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## **Enabling detection of ecological patterns in 10.000 samples representing the Danish soil microbiome**

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# MICROFLORA DANICA – THE MICROBIOME OF DENMARK

Mads Albertsen, TBN. Jensen, V. Rudkjøbing, EA. Sørensen, M. Sereika, SM. Dall, S. Knutsson & PH. Nielsen

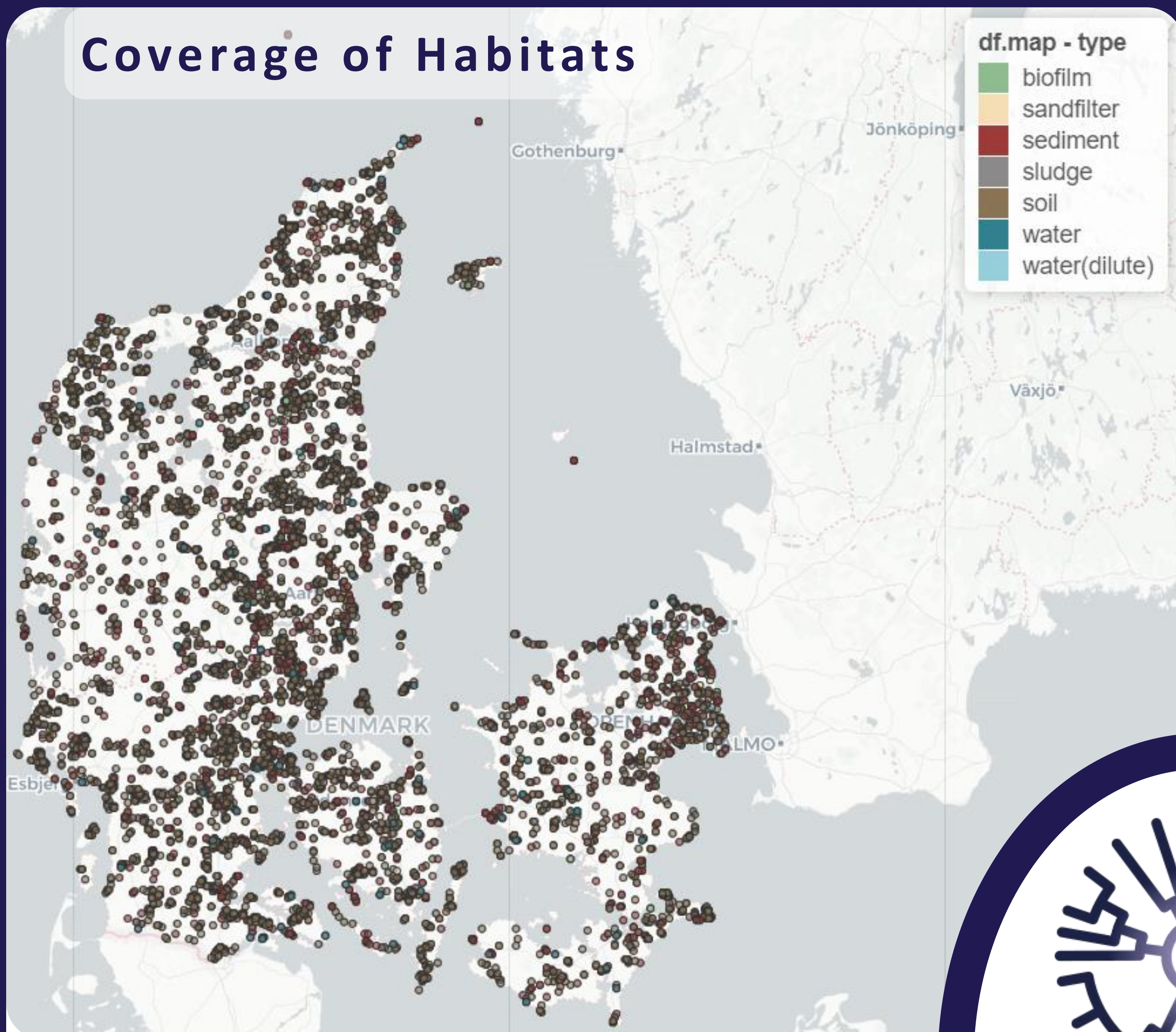
Center for Microbial Communities, Aalborg University, Denmark



## Introduction

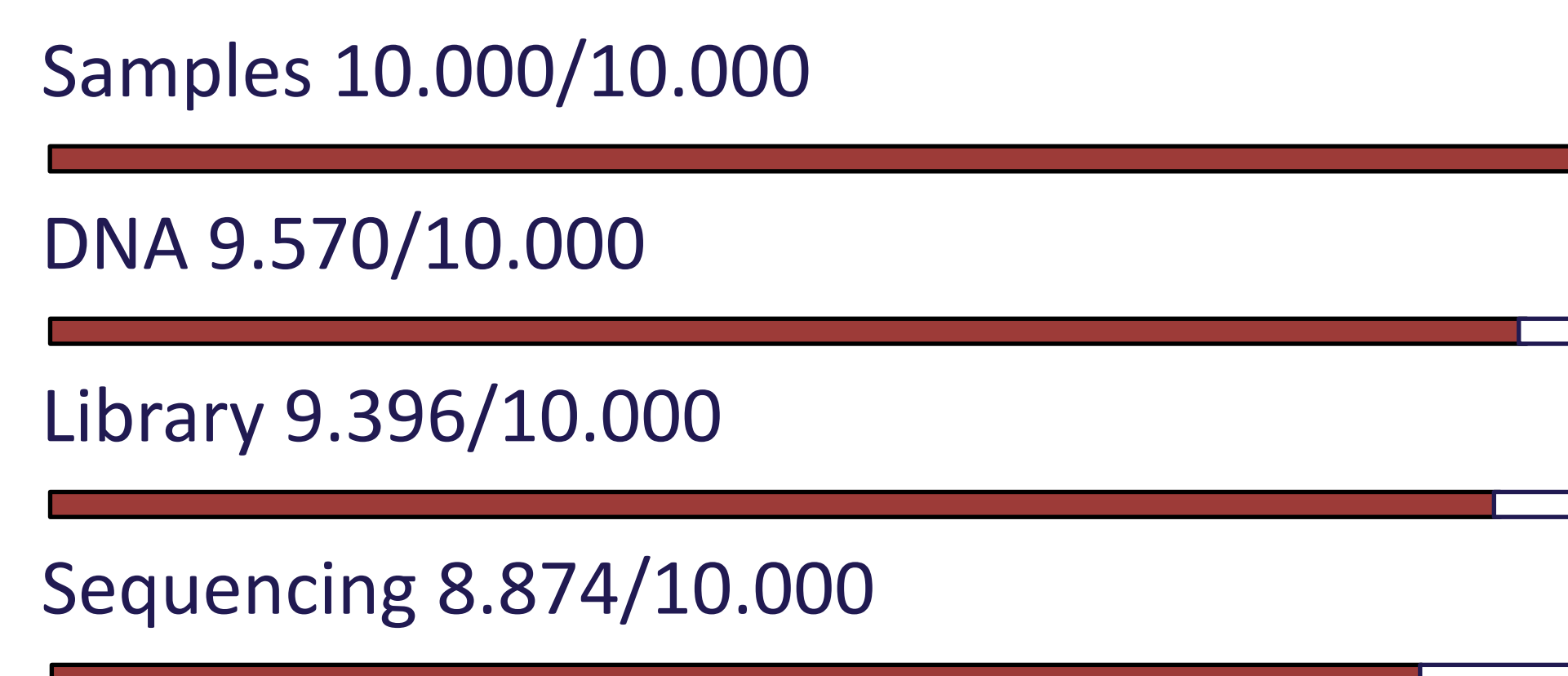
By sampling soil, sediment, and water across both natural and cultural habitats and by applying novel DNA-based sequencing technologies, the aim of Microflora Danica is to generate an almost complete reference database of the microbiome of Denmark. The purpose of Microflora Danica is to establish a common reference database and to link the identified microbes to their functions and distributions across different habitats.

## Coverage of Habitats

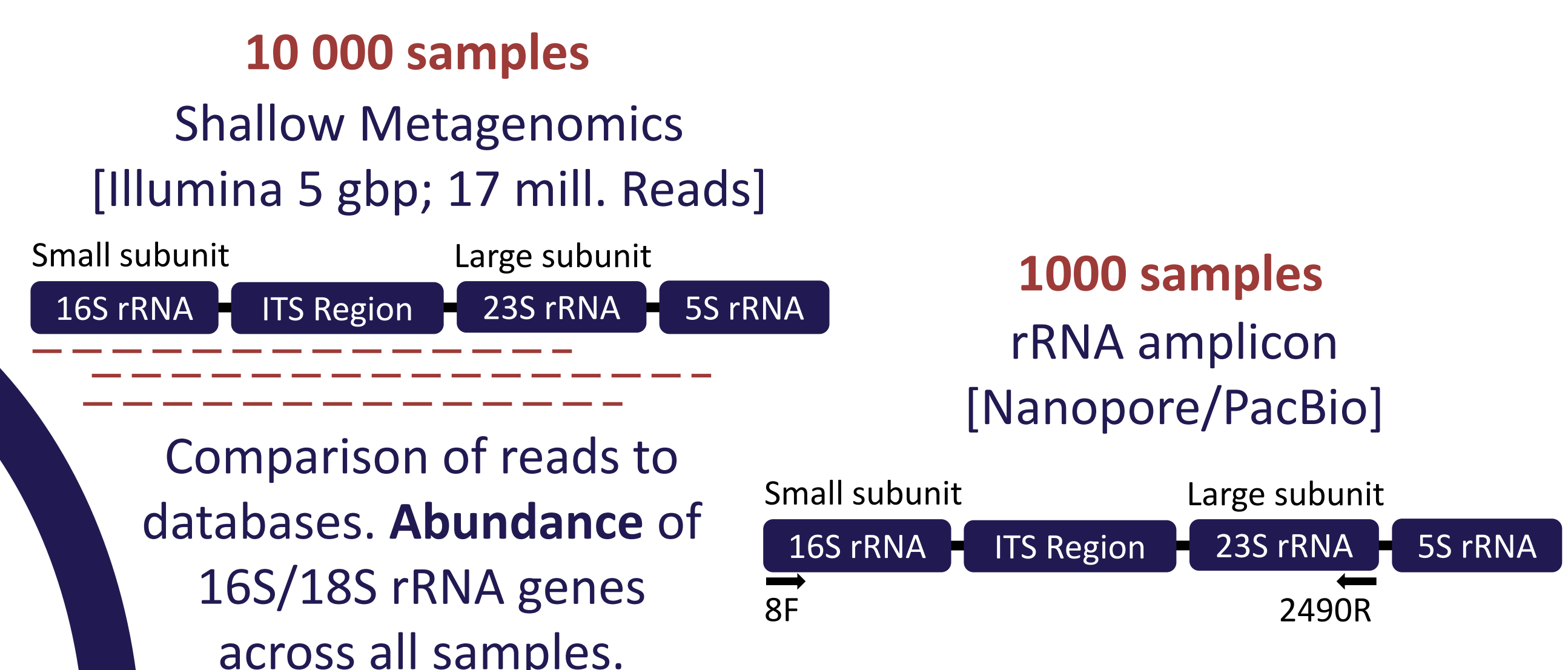


- 10.000 samples covering **natural and cultural habitats**
- **EMP500** samples included

## Project Progress

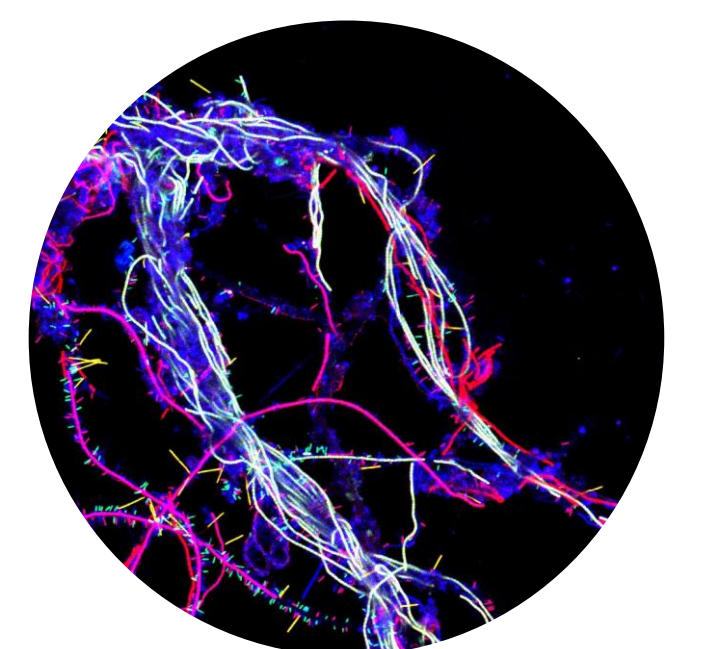


## Types of Data



Database of high-quality reference **16S/18S rRNA** sequences to build the tree-of-life.

Interesting samples  
FISH and FISH-Raman  
microspectroscopy



Visualization of **novel** and **uncultured** bacteria

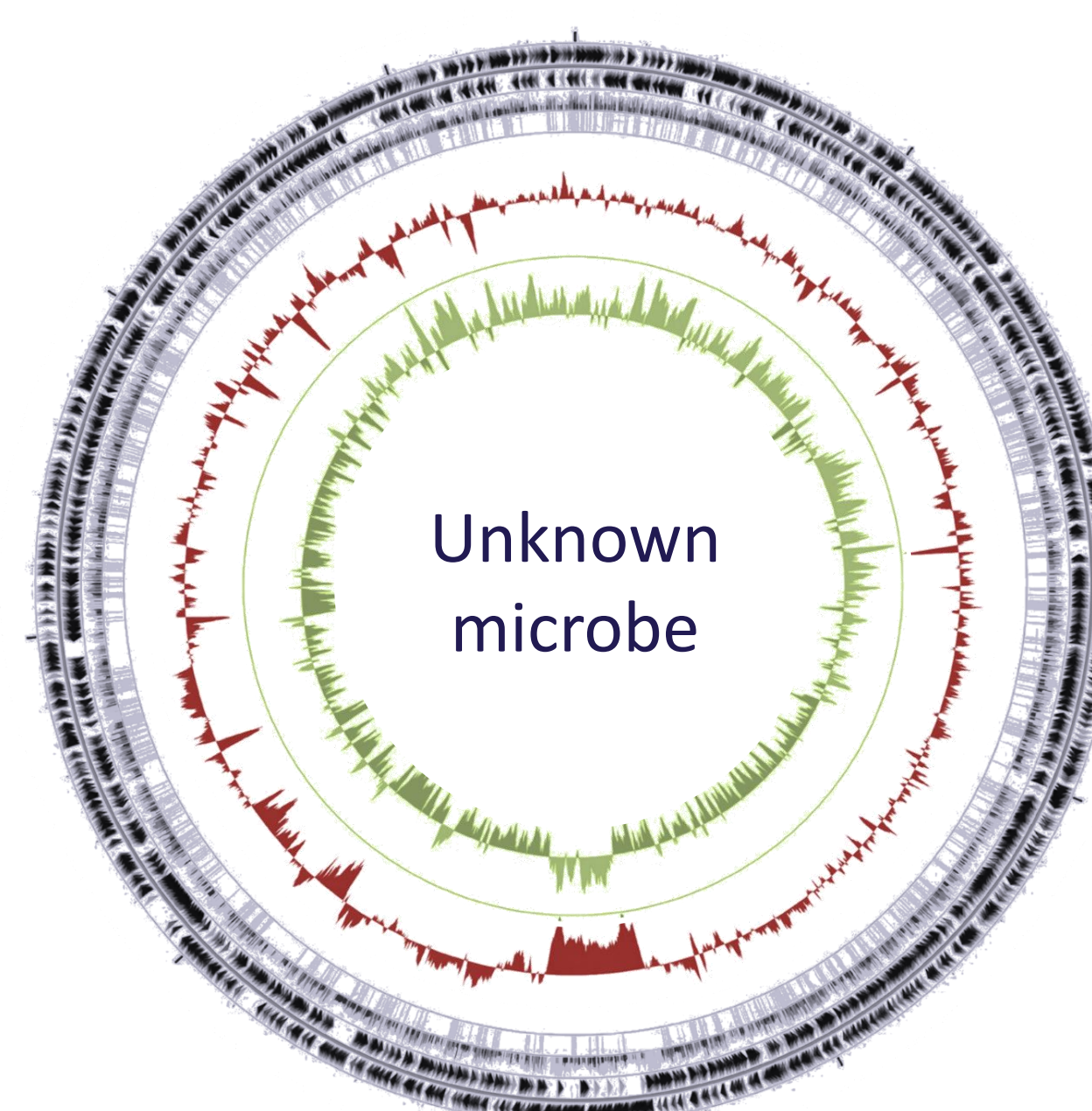
## Developed Methods

- Barcoding and **automated registration** of samples
- High throughput DNA extraction – **276 samples a day**
- **10x down-scaling** of sequencing library preparation through nanoliter dispensing
- Automated workflows using **liquid handlers**
- Automated **sequence processing pipeline**

## Database

- Based on latest release of SILVA
- Addition of new full length 16S sequences
- De novo name generation when needed
- Expectation: final version based on < 15 million sequences

## Research Questions



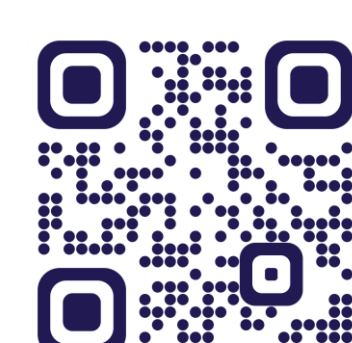
- Assessment of novelty and diversity
- Importance for habitat function
- Prediction of habitat preferences
- Naming of novel organisms



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MicroFlora Danica

POUL DUE JENSEN GRUNDFOS  
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