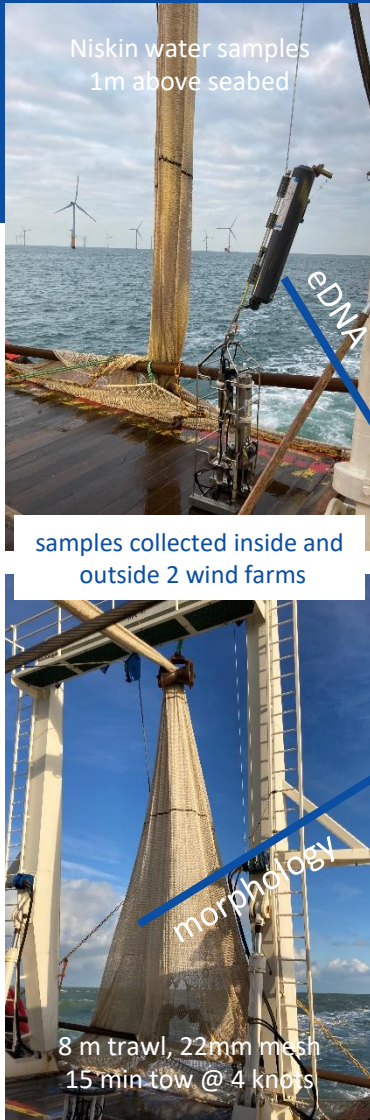
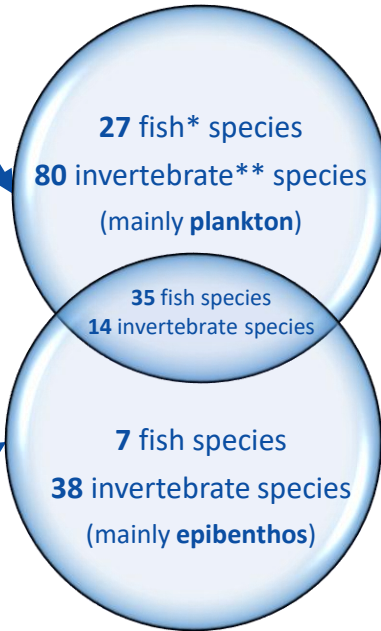


# Detecting fauna in Belgian wind farms, using eDNA



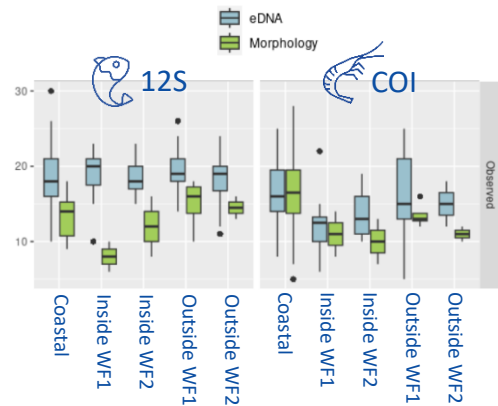
**eDNA** has proven to adequately capture fish diversity and spatial patterns. But is that also true for the shallow North Sea? And can eDNA be used as a tool to monitor changes in fish and epibenthic invertebrate communities within wind farms, which are difficult to sample with beam trawling?

## Species detection



\*12S eDNA  
\*\* COI eDNA

## Diversity patterns



## Time & costs

Beam trawling was **42.5% faster & 53% cheaper** than eDNA-based analyses with two marker genes. However, eDNA monitoring is **much less invasive** for the environment and for the species of interest!

(GEANS data 2023, based on samples taken in 2021)

- Considerably more fishes and invertebrates were found with eDNA than with morphological identification of beam trawl catches.
- Patterns in species numbers and community structure of fishes and invertebrates found with eDNA were similar to those observed with morphological analyses.
- The majority of the fishes detected in the beam trawl catches (83%) were also detected with 12S eDNA, while only a small fraction of the invertebrate species found in the catches (27%) were detected with COI eDNA metabarcoding.



*We recommend 12S eDNA monitoring as an alternative for fish monitoring. However, for epibenthic invertebrates eDNA metabarcoding is not a valid alternative.*