

WinMon.BE: The Belgian countrywide research program to understand cumulative impacts of offshore wind development



MUSEUM

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Getting ourselves geolocated...



Here's where most of you are.

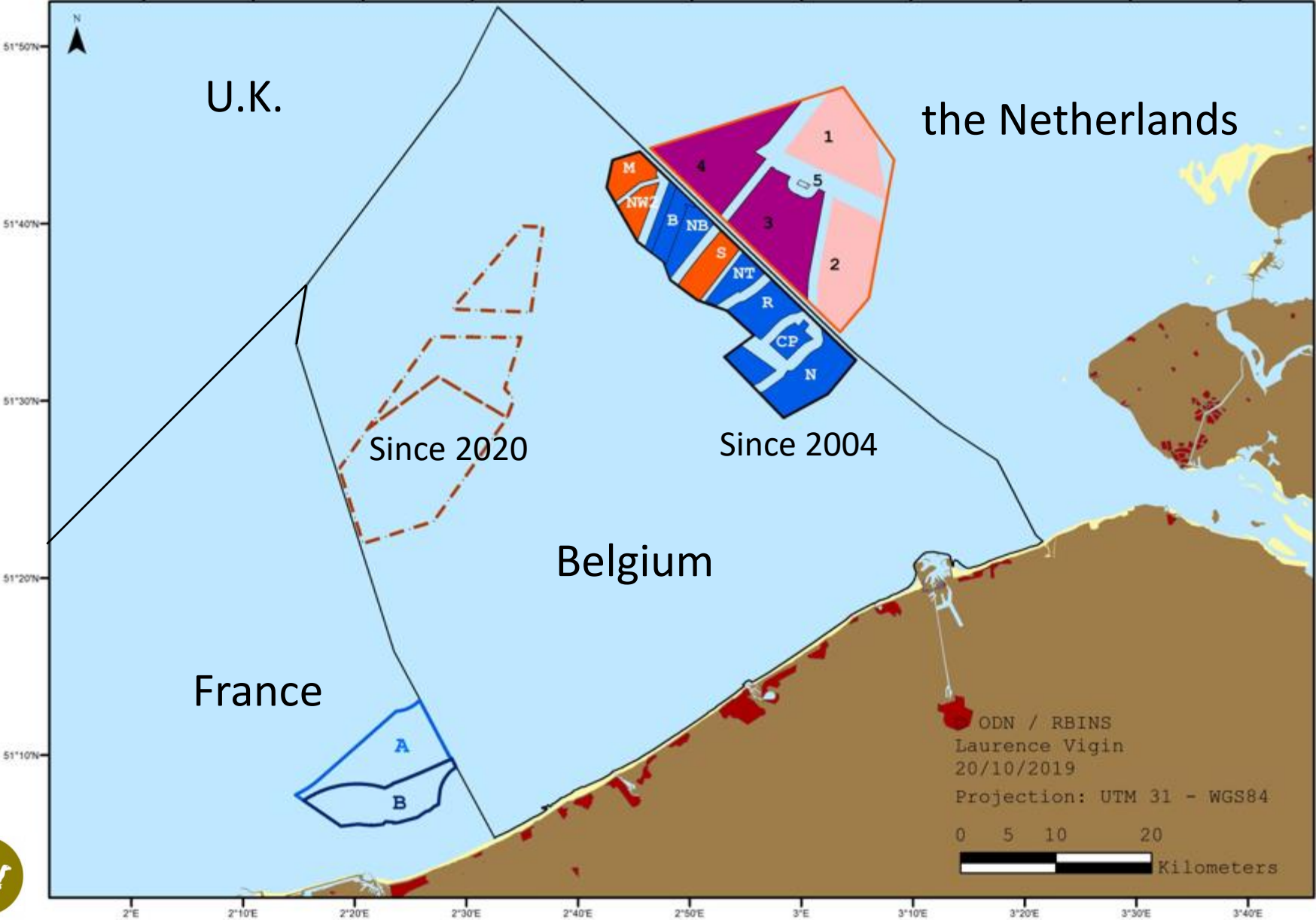


Here's where WinMon.BE is situated.

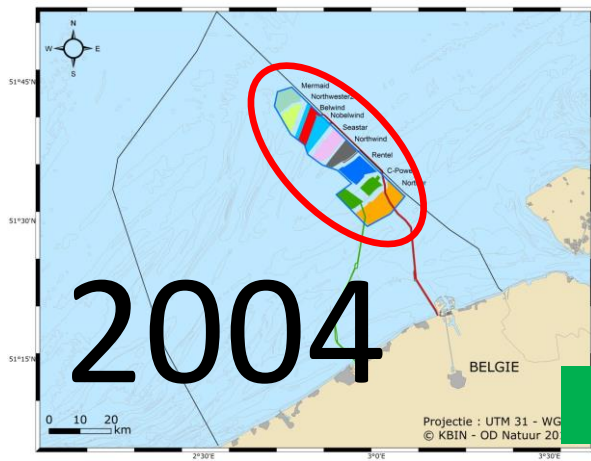


Here's where many wind farms are.

Belgian and neighbouring offshore wind farms



First attempts...
1990'



WinMon.BE WinMon.BE WinMon.BE WinMon.BE WinMon.BE



...



...



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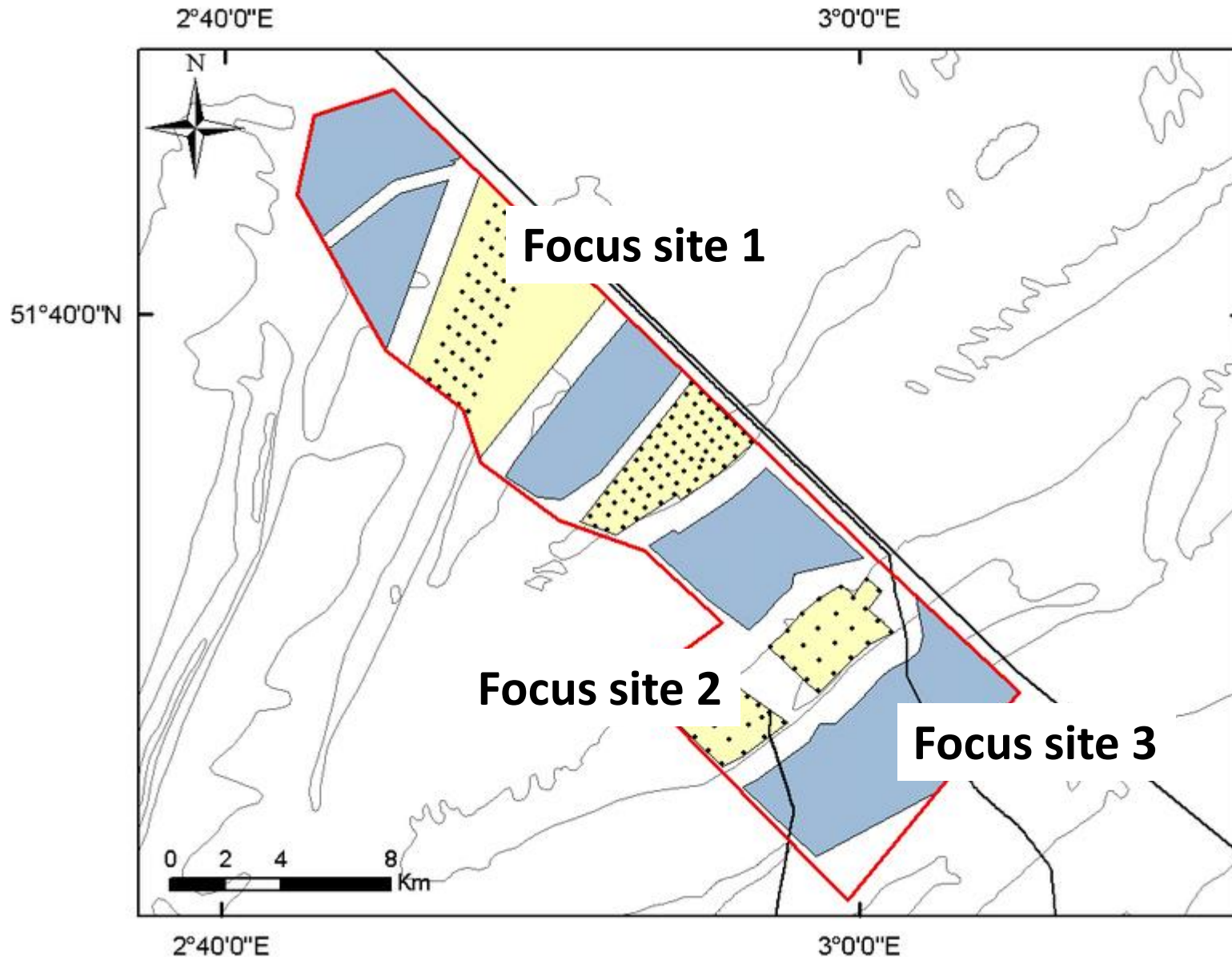
**Belgian offshore wind farms
and WinMon.BE:
between late 1990ies, 2023
and beyond...**

WinMon.BE WinMon.BE WinMon.BE WinMon.BE ?WinMon.BE?

WinMon.BE embraces

- A long-term and integrated approach.
- Observing and understanding of impacts.
- Adaptive monitoring.

1. Integrated monitoring...

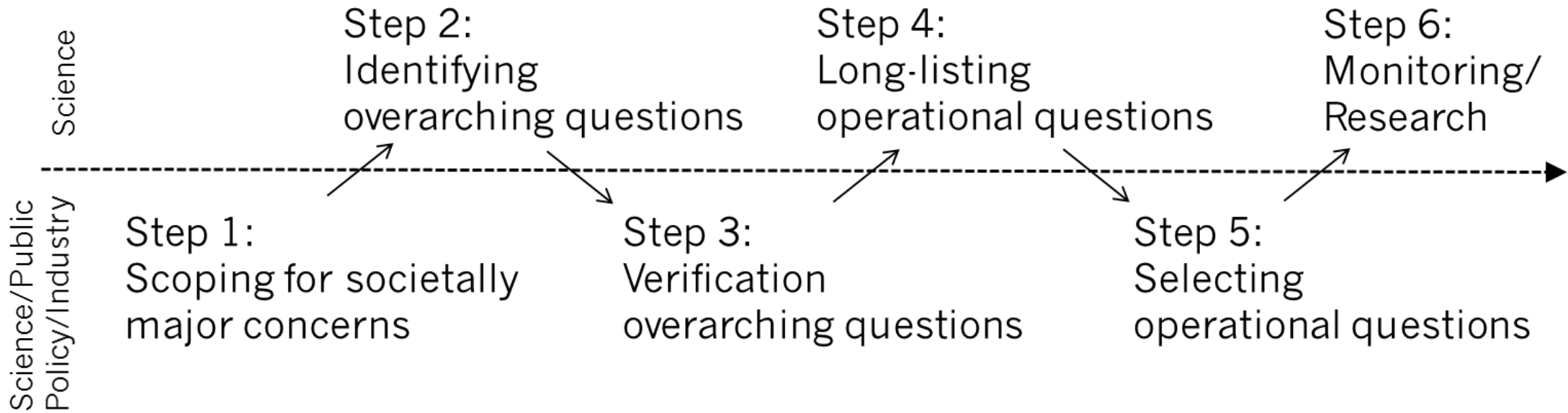


Two monitoring themes

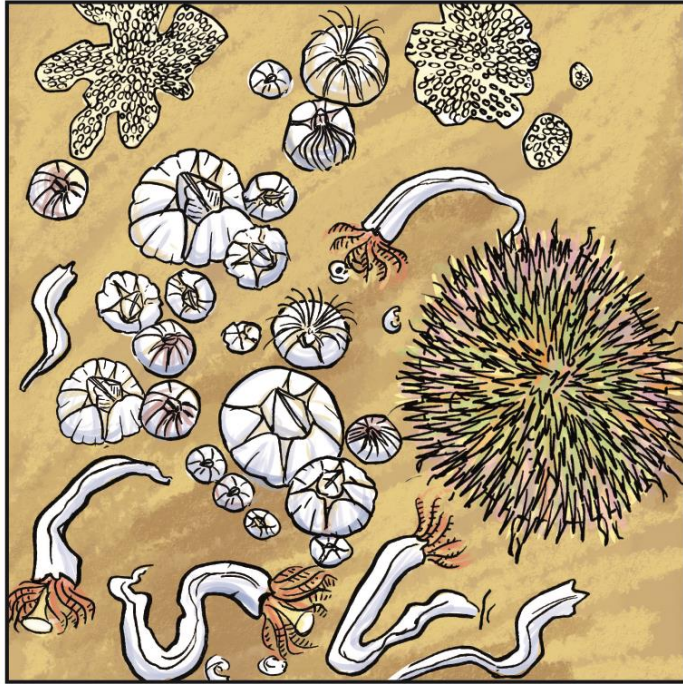
1. Marine mammals, seabirds and bats
2. Benthos, fouling and fish

... each with a monitoring programme coordinated in space and time...

1. New approach towards monitoring and research prioritisation...



1. Long-term monitoring is needed...



Pioneer stage
0-2 years



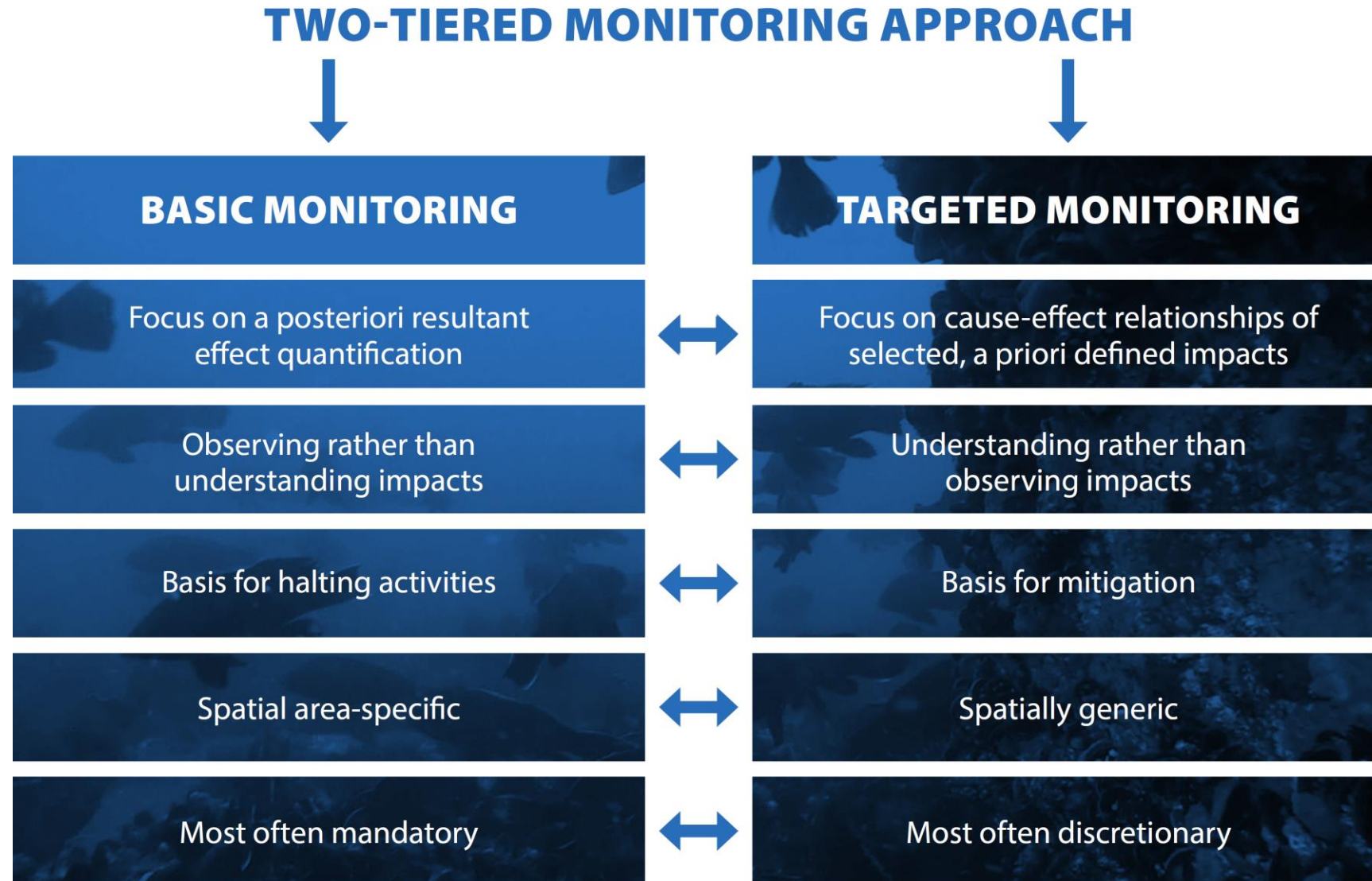
Intermediate stage
3-5 years



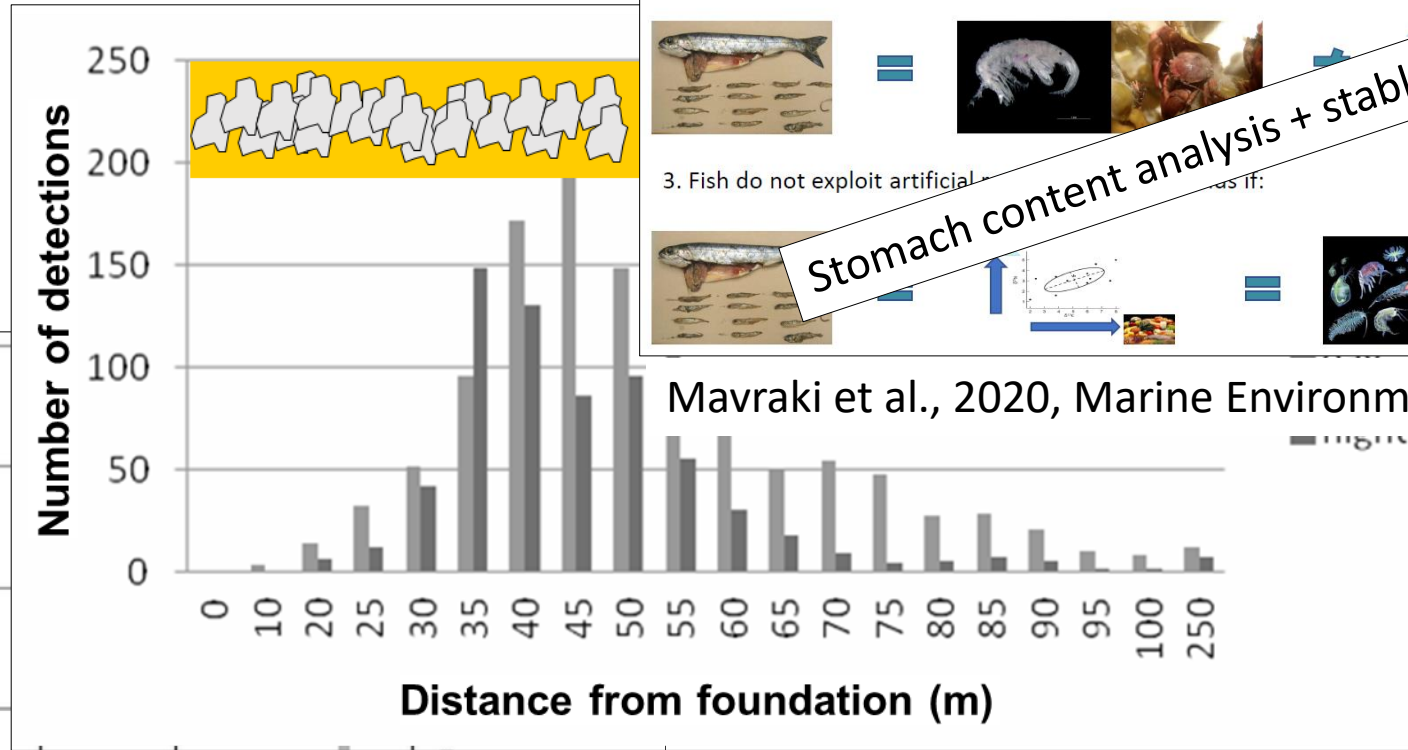
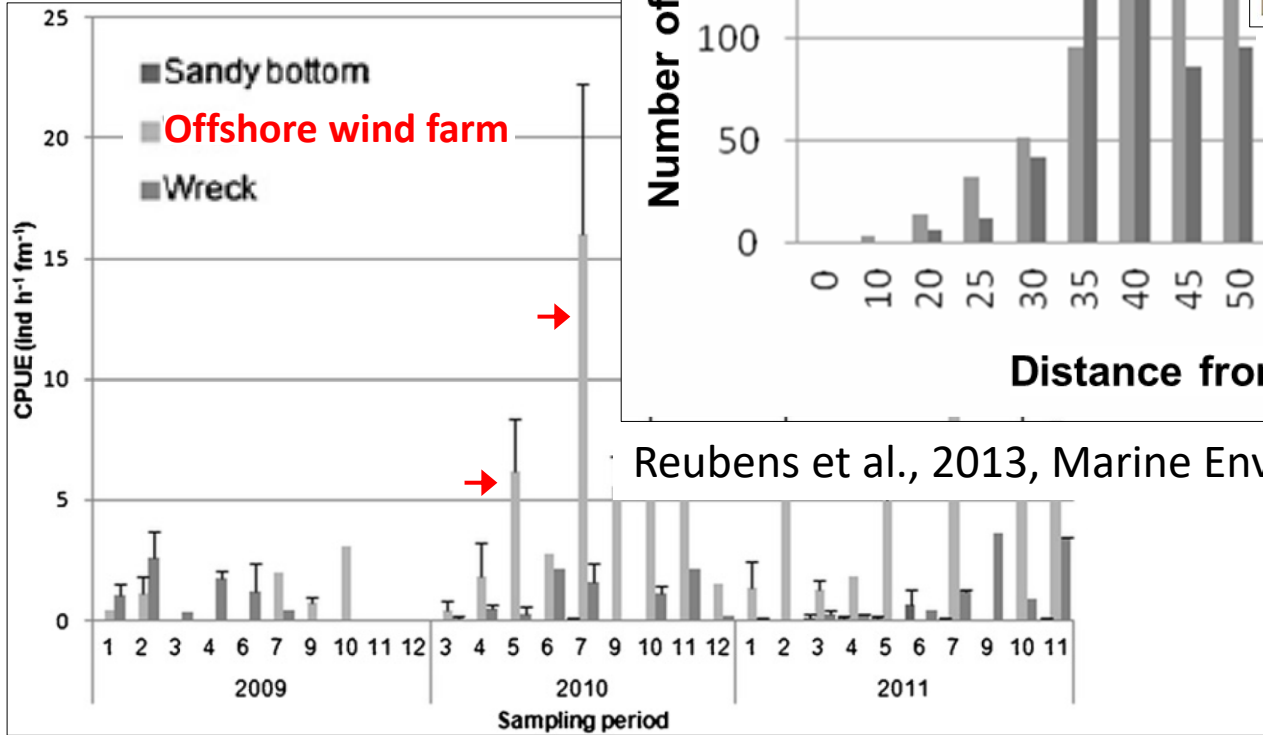
Climax stage
6+ years

Illustration by Hendrik Gheerardyn

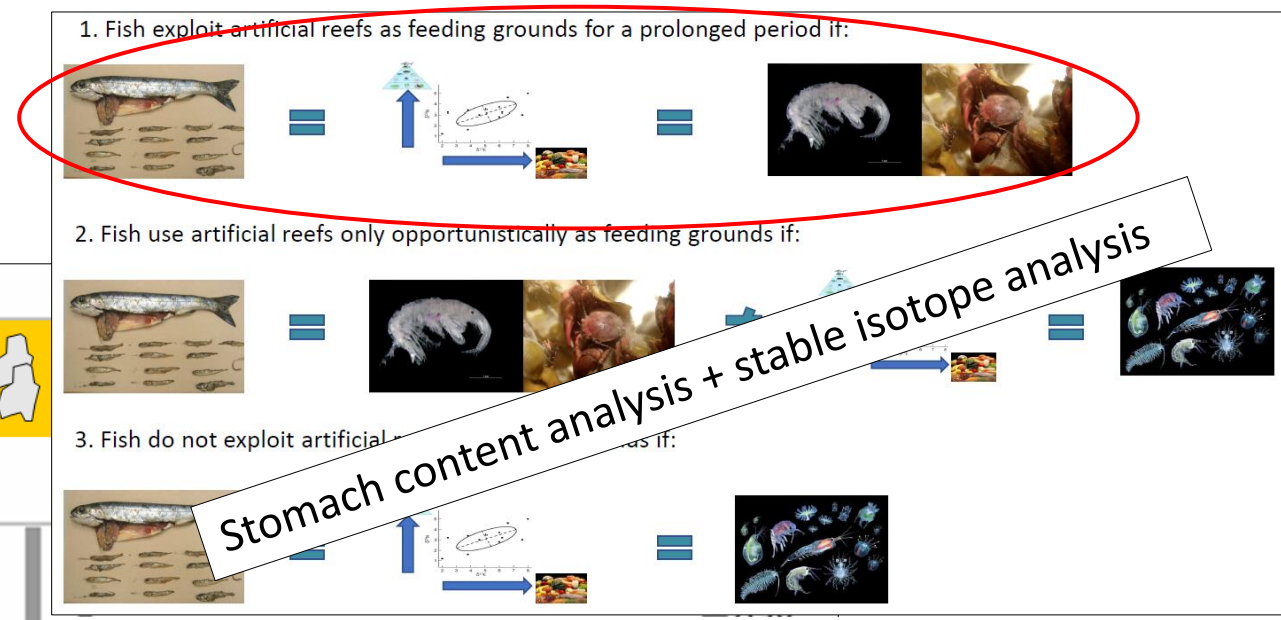
2. Observing and understanding of impacts



2. From observing to understanding



Reubens et al., 2013, Marine Environmental Research



Mavraki et al., 2020, Marine Environmental Research

2. Targeted monitoring and associated research projects



Functional biodiversity in a Changing sedimentary Environment: Implications for biogeochemistry and food webs in a managerial setting.

Focus:

- Effects of fining and hardening on biogeochemical cycles and food webs

Research designs:

- Field campaigns and lab experiments, modelling



ExPERimental approaches towards Future Sustainable Use of North Sea Artificial HarD SubstratEs

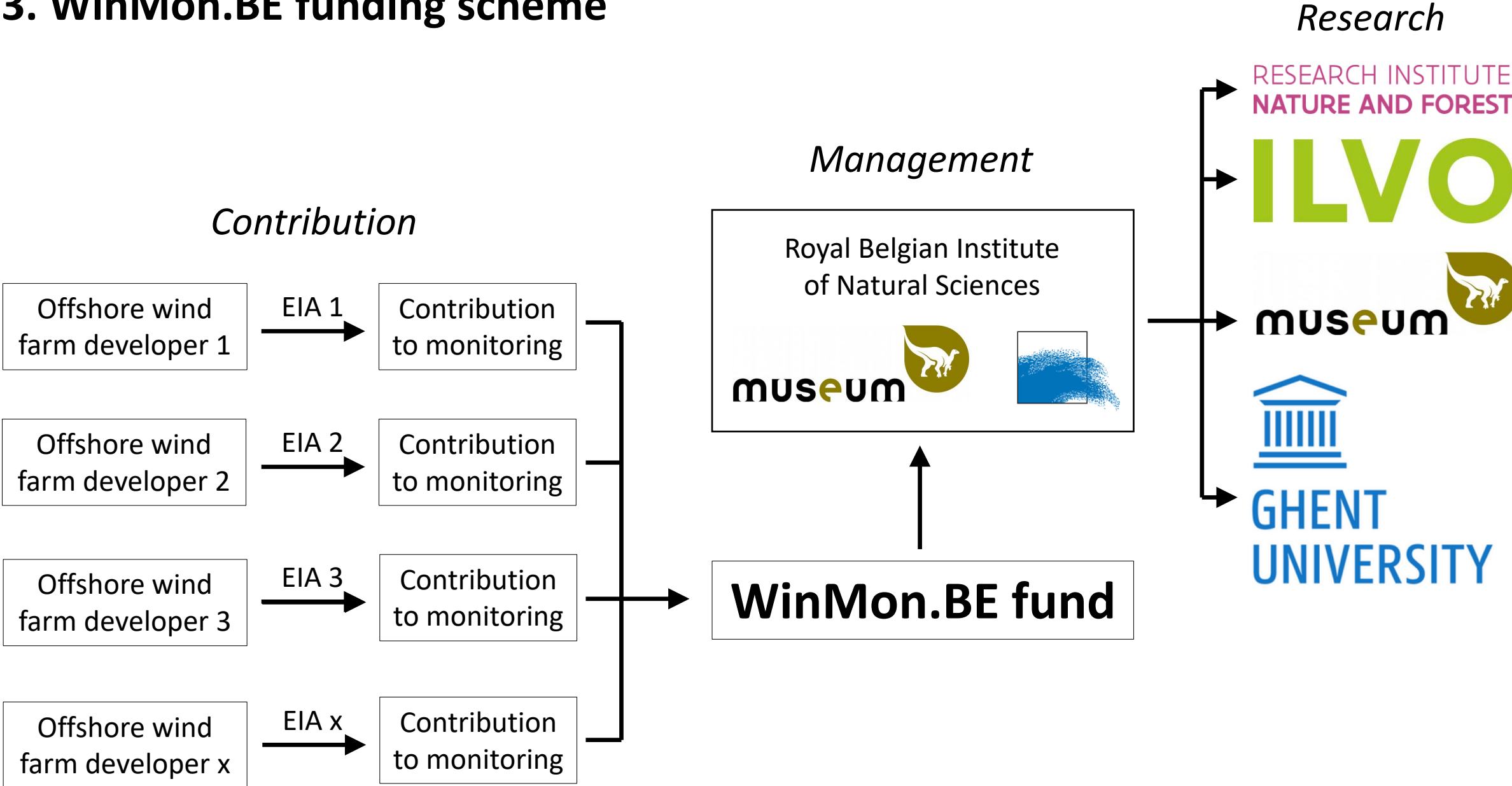
Focus:

- Effects of offshore wind farms on biogeochemistry and food webs...
- ...under changing climate and co-use conditions

Research designs:

- Lab experiments and modelling

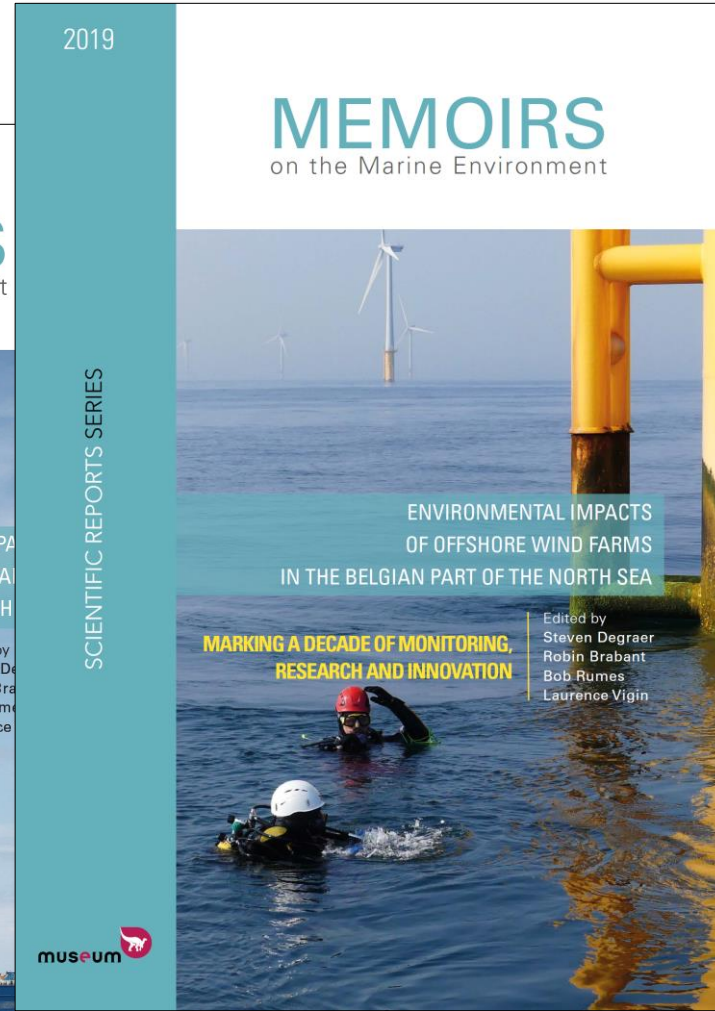
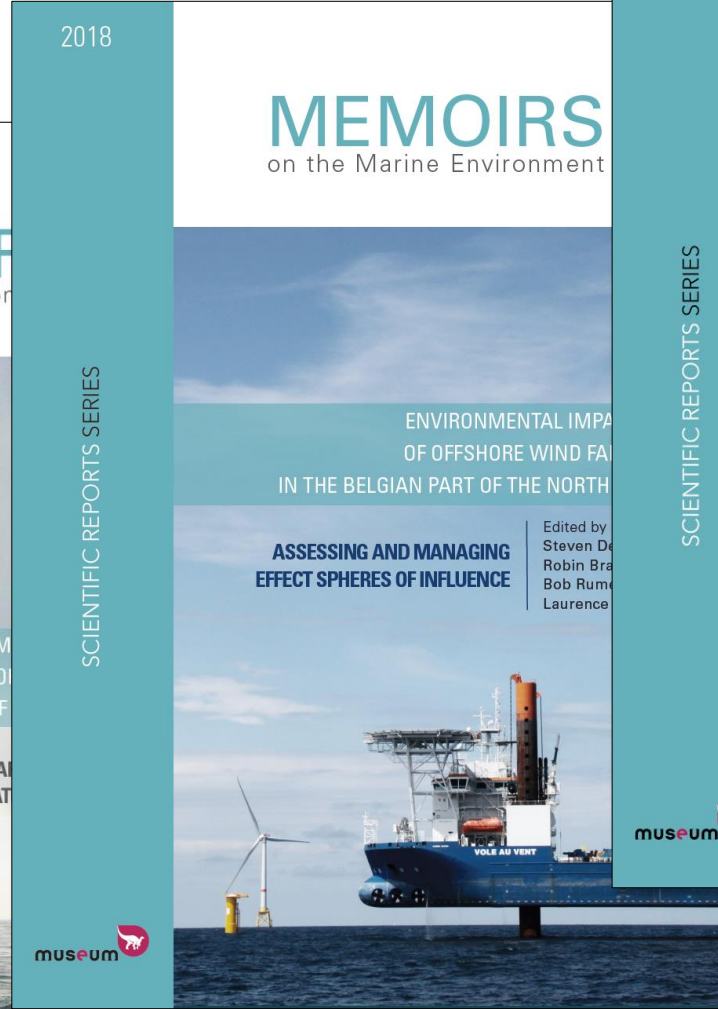
3. WinMon.BE funding scheme



3. Yearly WinMon.BE reports



...Est. 2009...



+ open data policy

<https://odnature.naturalsciences.be/mumm/en/windfarms/#monitoring>

Take home message

- Opt for a long-term and integrated approach.
- Opt for observing and understanding of impacts.
- Opt for adaptive monitoring.

Thank you for your attention