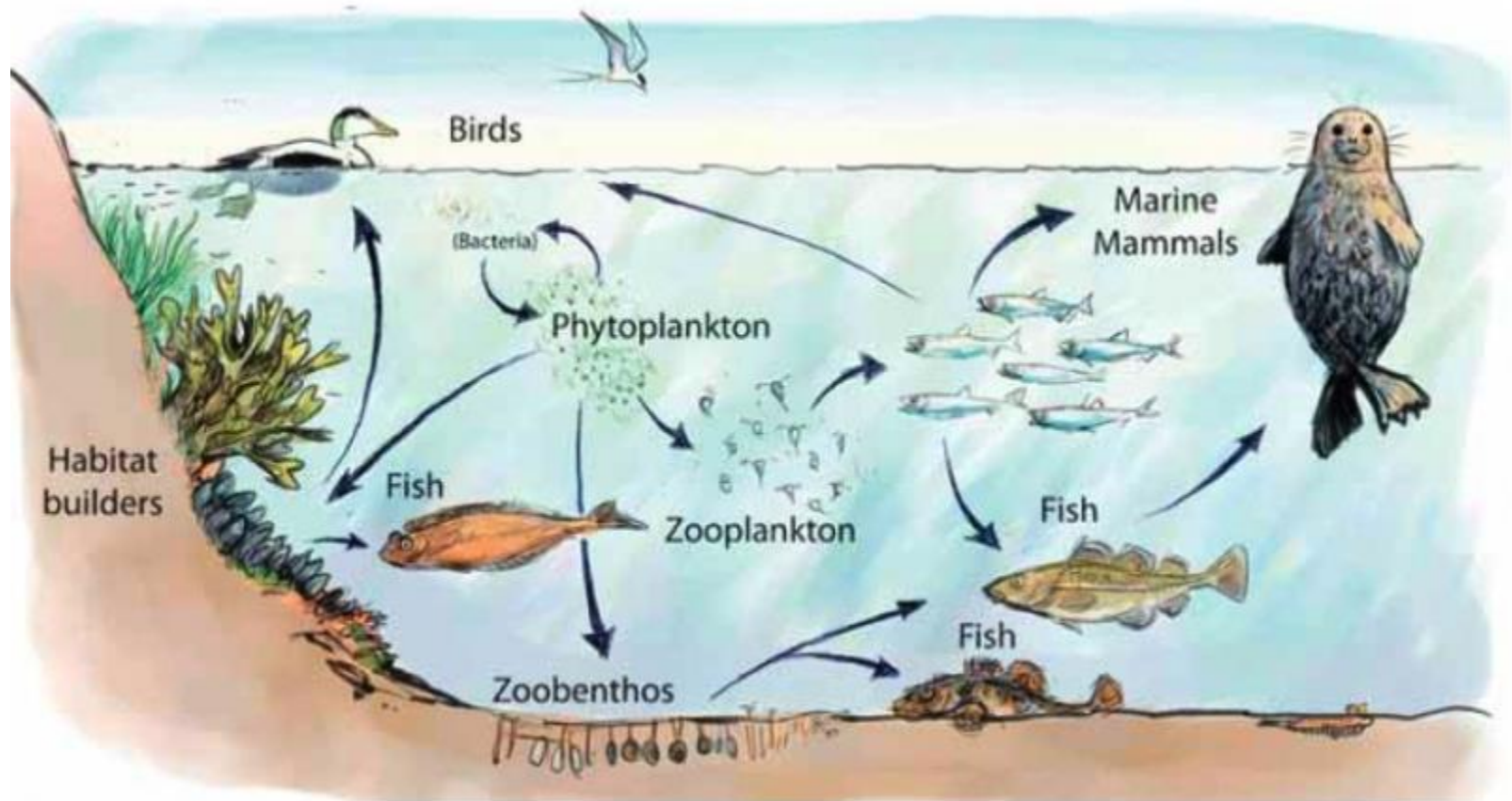
# Populatie ontwikkeling: Grijze zeehond



# Herstel grote roofdieren in Noordzee

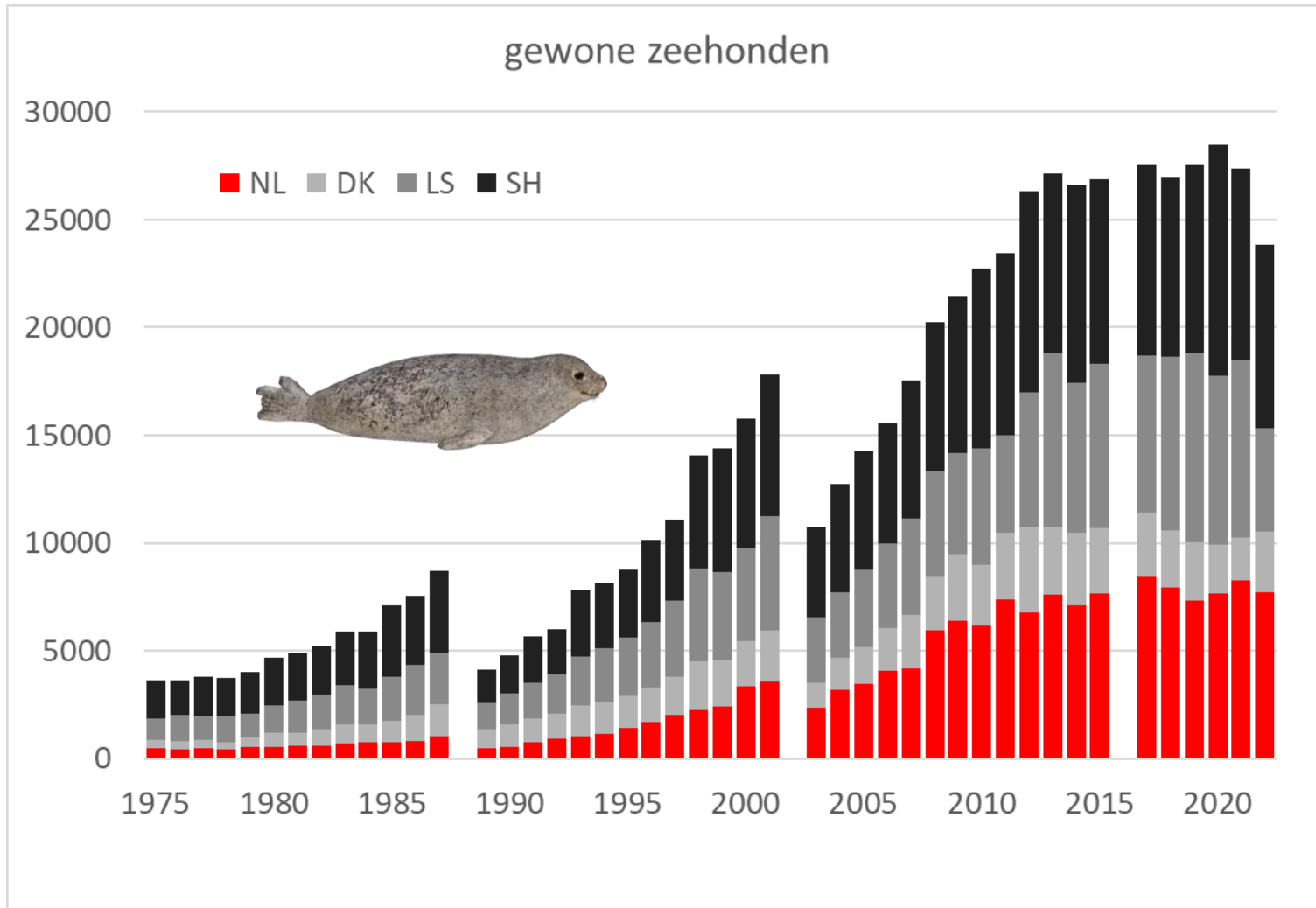


# Roofdieren faciliteren biodiversiteit





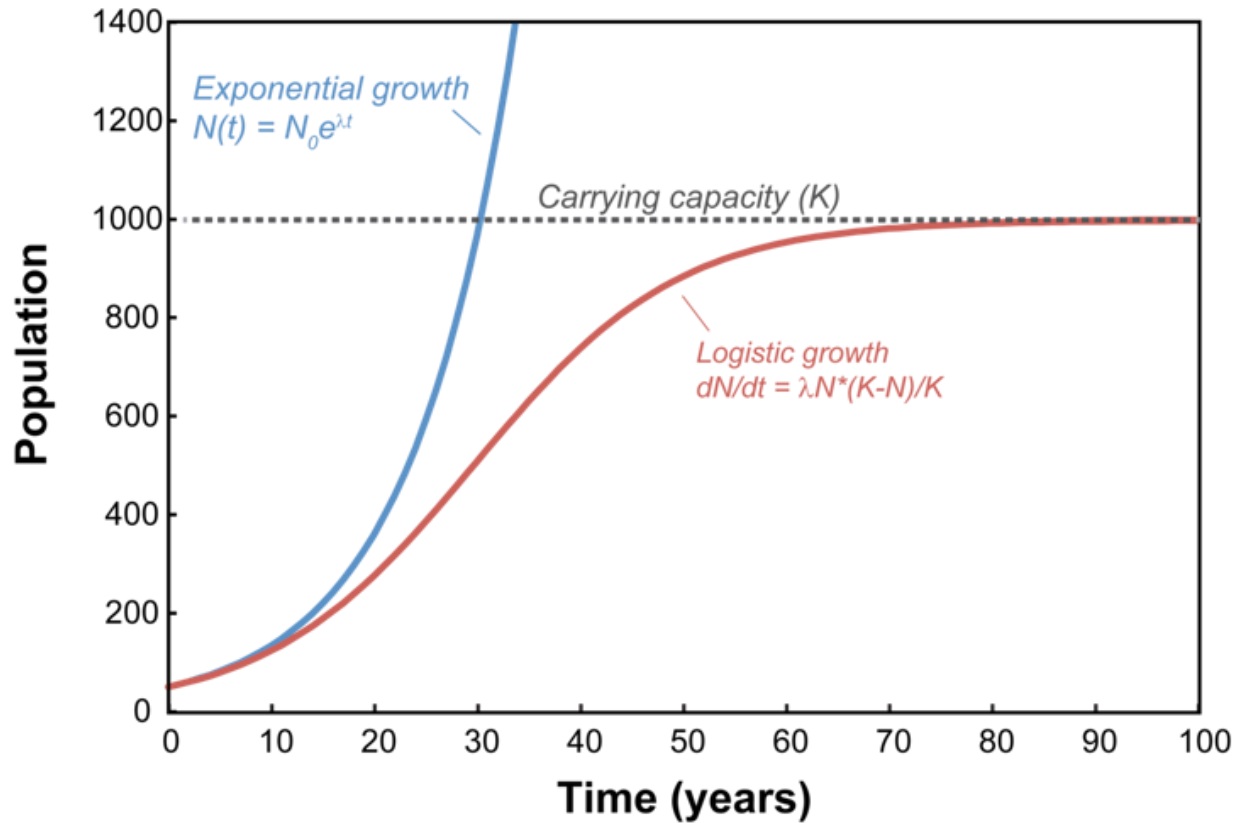
# Afvlakking. Keert het tij?



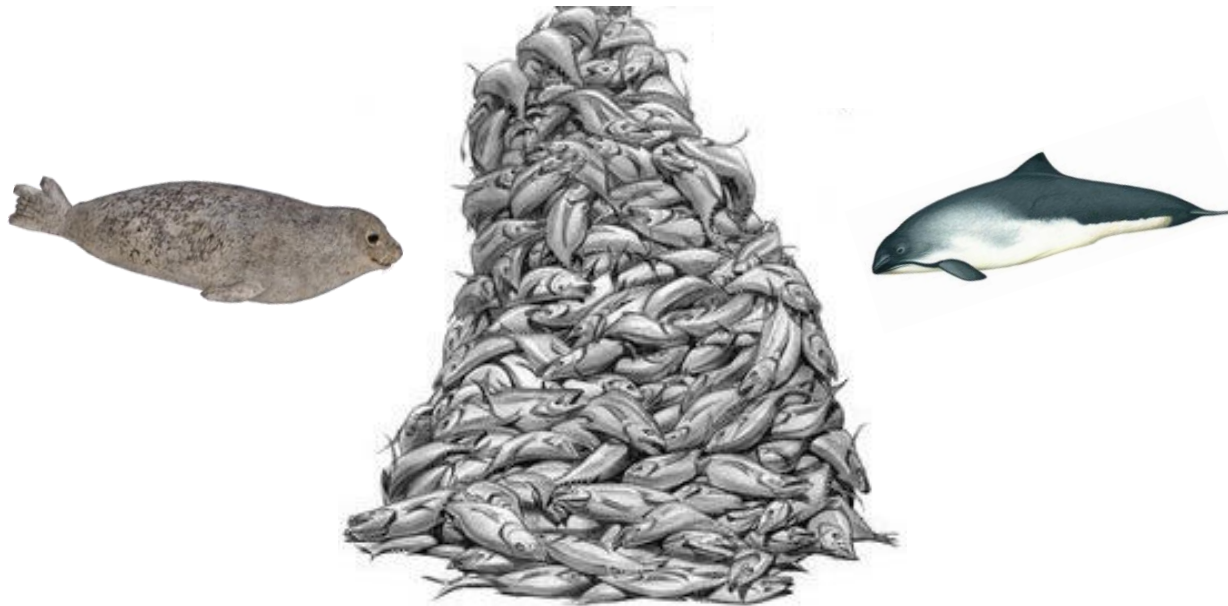
# Verklaring voor afvlakking?

1. Natuurlijke draagkracht
2. Antropogene stress-factoren

# Wat is draagkracht?



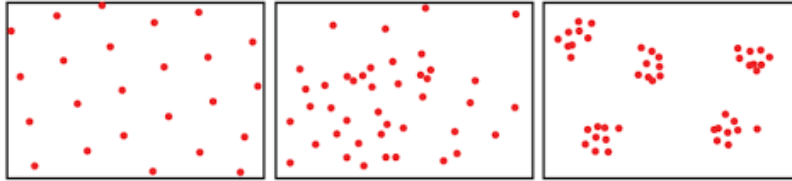
# Wat is draagkracht?



# Wat beïnvloedt draagkracht?



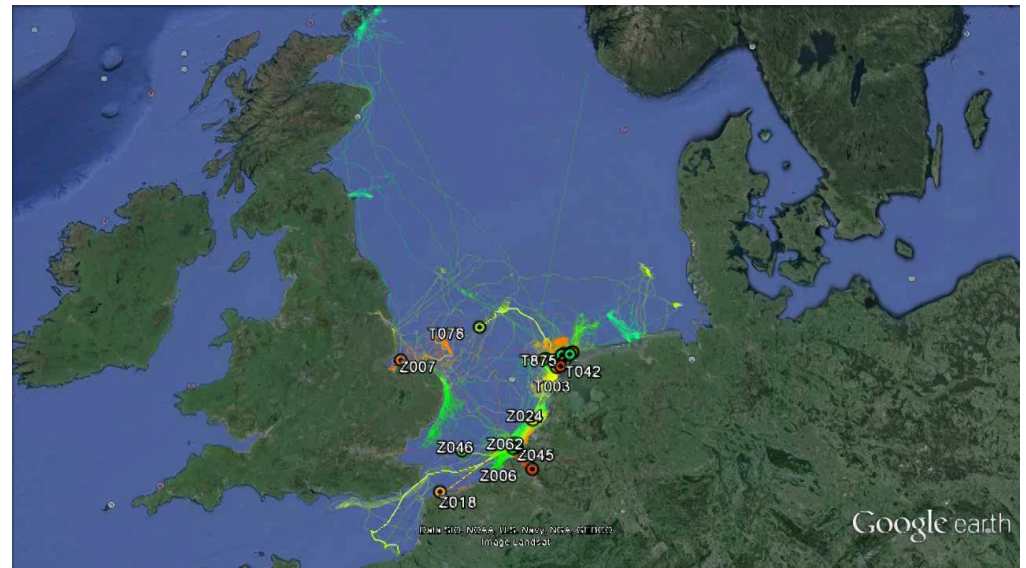
Hoe verdeeld?



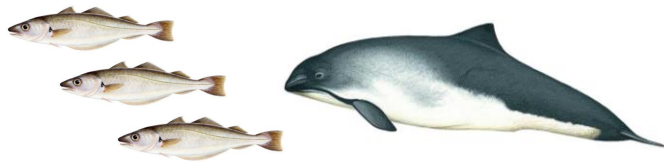
Vangbaarheid



Waar?

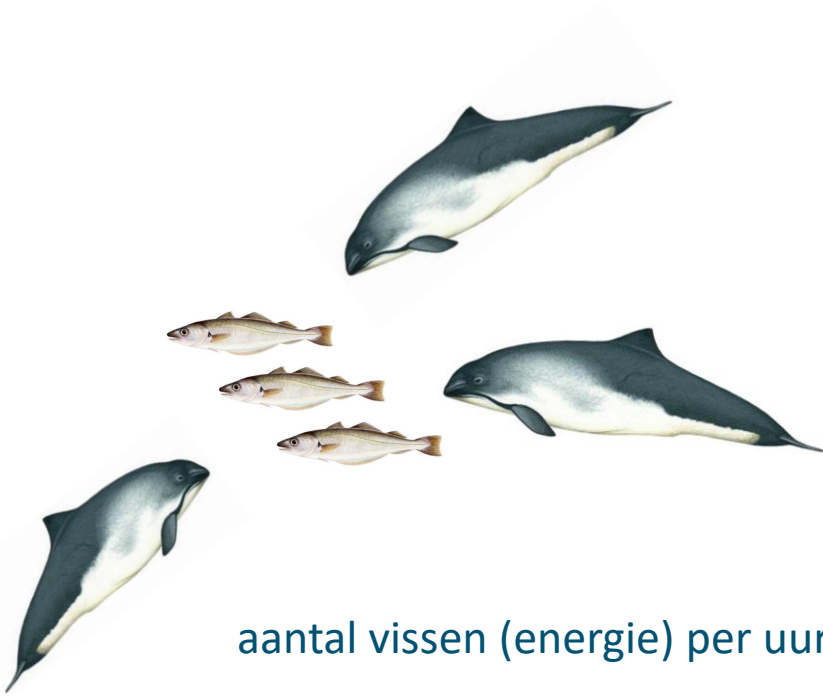


# Draagkracht vanuit het individu



aantal vissen (energie) per uur    x    beschikbare tijd    =    intake

# Draagkracht vanuit het individu



aantal vissen (energie) per uur    x    beschikbare tijd    =    intake

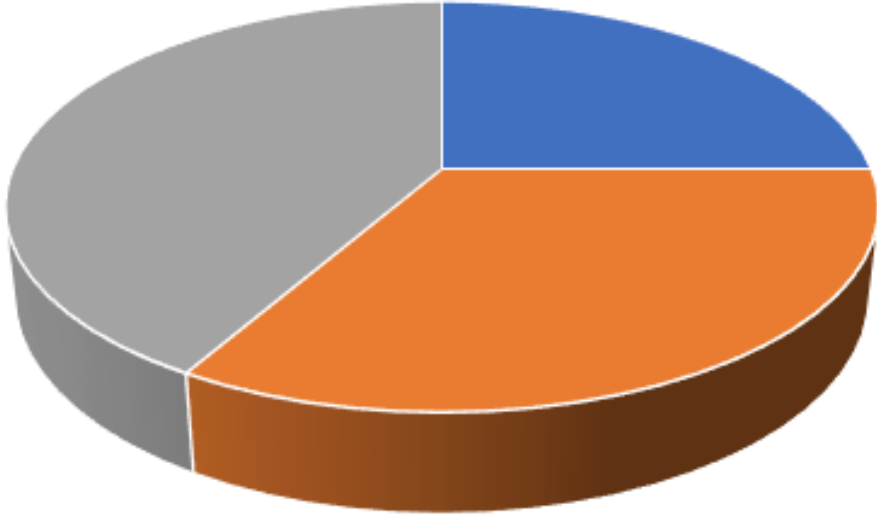
# Draagkracht vanuit het individu



aantal vissen (energie) per uur    x    beschikbare tijd    =    intake

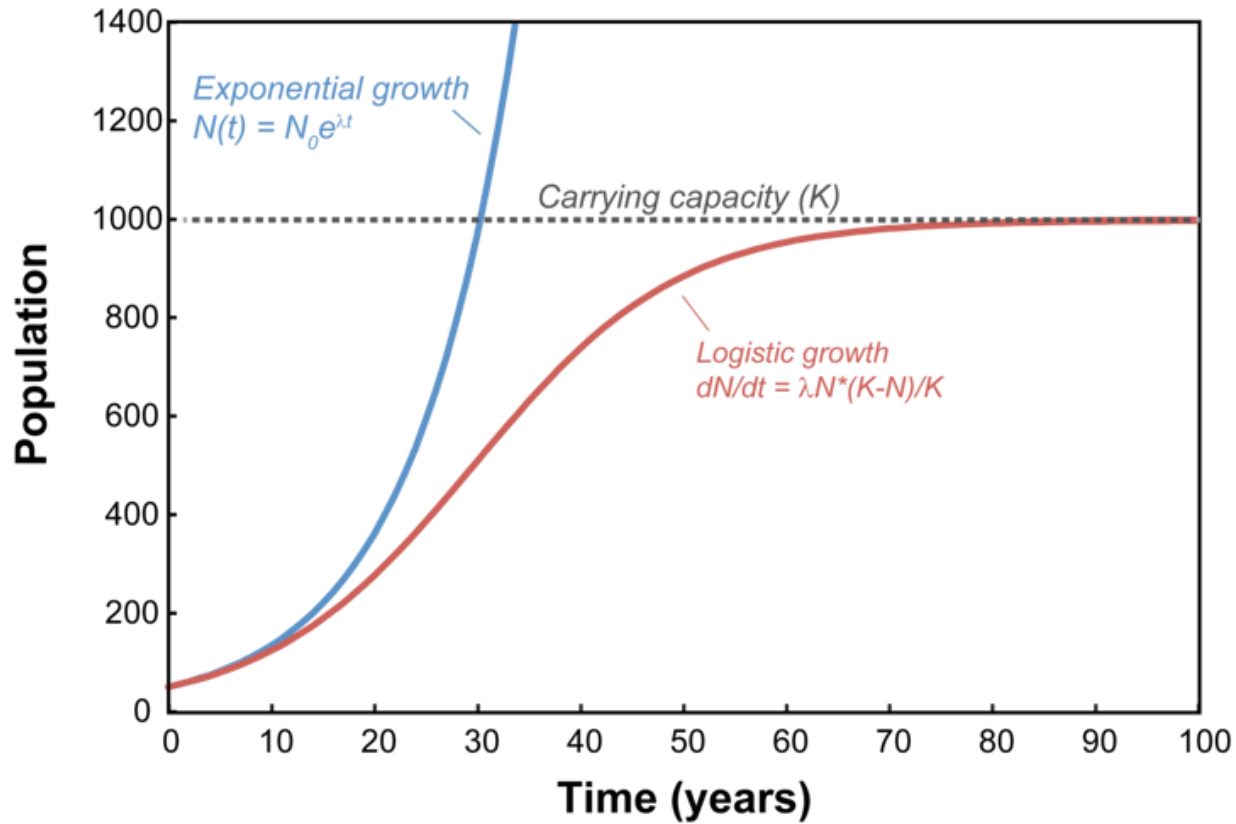


# Tijdbudget

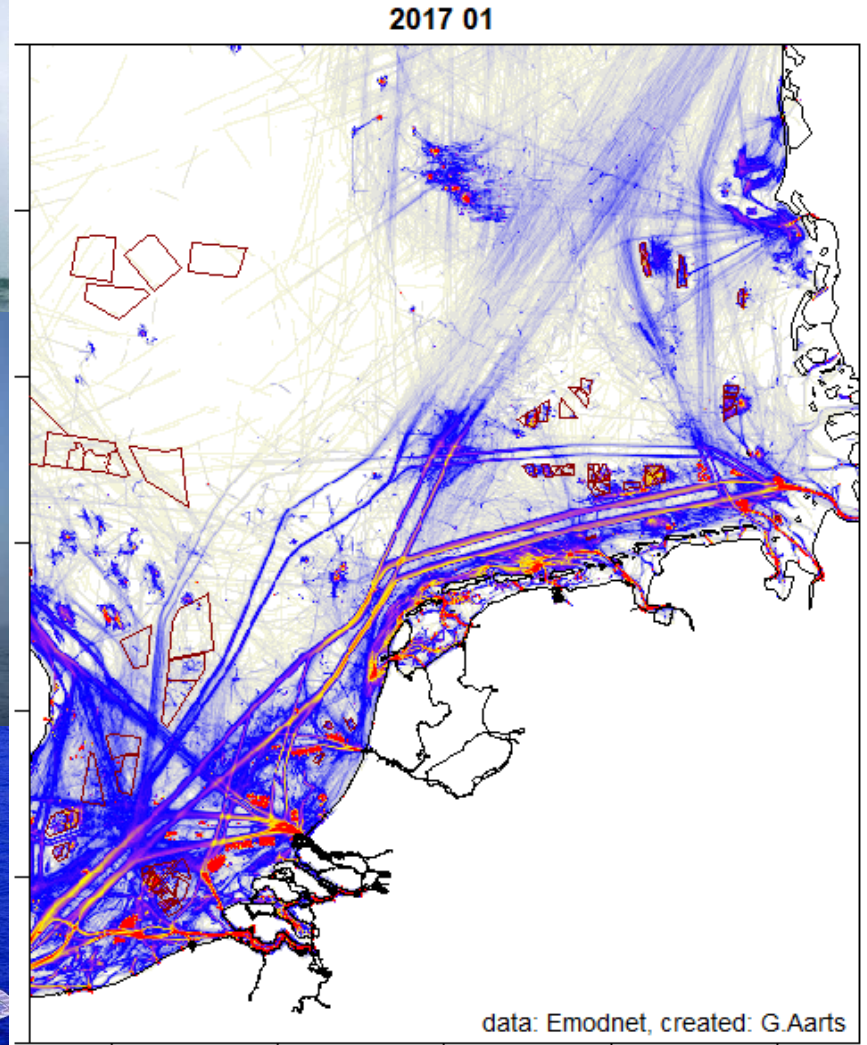


■ Rust ■ Transit ■ Foerageren

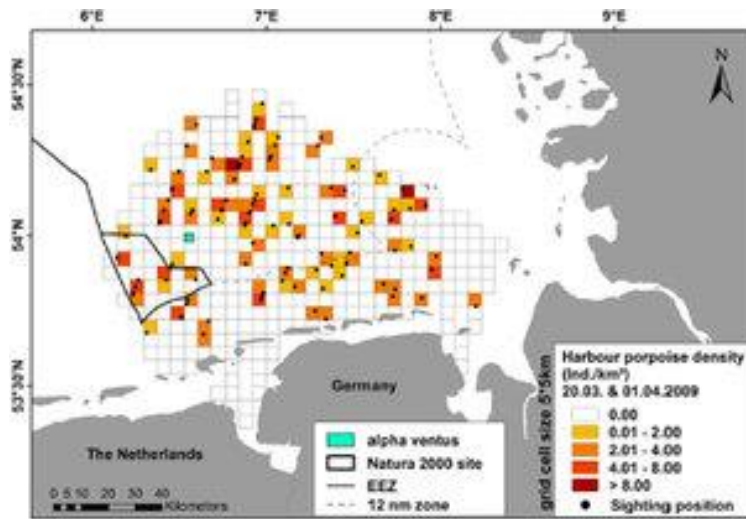
# Wat is draagkracht?



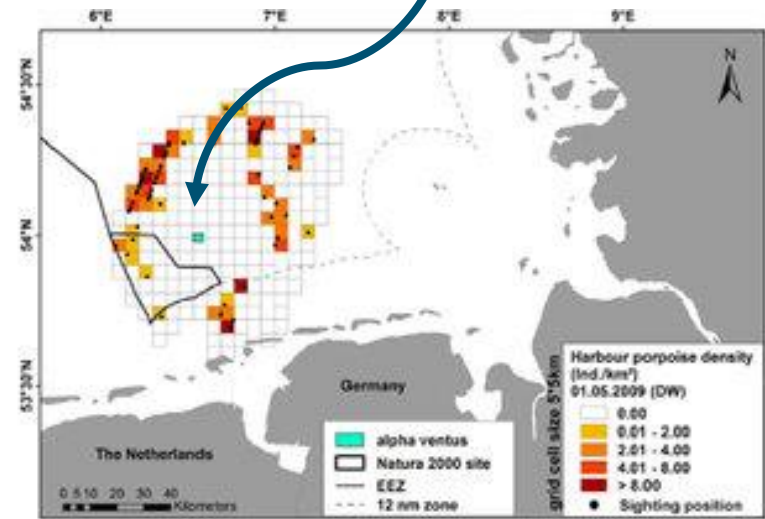
# Invloed van antropogene stressors?



# Effect onderwatergeluid

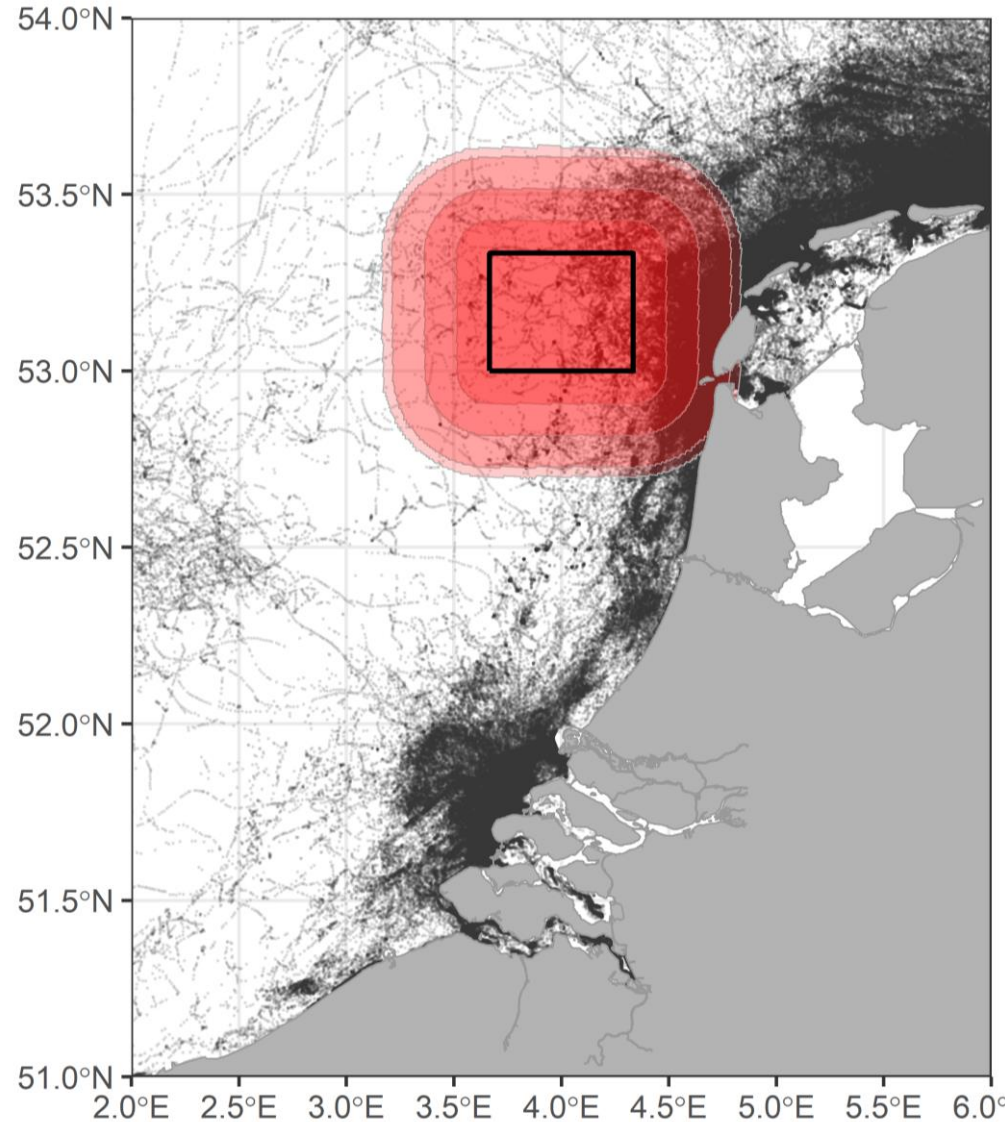
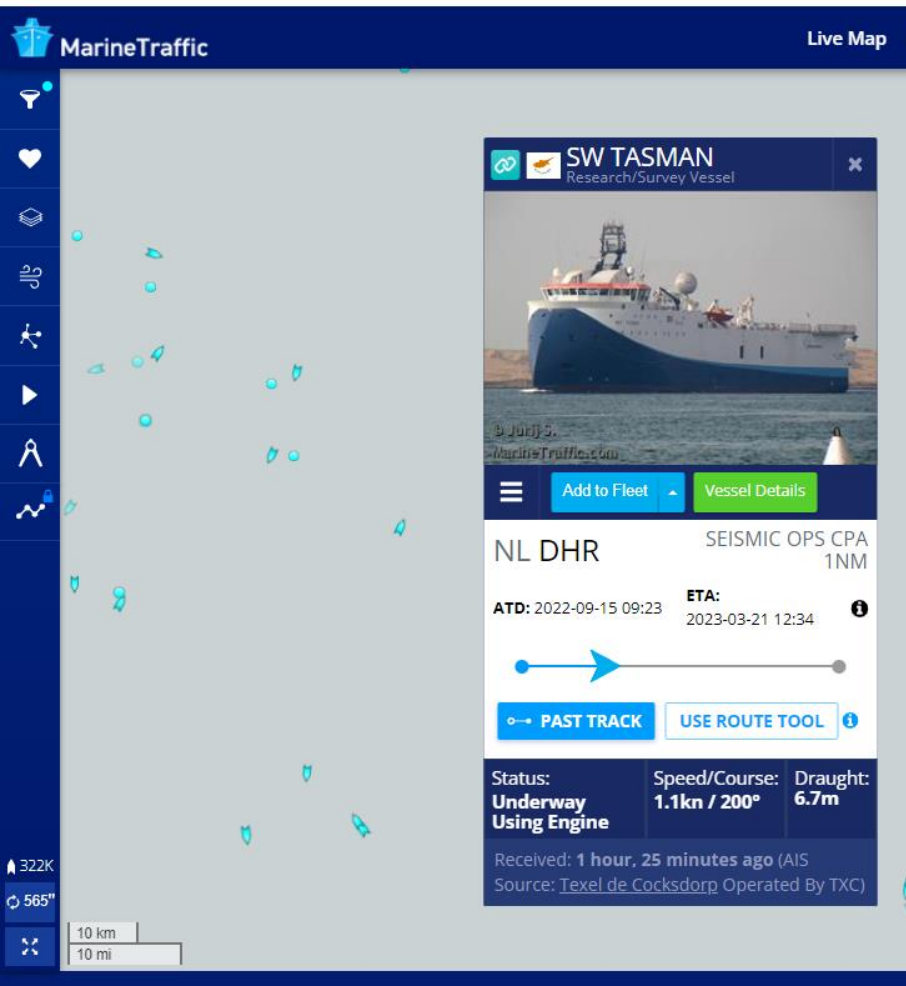


a)

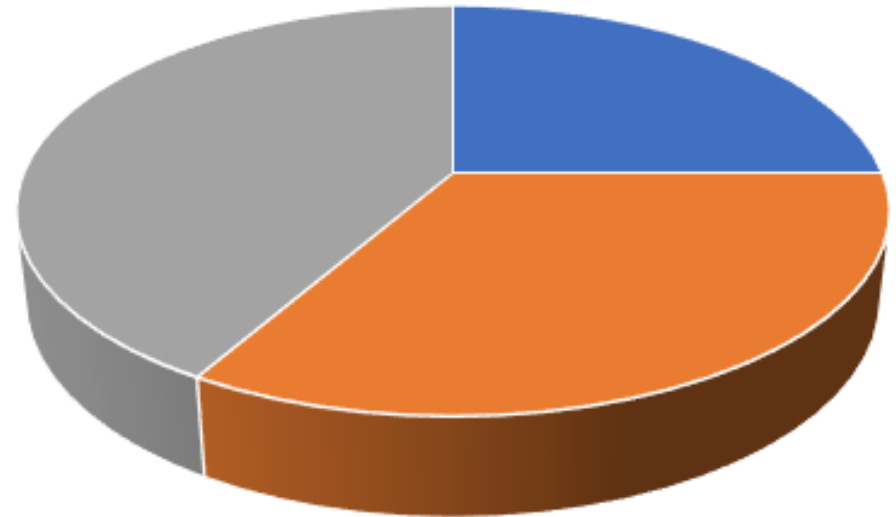


b)

# Seismische survey voor olie & gas

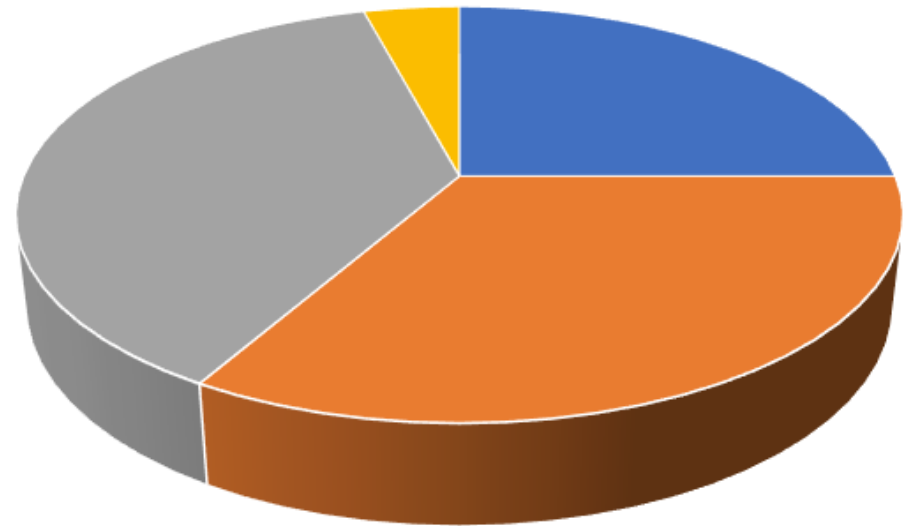


# Tijdbudget: Zonder verstoring



■ Rust ■ Transit ■ Foerageren

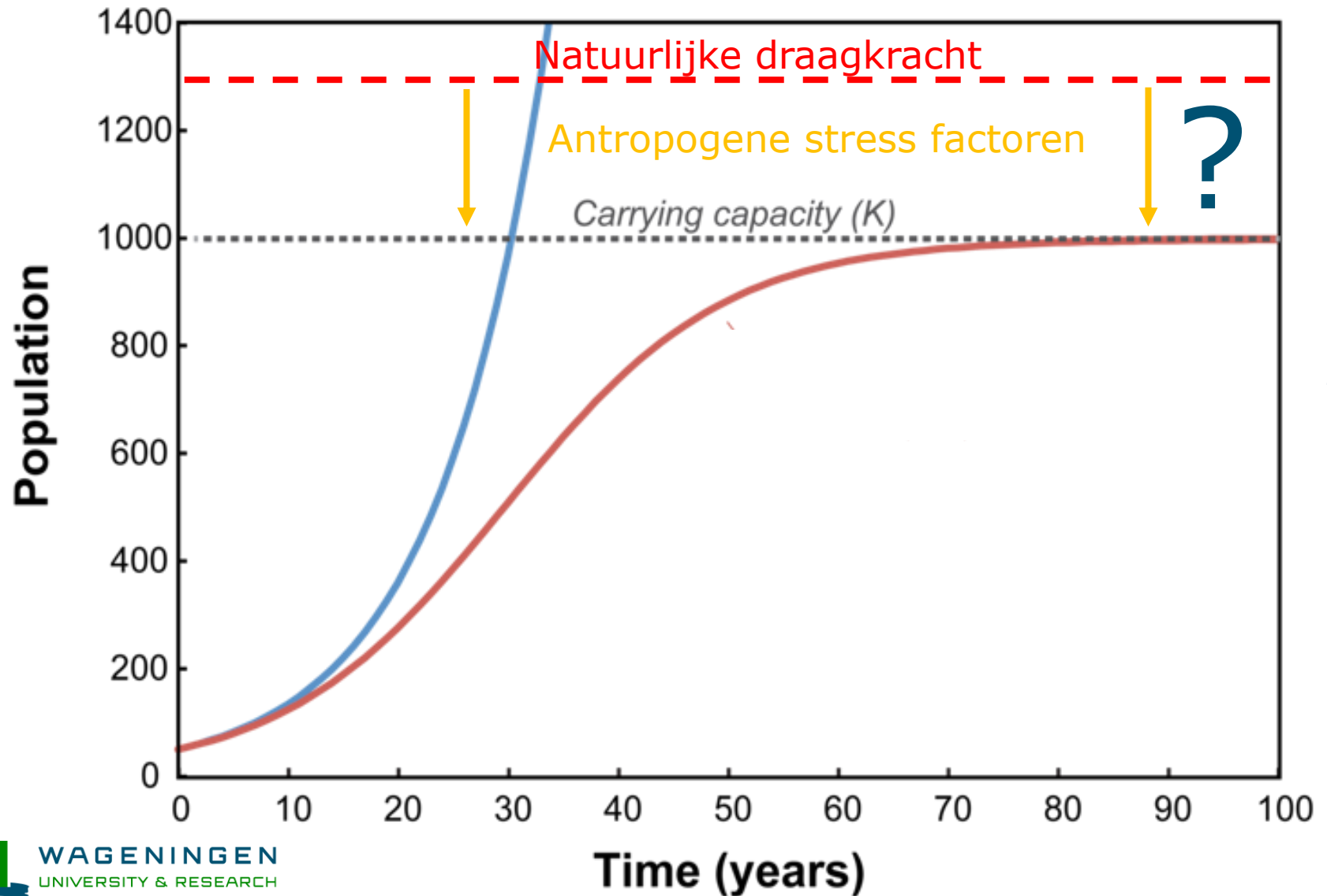
# Tijdbudget: met verstoring



■ Rust ■ Transit ■ Foerageren ■ Verstoring

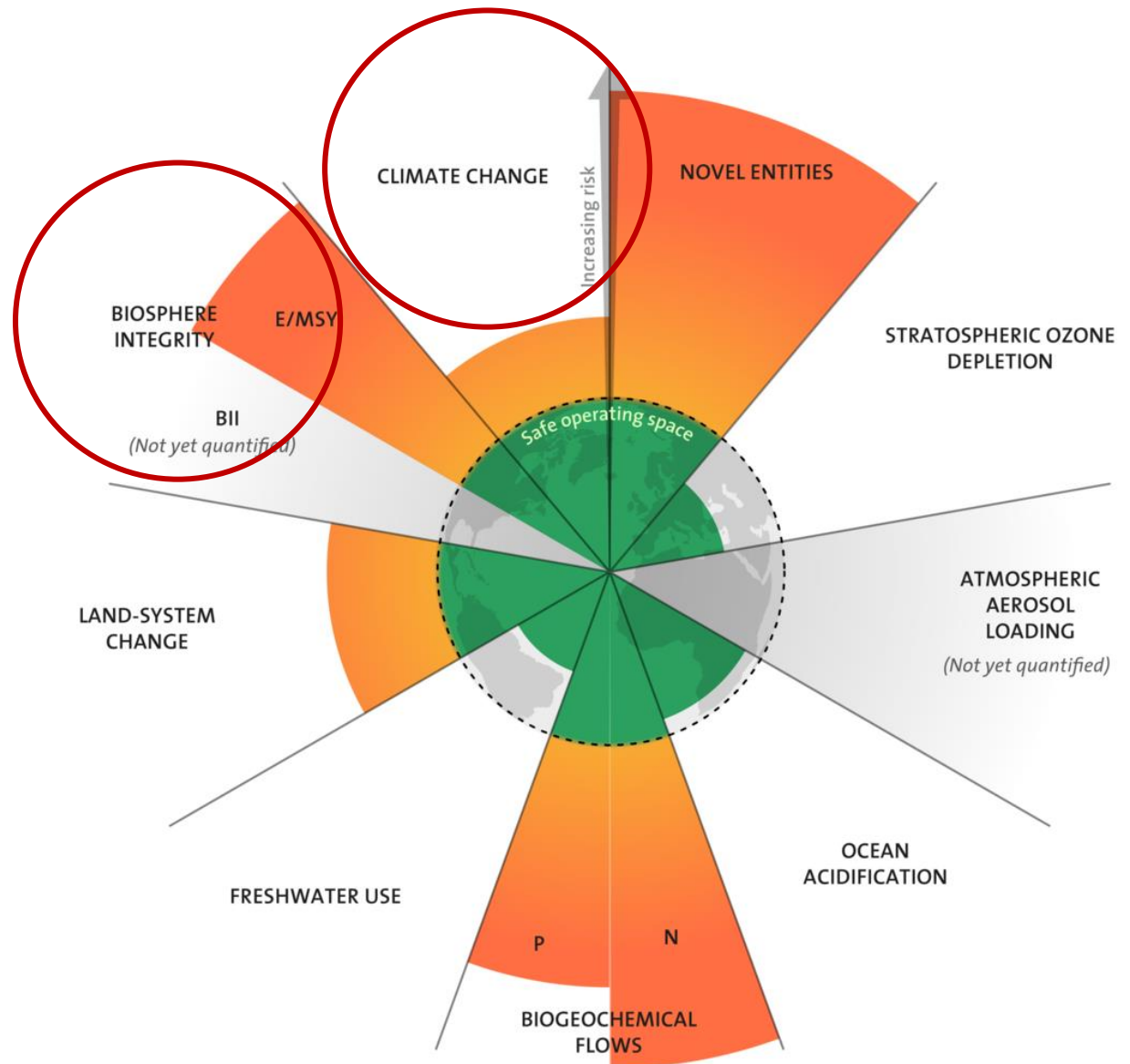
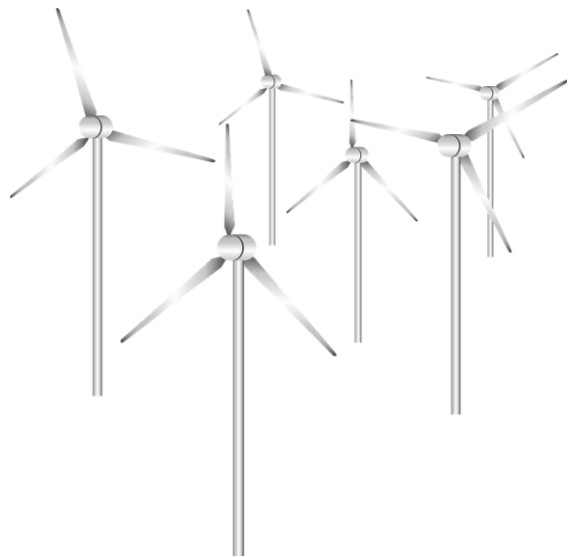
10% minder foerageren of 17% minder rusten

# Wat is draagkracht?

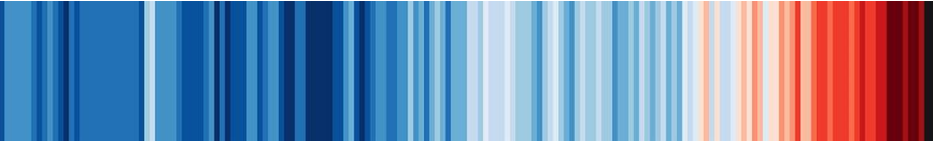
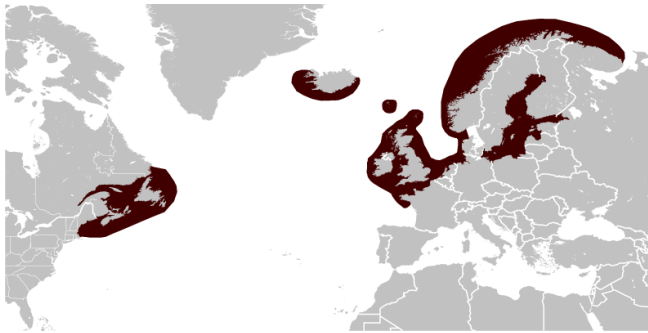




# Dilemma's



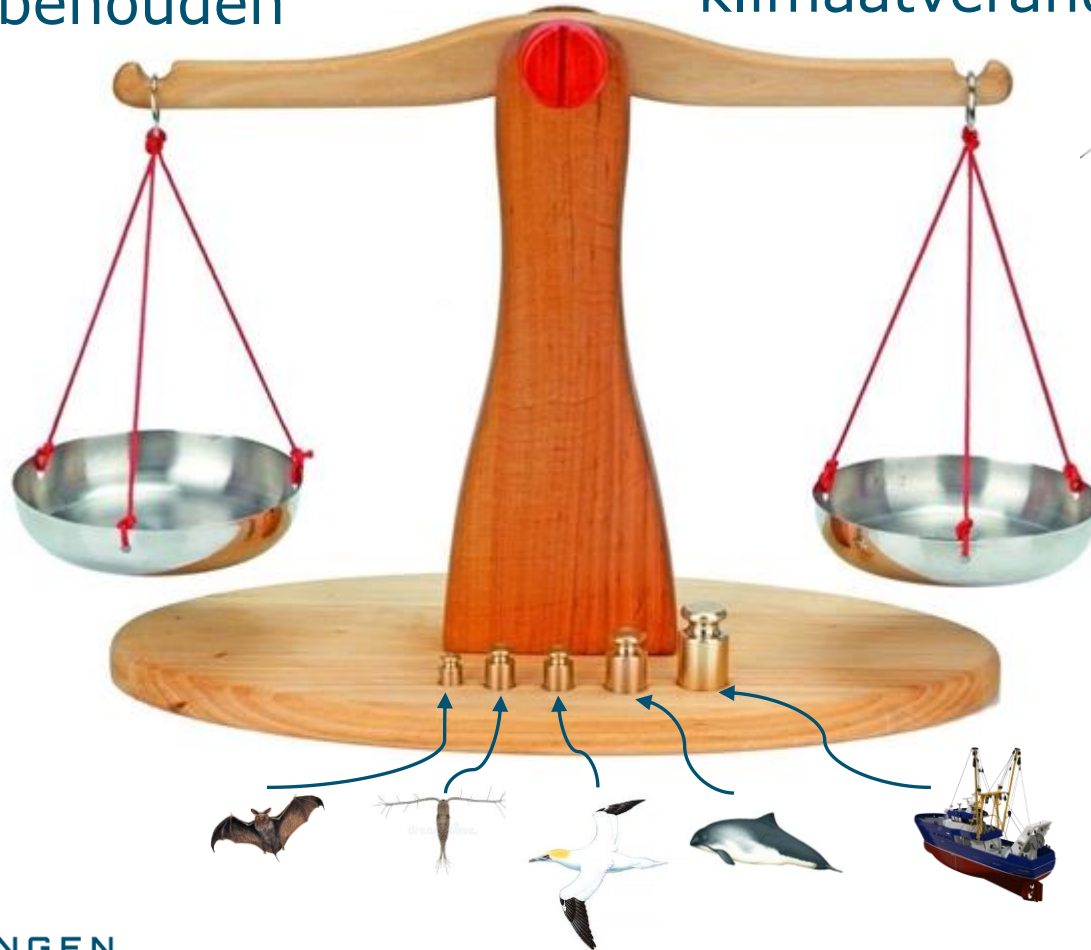
# Tegengaan klimaatverandering



# Hoe te wegen?

Biodiversiteit  
behouden

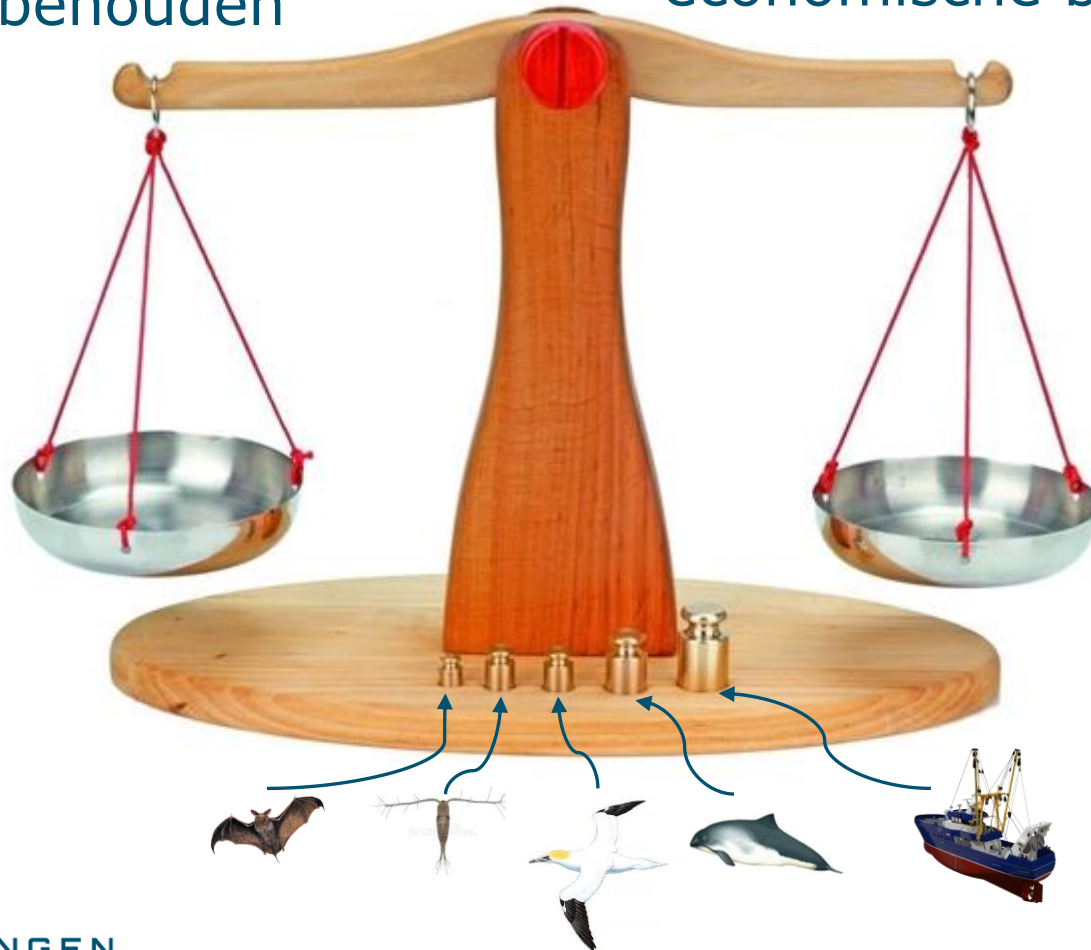
Beperken  
klimaatverandering




# Hoe te wegen?

Biodiversiteit  
behouden

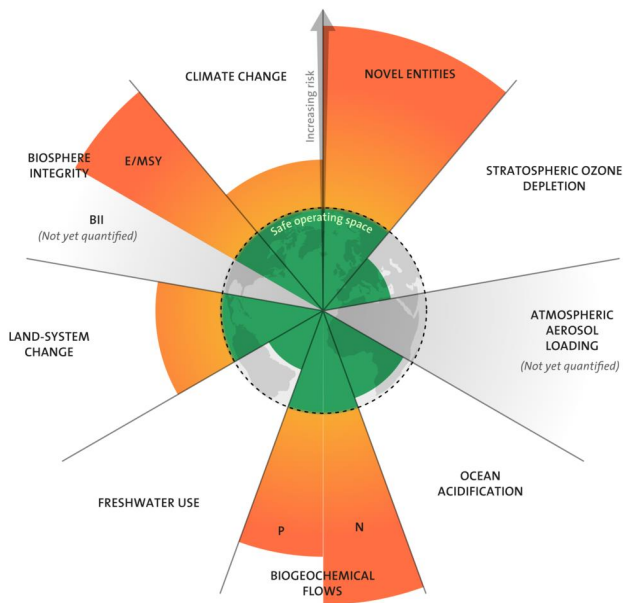
(Korte termijn)  
economische belangen



# Vraagt om holistische benadering

- Of iets 'erg' is politieke keuze (binnen de kaders van wetten en regels)
- Maar wetenschap kan helpen:
  - formuleren van heldere onderzoeksvragen
  - Doorrekenen scenario's
- multidisciplinaire aanpak. Alle soort-specifieke experts, maar vooral ook **economen & sociologen**.
-  voor de Noordzee (alsook ORELSE, NWA?)

# Bedankt voor het luisteren



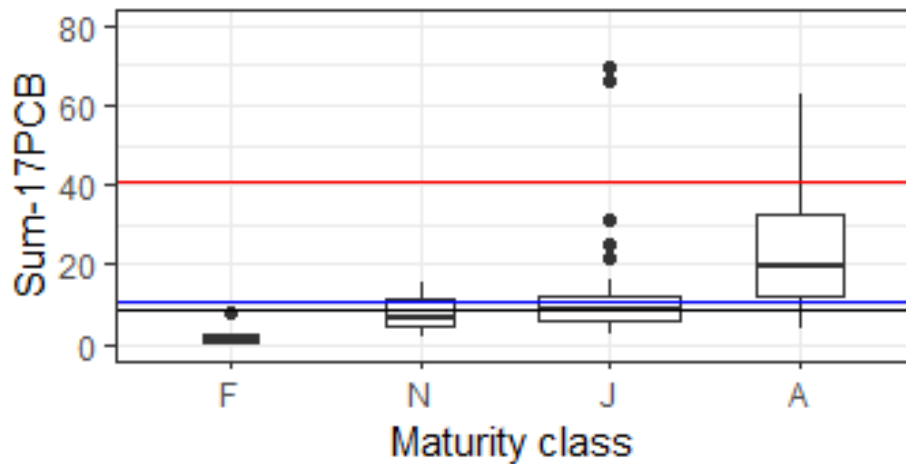


# Andere antropogene stressors

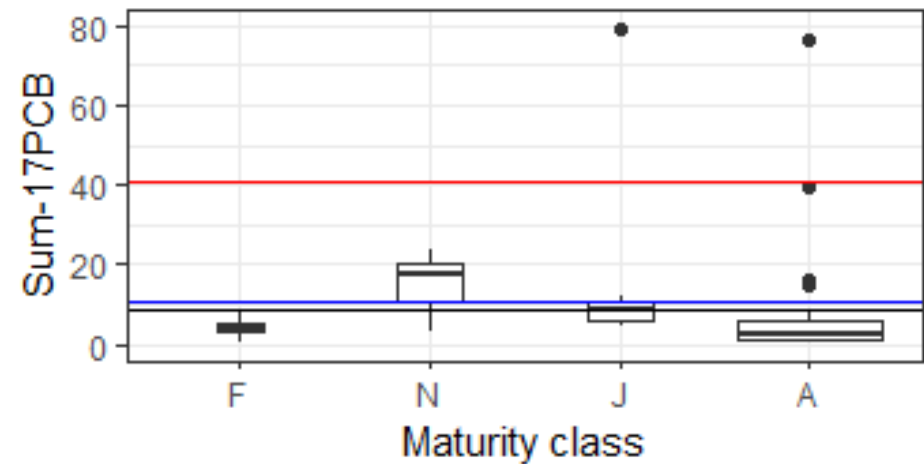
Ophoping & overdracht PCB moeder-kalf



Males n=63



Females n=58





# Afvlakking. Keert het tij?

