Webinar, 28.10.2026

FINMARI Market Place

Programme

- FINMARI partners – presentation of facilities and services **5 min!**
- Aranda
- European RIs
- Transnational access
- Researchers' pitches
- Other opportunities, open positions, etc.

Fin MARI
Finnish Marine Research Infrastructure

Next up: Service presentation / Syke / Jukka Seppälä

Remember that you can post comments, questions, info and links in the chat all along.

Fin MARI
Finnish Marine Research Infrastructure



Marine research services Syke

Marine RI facilities and services of Syke

- Services of Syke

  https://www.finmari-infrastructure.fi/service-catalogue/

- Main facilities
  - Marine Research Laboratory in Viikki
  - Experimental laboratory and mesocosm facility
  - Utö Atmospheric and Marine Research Station
  - RV Aranda → Riitta will talk about this
  - Marine Containers
  - Field and laboratory instruments

Contacts
Anne-Mari.Luhtanen@syke.fi
Jukka.Seppala@syke.fi
Pasi.Ylostalo@syke.fi
Sami.Kielosto@syke.fi

Marine research laboratory in Viikki 1/5

Analytics laboratory

Specialized in marine research

Facilities for basic research laboratory work and different special purposes. Instruments and services can also be provided for research campaigns, field stations and cruises.

- Basic infrastructure for lab work and maintenance: glassware, dishwashers, autoclaves, ultra-pure water, fume hoods, laminars, centrifuges, super-freezers, scales, incubators, freeze dryers, furnaces, pumps
- Inorganic nutrient analysis NO_2, NO_3, TOTN, NH_4, PO_4, TOTP, H_2S, SiO_4) from brackish water
- Analyzers for pH, oxygen, salinity, alkalinity, DIC, POC/N
- Laboratories for isotope, molecular and microplastics studies
- Facilities for microscopy, bio-optics, particle analysis and imaging
- Services for phytoplankton, zooplankton and benthos analytics
- Contact Anne-Mari Luhtanen (firstname.surname@syke.fi)



Marine research laboratory in Viikki 2/5

Microplastic laboratory

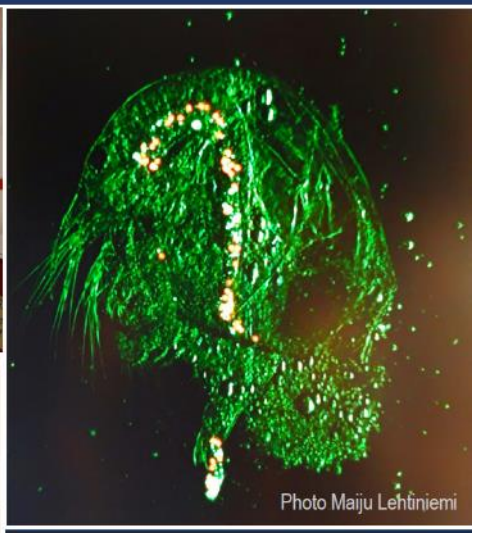
Marine Research Laboratory, Viikki

In-house protocols to study the amount and type of plastic polymers in different matrices. Sample processing methods include enzymatic digestion of organic material and density separation. Especially relevant for analyzing plastic polymers from marine monitoring samples are epifluorescence microscopes.

Instruments

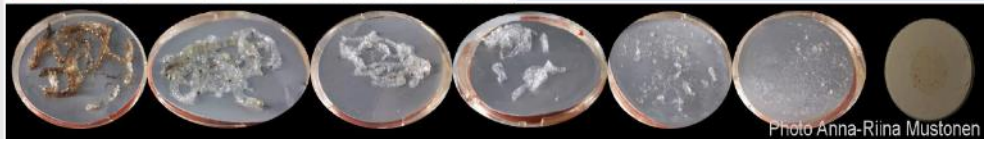
- Incubator shaker (Infors Multitron standard)
- Fume hoods and a laminar hood
- A high magnification (up to 640X) fluorescence stereomicroscope equipped with advanced imaging and analysis tools (Leica Microsystems)
- Close collaboration with SYKE Laboratory Centre: spectroscopical material characterization (FTIR)
- Video: Collaboration with sailors (in Finnish)
- Contact: Siru Tasala (firstname.surname@syke.fi)











Marine research laboratory in Viikki 3/5

Laboratory for molecular biology

A well-equipped laboratory for aquatic microbial ecology studies: DNA, RNA and eDNA.

Instruments

- FastPrep 5G sample homogenizer (MP Biomedicals)
- DNA extraction robot QiaCube Connect (Qiagen)
- Bioanalyzer 2100 (Agilent)
- Qubit and NanoDrop fluorometers
- Standard PCR thermal cyclers
- Real-time PCR Quant Studio 6 Pro (Applied Biosystems)
- E-Gel electrophoresis system (Thermo Fisher)
- Centrifuges, laminar hoods, clean space PCR
- Microplate Reader (Tecan Spark)

- Use of technical personnel on request
- Contact: Anne-Mari Luhtanen (firstname.surname@syke.fi)



Marine research laboratory in Viikki 4/5

Isotope laboratory
at the Marine Research Laboratory

Type C isotope laboratory for the radionuclides H-3, C-14 and P-33. Maximum handling activity is 37 MBq.

- Scintillation counter (PerkinElmer Tri-Carb 4910 TR)
- Centrifuges (Jouan BR4i, Eppendorf 5425)
- Fume hoods for isotope work
- Fridge and freezer
- Dishwasher
- Contact Anne-Mari Luhtanen (firstname.surname@syke.fi)



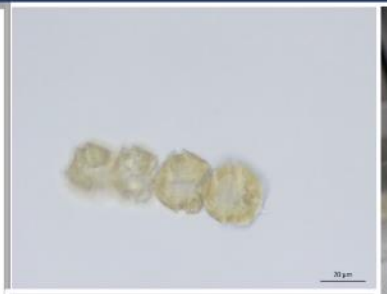
Marine research laboratory in Viikki 5/5

FINMARI culture collection

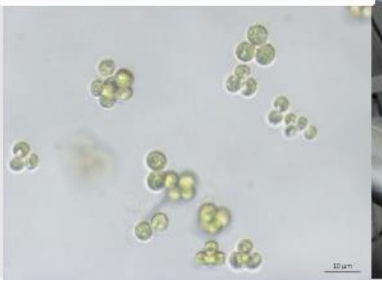
gear gallery

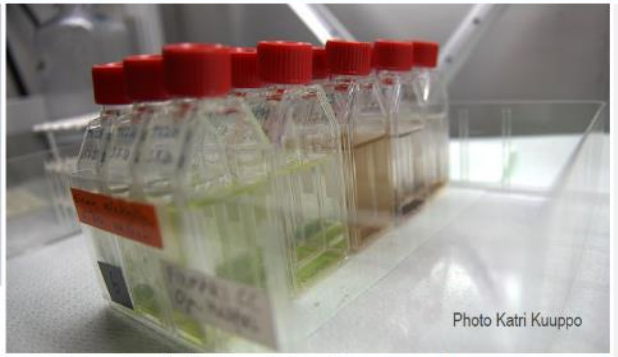
A collection of Baltic Sea phytoplankton, including some heterotrophic dinoflagellates.
The cultures are used for ecological and applied research, instrument testing, harmonization of methods and education.

- Contains approx. 100 strains and 30 taxa
- The strains are maintained in SYKE Marine Research laboratory and Tvärminne Zoological Station (UH).
- Cultivation in water phase at 6 psu, at +4 /+16 °C
- The strains have been used in > 60 publications since 2014
- The strains are available for research in collaborative projects
- See also marinefinland.fi
- Contact:
  Heidi Hällfors Syke (firstname.surname@syke.fi)
  Joanna Norkko UH (firstname.surname@helsinki.fi)











Finnish Environment Institute

Syke

Tvärminne Zoological Station

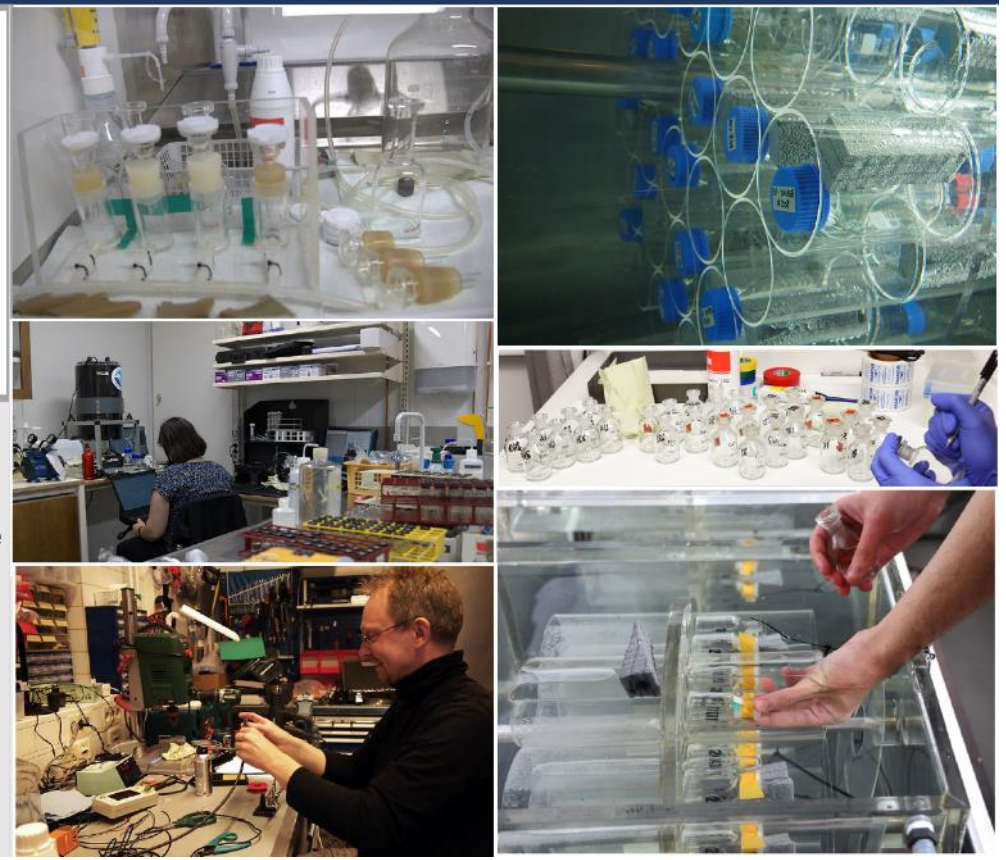
HELSINGIN YLIOPISTO
HELSINGFORS UNIVERSITET
UNIVERSITY OF HELSINKI

Experimental laboratory

Experimental laboratory
at the Marine Research Laboratory

Experimental marine research laboratory (~140 m^2) is a fit for purpose space for ecological and applied studies, food web dynamics, oil degradation, microplastics research and genetics. The target organisms range from bacteria to phytoplankton, zooplankton and benthos.

- Walk-in incubators (2-10 m^2) for bench-scale experimental units with adjustable light and temperature (Σ 27,5 m^2)
- Four phytoplankton culture rooms with temperature and light control (Σ 15,5 m^2)
- Test space for instruments (35 m^2) and a workshop (15,5 m^2)
- Indoor mesocosm facility (47 m^2)
- The facilities are suitable for experiments ranging from 300 µl to 300 l
- Contact: Jukka Seppälä, Pasi Ylöstalo (firstname.surname@syke.fi)



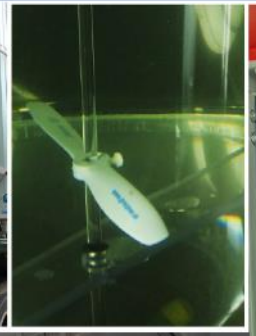
Mesocosm facility

Indoor mesocosm facility

Marine Research Laboratory, Viikki

The indoor mesocosm facility is part of the Marine Research Laboratory of Syke. The 47 m^2 space has 12 x 300-liter experimental units, where temperature, light and mixing can be adjusted. The mesocosms can be monitored 24/7.











- The mesocosm facility is immediately adjacent to
  - 5 walk-in incubators (2-10 m^2) for smaller experimental units with adjustable light and temperature
  - Spaces for phytoplankton cultures
  - 35 m^2 test space for instruments and a workshop
- The AquaBox sampling and measuring unit can be used for measuring several parameters 24/7
- As the mesocosm facility has no direct access to the Baltic Sea the water is brought to the laboratory
- Video: Indoor mesocosm experiment 2020
- Contact: Pasi Ylöstalo (firstname.surname@syke.fi)

Utö Atmospheric and Marine Research Station

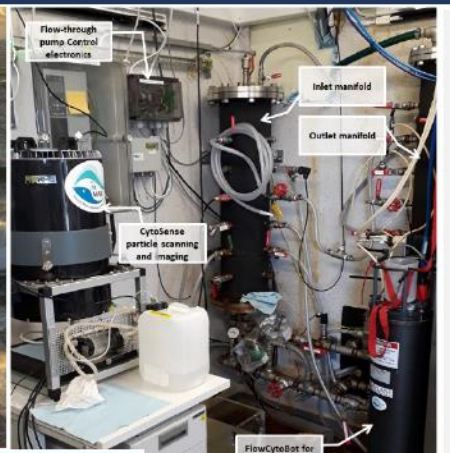
Utö Atmospheric and Marine Research Station

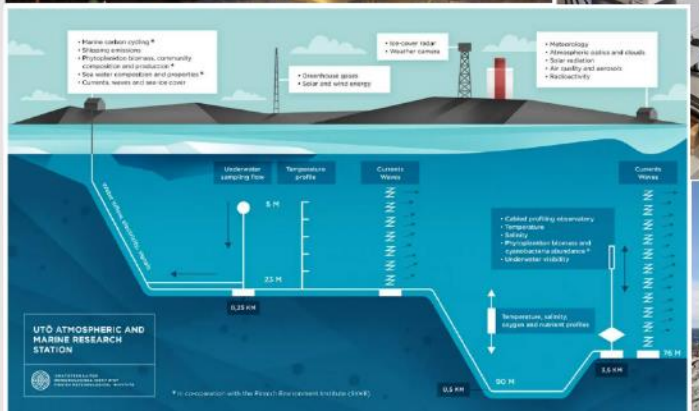
gear gallery

Meteorological observations since 1881, marine observations since 1900, automatic observations since 2014. Today, multidisciplinary measurements from the sea.

- Fixed platform for flow-through autonomous instruments and cabled measurements
- Continuous water flow from the sea, possibility to attach equipment for intensive field campaigns
- Laboratory with basic instrumentation (for 3-4 pers)
- Measurements: carbon cycling, bio-geochemical interactions, coupling of physics and biology, plankton observations and imaging
- Test and pilot site for emerging technologies
- https://www.jerico-ri.eu/va-service/uto/
- https://en.ilmatieteenlaitos.fi/uto
- https://swell.fmi.fi/Uto/
- Contact at Syke: Jukka Seppälä, Pasi Ylöstalo (firstname.surname@syke.fi)









Finnish Meteorological Institute

FMI

Finnish Environment Institute

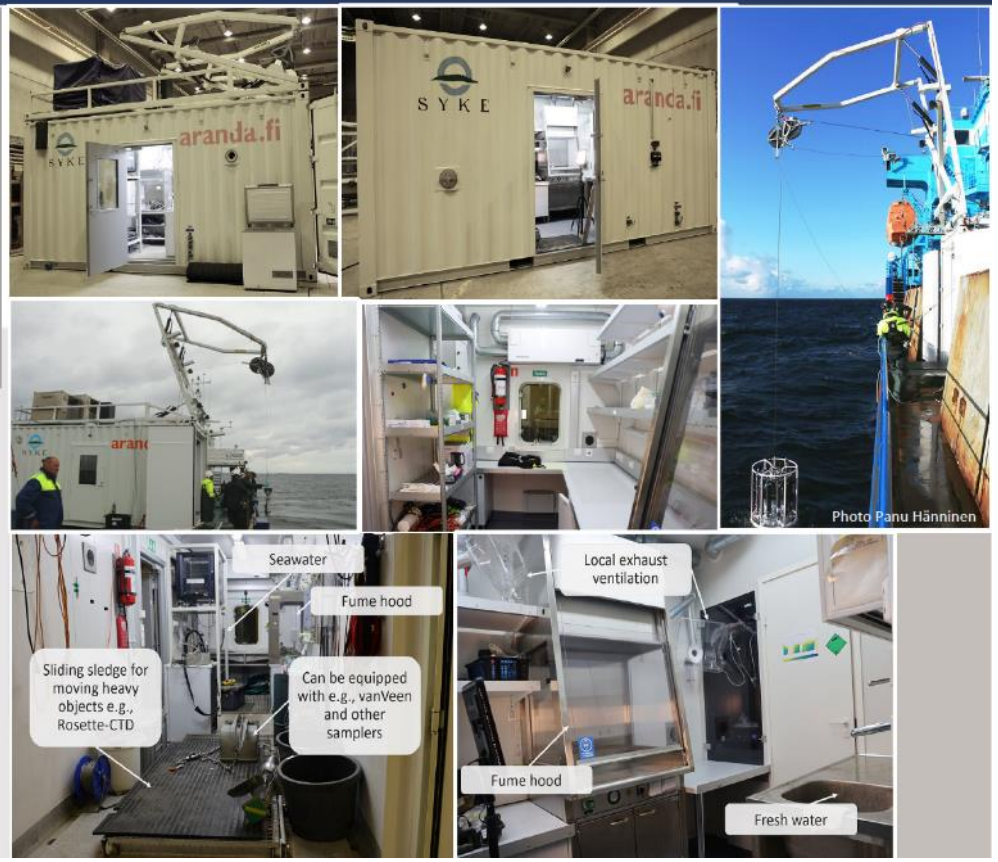
Syke

Marine containers

Marine Containers
for sampling and laboratory work

Two marine containers, equipped for sampling and laboratory work. The containers can be installed on a ship, or on land. Both have connections for electricity and IT, plugins for freshwater, salt water and a drain, as well as fume hoods.

- Dimensions (length x width x height): 6,1x2,4x2,9 m, weight 5 ton
- The sampling container is
  - equipped with a winch (weight 2,4 ton), which has lifting capacity of 500 kg.
  - suitable for sampling of sediments, bottom fauna and water
- The laboratory container
  - is suitable for basic laboratory work
  - can be equipped according to the purpose
- Contact: Panu Hänninen Syke
  (firstname.surname@syke.fi)



Find lab and field instruments in FINMARI Gear Gallery



Gear Gallery

Next up: Service presentation / FMI / Laura Tuomi

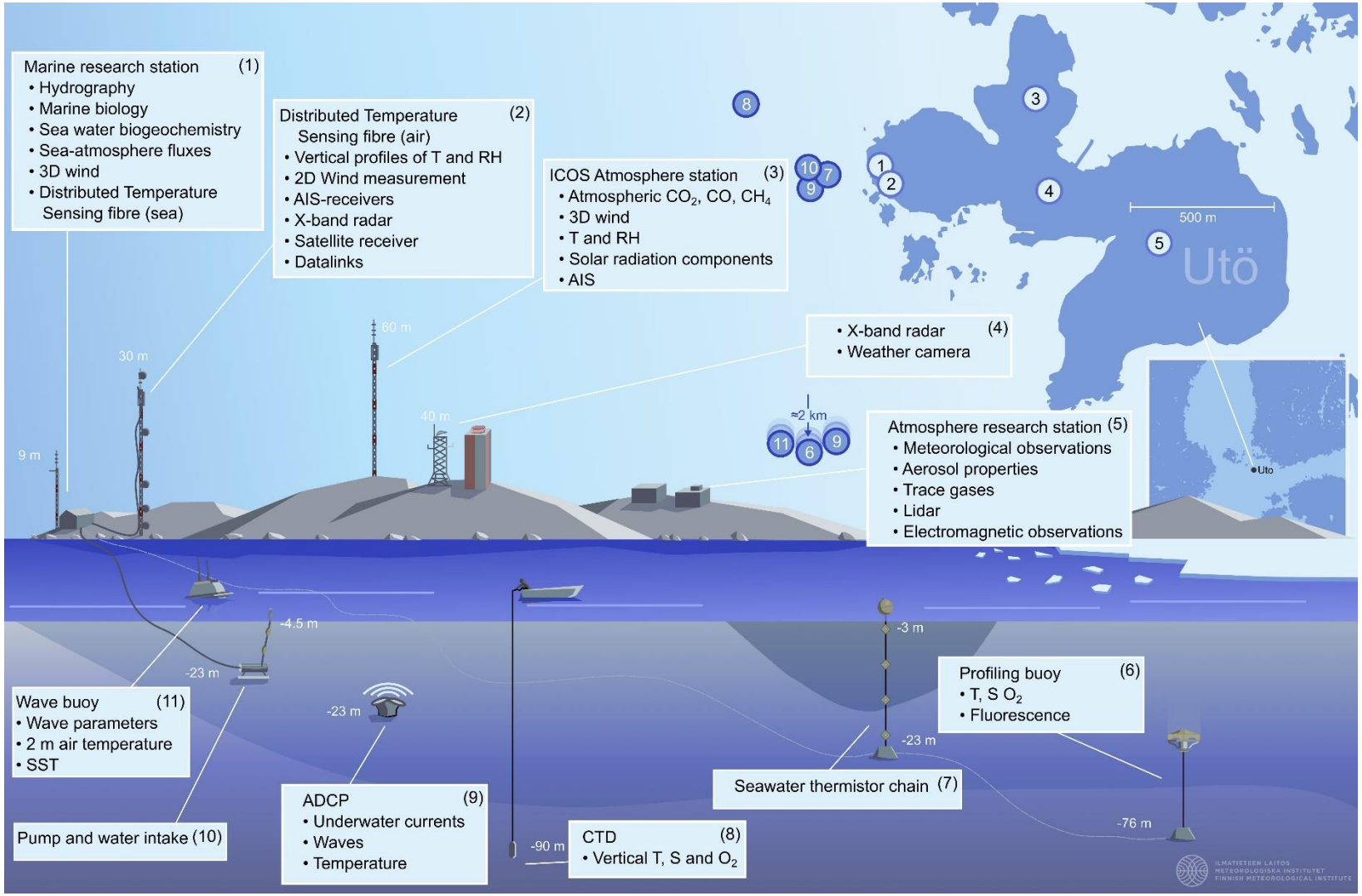
Remember that you can post comments, questions, info and links in the chat all along.



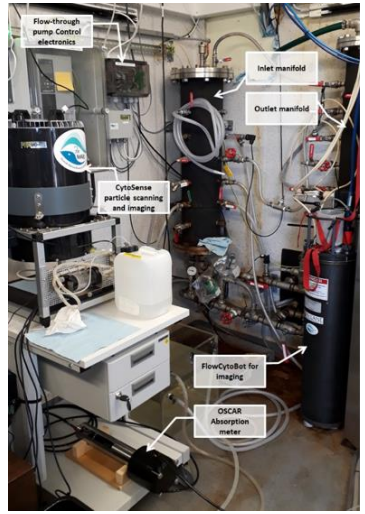
Utö Atmospheric and Marine Research Station

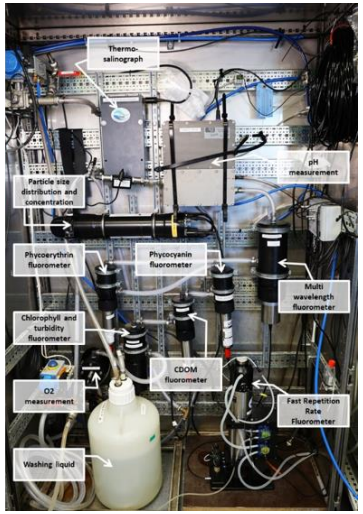
ILMATIETEEN LAITOS
METEOROLOGISKA INSTITUTET
FINNISH METEOROLOGICAL INSTITUTE

Suomen ympäristökeskus
Finlands miljöcentral
Finnish Environment Institute









METEOROLOGICAL OBSERVATIONS

Variable	Start of measurements
T, p, WS, WD, RH	1881
Precipitation	1881
Global radiation	1998
Diffuse radiation	1998
UV-radiation	1998
Visibility	2002
Cloud cover and height	2006
Wind profile (Doppler lidar)	2012
Weather camera	2014
Solar radiation spectra	2017
Sun photometer	2017
Solar energy production	2025
Atmospheric moisture profiles	2026

AEROSOL AND TRACE GAS OBSERVATIONS

Variable	Start of measurements
Aerosol chemical composition (PM10)	1980
SO_2	1980
NO_2	1986
O_3	1986
VOC	1994-2008
Fine particles (PM2.5)	2003
Aerosol size distribution	2004
Aerosol absorption	2007
Aerosol scattering	2010
Aerosol chemical composition (PM2.5)	2011
Phosphorus deposition	2014
Radon	2015
Aerosol Optical Depth	2016

MARINE OBSERVATIONS

Variable	Start of measurements
Sea ice observations	1897
Temperature and salinity profiling 0-90m	1900
Nutrients and chlorophyll	2001
Wave buoy & SST	2023 -
Sea Ice radar	2013
T-S-O_2-profiles (0...-80m)	2013
Temperature, salinity, O_2, turbidity, chlorophyll (at 5 m depth)	2014
Currents (0...-23m) and surface waves	2014 - 2025
AIS receiver	2015
Bottle sampler	2015
Chlorophyll, temperature, salinity, phycocyanin, turbidity, phytoplankton species composition etc (flow-through)	2016
Phytoplankton species composition (real-time), primary productivity, discrete biweekly nutrient samples (at 5 m depth)	2017
Vertical profiles of temperature, salinity, O_2, turbidity, chlorophyll, phycocyanin (0...-76m)	2018
Currents (0...-76m) and surface waves	2018

GREENHOUSE GAS OBSERVATIONS

Variable	Start of measurements
CO_2, CH_4 and CO concentrations	2012
CO_2- flux	2016
pCO_2	2016
pH (sea water)	2016

ELECTROMAGNETIC OBSERVATIONS

Variable	Start of measurements
X-band radar	2014
Refractivity profiles	2021
AIS profiles	2022
ADS-B	2024
SDR	2025
Satellite receiver	2026
X-band radar	2026
Data links	2026
Satellite signals	2026
C-band radar signal	2026

Utö Atmospheric and Marine Research Station is the globally leading research facility combining atmospheric, marine and electromagnetic observations.

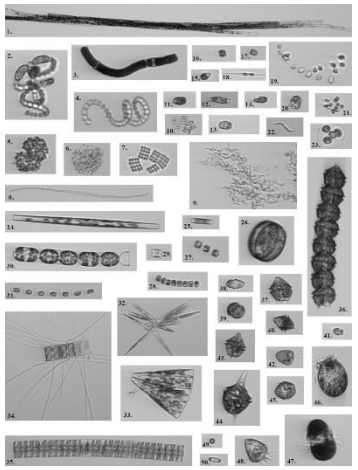
Read more about our research: https://en.ilmatieteenlaitos.fi/uto

Research opportunities

- Utö supersite one of the main research sites of FMI and SYKE
  - Utö island can be reached 4 times a week by free public transport
  - Hotel with a restaurant and conference facilities
  - A shop
- Services available for researcher and industry partners
  - Data from existing observations
  - Possibility to install additional atmospheric / marine / electromagnetic sensors (3-λ electricity, high speed internet)
  - 50 lpm waterflow from the sea
  - A part-time technician at the site able to help in weekly maintenance
  - FMI & SYKE teams able to provide necessary technical support for installation and maintenance data processing and transmission and data from other observations at Utö station.
- R&D projects done at Utö (last 10 years), funding from EU, EDF, RCF, foundations, FDF, SAF, ESA, industry
  - Marine carbon cycle and biogeochemistry
  - BVOC's from marine ecosystem
  - Shipping emissions
  - Marine ecosystem dynamics (species, taxonomy, optics)
  - Waves and hydrodynamics
  - Renewable energy
  - Weather, marine and climate modelling
  - Remote sensing
  - Aerosol research
  - Atmospheric chemistry
  - Greenhouse gases
  - Climate change research
  - Electromagnetic signal propagation
  - Sensor and instrument testing
  - Defence research applications

Utö Atmospheric and Marine Research Station is part of several RI's:

JERICO RI – Science – Services – Sustainability
HELCOM
ACTRIS
ICOS – Integrated Carbon Observation System
Cloudnet
emep
FinMARI – Finnish Marine Research Infrastructure
ACCC – Clean Air. Safe Climate.






Next up: Service presentation / Luke / Jani Helminen

Remember that you can post comments, questions, info and links in the chat all along.



Luke’s marine infrastructure

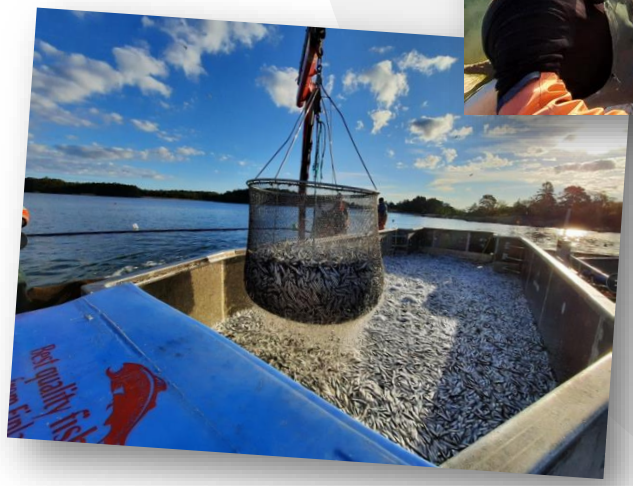
FINMARI Market Place 2026

Photos: Ville Vähä, Riku Helisevä & Jani Helminen











Fish, fisheries, and marine-life data

© Luke

FISH STOCKS

status, movement, age

FISHERIES

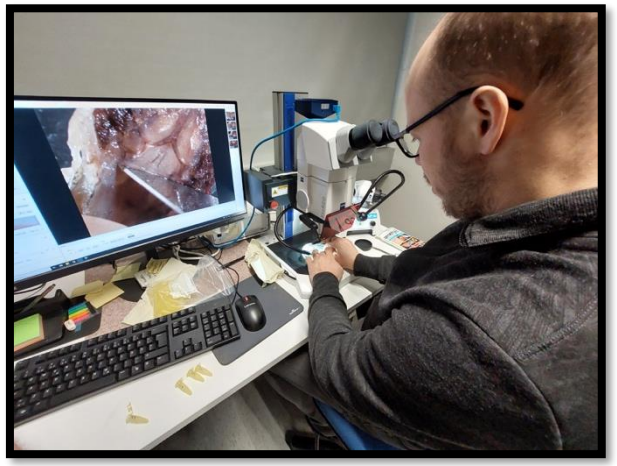
commercial and recreational catches, effort, bycatch

MARINE MAMMALS & SEABIRDS

abundance, habitat use, interactions with fisheries

AQUACULTURE

production systems, welfare, environmental impacts







Photos: Jani Helminen

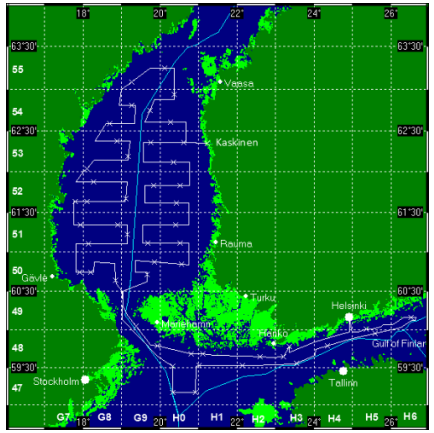
From coastal stations to offshore surveys

COAST Standardised surveys, catch sampling from commercial fisheries, and shared biological material.

OFFSHORE BIAS acoustic transects and trawl. R/V Aranda.







Figures: Jani Helminen, Perttu Rantanen & Meri Helisevä



© Luke

Animal movements, migration & habitat use

© Luke

Photos: Jani Helminen



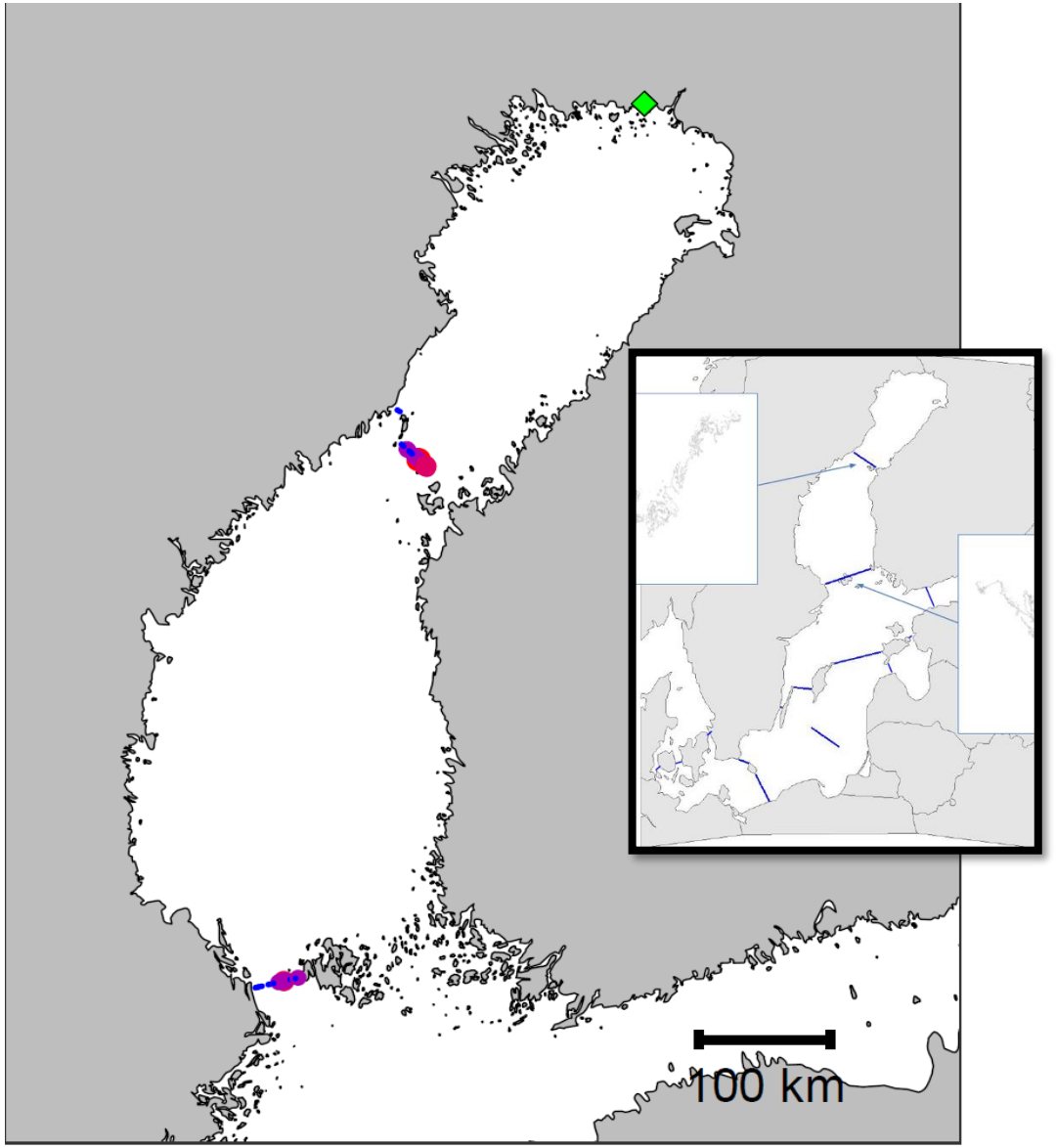






TELEMETRY & PASSIVE ACOUSTIC MONITORING

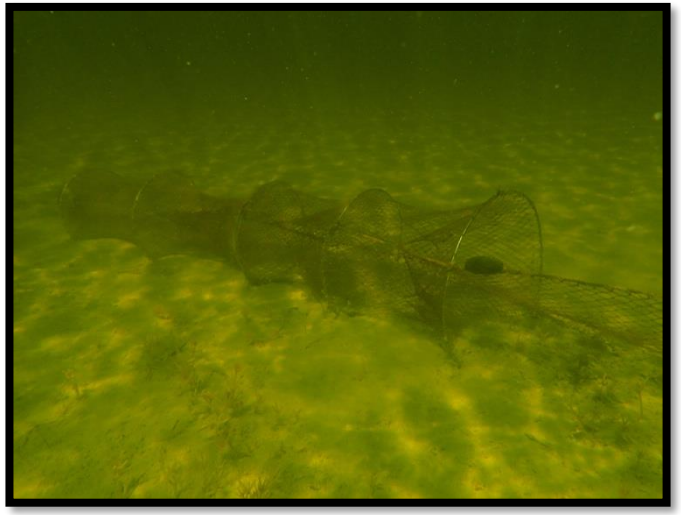
- Tagging and tracking expertise
- Mobile receivers
- Permament receiver infrastructure available for all
- Links local deployments to Baltic and European networks.



From fieldwork to sample analysis

© Luke



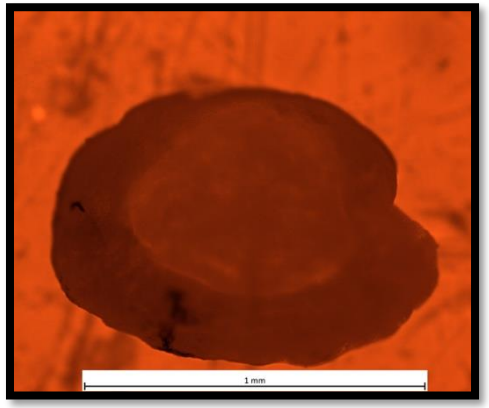


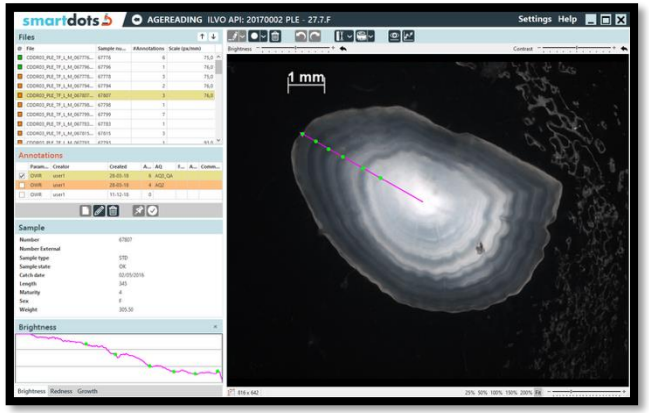
Photos: Jani Helminen

FIELD OPERATIONS & FISH SAMPLING

Boats, survey gear, sensors, and technical staff for coastal and offshore work.

Photos: Sami Vesala & ICES SmartDots





SPECIALIST LABS

Otolith and hard-tissue preparation, imaging and ageing.

Isotopes, eDNA, and FT-NIR spectograhpy.

Methods, continuity and people who know the system.

Get access

Current first contact: Velimatti Leinonen
velimatti.leinonen@luke.fi

Online access forms are being rolled out.

As an example:
https://www.luke.fi/fi/palvelut/otoliittilaboratorion-kaytto
https://www.luke.fi/en/services/access-to-otolith-laboratory

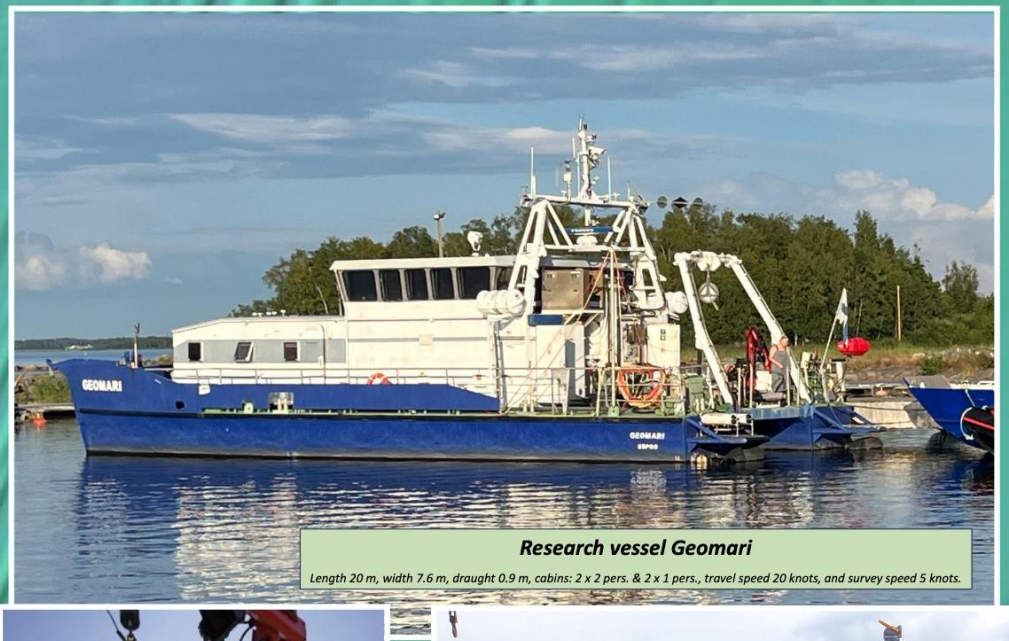
© Luke

Next up: Service presentation / GTK

Remember that you can post comments, questions, info and links in the chat all along.



Geological Survey of Finland (GTK) – Marine Geology



Research vessel Geomari

Length 20 m, width 7.6 m, draught 0.9 m, cabins: 2 x 2 pers. & 2 x 1 pers., travel speed 20 knots, and survey speed 5 knots.



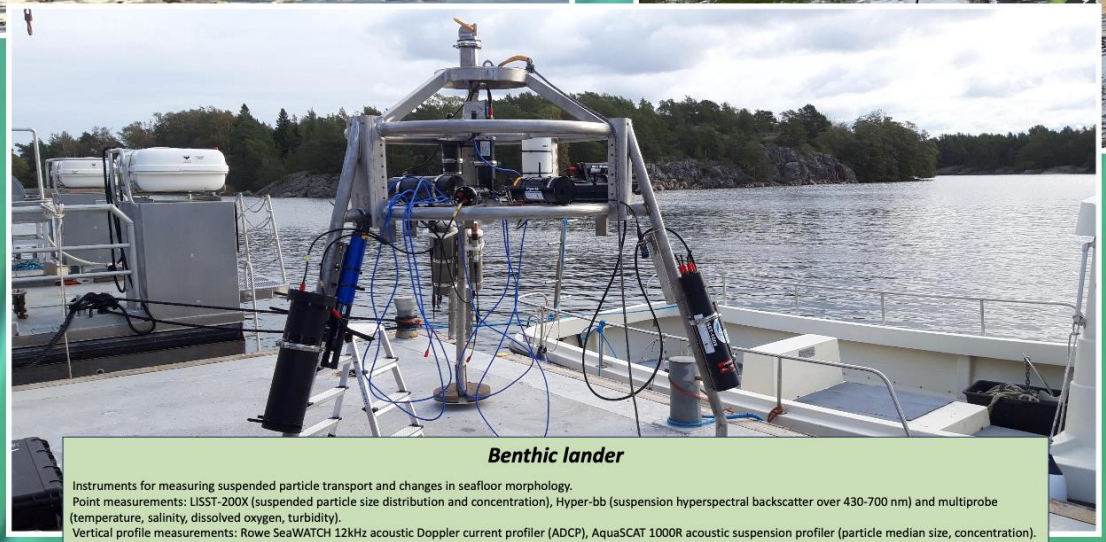
Research boat Gridi

Length 6.45 m, width 2.2 m, draught 0.5 m, crew 2-5 persons, travel speed 25 knots, and survey speed 3 knots.



Gemax corer

for undisturbed soft sediment sampling



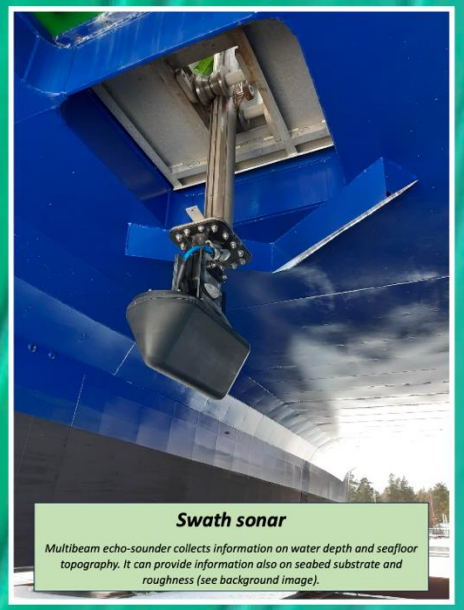
Benthic lander

Instruments for measuring suspended particle transport and changes in seafloor morphology.
Point measurements: LISST-200X (suspended particle size distribution and concentration), Hyper-bb (suspension hyperspectral backscatter over 430-700 nm) and multiprobe (temperature, salinity, dissolved oxygen, turbidity).
Vertical profile measurements: Rowe SeaWATCH 12kHz acoustic Doppler current profiler (ADCP), AquaSCAT 1000R acoustic suspension profiler (particle median size, concentration).
Seafloor profiling: Marine Electronics 3D sonar.



Vibro hammer corer

This corer has been designed for collecting undisturbed samples in coarser substrate such as gravel, and boulder clay.



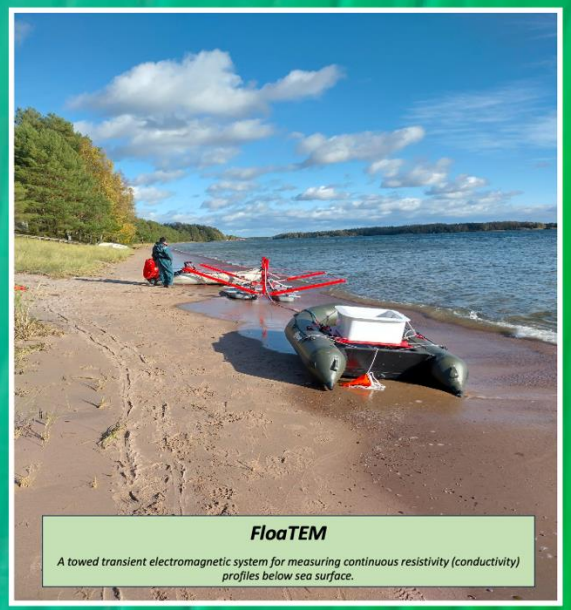
Swath sonar

Multibeam echo-sounder collects information on water depth and seafloor topography. It can provide information also on seabed substrate and roughness (see background image).



Free-Fall Cone Penetrometer

Measurement of near-surface undrained shear strength of soft seabeds.



FloaTEM

A towed transient electromagnetic system for measuring continuous resistivity (conductivity) profiles below sea surface.



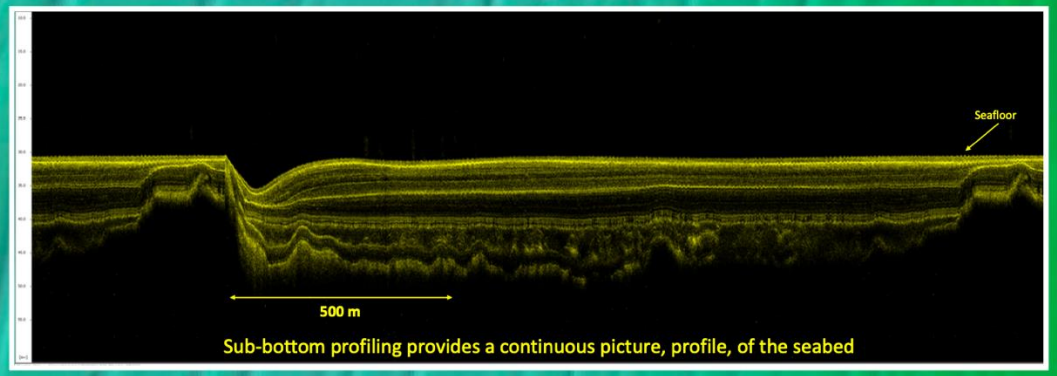
Sound Velocity Profiling

Automated measurement of sound velocity and temperature profiles from a moving vessel.



Side-scan sonar

Side-scan sonar imaging provides information on seafloor roughness, substrate and topography, and information about objects on the seafloor.



Sub-bottom profiling provides a continuous picture, profile, of the seabed

The background shows submarine linear dunes in the Bothnian Bay. The image is produced using a multibeam sonar.

Next up: Service presentation / Seili / Katja Mäkinen

Remember that you can post comments, questions, info and links in the chat all along.

Fin MARI
Finnish Marine Research Infrastructure

Research Services and Equipment at the Archipelago Research Institute

UNIVERSITY OF TURKU

FinMARI Finnish Marine Research Infrastructure

EMBRC EUROPEAN MARINE BIOLOGICAL RESOURCE CENTRE

INAR Institute for Atmospheric and Earth System Research

AnaEE ERIC Analysis and Experimentation on Ecosystems



Services provided by the station

1. Research facilities (e.g., laboratories) and equipment
2. Boat hire and transport services
3. Long-term environmental data
4. Per agreement: sampling services, lectures/guided tours for visiting groups

Travel services (accommodation, restaurant, saunas etc.) provided by travel company Visit Seili

UNIVERSITY OF TURKU

Important information on booking

For booking the equipment and facilities, fill out our online booking inquiry form or email us varaukset-seili@utu.fi

Check accommodation availability well in advance! (email: sales@visitseili.fi)

- UTU price list for internal users and visitors

Grant from Sakari Alhopuro Foundation for supporting research at Seili – inquire support for accommodation costs well in advance

Environmental data

Seili intensive monitoring station (NAU Seili intens)

Water quality data available since 1966

- >>Metadata of currently running monitoring programs

Automated monitoring buyo:

- Salinity, temperature, dissolved oxygen, turbidity, chlorophyll-α, and blue-green algae content

- 4 profiles (2-40 m depth) conducted per day at one-meter intervals.
- Data available since 2011. Weather data since 2015-

- Data and graphs available at https://saaristomeri.utu.fi/odas_en/
- Buyo data will be later available also at Emodnet





2. Boats

Research vessel r/v Aurelia
- Max. 40 persons (+ 2 crew)

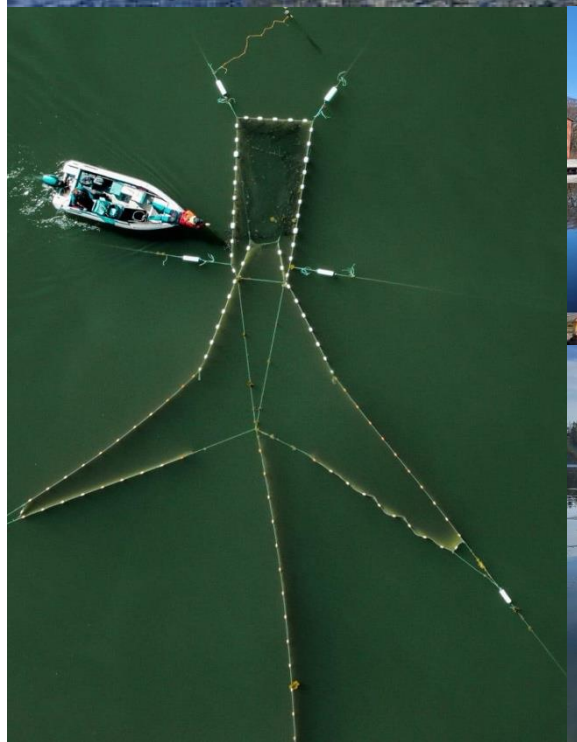
Minor Range 7600
- 8 persons, 160 hp

Faster 515
- 6 persons, 60 hp, trailer available

Rowing boats

2027-
- Hover craft
- New Faster boat












Sea water laboratory building
Station pier
Main building


Sea water laboratory + mesocosm


Post pier


Workshop buildings

Experimental research facilities

Indoor aquaria facilities

- 10 close-circulation aquarium racks, each with 12 (24 L) replicated aquaria
- 4x seawater laboratory, 6x main building
- Temperature regulation, water filtration and advanced lightning

Mesocoms/outdoor aquaria facility

- Wooden terrace (8×5 m) with UV- protected PVC roofing
- **16 Movable flow-through aquaria tanks**

- **Continuous flow of water** via pipe from Kirkkoniemi bay at 26 m depth
- **Automated surveillance system** (live camera + sensors, 2024)

- Other tanks also available: 9 round tanks (top Ø 80 cm, bottom Ø 70cm, depth 40cm) and standard glass aquaria tanks also available (various shapes and volumes, e.g. 150L)





Field equipment

- Several standard plankton nets
  - 20 µm, 50 µm, 100 µm, 150 µm, Ø ca. 30 cm
- Hensen plankton net (Ø 90 cm, 200 µm)
- Closing plankton nets (Ø 30 cm, 150 µm)

- HYDRO-BIOS Multi Plankton Sampler MultiNet (100 µm)

- Manta trawl (100 µm/300 µm)

- Polypropene ropes, ~10-100 m-long reels available













Field equipment

- Custom made herring research trap nets
- 2 x beach seine nets (new coming 2027)
- 3 larger beach seine nets
- Gill nets
  - Various sizes
  - Nordic and Coastal survey nets
- Littoral nets, plant rakes, dredges
- Gulf-V sampler with a flow-meter for sampling larval fish
- Inflatable boat ”Clarissa” (QS Mercury Tendy 200)







Field equipment

- **RBRconcerto³ CTD++** (2019)
  - conductivity, temperature, pressure (depth), dissolved oxygen and pH
    - New oxygen probe (Rinko) (2024)

- **YSI ProQuatro handheld multiparameter sensor** (2022)
  - conductivity, specific conductance, salinity, resistivity, total dissolved solids (TDS), temperature
  - 10 m and 30 m cables

- **EcoSense ODO200 Dissolved oxygen meter**
  - 2 m cable
- **EcoSense EC300A Conductivity & salinity meters**
  - 10 m cable









Field equipment

- **ONSET HOBO Pendant data loggers** (2024)
  - Conductivity, salinity, DO, temperature
- **Portable chlorophyll fluorometer (Waltz PAM 2500** (2018)
- Limnos and Ruttner water samplers
- Secchi disks
- Hydroscopes (7 pch)
- Waders
- URSUIT dry suits etc. (S-XXL)









Field equipment

- **GEMAX** soft sediment corer with two Ø9cm tubes

- **Sediment Limnos** sampler with weights
- **Small Niemistö** sampler with a sediment Slicer

- Standard **van Veen** grabs, small and tall **Ekman** grabs

- **Sediment trap stations** (10-15 pch, each with stainless steel frame and fin, 2 acrylic tubes and buyo)
- Soft sediment samplers (e.g. Kautsky sampler)
- Sieve sets, Sieve table
- Tubs, shovels etc.


GEMAX


Soft sediment grabs


Sediment traps


van Veen grab

Field equipment

ROV cameras

- **Deep Trekker Pivot (2024)**
  - Equipped with a 150 m cable, 1 camera
  - Transported in two Pelican cases





ROV Photon (2024)

- 150 m cable, 2 cameras
- Transported in one Pelican case



Side scan sonar

(Sonartech S-150Ai, 2018)

- Size 1,026 × Ø89 (mm)
- Weight: 16 kg
- Single Frequency 900, 1,250 kHz
- Dual Frequency 400 / 900, 400 / 1,250kHz
- Maximum Depth 300 m
- Beam Tilt 10, 20, 30 degree down adjustable
- Altimeter Sensor 200 kHz, 20 deg

Field equipment

Terrestrial research equipment:

- Burkard cyclone sampler
- Malaise trap net
- Tick nets
- Quadrats for plant surveys
- Several trail cameras
- Binoculars (10x42)
- Magnifying glasses 10x (loupe)
- Bat echo meters (Echo meter touch 2 & Magenta bat5)









Laboratory equipment

- **Olympus CKX53 fluorescence microscope** (2024)
- **Olympus IX53 Inverted** compound microscope (2019)
- **Olympus IMT-2 Inverted** compound microscope
- **6.4 megapixel camera** (DP23-CU-1-2), c-mount adapter, cellSens Entry imaging software + screen and computer (2026)





- **2 x Zeiss Primostar 3** compound microscope with fixed and full Köhler illumination and 4x, 10x, 20x, 40x objectives (2026)
- **Leica DM2000 compound microscope** + screen and camera (2021)
- **2 x Zeiss Stemi 508** stereo microscopes + camera axiocam 807 color (2026) & camera axiocam 105 color (2026)
- **Zeiss Stemi 305** and **355** stereo microscopes (14 pch)





- Additional microscope lights (e.g. standard and cold lights)
- Various accessories (micrometers etc.)

Laboratory equipment

- 4 x freezers (-20 °C) and 2 fridges (ca. +4-+6 C)
- 2 x Ultra-low freezers (-65-80 °C)

- 2 cold rooms +5-+15 °C (makasiini-building, only summer use)
- 2 cold rooms, +5-+15 °C (main building, year round use)
- Freezers and cold rooms connected to surveillance system

- Ice flake machine (Porkka, 2026)
- Fume hoods
- Chemical storage cabinets
- Drying cabinets


Cold rooms


Seawater laboratory


-20 C freezers and fridges



Ultra-low freezers

Laboratory equipment

For example:

- Ion exchangers (Silex 1C PE)
- Freeze dryer (2025)
- Manual single grinder-polisher Ecomet 30 (2025)
- Microcentrifuge (VWR microstar 12, 2021)
- Folsom plankton splitter
- Shaking waterbaths (Julabo VLSB12 (2020) and SW-20C)
- Sartorius pipettes, e.g. 10 µl and 100 µl
- Incubator cabinet
- Soxhlet extraction apparatus used in lipid analyses
- Millipore vacuum filtration systems with accessories

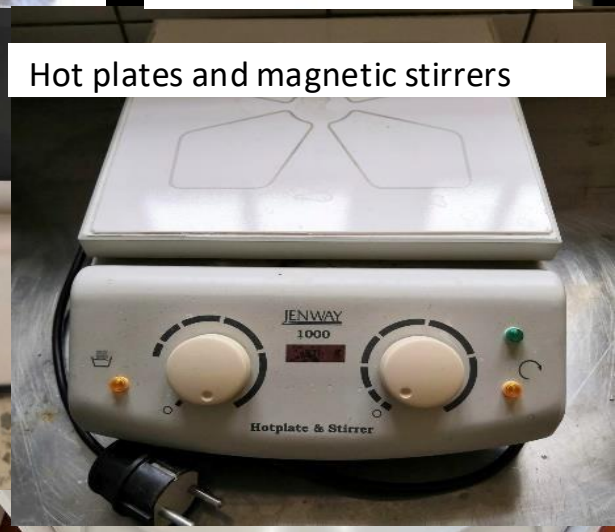

Autoclave



Analytical and toploading balances



Hot plates and magnetic stirrers





Grinder-polisher

Microsentrifuge



Diving equipment

The station does not actively maintain and borrow diving equipment. However, the following are currently available by request:

- 2 compressors
- 200 bar diving tanks (3x 10 L, 2x 7 L)
- A few extra diving masks, fins, gloves, wet suit, diving flags etc.

Laboratory and field equipment will be updated in 2027

Go to webpage >>utu.fi/seili
for more information and updates on latest infra!

UNIVERSITY OF TURKU

Next up: Service presentation / Tvärminne / Laura Kauppi

Remember that you can post comments, questions, info and links in the chat all along.

FinMARI
Finnish Marine Research Infrastructure

SERVICES FOR MARINE RESEARCH

UNIVERSITY OF HELSINKI | TVÄRMINNE ZOOLOGICAL STATION

Coast Clim Coastal Ecosystem and Climate Research

FinMARI Finnish Marine Research Infrastructure

EMBRC The services offered at TZS are part of the European Marine Biological Resource Centre, which provides access to marine ecosystems and experimental platforms, and related services, to researchers from both academia and industry.
WWW.EMBRC.EU

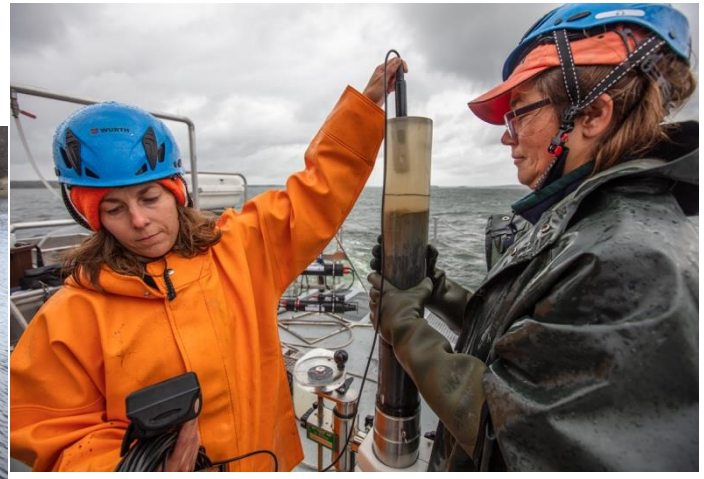




ECOSYSTEM ACCESS AND FIELD EXPERIMENTS

- Access to habitats within an MPA
- Research vessels of different sizes: R/V Augusta (18 m catamaran), hovercraft for winter sampling, and a range of smaller boats
- Standard sampling equipment





LABORATORY SERVICES

- Water
- Molecular biology laboratory facilities
- Microscopy



EXPERIMENTAL FACILITIES

• Experimental tanks in temperature-controlled rooms with flow-through seawater and adjustable light spectra
• Outdoor mesocosms, with 12 units (flexible plastic bags) attached to a floating raft

FINMARI PHYTOPLANKTON CULTURE COLLECTION

• Approx. 100 species strains of Baltic Sea phytoplankton
• For ecological and applied research, instrument testing, harmonization of methods and education



TECHNICIAN-AS-A-SERVICE

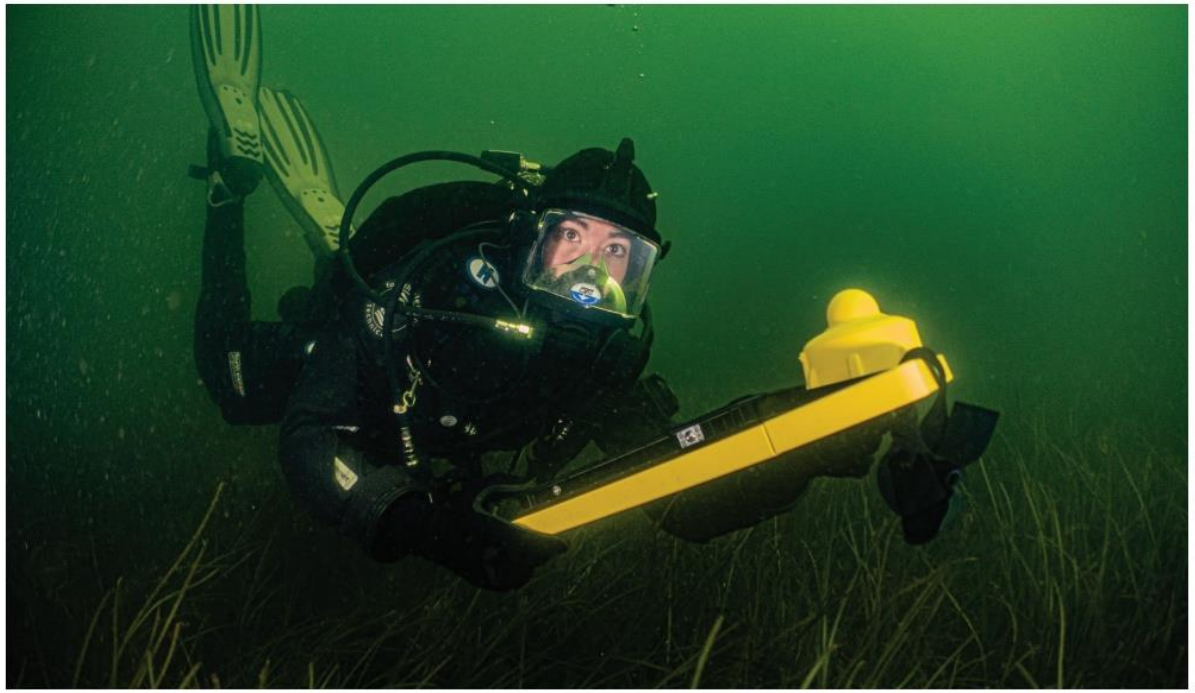
- Competent and highly skilled technical personnel assists you from planning to execution

SCIENTIFIC DIVING

- Sampling and instrument deployment
- FSDA

ENVIRONMENTAL MONITORING DATA

- Unique, over hundred-year-long datasets of biological and hydrographical parameters
- Automatic, high-frequency measurements (www.helsinki.fi/monicoast)
- Part of the European Marine Omics Biodiversity Observation Network (EMOBON)
- ICOS station for atmospheric and oceanic greenhouse gas measurements



SERVICES FOR MARINE RESEARCH

UNIVERSITY OF HELSINKI | TVÄRMINNE ZOOLOGICAL STATION

Coast Clim

FinMARI Finnish Marine Research Infrastructure



CONTACT; www.helsinki.fi/tvarminne

Tvärminne research coordinators; access to ecosystem, facilities, overall planning, data

Laura Kauppi, laura.kauppi@helsinki.fi

Joanna Norkko, joanna.norkko@helsinki.fi

Technician-as-a-service; boats, practical planning for experiments in the field

Göran Lundberg, goran.lundberg@helsinki.fi

Next up: Service presentation / Husö / Martin Snickars

Remember that you can post comments, questions, info and links in the chat all along.



Husö Biological Station, the Åland Islands

HBS provides access to coastal marine ecosystems in the Åland Island.
In addition to research, we profile in education and outreach.

The research is facilitated by a long tradition in both field work and indoor and outdoor experiments



Access to Coastal Ecosystems

- Sampling of a wide range of species and habitats from inner to outer archipelago, from sheltered bays to exposed reefs.
- Smaller boats with outboard motors (15-115 hp) suitable for coastal water sampling and diving.
- Standard sampling equipment such as water samplers, plankton nets, sediment corers and grabs, gillnets and handheld probes (CTD).





Relatively undisturbed systems
Biodiversity monitoring
Eutrophication research
Climate change studies

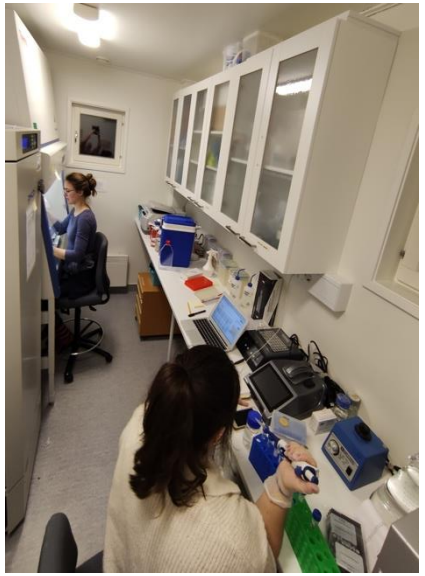
Laboratory Facilities

Molecular lab

Microscopy & imaging

Water chemistry analysis

Sediment and biota processing



- Molecular biology laboratory (e.g. PCR, Spectrophotometer, Cultivation chamber) for DNA/RNA extraction, quantification and quality control. Enabling high throughput growth experiments with phytoplankton/microbes.
- Stereomicroscopes and inverted microscopes fitted with cameras, some with fluorescence capability.
- Water chemistry (e.g., nutrients, chlorophyll) and sediment analyses
- Wet lab for benthos and fish processing



Experimental Platforms

- Experimental units including aquaria of varying size (small and medium) with flow-through seawater (filtered or natural) adjustable temperature and PAR light.
- Automated and hand-held sensors (temperature, salinity, oxygen).

- Mesocosms, 20 tanks (600 l) Adjustable temperature regime of individual tanks, with flow-through seawater (filtered or natural).







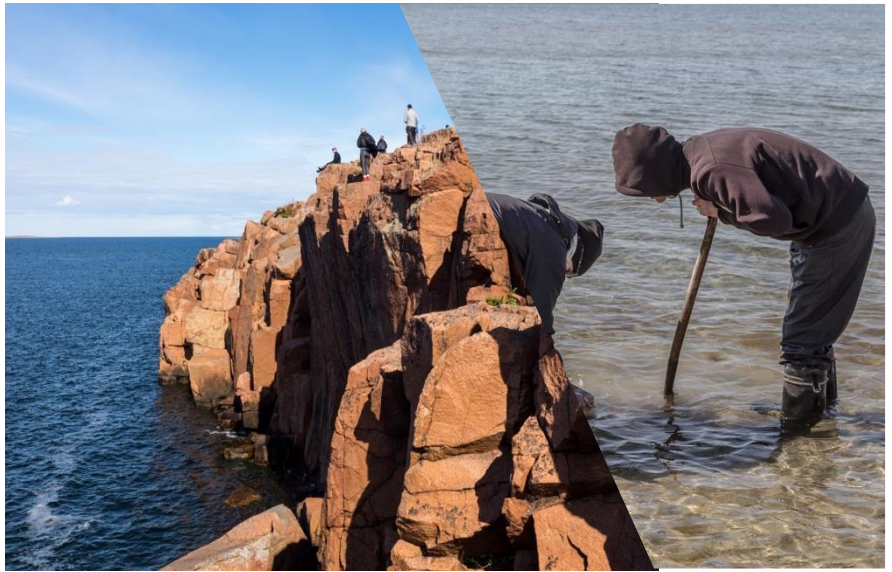
Monitoring Data

- Since the early 1980's, three sites in a gradient from inner to outer archipelago are monitored for biological and hydrographical parameters.
- Also fish and vegetation data from Åland's largest lakes
- Open-access data on request









Welcome to Husö Biological Station



More information: Husö

List of equipment at Husö biological station

martin.snickars@abo.fi



Next up: Service presentation / Korpoström / Christoffer Boström

Remember that you can post comments, questions, info and links in the chat all along.

Fin MARI
Finnish Marine Research Infrastructure


Skärgårdscentrum • Saaristokeskus • Archipelago Centre
Korpoström

Archipelago Centre Korposström Marine Infra in a Nutshell

- Wet and dry labs for regular benthic (fauna/flora) work (owens, microscopes etc)
- Temperature regulated aquarium room for no-flow through experiments
- Outdoor natural light aquarium room with flow through system
- Four outdoor hydraulic wave tanks (3x0.5 m)
- Diving infra (tanks, compressor)
- 70 Hp outboard boat (Rönnqvist 590) and rowing boat
- A complete outdoor mesocosm facility with heaters and coolers & control units
- All basic benthic and water sampling equipment
- An outreach lab for schools (KIDS LAB)
- Excellent exhibition facilities
- An art-science art residence building & collaboration
- A 14-room hotel
- Metal and wood workshops
- 80 pers auditorium, 20 pers seminar room, 3 offices
- UNESCO Biosphere Reserve & Metsähallitus share facilities

Korposström mesocosms



®Sarah Rühmkorff











20x 600 L independent mesocosm tanks

- 112+92 cm in size, 60 cm deep
- Separate in and outflow of seawater
  → per 600 L tank = 132 ± 25 (SD) L
  (entire volume exchanged 5x/day)

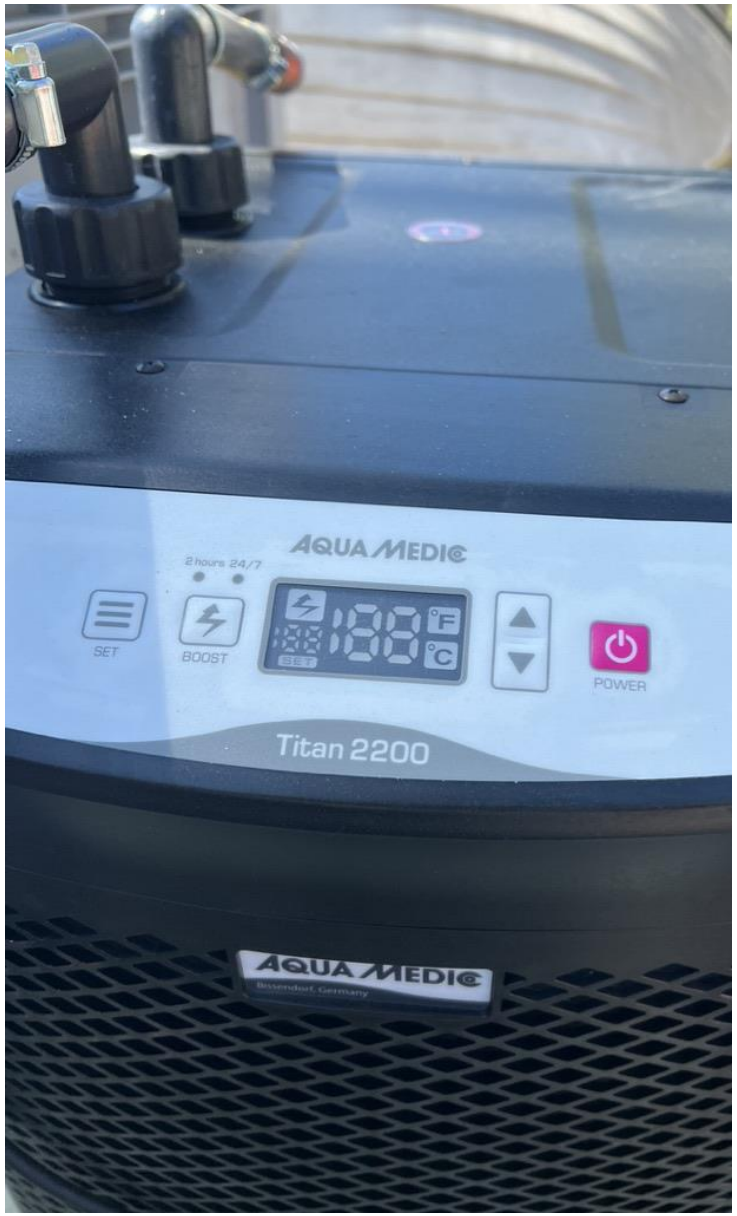
80-100x 18 L experimental sub-units

- Spread across 20 tanks (water bathes)
- 20 header tanks provided 19.3 ± 1.2 L of seawater per sub-unit per hour
  (entire volume exchanged 26x/day)

- Natural sunlight
- Natural recruitment of species






AQUA MEDIC
2 hours 24/7
SET
BOOST
BET
180
°F
°C
POWER
Titan 2200
AQUA MEDIC
Bissendorf, Germany




Titan 2200



Outdoor flow through aquariums



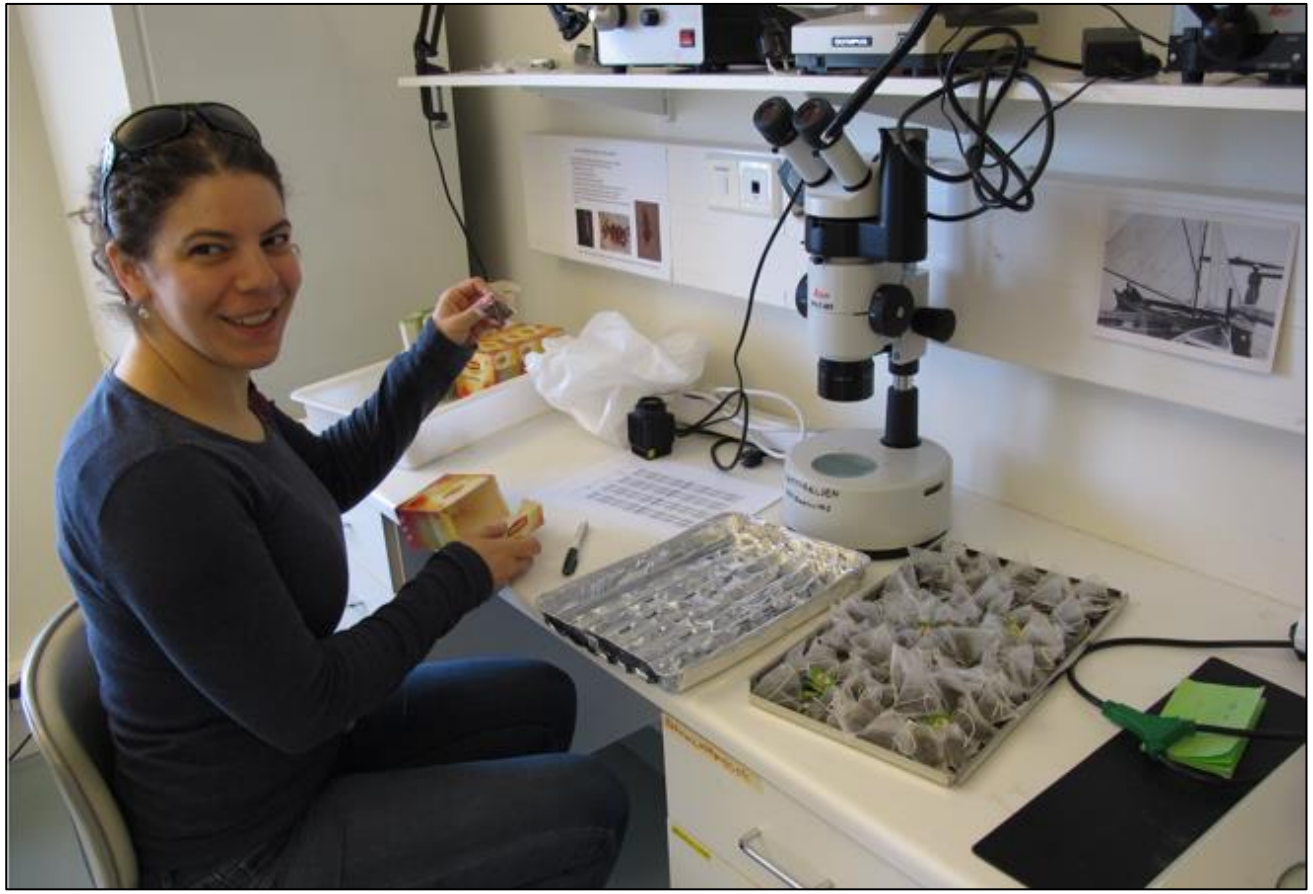
Outdoor aquarium facility



Wave tanks



Labs for research and outreach





Multiple exhibition facilities



Rönnqvist 590 boat





- Time for a little break!
  - Grab a coffee
  - Stretch your shoulders
  - Look away from the screen
  - Back in 5 minutes



Next up: FINMARI integrated services / Katri Kuuppo

Remember that you can post comments, questions, info and links in the chat all along.



FINMARI integrated services

cross-partner • end-to-end

1. Integrated field observation systems
    - Water column sediment interactions
    - Open pelagic ecosystem sampling
    - Pelagic and benthic measurements with wide areal coverage
    - Integrated use of mesocosms
    - Integrated meteorological and oceanographic services
2. Virtual and data services, data links
    - itämeri.fi, EmodNET, Copernicus,..
    - Data hub in preparation

Water column - sediment interaction

- Benthic Lander
- Sedimentation
- Water chemistry and biology observations
- Integration of physical observations (current meters, gliders, profiling buoys)
- Water and sediment sampling
- Experimental work
- Project example: PHYTOTRANS



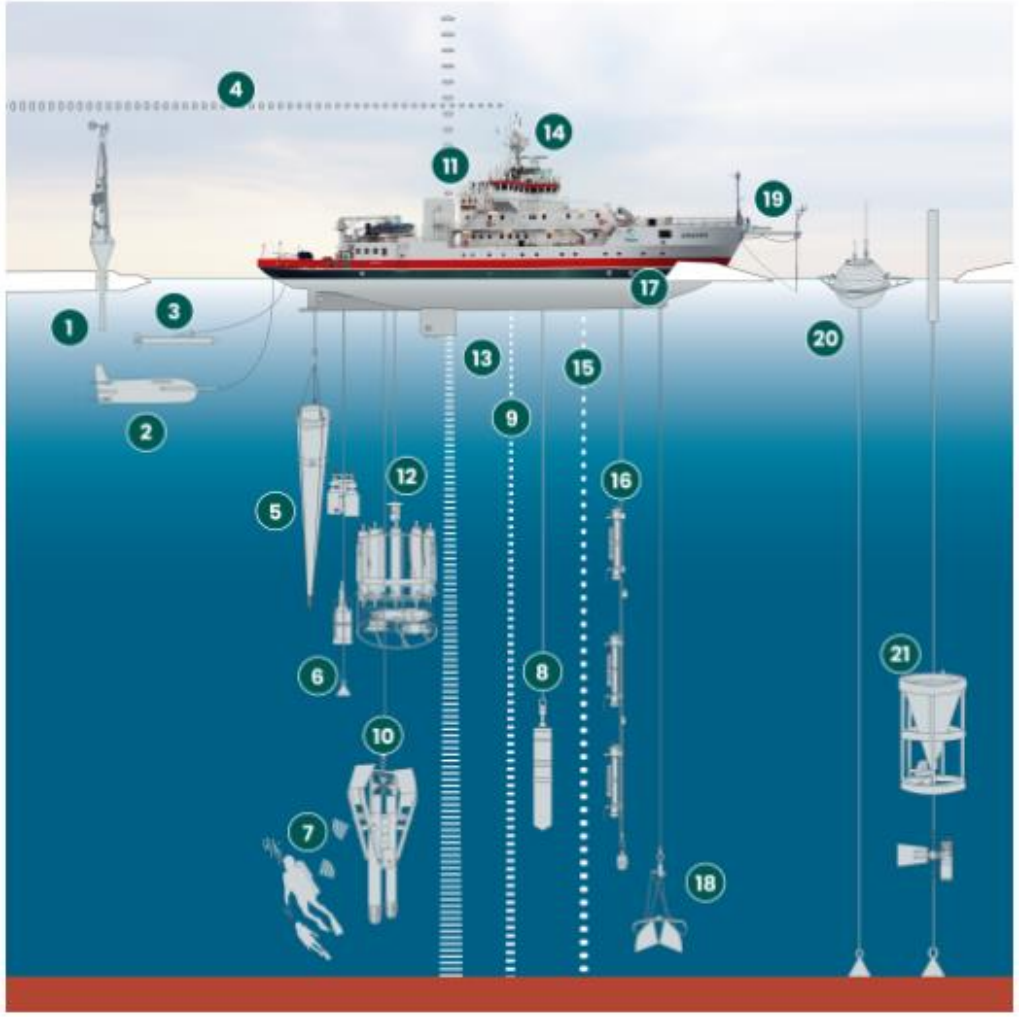
Sediment traps deployed on RV Augusta



A benthic lander deployed on RV Augusta

Integrated pelagic ecosystem sampling

- RV Aranda
- Sampling of water column and sediment from microbes to fish and plastics
- Rosette, fish trawl, sediment corers
- Deployment of instruments for physical oceanography and hydro-acoustics
- Laboratory for analytics and process measurements
- Technology development platform
- Research cruises: LINK
- Project example: MEMOBALTIC



Pelagic and benthic measurements with wide areal coverage

- FINMARI fleet + smaller boats
- Water chemistry, biology, physics and geology
- Large areal coverage from open sea to archipelago and coast
- Project example: MAAMERI

Aranda
- Length 59.20 m
- Cruising speed 11 knots Berths for 25 scientists
- Laboratory space, wet lab, acclimated rooms, computer lab and offices
- Sampling facility 132 m²
- Research and storage containers
- Owner Syke

Augusta
- Length 18.5 m
- Cruising speed 18 knots
- Range 20 h at cruising speed
- Crane capacities of 300 and 1000/500 kg
- Capstan and rope lock for buoy anchor
- Small field laboratory
- Owner Tvärminne Zoological Station

Aurelia
- Length 18.1 m
- Cruising speed 15 knots
- Passengers max 42
- Wet and dry laboratories
- CTD, sediment corers, grabs ADCP-profiler, on-line chlorophyll fluorometer, sonar systems
- Owner Archipelago Research Institute

Geomari
- Length 20.0 m
- Cruising speed 20 knots
- Berths for 3 scientists
- Equipment for seafloor mapping and research: seismic signal equipment, echosounder, sonars, seabed sediment sampling equipment
- Wet laboratory
- Owners GTK and Finnish Navy






Integrated use of mesocosms

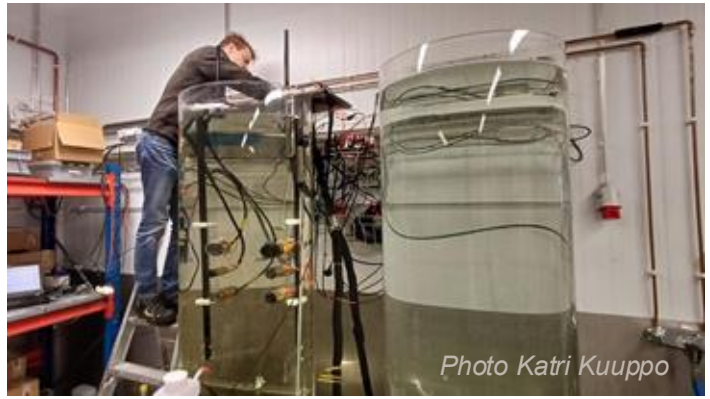
- Experimental plankton and littoral mesocosms (outdoor/indoor)
- Integrated/adjacent analytical facilities and services
- Autonomous sampling and measurement of chemical and biological parameters
- Project examples: JOMEX





Outdoor mesocosms in Korpoström and Tvärminne Zoological Station





Indoor mesocosms in Tvärminne and Syke mesocosm facility

Oceanographic and meteorological observations at Utö and TZS stations

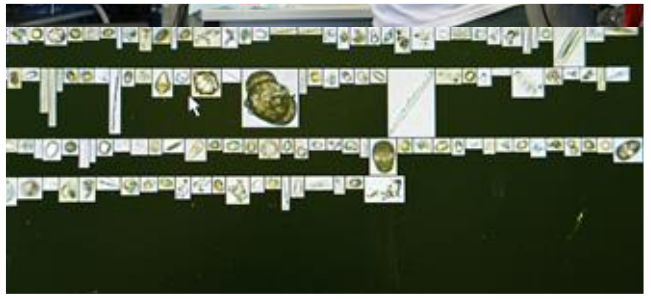
- Continuous atmospheric observations linked with marine processes
- Research on biogeochemical cycling and biodiversity
- Adjacent analytical and experimental facilities
- Real-time observations
- LINKS
  https://en.ilmatieteenlaitos.fi/uto-observations
- https://www.helsinki.fi/monicoast





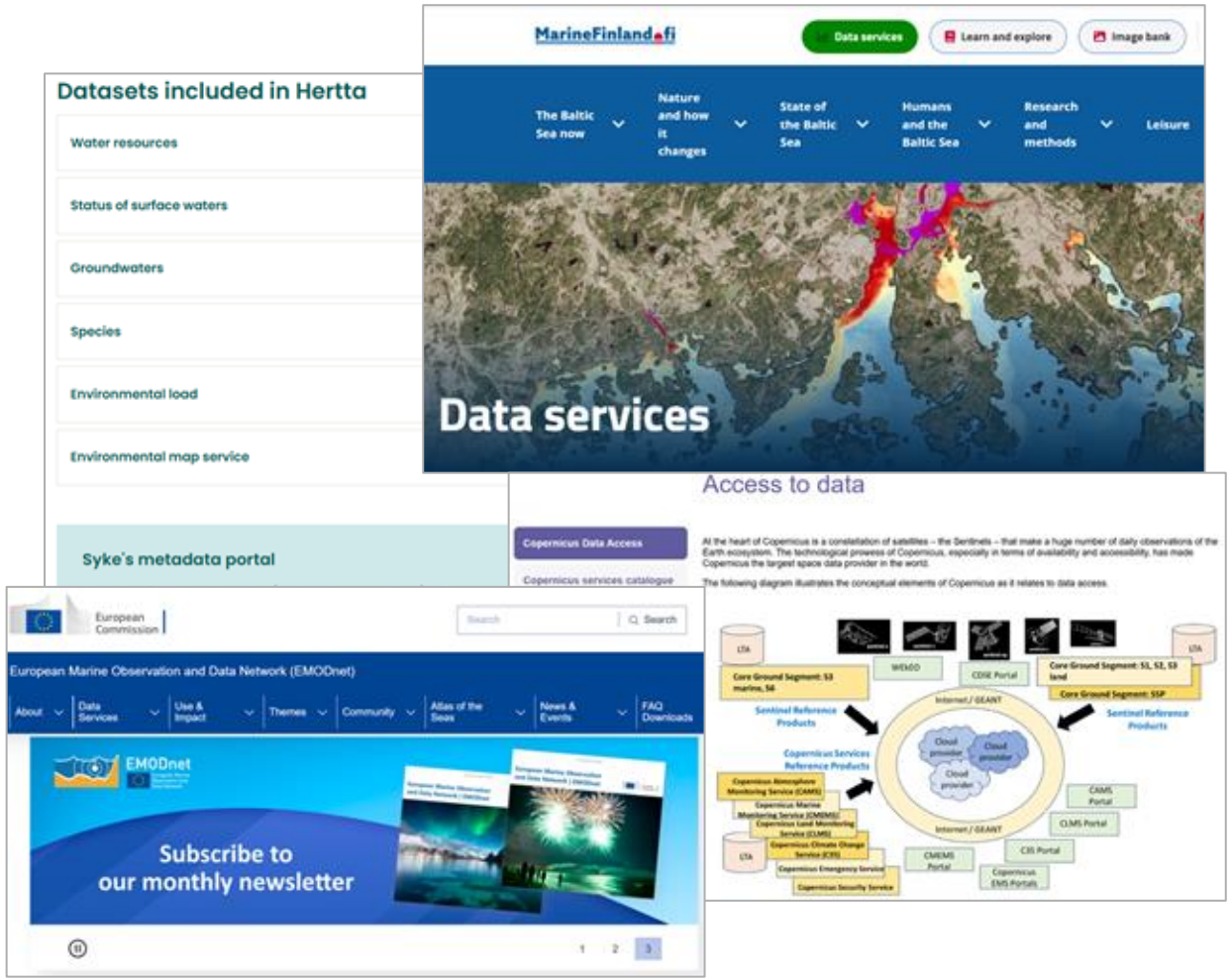






Virtual and data services, data links

- Monitoring data from cruises
- Real-time observations from the sea
- Continuous atmospheric observations
- Data from experiments
- Examples of links to data
  - MarineFinland.fi
  - EMODnet
  - Copernicus
- Data availability is increased and diversified by the FINMARI DataWG



More information from



Next up: Aranda monitoring cruises in 2027 / Riitta Autio

Remember that you can post comments, questions, info and links in the chat all along.

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Aranda Cruises in 2027



Photo Ilkka Lastumäki, Syke

Aranda cruise plan for 2027

Time	Cruise / CS	Institute	Duration days	
19. - 22.1. Leg 1 22.1. - 2.2.2027 Leg 2	**COMBINE 1** Harri Kankaanpää Pekka Kotilainen	Syke&IL	15	Hydrographic, nutrient, and biological monitoring of the state of the Baltic Sea.
13. - 23.4.2027	**COMBINE- spring monitoring** Kristian Spilling	Syke&IL	12	Monitoring and research of the spring bloom
25.5. - 8.6.2027	**COMBINE 2** Henrik Nygård	Syke&IL	13	Monitoring of zoobenthos in the Baltic Sea.
10.-14.8.2027 Leg1 14.- 24.8.2027 Leg2	**COMBINE 3** Pekka Kotilainen Maiju Lehtiniemi	Syke&IL	15	Hydrographic and biological monitoring of the state of the Baltic Sea.
22.9. - 6.10.2027	**ICES-BIAS 2027** Juha Lilja	Luke	15	Baltic International Acoustic Survey on herring and sprat in the Northern Baltic Sea, covering ICES Sub-divisions.

Doing research onboard Aranda

- Possible for researchers to attend the cruises if berths available
- Contact the cruise leaders
- More information on Aranda: https://www.syke.fi/en/services/research-vessel-aranda

Next up: JERICO: European gateway for coastal observation / Jukka Seppälä

Remember that you can post comments, questions, info and links in the chat all along.



JERICO: European gateway for coastal observation

FINMARI connects Finnish marine research infrastructure to European ones



European Strategy Forum on Research Infrastructures (ESFRI), an EU policy-making body to support a coherent strategy for research infrastructures (RIs) across Europe.

ESFRI Roadmap, identifies pan-European research infrastructure needs and investments for a 10–20 year horizon.

Roadmap updated in 2026, including now also JERICO – very relevant for FINMARI

So, what is this … JERICO … and why should we care ?

JERICO-RI Observations

A Pan-European Multiplatform Approach

Fixed Platforms

- Bottom-based Observatories
- Multiparametric Buoys
- Coastal Landers



Moving Platforms

- Ferrybox
- Coastal / Surface Drifters
- Gliders
- Vessel-Mounted ADCP

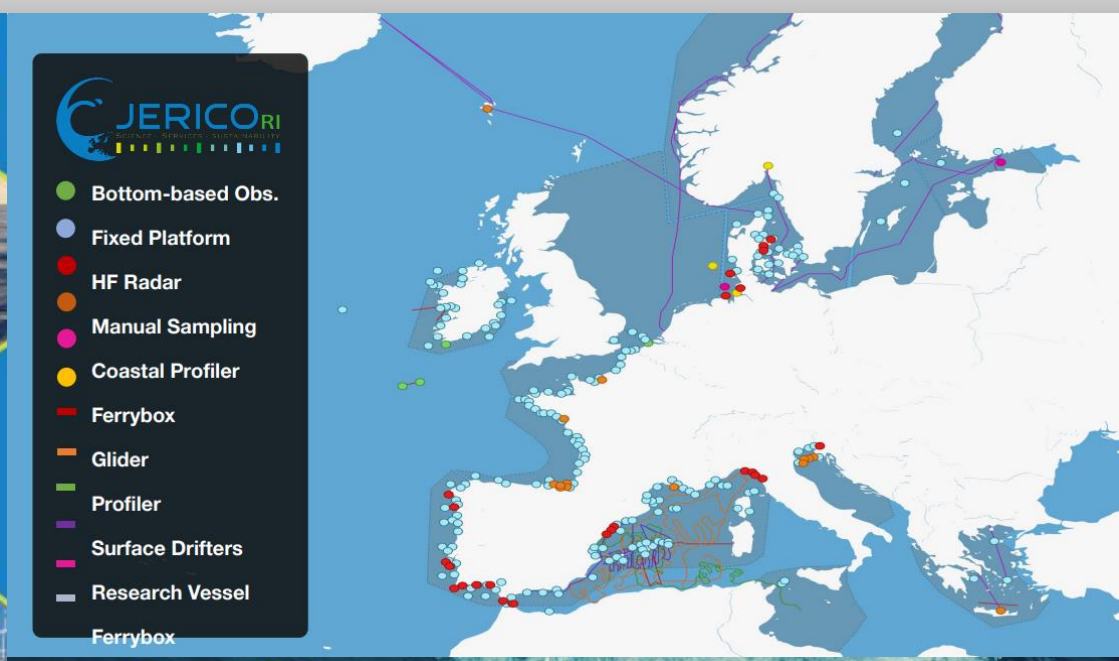


Land-based Stations

- Pier Multiparametric Station
- High Frequency Radars
- Tide Gauges

Metrology and Calibration Facilities





The European Coastal Ocean Observing System

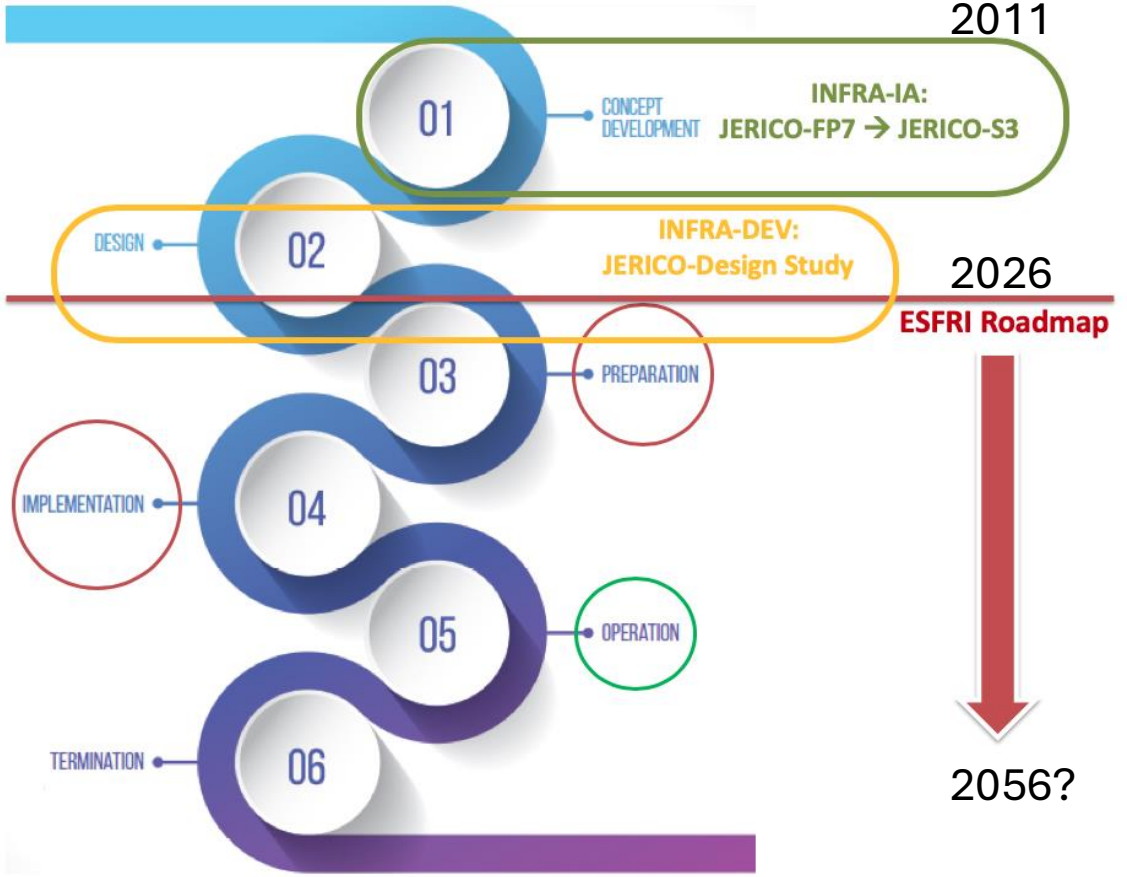
17+
Countries
JERICO comprises 17+ countries

39+
Partners
More than 39 partners are involved in the RI

672+
Platforms
JERICO integrates more than 670 platforms

Core component of EU marine observing systems for decades





Next up: EMBRC - How can we benefit? How can we contribute? / Joanna Norkko

Remember that you can post comments, questions, info and links in the chat all along.

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Finnish Marine Research Infrastructure

EMBRC - HOW CAN WE BENEFIT? HOW CAN WE CONTRIBUTE?



EMBRC
EUROPEAN
MARINE
BIOLOGICAL
RESOURCE
CENTRE

EUROPEAN MARINE BIOLOGICAL RESOURCE CENTRE

Europe’s research infrastructure for marine biology & ecology

A network of marine stations giving academic and industry researchers access to marine biodiversity, ecosystems, facilities and expertise — an ESFRI Landmark organised as an ERIC.

10
MEMBER COUNTRIES

86
MARINE SITES

617
RESEARCH SERVICES



EMBRC Finland · FINMARI

WHAT EMBRC OFFERS

One gateway to Europe’s marine stations



…plus pan-European programmes

EMO BON observatory

Europe’s first permanent, coordinated genomic biodiversity observatory, tracking marine life with DNA.

Funded transnational access

EU projects cover visits — AQUASERV (274 services, to 2028) and IRISCC (128 services).

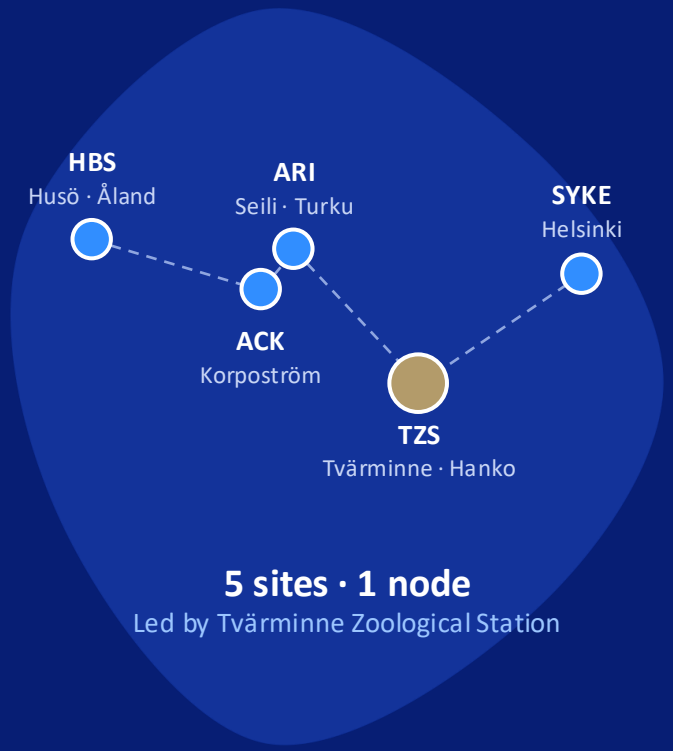
Training, data & ABS

Marine training, data and e-infrastructure working groups, and Nagoya/ABS compliance support.

All bookable via the **EMBRC Service Catalogue** · embrc.eu

WHAT IT MEANS FOR FINMARI

The Baltic marine biology goes European



HOW WE BENEFIT

Access across Europe

86 sites and 617 services in 10 countries, incl. fully marine systems.

Leverage for funding

EU-funded transnational access and a stronger hand in Horizon Europe.

Visibility & new users

Finnish institutions in the EMBRC catalogue: new partners and service income.

Shared standards & voice

Common services, standards, data and training, and a seat in EU ocean policy.

HOW WE CONTRIBUTE

A unique Baltic ecosystem

Brackish, ice-covered sites, with vessels and gear for winter work.

Experimental facilities & analytics

e.g. aquaria, mesocosms, imaging

Long-term data & collections

Decades of time series. Algal culture collections.

Cold-water & ice diving

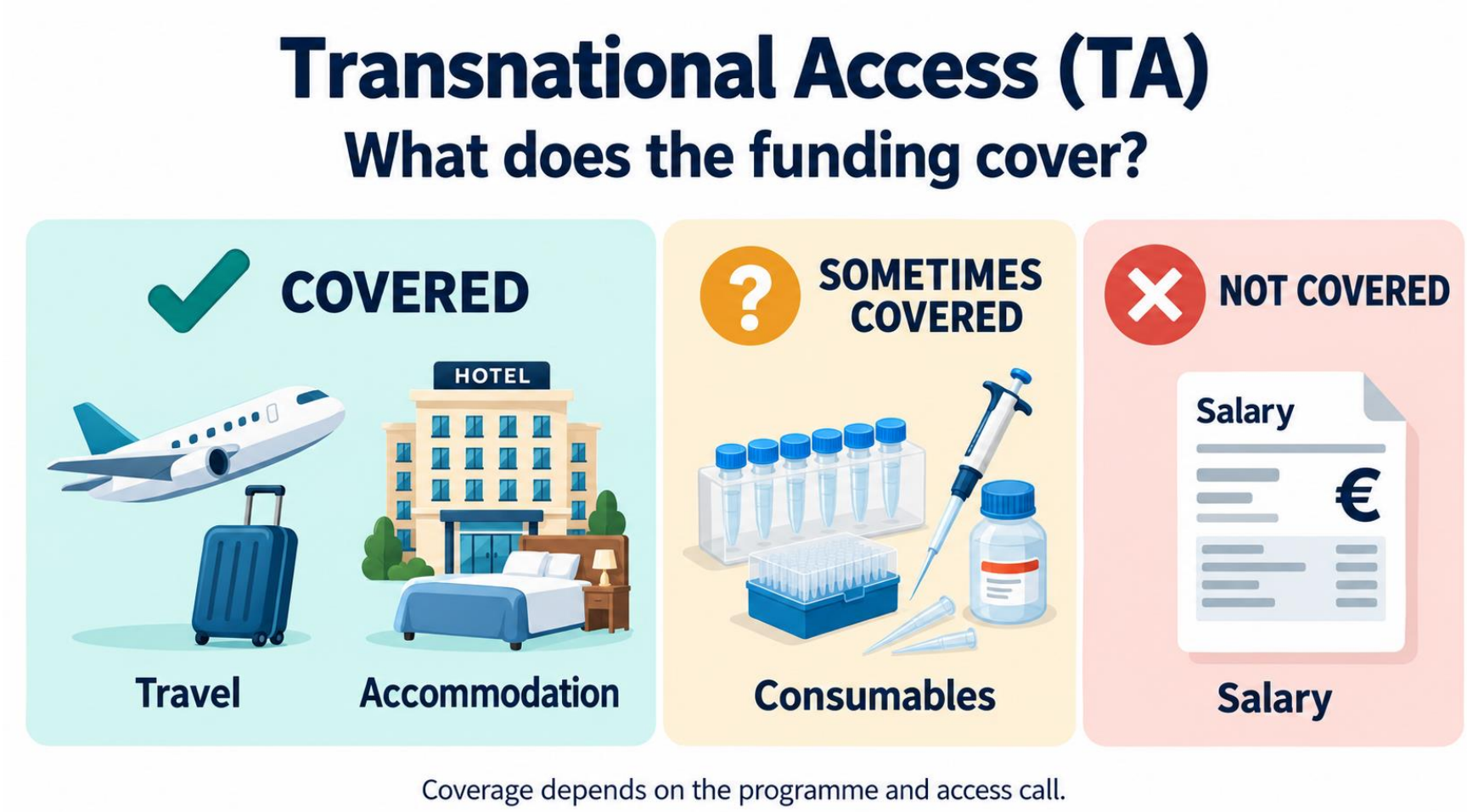
Scientific SCUBA training through the Finnish Scientific Diving Academy.

Next up: Kristian Spilling

Remember that you can post comments, questions, info and links in the chat all along.



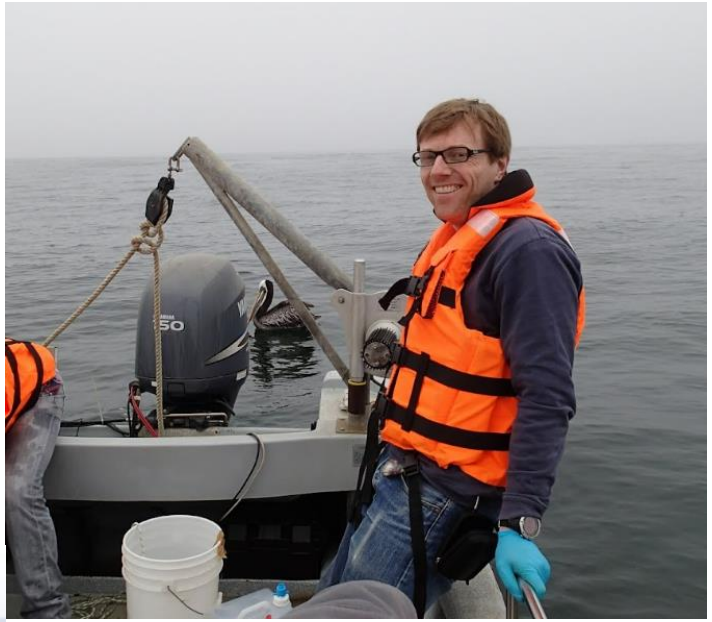
TA / TNA Transnational access: Kristian Spilling (EU funded access to infrastructure)



ASSEMBLE 2014 (Chile)













AQUACOSM 2018, 2020, 2021, (2021)













IRISCC 2026









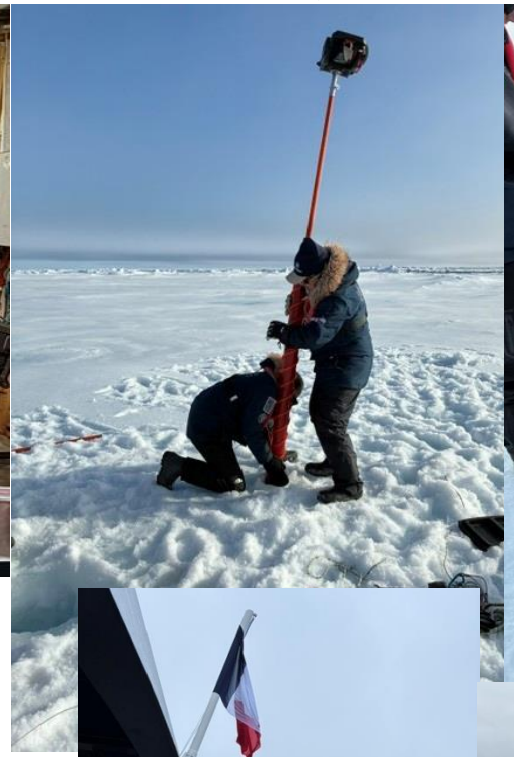
Suomen ympäristökeskus
Finlands miljöcentral
Finnish Environment Institute

POLARIN 2026
(PI Jari Haapala FMI, Letizia Tedesco, Syke)



POLARIN 2026
(PI Jari Haapala FMI, Letizia Tedesco, Syke)



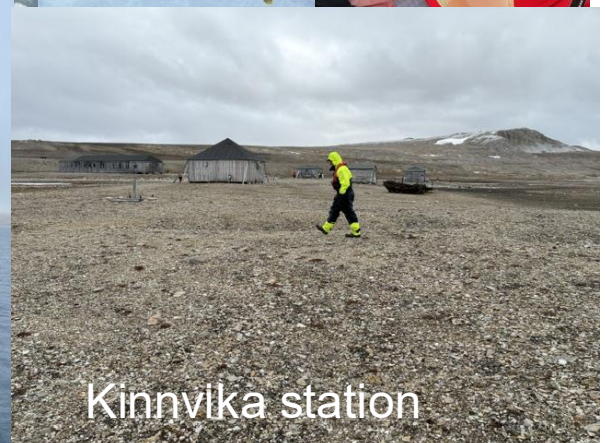














A great way to expand your research

Make the most of Transnational Access





Be self-sufficient

Bring the skills and essentials you need



Keep critical steps in your hands

Get an understaniding of possibilities and limitations before you go



Have backup plans

Keep plans B, C and D ready

Stay flexible when things do not go according to plan.

- Time for a little break!
  - Grab another coffee
  - Stretch your shoulders
  - Look away from the screen
  - Back in 5 minutes



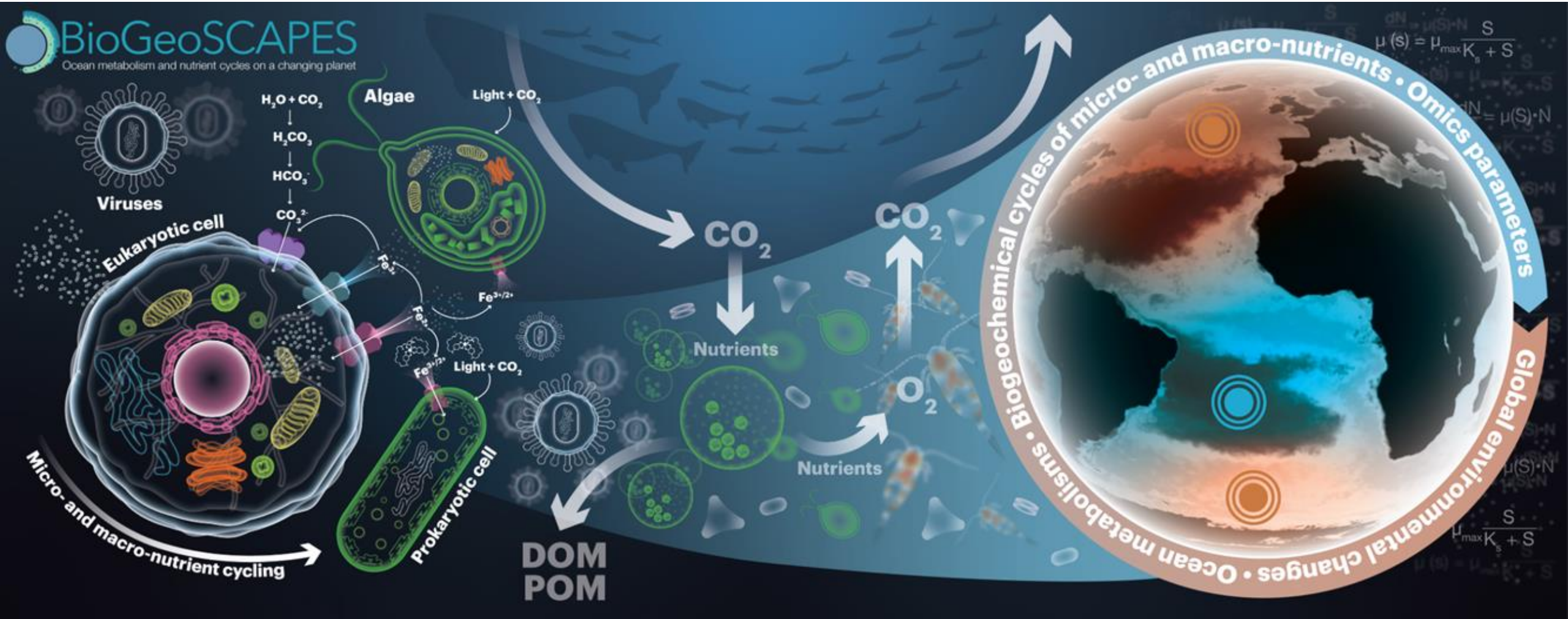
Next up: Shane Hogle

Remember that you can post comments, questions, info and links in the chat all along.



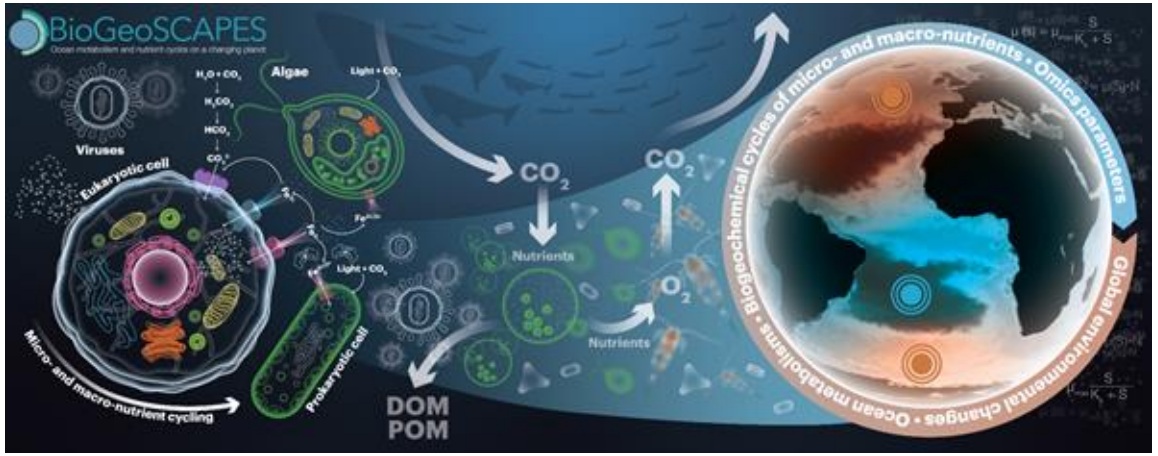
BioGeoSCAPES Program Overview

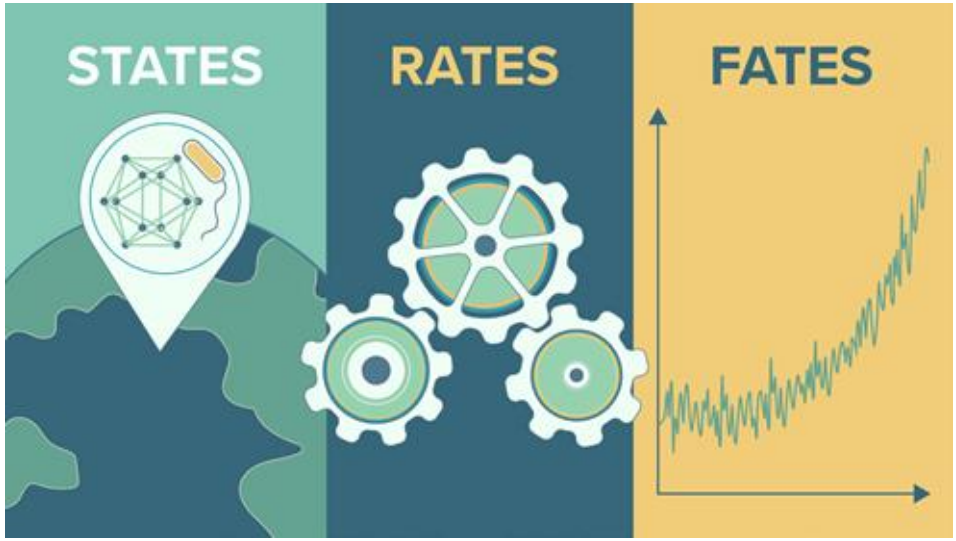
Shane Hogle, Associate Professor, Åbo Akademi University,
Academy of Finland Research Fellow, University of Turku, Finland
FINMARI Marketplace Oct. 28, 2026



Ocean Metabolism – at the heart of our planetary system

Vision: to achieve an integrated and predictive understanding of the global ocean metabolism and its role in shaping biogeochemical cycles and climate, empowering society to better address the impacts of global change.

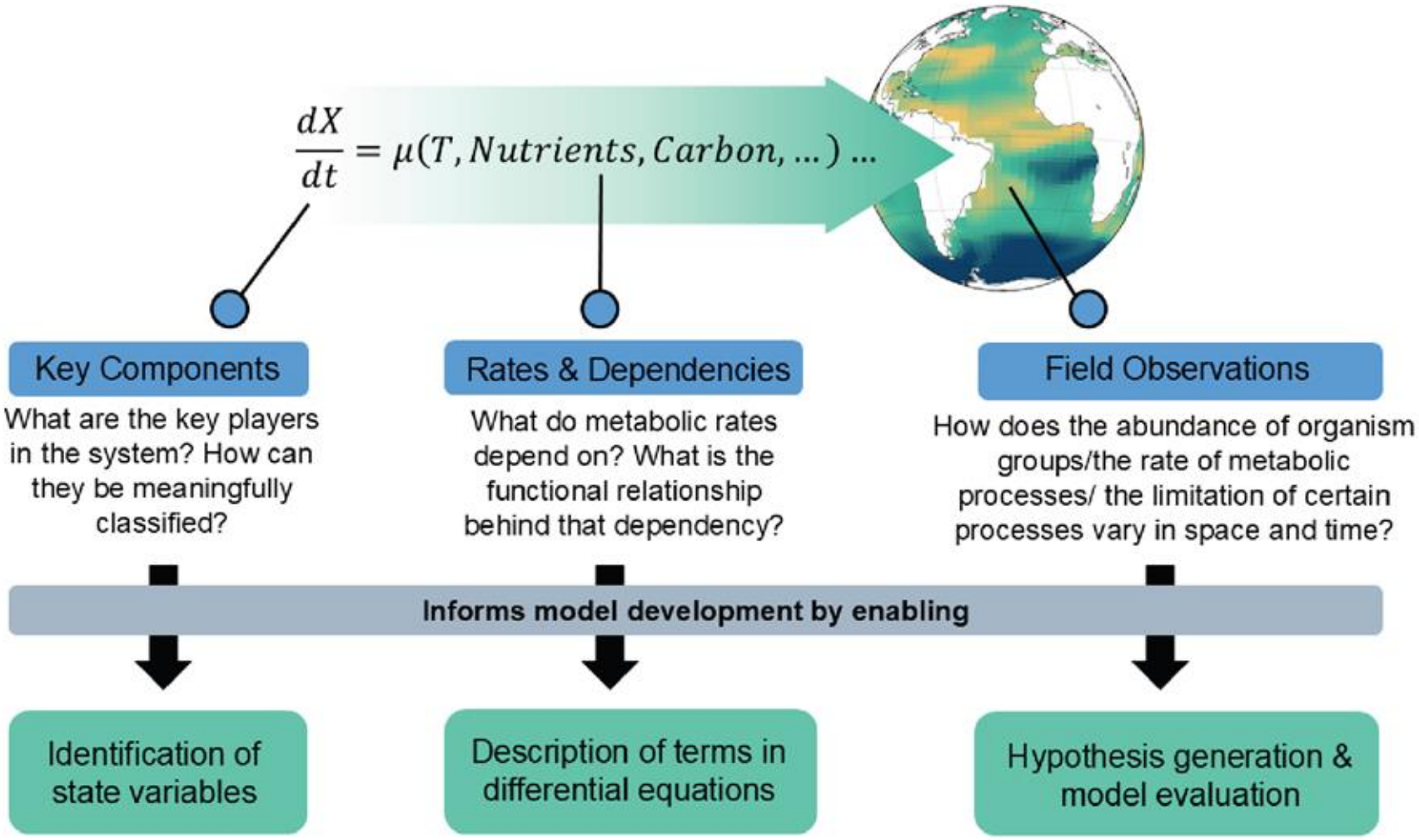




Mission: to measure the global distribution of marine microbes and chemical drivers ***(States)***, quantify the microbial metabolisms regulating planetary nutrient cycles ***(Rates)***, and integrate these insights, using next-generation biogeochemical models to deliver the predictive capabilities required to forecast ecosystem resilience in a rapidly changing planet ***(Fates)***.

Conceptual BiogeoSCAPES Framework

Field and lab-based experiments and observations (omics, biogeochemical & physical) inform Earth system model developments for synthesis & prediction



Science Plan - Chapter 5: Implementation, Figure credit: Sinikka Lennartz

Implementation of BioGeoSCAPES



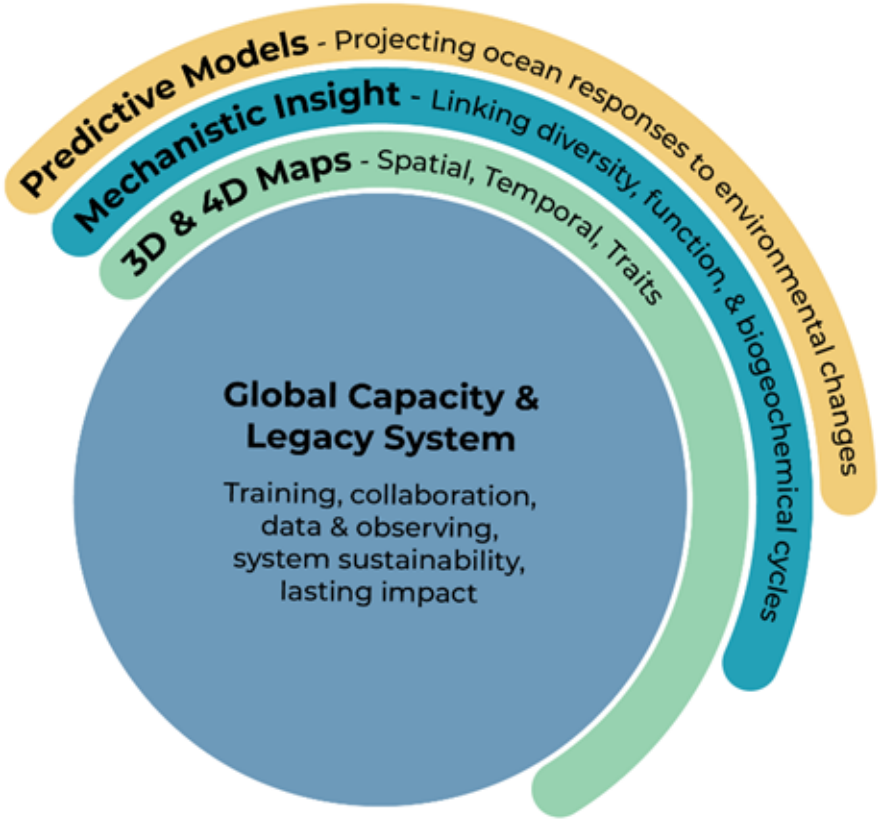
Integrated Observations & Experiments
Fieldwork, lab, studies, autonomous platforms

Standardization & Intercalibration
Protocols, reference materials, cross-platform comparability

Omics > Rates > Flux Integrations
Linking genes, proteins, & metabolites to biogeochemical rates
Currency conversion from molecular to ecosystem scales

Global Data Systems
FAIR - Findable, Accessible, Interoperable, Reusable
Data assimilation, model development, prediction & analysis

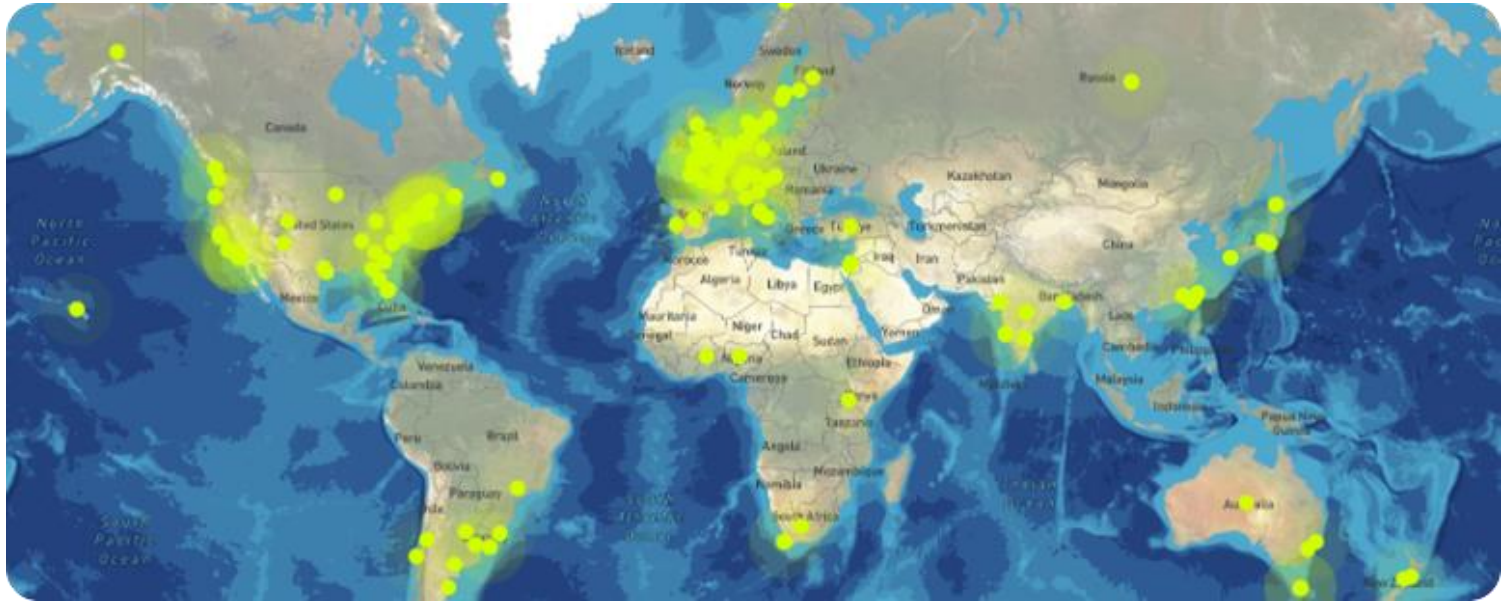
Multi-scale Models & Synthesis
Cellular > Ecosystem > Global Ocean
Data assimilation, model development, prediction & analysis



BioGeoSCAPES

Ocean metabolism and nutrient cycles on a changing planet

Join the Community!



Share projects and discover opportunities

Help expand our global map

Grow your network and find collaborators

Connect with BioGeoSCAPES

biogeoscapes.org/connect

PROGRAM OVERVIEW + Q&A

Discover BioGeoSCAPES

NOVEMBER 10, 2026

SESSION 1 9–10 a.m. ET

SESSION 2 8–9 p.m. ET



Visit https://biogeoscapes.org/activities/ to sign up!

Next up: Margaret Willamson

Remember that you can post comments, questions, info and links in the chat all along.



Pharmaceutical Presence in Coastal Reed Bed Sediments



FinMari Marketplace

28.10.2026

PostDoc Project Proposal

Margaret Williamson

What and Why

- Presence of pharmaceuticals in coastal and aquatic environments is an increasing concern **worldwide**

- Helcom 2017 report showed pharmaceutical presence in **all sites sampled for Finland**.
  - Report called for data on occurrences located further inland

Potential impacts to:

- Coastal sediment microbial health (their ability to sequester C and produce methane)
- Fisheries health
- Baltic Sea eutrophication
- Coastal recreational activities
- More

Proposal

Test for pharmaceutical presence in 5-10 sites

a) close to Helcom report sites, close to wastewater treatment facilities, close to urban areas

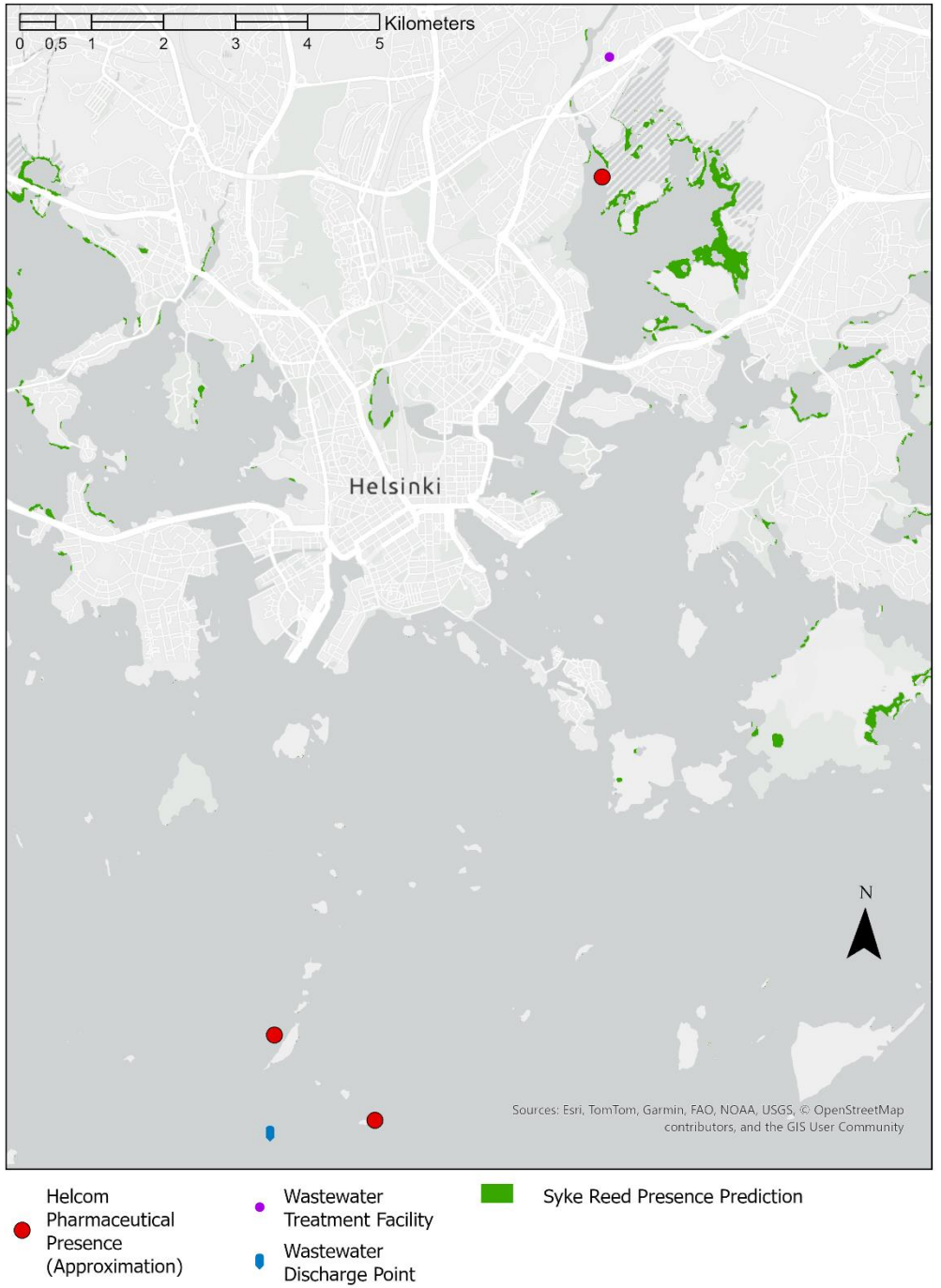
Test for dead microbial residues (amino sugars) in sediments (method from project collaborator)

People:

- University of Helsinki
- Luke

Equipment:

- Soil corers
- Chromatography equipment: (UHP)LC-MS/MS, UHPLC-Q-TOF MS (both methods available in Viikki) or UHPLC-TOF-MS



Asks

- Collaborators interested in helping with:
  - funding applications
  - field work
  - lab work
  - outreach

- Any further suggestions or ideas

Contact Margo:



Margaret.Williamson@helsinki.fi

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Next up: Norman Göbeler

Remember that you can post comments, questions, info and links in the chat all along.



Plans for 2027 - Coastal biodiversity and climate interactions

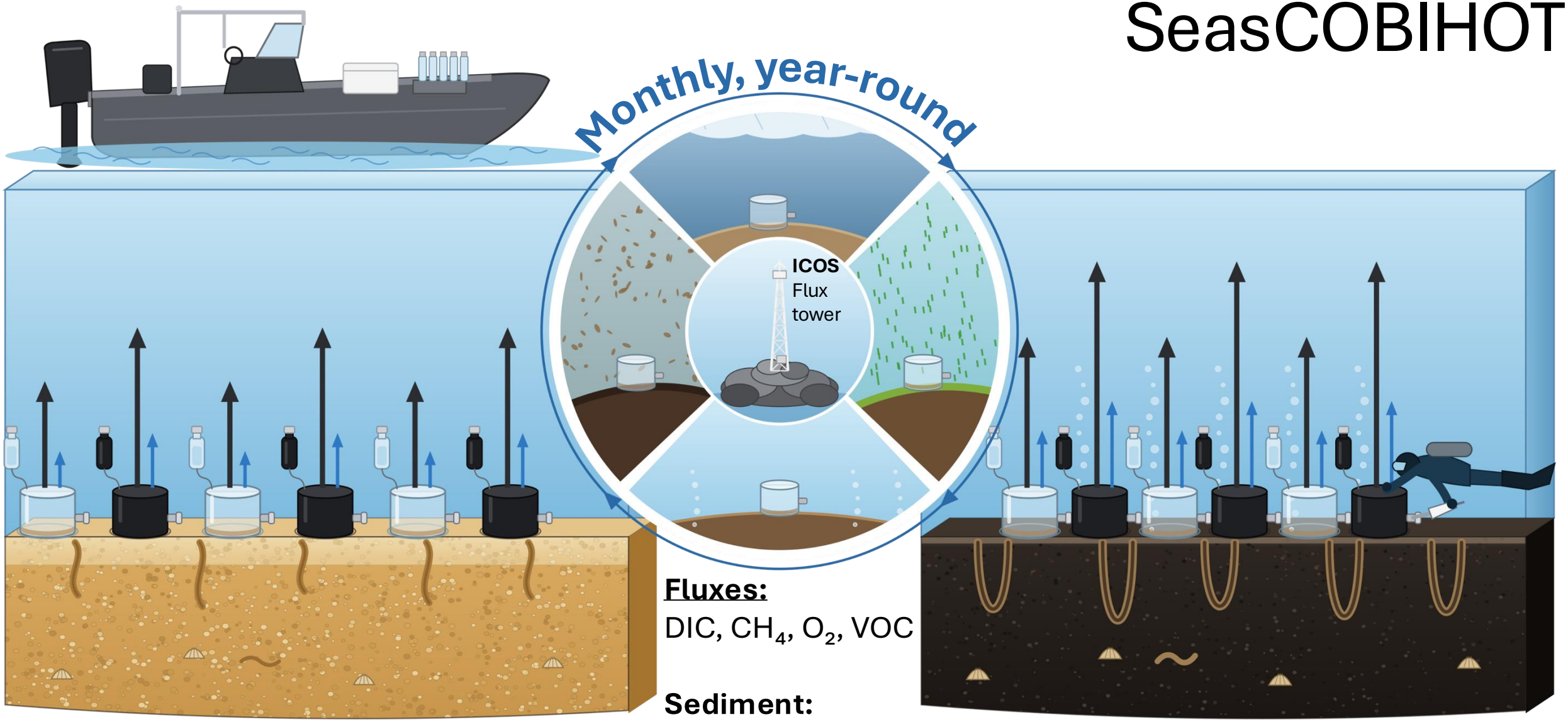
Seasonal succession of benthic communities and seafloor GHG and VOC dynamics

Research question:
How does the seasonal succession of benthic communities shape the exchange of GHGs and VOCs between sediment, sea and atmosphere?

Approach:

- Two bare-sediment sites with contrasting organic matter content, at the same depth, within the footprint of the Ångbåtsbryggan flux tower
- Monthly in situ light and dark chamber incubations, with additional opportunistic sampling (extreme events)
- DIC, CH_4, O_2 and VOC fluxes linked to sediment properties and benthic communities

SeasCOBIHOT



Sandy site, low OM

Fluxes:
DIC, CH_4, O_2, VOC

Sediment:
C/N, OM,
Chla/Phaeo, DNA,
Microphytobenthos,
Macrofauna

Muddy site, high OM

Next up: Heta Rousi

Remember that you can post comments, questions, info and links in the chat all along.



Temporal impacts of winter NAO and water physicochemical parameters on cyanobacteria biomass in the Northern Baltic Sea

Finmari Market Place 2026

Heta Rousi (UTU), Conny Sjöqvist (ÅAU), Julia Fält-Nardmann (UTU), Betty Marjamäki (UTU), Pekka Niemelä (UTU), Jari Hänninen (UTU)

A short overview

- Impacts of surface water physicochemical parameters (PO43-, NH4+, T, S, pH, ice cover) as well as wind speed and winter NAO on cyanobacteria biomasses between 1991-2023 in the AS.

- Cb classified according to their N_2 fixing capability.

- Have different cb group biomasses changed and which environmental factors drive the changes?

UNIVERSITY OF TURKU

A short overview

- Cb biomass and water physicochemical data from Hertta Avoimet ympäristötietojärjestelmät
- Modelled Ice Cover data from FMI jääpalvelut (Orhisaari, ~1km from Seili intensive monitoring station) Jäätilastot - Ilmatieteen laitos
- Winter NAO (Dec-Mar) index data from NOAA Climate Prediction Center - Teleconnections: North Atlantic Oscillation
- Anyone interested in co-operation please contact herous@utu.fi or jarhan@utu.fi

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Next up: Ivia Closset

Remember that you can post comments, questions, info and links in the chat all along.





ILMATIETEEN LAITOS
METEOROLOGISKA INSTITUTET
FINNISH METEOROLOGICAL INSTITUTE

Gliders at work!

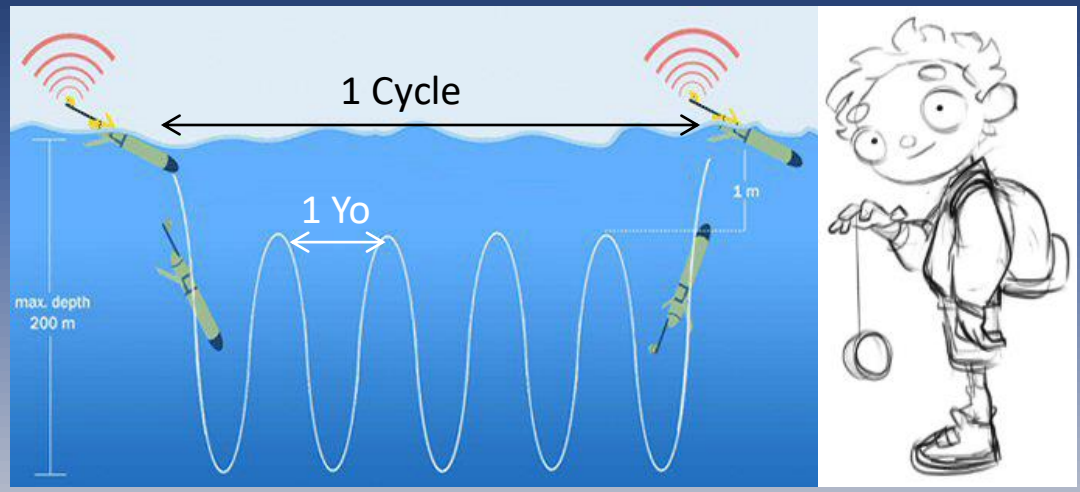
FMI-gliders 2027 instruments and observations

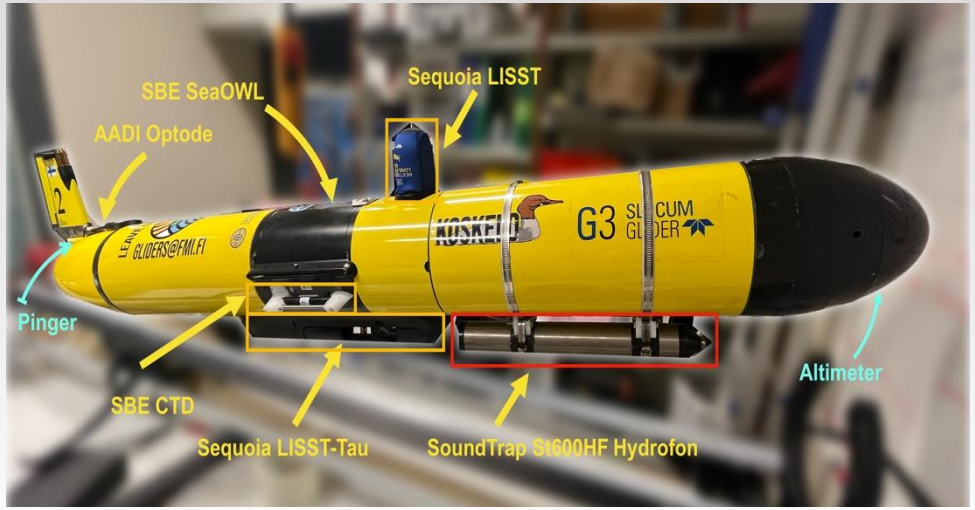
Ivia Closset, Kimmo Tikka & Tuomo Roine

ivia.closset@fmi.fi *kimmo.tikka@fmi.fi* *tuomo.roine@fmi.fi*

Underwater gliders are…

- Buoyancy driven
- All weather operations
- Autonomous
  - High endurance (3-4 weeks)
  - Dense data profiles (10-200m)
  - Distance 300-500 km





Contact us! *ivia.closset@fmi.fi & kimmo.tikka@fmi.fi*

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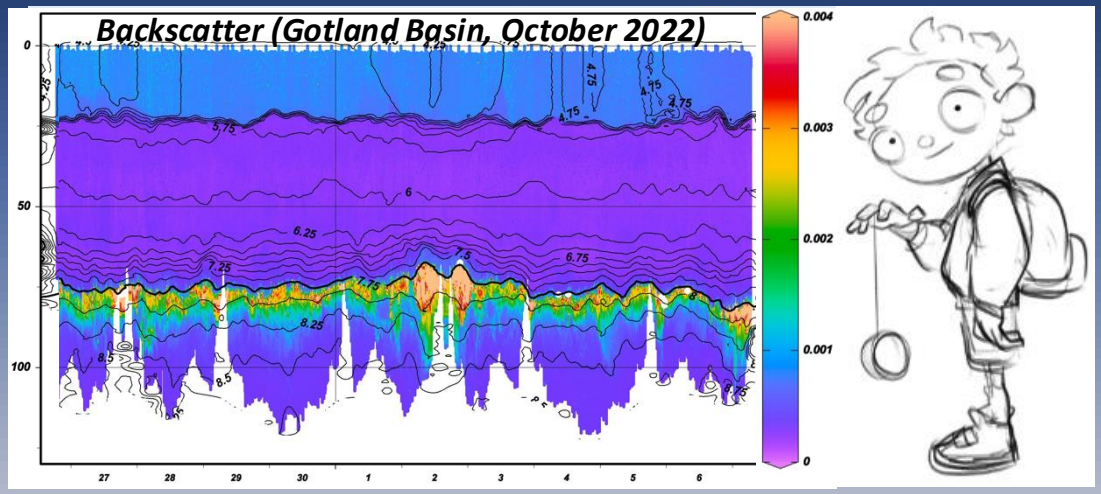
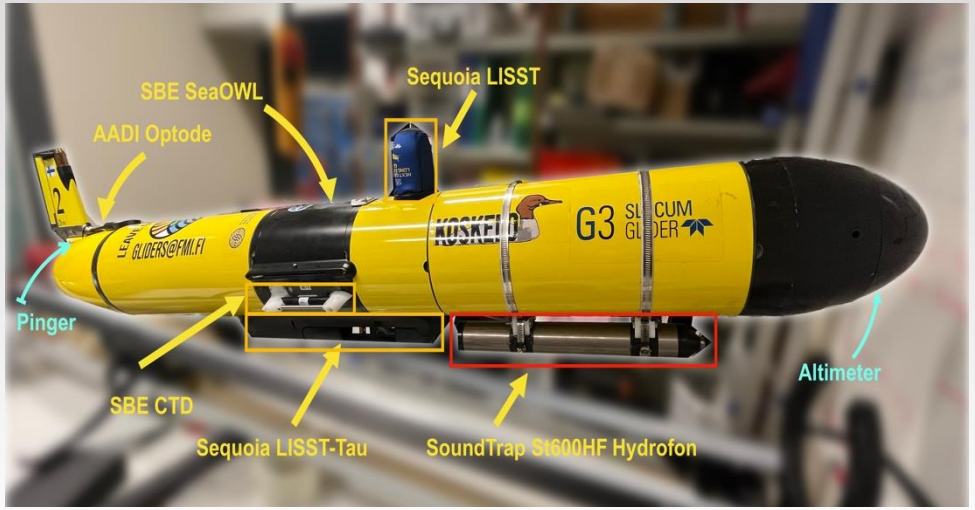


3 SLOCUM Gliders (G2 & G3)



- **Science Payload**

- CTD	- Nitrates
- Oxygen	- Irradiance
- Chlorophyll a	- Accoustic
- fDOM	- Particles
- Turbidity	- Light transmission

Contact us! *ivia.closset@fmi.fi & kimmo.tikka@fmi.fi*

Glider missions in the Baltic Sea

Planned mission for 2027

- On average 3 missions per glider per year from April to November

- Coverage: Tvärminne, South of Utö, Bothnian Sea and Bothnian Bay, Gotland Basin, Gulf of Riga



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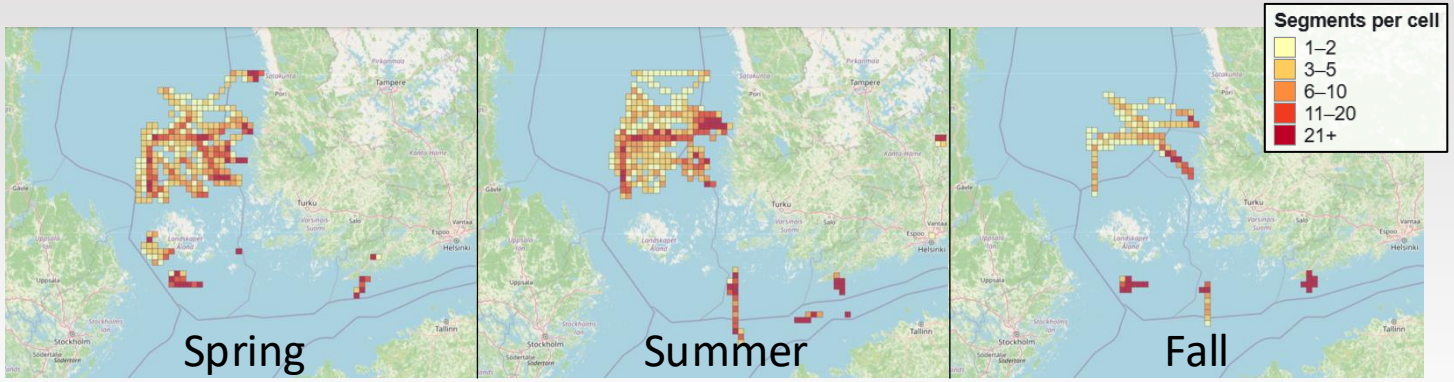
Past missions and where to get data

http://nnodc.fmi.fi/glider/maps/#/fmi-missions
http://ocean-erddap.fmi.fi/



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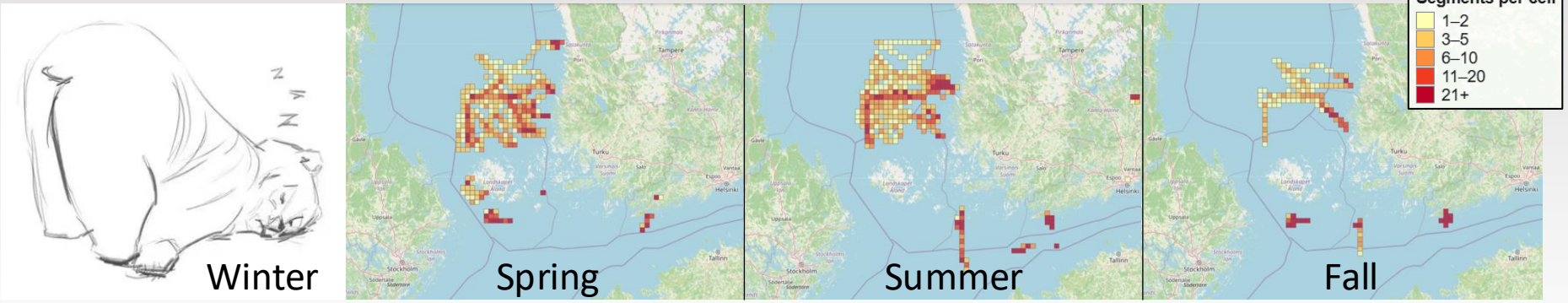

Contact us! *ivia.closset@fmi.fi & kimmo.tikka@fmi.fi*

Other opportunities, open positions, etc.

