List of Research Equipment at the Archipelago Research Institute

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UNIVERSITY OF TURKU

Fin MARI
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



Booking

For booking the equipment and facilities, please fill out our booking inquiry form, well in advance.

Before submitting a booking inquiry, please also familiarise yourself with the guidelines for research activities at the Seili Research Station (PDF).

UNIVERSITY OF TURKU

1. Environmental data

Seili station has conducted environmental and at-sea monitoring since 1966 in collaboration with numerous stakeholders. These monitoring programs have generated extensive datasets, some that span over 50 years. Most of these datasets are available to researchers, offering background information for studies related to climate-induced environmental changes in the northern Baltic ecosystem.

>>Metadata of currently running monitoring programs

If you require additional information or assistance regarding these monitoring programs, please contact us.

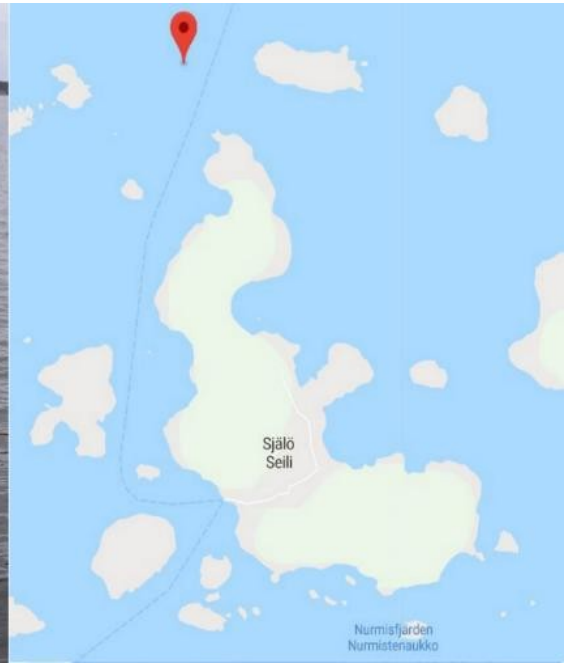
1. Environmental data:

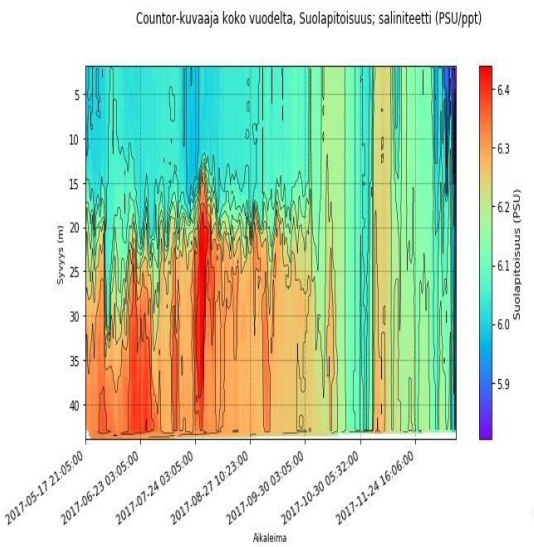
Automated monitoring buoy (ODAS)

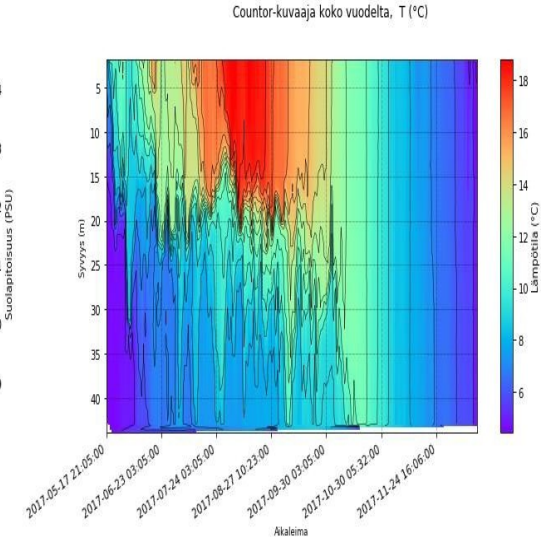
- **Salinity, temperature, dissolved oxygen, turbidity, chlorophyll-α, and blue-green algae content** measured daily during open water season
- YSI 6952 buoy base and EXO multiparameter sonde YSI 6000 (updated in 2024)
- 4 profiles (2-40 m depth) conducted per day at one-meter intervals. Data available since 2011.
- Operated during open water season, i.e. from spring, as soon as the ice permits, until early winter before the ice forms.

  Weather station on top of the buyo measures air temperature, pressure,humidity, precipitation, wind speed, and direction (from 2015-today)
- Data and graphs can be viewed and downloaded at https://saaristomeri.utu.fi/odas_en/









2. Vessels
Research vessel r/v Aurelia

- Max. passenger capacity 40 persons (+ 2 crew).
  The vessel is hired only with crew.

- Built in 1991
- Overall length 18.1 m
- Beam 5 m
- Draft 1.5 m
- Maximum speed 15 knots
- Gross tonnage 5,8 t.

- Outdoor working space (16,4 m^2)
- Sampling deck (15,5 m^2, lowered 0,7 meters closer to sea surface)
- Small laboratory/wet lab space (2,9 m^2)
- Mess decks (9.2 (16 persons) and 5.1 m^2)





2. Vessels
r/v Aurelia

- A-shaped beam
- Winch (Hiab, max. 500kg)
- Access to seawater and freshwater
- Equipped with a rowing boat

- Aurelia is used mainly for day trips, but can accommodate up to 4 persons, if needed
- WC, fridges and freezer, drying cabinet, coffee/tea maker, microwave ovens, toaster, gas cooker and utilities

- The station has various field equipment that are available for fieldwork onboard r/v Aurelia








2. Vessels

Motorboats

Minor Range 7600

- Acquired in 2023

- Max. 8 passengers
- Length 7.5 m
- Power 160 hp
- Equipped with chart plotter, AIS and echo sounder
- Accommodation for 2 persons, if needed







2. Vessels

Motorboats and rowing boats

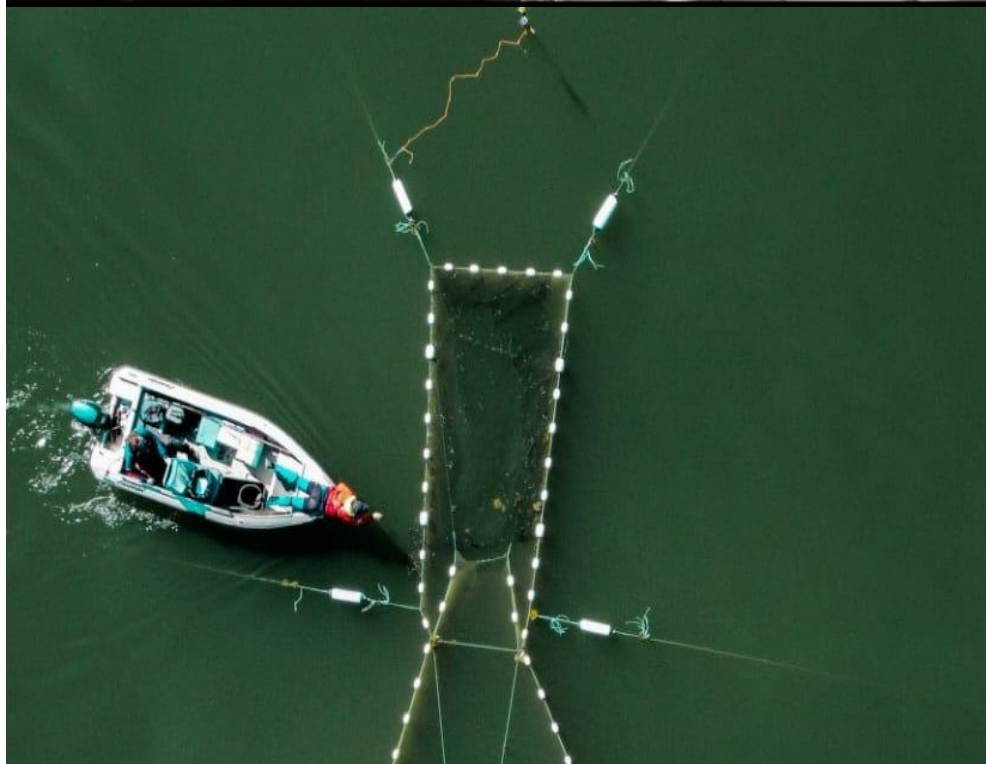
Faster 515 motor boat

- Aluminium boat with outboard engine (Suzuki 60 hp)
- Max. passengers 6
- Length 5.1 m
- Max. speed 25 knots
- Equipped with chart plotter/echo sounder
- Trailer available

Two rowing boats with outboard engine

- Two aluminium rowing boats, can be equipped with an outboard engine (6 hp)





3. Experimental research facilities

Indoor aquaria facilities

- Acquired in 2013-2015
- Semi-automated rearing and maintenance of marine organisms for observational and experimental studies
- Possibilities to manipulate water quality (e.g. salinity), temperature and lightning
- Replication of study units

The station has a total of 10 close-circulation aquarium racks, each with 12 (24 L) replicated aquaria, temperature regulation, filtration and advanced lightning

- 4 racks situated in the Seawater laboratory-building
- 6 racks located in the Main building
- Access to seawater via pipe from outside the island (26 m) in the Seawater laboratory
- Ion-exhanged water and aquarium salt available for artificial seawater





3. Experimental research facilities

Each rack has a recirculating water system, in which seawater is pumped from a large head tank (~ 200 L) situated at the base of the rack to the aquaria, from where it returns to the head tank.

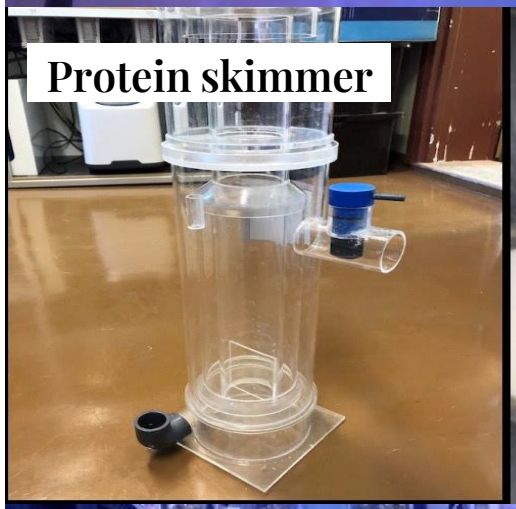
There, the water is filtered and cleaned first by an acrylic filtration unit equipped with a both the mechanical and biological filter, then by a protein skimmer, and finally by UV radiation.

Water filtration:

- Mechanical filtration: Filter socks
  - Two in each rack, 20 in total
- Biological filtration: ceramic filtration tubes
  - One container in each rack, 10 in total
  - allows bacteria to grow and filtrate the water biologically
- Sterilizing UV-light
  - one in each rack, 10 in total
- Protein skimmer (SCHURAN Jetskim 120)
  - one in each rack, 10 in total
  - removes proteins from the aquarium water











3. Experimental research facilities

Water cooling/heating

Each head tank is equipped with a chiller/heater (Teco TR15/TK2000H) to regulate the temperature. Air temperature can also be regulated in the aquaria rooms with an air heat pump (min. temperature +18 °C)

- **Teco SeaChill TR, aquarium chiller**
  - one in 5 racks, 5 in total
  - includes a sterilizing UV-light
- **Teco TK2000H, aquarium chiller**
  - one in 4 racks, 4 in total
- Min. temperature reachable ca.+10 °C

Aquarium lights

Lightning in each rack is provided by six LED lamps with advanced light:dark -rhythm and spectral adjustments and a maximum intensity of up to 1200 µmol m-2 s-1 at the water surface (Ecosmart live with Reeflink).

EcotechMarine's Radion ™ XR30w Pro lamp

- One light per 2 aquariums (60 in total)
- Programmable and possible to mimic a wide range of scenarios and wave lengths
- For more specifications: https://reeflabs.net/Ecotech_XR30PRO


Teco SeaChill TR, aquarium chiller



Teco TK2000H, aquarium chiller




Radion XR30w lights

4. Mesocosm/Outdoor aquaria facility



4. Mesocosm/Outdoor aquaria facility

- 8×5 m LxW wooden terrace with UV-protected PVC roofing (built in 2022)

- **16 Movable flow-through aquaria tanks**
- **9 round fish tanks** (top diameter 80 cm, bottom diameter 70cm, depth 40cm)

- **Continuous flow of brackish water** via pipe from Kirkkoniemi bay at 26 m depth

- **Automated surveillance system** (live camera + sensors, 2024)





4. Mesocosm/Outdoor aquaria facility

Simple aquaria room with regular light and temperature regulation + a maintenance room for brackish water plumbing system

- Standard glass aquaria tanks and round glass fibre tanks also available (various shapes and volumes, e.g. 150L)

Adjacent are also sea water laboratory building and storage room (Makasiini) having two large climate chambers (temperature range +5 - +15 °C).


Aquaria room adjacent to the mesocosm


Makasiini-buiding with working space and climate chambers


Seawater laboratory

5. Field equipment

- Several standard zooplankton and phytoplankton nets
  - Mesh sizes 20, 50, 100, 150 µm, Ø ca. 30 cm
- 1 x Hensen plankton net (Ø 90 cm, 200 µm)
- 2 x Closing plankton nets (Ø 30 cm, 150 µm)
- HYDRO-BIOS Multi Plankton Sampler MultiNet (100 µm)
- Manta trawl (100 µm/300 µm)

- All plankton nets are equipped with polypropene ropes, ~10-100 m-long reels available









Closing plankton nets



Hydro-Bios multi net



Manta trawl

5. Field equipment

- 2 x Custom made herring research trap nets
- 2 x beach seine nets
- 3 larger beach seine nets
- Gill nets
  - Various lengths and mesh sizes suitable for all fish found regularly in the Archipelago Sea
  - Several Nordic and Coastal survey nets
- Littoral nets
- Plant rakes
- Dredges
- Gulf-V sampler with a flow-meter for sampling larval fish
- Inflatable boat (QS Mercury Tendy 200)







Littoral nets



Gill nets,
various mesh sizes

Beach seine nets

Plant rakes
Dredges

5. Field equipment

- RBRconcerto³ CTD++ (2019)
  - Conductivity, temperature, pressure (depth), dissolved oxygen and pH
    - New oxygen probe (Rinko) aquired in 2024
  - Equipped with a **field laptop and Ruskin program and Matlab code to download and visualize the data**
- YSI ProQuatro handheld multiparameter sensor (2022)
  - Measures a variety of combinations of **conductivity, specific conductance, salinity, resistivity, total dissolved solids (TDS), temperature**
  - 10 m and 30 m cables
- EcoSense ODO200 Dissolved oxygen meter
  - 2 m cable
- 2 x EcoSense EC300A Conductivity & salinity meters
  - 10 m cable









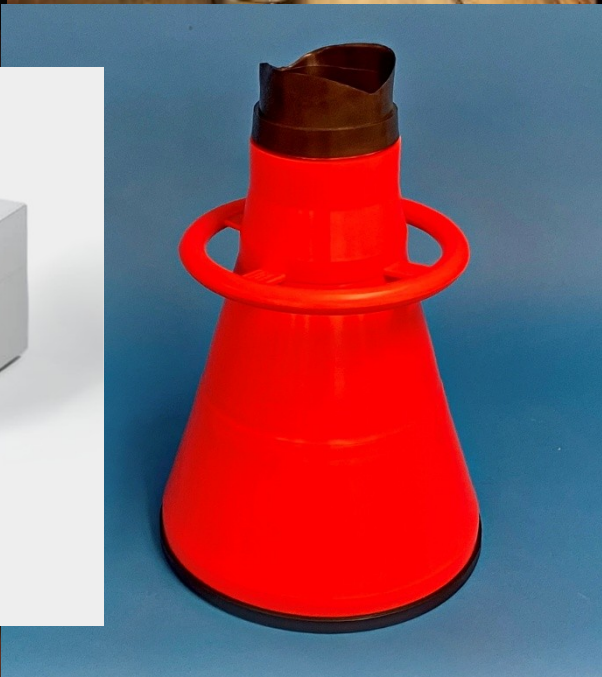
5. Field equipment

- Limnos water samplers (7.2 L, 3.6 L, 1.8 L)
- Ruttner water samplers
- Hydroscopes (7 pch)
- Secchi disks (several round and rectangle- ones, various sizes)
- ONSET HOBO Pendant data loggers (2024)
  - Conductivity, salinity, DO, temperature
- Portable chlorophyll fluorometer (Waltz PAM 2500 (2018)









5. 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
- Benthic dredges and harrows for e.g. mussel and plant sampling
- Sediment trap stations,
- Ca. 10-15 pch, each equipped with stainless steel frame and fin, and 2 acrylic tubes, and buyo. Suitable for e.g. for PCB-, phytoplankton, sediment and microplastic studies
- Soft sediment samplers (e.g. Kautsky sampler)





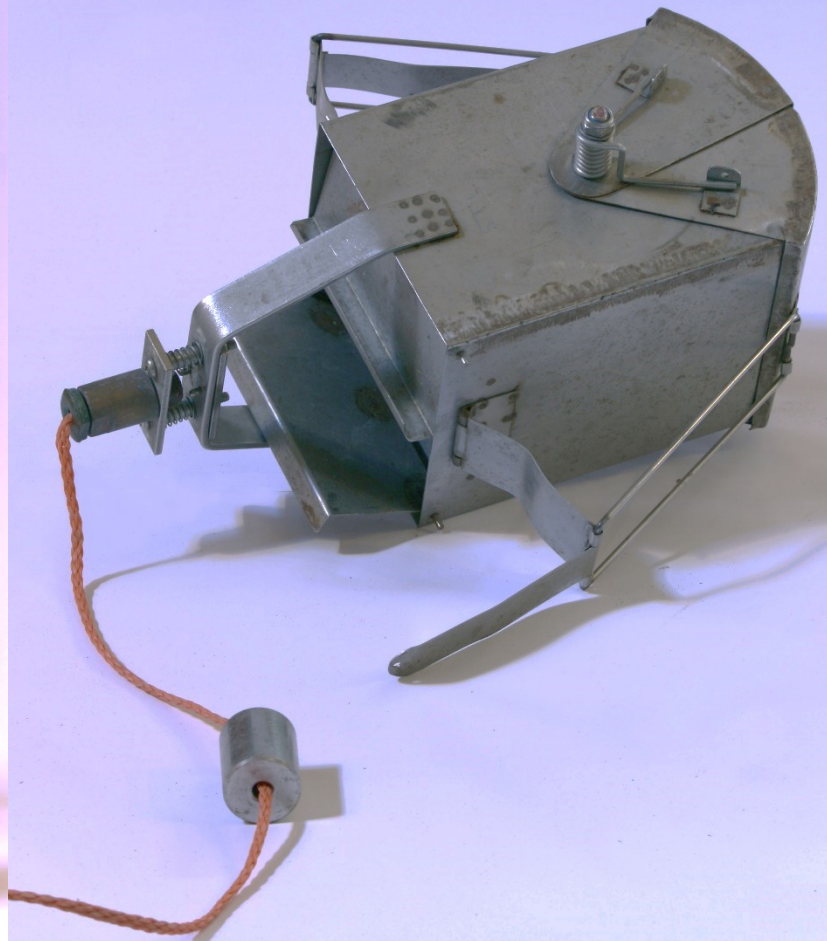




Van Veen



Soft sediment grabs (different sizes)



Sediment
LIMNOS



5. Field equipment

- **Accessories**:
  - Several sieve sets (0.5 mm, 1 mm, 1.5 mm)
  - Sieve table
  - Several waders
  - Several tubs, shovels etc.
  - Polypropene ropes (ca. 10-100 m reels)

  - URSUIT dry suits etc. (S-XXL)









5. Field equipment

Underwater filming

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



Product information and tutorials:
https://www.youtube.com/watch?v=P3lmrjghQVc&list=PLCTnpG7aXT28-FU6it1E0SbU2KRLVbih9

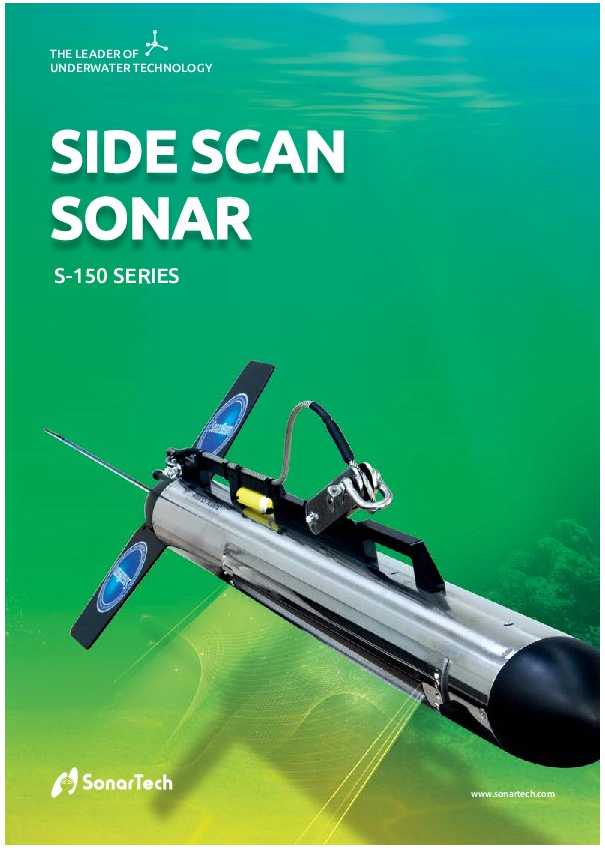


ROV Photon (2024)

- 150 m cable, 2 cameras
- Transported in one Pelican case
- https://www.deeptrekker.com/products/under water-rov/photon

5. Field equipment

- **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





5. Field equipment

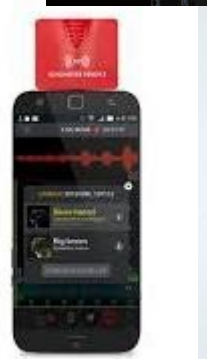
The field equipment at Seili is mostly catered to the needs of aquatic research, but the station also has various field equipment also for terrestrial research and teaching needs, e.g.:

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

Note! Please acquire well in advance for availability as most are currently being used in monitoring programs or field courses















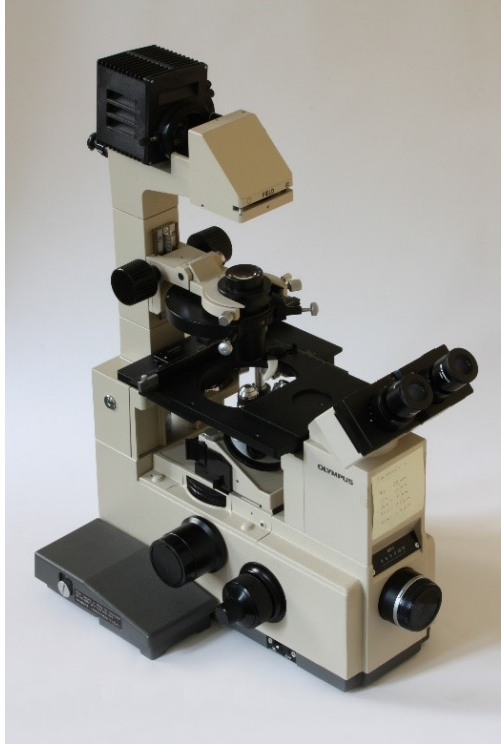


6. Laboratory equipment

Microscopy

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







6. Laboratory equipment

- Zeiss Primostar 3 compound microscope with fixed Köhler illumination and 4x, 10x, 20x, 40x objectives (2026)
- Zeiss Primostar 3 compound microscope with full Köhler illumination and 4x, 10x, 20x, 40x objectives (2026)
- Leica DM2000 compound microscope + screen and camera (2021)





- Zeiss Stemi 508 stereo microscope (8:1 zoom) + camera axiocam 807 color (2026)

- Zeiss Stemi 355 stereo microscopes (2 pch) (2026)
- Zeiss Stemi 508 stereo microscope (8:1 zoom) (2016) + camera axiocam 105 color (2026)
- Zeiss Stemi 305 stereo microscopes (12 pch) (2016)





- Various older inverted, stereo- and compound microscopes (Olympus, Zeiss, Wild, Ilmonen etc.)
- Additional microscope lights (e.g. standard and cold lights)
- Various microscope accessories (micrometers etc.)

6. 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 temperature range (makasiini- building, available only during summer)
- 2 cold rooms, +5-+15 °C temperature range (main building, year round use)
- Ice flake machine (Porkka, 2026)

- Freezers and cold rooms are connected to a surveillance system
- 5 x Fume hoods (1x seawater laboratory, 4 x main building)
- Chemical storage cabinets
- 2 x Drying cabinets


Cold rooms


Seawater laboratory


-20 C freezers and fridges



Ultra-low freezers

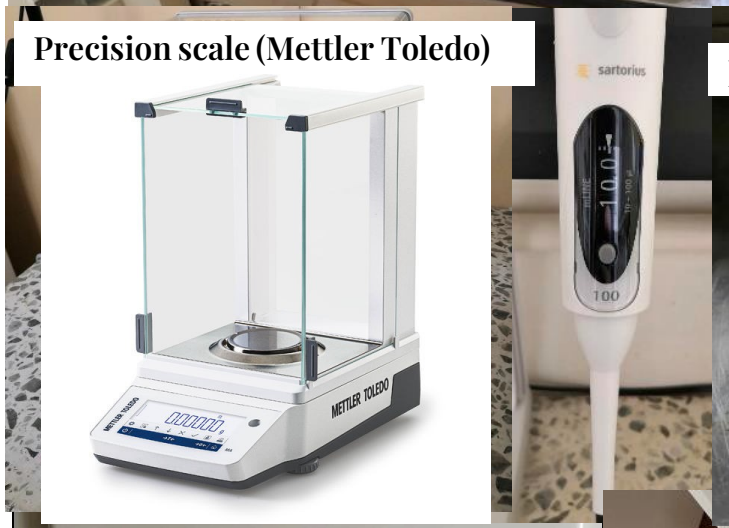
6. Laboratory equipment

- Ion exchangers (2 x Silex 1C PE)
- Mettler AT250 Analytical balance
- Mettler MA155Du Analytical balance (2024)
- Toploading balances
- Christ Alpha freeze dryer 1-4 LSCbasic (2025)
- Ecomet 30 manual single grinder-polisher (2025)
- Amsco Autoclave
- Microcentrifuge (VWR microstar 12, 2021)
- Hot plates and magnetic stirrers
- 2 x shaking waterbaths (Julabo VLSB12 (2020) and SW-20C)
- Vortex mixer
- Soxhlet extraction apparatus used in lipid analyses
- Sartorius pipettes, e.g. 10 µl and 100 µl
- Drying ovens and incubator cabinet


Autoclave



Precision scale (Mettler Toledo)



Hot plates and magnetic stirrers




Drying ovens

Microsentrifuge



6. Laboratory equipment

- 2 x Millipore vacuum filtration systems with accessories
- Basic titration equipment
- Large and variable collection of standard laboratory glass- and plasticware
- Laboratory lights (cold lights etc.) and light tables

7. Diving equipment

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

- Fixed (300 bar) and portable compressor
- 200 bar diving tanks (3x 10 L, 2x 7 L)
- A few extra diving masks, fins, gloves, wet suit, diving flags etc.

>>Sea water laboratory











Sea water laboratory

1. Laboratory room includes a fume hood, fridge, basic tools and equipment
2. Course room includes tables and adjustable seating for max. 12-15 persons
   - 75" TV screen with Genelec speakers, a Logitech meetup web-camera, a microphone, and various connectivity options including HDMI, VGA, and USB. Laptop. An overhead projector is also available.
   - Small library with marine biology literature
3. WC and shower
4. Aquaria room houses 4 aquaria racks connected to a seawater plumbing system
5. Storage room for school group equipment

Access to Wifi (Eduroam, UTU Visitor) is available throughout the facility

8. School groups

The following laboratory and field equipment are readily available for school groups visiting the island and using the infrastructure at seawater laboratory.

Laboratory and classroom equipment:

- Document camera (Ipevo V4K Pro), TV + camera&speakers, laptop
- Zeiss stemi stereomicroscopes (max. 15 pch)
- Light microscopes (1 pch)
- Microscope camera attached to stereomicroscope (1 pch, available by separate request)
- Buckets, trays, pipettes, tweezers, preparation needles, petri dishes and various other basic plastic and glassware to process samples
- Ionexchanged water
- Species identification books and manuals (mostly in Finnish)



8. School groups

The following are readily available, other equipment by separate request. Milk carts are available for transporting the items to sampling locations.

- Littoral nets (3 pch)
- Extendable arm 145-275 cm (2 pch)
- Limnos&Ruttner water samplers
- Ekman and van Veen sediment samplers and sieve sets (1 mm, 0,5 mm)
- Phytoplankton (65 um) and zooplankton nets (100 + 105 um) (3 pch)
- Binoculars (5 pch, 10x42)
- Tick net (1 pch)
- Secchi-disks (3 pch)
- Magnifying glas 10x (loupe, 2 pch)
- Bat detectors (Echo meter 2 & Magenta bat5)
- Buckets and trays (several)
- Waders (5 pch)
- Hydroscopes (7 pch)
- Salinity and dissolved oxygen meters (1+1 pch)



























Get inspired.

TURUN YLIOPISTO