

Biofouling on recreational vessels: metabarcoding for rapid screening of NIS



The connectivity of maritime and inland waterways promotes the risk of unnoticed distribution of **non-indigenous species (NIS)** in the form of biofouling on ship hulls or by ballast water.

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Screening of biofouling requires scraping the hull and visual identification. However, individuals get damaged in the process, and especially bryozoans, cnidarians and small annelids are hard to identify. A test case was set up in one North Sea and one Baltic Sea marina to test the potential of **metabarcoding** as screening technique.

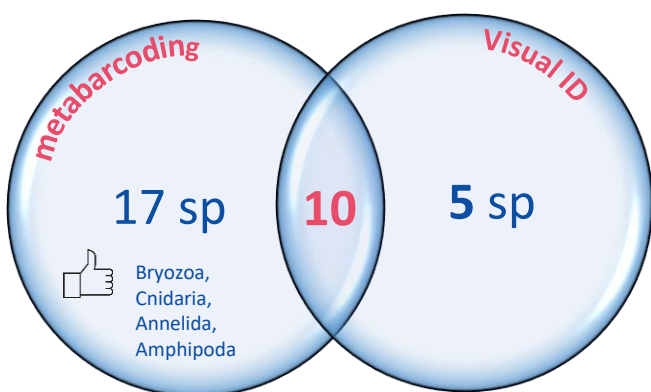
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Research questions

- Is there a difference in organisms detected?
- What is the specificity towards NIS?
- Is it possible to identify to species level?
- Can metabarcoding replace/supplement traditional methods?
- What is the best possible cost-benefit combination?



(Based on 2020 GEANS case study, with the Federal Maritime and Hydrographic Agency (BSH) and the BMDV Network of Experts)



! high potential for identifying larval stages and detecting 'difficult' taxa

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! At present, **reference libraries** are the limiting factor for deeper information yield and better species match results.

! Metabarcoding can be used as a tool for a rapid screening and check specific cases, but visual screening is still necessary for a full assessment.

Metabarcoding provides a SUPPLEMENT to traditional visual identification of NIS in scrape samples, but extra effort is needed to EXTEND the REFERENCE LIBRARY.