

How Reproducible are DNA Metabarcoding Data for Marine Macrobenthos?

Testing Repeatability, Testing Repeatability, Testing Repeatability

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Background

Compared to morphological identification, DNA metabarcoding is potentially:



faster



cheaper

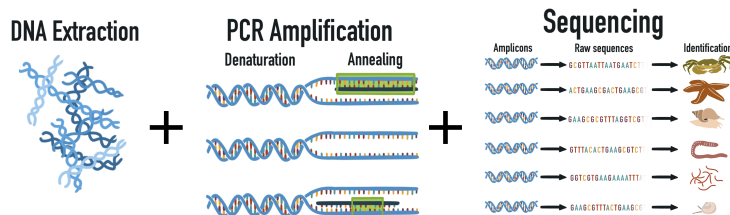
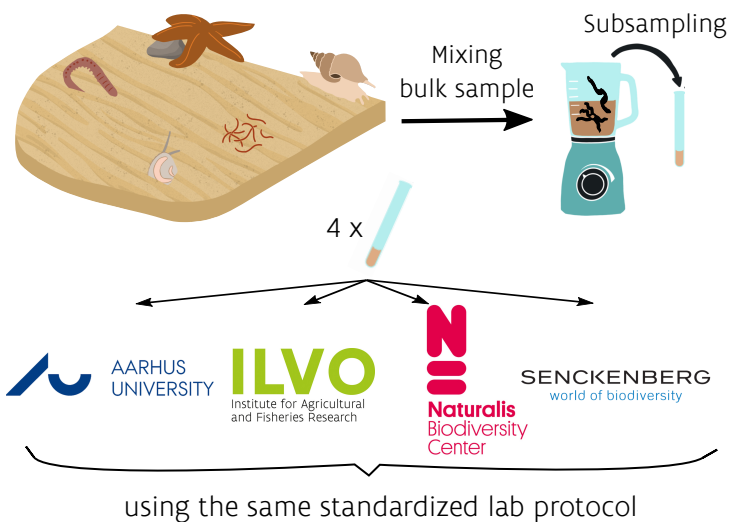


no experts

BUT to be applicable in environmental impact assessments and to be adapted by policy, a standardized protocol that allows for reproducible and robust DNA metabarcoding results is a prerequisite.

Methods

Sampling four macrobenthic communities with different diversity in the Belgian Part of the North Sea.

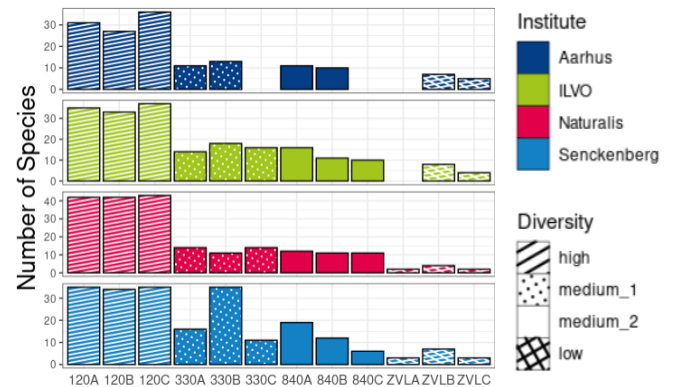


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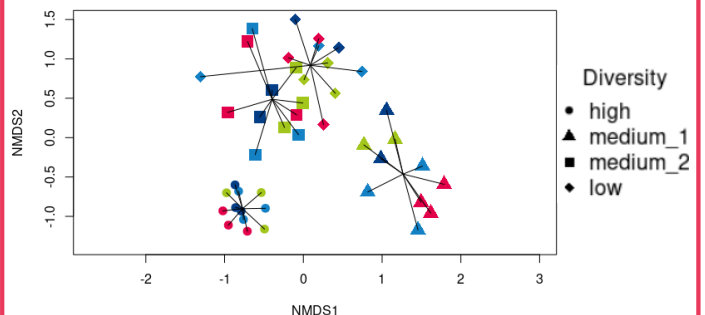
Results

The number of species reflected the morphological diversity patterns: high to low values for replicates from high to low diverse macrobenthic communities, respectively. These patterns were **identical between the four institutes**.

58% of the detected species through DNA metabarcoding were shared between all institutes.



The clustering is based on the different macrobenthic communities, independent of the institute that conducted the work.



This study shows for the first time that DNA metabarcoding offers a **highly reproducible assessment of alpha and beta diversity patterns**, which demonstrates the suitability of DNA metabarcoding for environmental monitoring of marine macrobenthos.

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