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# MARE INCOGNITA

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## AECO - Monitoring Workshop - Svalbard March 2019

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# Content

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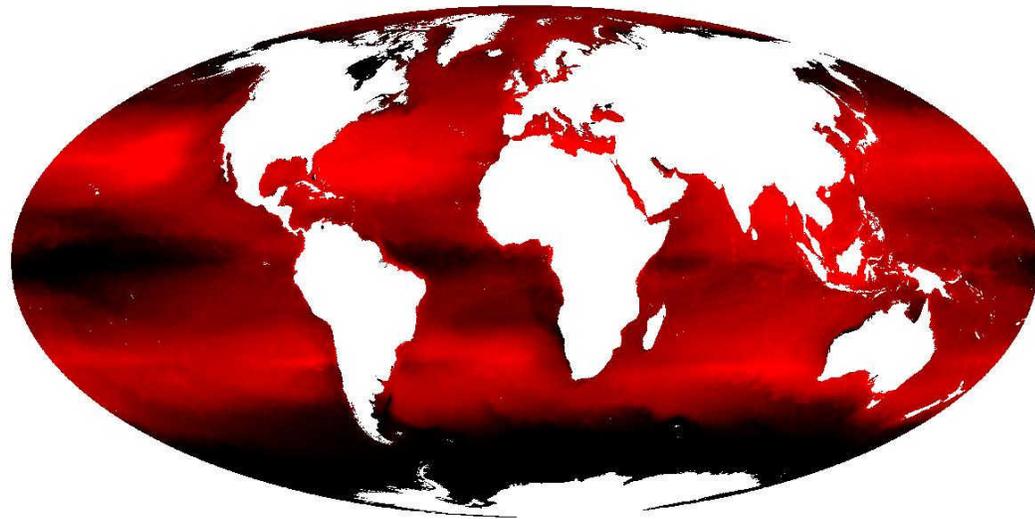
## The boat and the organisations:



**MARE INCOGNITA** is a Non-Profit organisation that brings people the opportunity to sail and have an unique experience on board of and iconic former Whitbread Sailing Yacht (actual Volvo Ocean Race) – The routes are namely in the Nordics and Arctic Region.

## About Wide Ocean

### Strategy and Vision



Plastic Pollution in Oceans Copyright wideocean.org

Wideocean is a Non-Profit organisation that supports impactful projects in order to help scientific research, monitoring and protection of the Oceans in all marine biospheres and ecosystems. Our focus is in research, risk management for sustainable investments, conservation and protection of marine species and waste prevention: mainly macro and microplastic.



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## **Opportunity Identification for Monitoring and Scientific Collaboration**

### **Scientific Research**

- Attending scientific conferences
- Attending network events . E.g. the Swiss Polar day
- Using of existing network, science networks

### **Monitoring Networks**

- Weather (NOAA - WORLD OCEAN DATABASE (WOD))
- Ocean and Pollution (p.e. plastic NOAA *Marine* Debris Programme, IUCN's programme of work on marine plastics, Ocean Acidification, Acoustic Pollution Measurements)
- Soil monitoring
- Marine life, Ecosystem monitoring (acoustic monitoring, photo identification (p. e. mammals, whales, seabirds, water sampling (plankton))



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## **Specific Survey and monitoring**

- Tsunami modelling of calving glaciers
- Mammal monitoring
- Whale monitoring

## **Supporting logistics**

- Transport of Infrastructure
- Transport of Scientists, Photographers



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# Data driven approach

- Risk models
- Pollution models
- Trajectory, tracers of pollution
- Social media data



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## Use cases

DNA Sampling Permafrost Habitat - WSL, ETH Zurich



### Scientific approach

DNA sequencing to assess soils in permafrost habitats analysing ecological patterns and microbial communities and the impact of climate change

### Area and samples covered

Svalbard, East, South and West Greenland in 2018, Surface Millions of Square km<sup>2</sup>, 30+ locations with 200+ samples on height elevation from 0 meters up to 1000 meters, in soil depth 0- 1000 mm

Samples were taken for DNA Sequencing, chemical and physical parameters (pH, Soil parameter)

Pictures and temperature measurements of soils where performed



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## Platform

As a transport platform we used our Mare Incognita Sailing boat, a Whitbread Racing Boat. Most of the distances were sailed, little or no use of Diesel and no use of Helicopter. Local surveys and Aerial photography where performed with drones, transport to sites with canoes, dinghy's and hiking.

## Equipment used

Very limited, spade, DNA conservation liquids, sampling bags, thermometer.



## Education, Training of Field staff

Detailed sampling procedures were documented  
2 Trainings were performed for field staff (sampling, pipetting, conservation, documentation of DNA samples)

## Results

DNA sequencing is ongoing



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