

## Monitoring Data Collected at Seili Island, Archipelago Sea, Northern Baltic Sea METADATA FILE

*Last updated: 20 February 2026*

This document details the metadata relating to ongoing, long-term monitoring programmes at Seili. The majority of data is collected by the Archipelago Research Institute (ARI), University of Turku, for a range of stakeholders. For more information regarding specific monitoring programmes, please contact ARI.

### **For further information regarding data access, usage rights or collaborations:**

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### **Quality Control:**

Quality control varies between monitoring programs/datasets. Most sampling and analytical procedures follow national and international quality standards (e.g. ICES, HELCOM). Instruments undergo regular maintenance and calibration, and metadata on sampling is collected. Further details are available upon request.

### **Abbreviations:**

ARI - Archipelago Research Institute

FMI - Finnish Meteorological Institute

MTL - Former Finnish Marine Research Institute

STUK – Radiation and nuclear safety authority

SYKE - Finnish Environment Institute

TUAS - Turku University of Applied Sciences

UTU - University of Turku

FINMARI - Finnish Marine Research Infrastructure network

ELY Centre - Centre for Economic Development, Transport and the Environment (2026: Economic Development Centre of Southwest Finland)

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## **Hydrographical Data**

### **Päiväluoto At-Sea Monitoring Station – Time Series 1**

- **Coordinates:** 60°15'18.9972"N, 21°57'3.744"E
- **Depth:** ca. 50 m
- **Research Vessel:** Small motorboat, R/V Aurelia, or Hydrokopter (during winter)  
Seawater Temperature (°C) and Salinity (PSU)
- **Sampling Frequency:** 1st, 11th, and 21st of each month (+/- 2 days), 1967–2017
- **Depths Profiled:** 0, 5, 10, 15, 20, 30, 40 m
- **Instrumentation:** Limnos water sampler
- **Collected by:** ARI
- **On behalf of:** Finnish Marine Research Institute (MTL) (1967–1985) and Finnish Meteorological Institute (FMI) (1986–2017)
- **Repositories:** [FMI Open Data Repository](#), University of Turku server
- **Data access:** Open

### Seawater Temperature (°C) and Salinity (PSU) – Time Series 2

- **Sampling Frequency:** 1st, 11th, and 21st of each month (+/- 2 days), from 2017-ongoing
- **Depths Profiled:** 0–50 m
- **Instrumentation:** RBR CTD sonde
- **Collected by:** ARI
- **On behalf of:** MTL & FMI
- **Data repository:** [FMI Open Data Repository](#), University of Turku server
- **Data access:** Open

### Seawater Quality – Time Series 3

- **Variables Monitored:**  
Temperature (°C), salinity (PSU), phytoplankton abundance (biomass, ind./m<sup>3</sup>), absorbance coefficient (400 & 750 nm, 1/m), alkalinity (mmol/l), ammonium as N (µg/l), arsenic (µg/l), biological primary productivity net (BPY, mg/m<sup>3</sup> C), cadmium (Cd, µg/l), chloride (Cl, mg/l), chlorophyll a (CP, µg/l), chromium (Cr, µg/l), cobalt (Co, µg/l), colour (mg/l Pt), conductivity (mS/m), copper (Cu, µg/l), dissolved oxygen (O<sub>2</sub>D, mg/l), iron (Fe, µg/l), lead (Pb, µg/l), manganese (Mn, µg/l), mercury (Hg, µg/l), nickel (Ni, µg/l), nitrate as N (NO<sub>3</sub>-N, µg/l), nitrite as N (NO<sub>2</sub>-N, µg/l), oxygen saturation (%), pH, pheopigment (FP, µg/l), phosphate as P (PO<sub>4</sub>-P, µg/l), selenium (Se, µg/l), silicate (SiO<sub>2</sub>, mg/l), suspended solids (SS, mg/l), total nitrogen (NTOT, µg/l), total organic carbon (TOC, mg/l), total phosphorus (PTOT, µg/l), turbidity (FNU), vanadium (V, µg/l), zinc (Zn, µg/l).
- **Sampling Period:** From 1974-ongoing (frequency varies)
- **Depths Profiled:** 1, 5, 10, 20, 40 m, and 1 m above bottom
- **Instrumentation:** Limnos water sampler
- **Collected by:** ARI / Varsinais-Suomi ELY Centre / Lounais-Suomen vesi- ja ymp.tutk. Oy
- **For:** Southwest Finland ELY Centre
- **Repository:** [Hertta Environmental Database](#)

### Online Monitoring Station: ODAS Buoy, Seawater Quality

- **Variables:** Temperature (°C), salinity (PSU), turbidity (NTU), chlorophyll (mg/l), blue-green algae (cells/ml), oxygen (mg/l)
- **Operating Period:** 2011 onwards; deployed during the open water season (spring–early winter), to capture the spring phytoplankton bloom
- **Sampling Frequency:** Four times per day, depths from 2–40 m (1 m depth resolution)
- **Instrumentation:** YSI 6952/YSI 6000
- **Collected by:** ARI, TUAS, FINMARI network
- **Repositories:** UTU server
- **Website:** [saaristomeri.utu.fi/odas](http://saaristomeri.utu.fi/odas)

- **Data Usage:** Data provided through these monitoring programmes are open access, licensed under Creative Commons Attribution (CC-BY 4.0) unless otherwise stated. If using these data in publications, please cite the originators as indicated in the relevant dataset metadata, and acknowledge the supporting institutions and funding sources.

### Online Monitoring Station: ODAS Buoy, Meteorological Data

- **Variables:** Wind speed & direction, precipitation, barometric pressure, temperature & relative humidity
- **Operating Period:** Open water season (April/May–October/November)
- **Instrumentation:** Vaisala WXT-520 with LUODE GPRS data logger
- **Collected by:** ARI, TUAS, FINMARI network
- **Data repository:** UTU server
- **Website:** [saaristomeri.utu.fi/odas](http://saaristomeri.utu.fi/odas)
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### Post Pier, Daily Surface Seawater Temperature 1

- **Coordinates:** 60.236592°N, 21.955186°E
- **Depth:** ca. 2–4 m
- **Sampling Frequency:** manually during work weeks (Monday–Friday), year-round, from 1981-2022
- **Depth:** ca. 1 m
- **Instrumentation:** Water thermometer
- **Collected by:** ARI
- **For:** FMI
- **Repositories:** [FMI Open Data Repository](#), University of Turku server
- **Data access:** Open

### Post Pier, Daily Surface Seawater Temperature 2

- **Coordinates:** ETRS89: 60° 14,1679'N, 21° 57,2974'E
- **Depth:** ca. 2–4 m
- **Sampling Frequency:** automated, Monday–Sunday, year-round, from 2022-ongoing
- **Depth:** ca. 0,5 m
- **Instrumentation:** currently: Starmon mini #5820 logger (contact for more information)
- **Collected by:** ARI
- **For:** FMI
- **Repositories:** [FMI Open Data Repository](#), University of Turku server

- **Data access:** Open, LoRaWAN-verkossa Digitan palveluun

## **Ecological Datasets in and around Seili**

### **Macrobutterfly Monitoring 1**

- **Coordinates:** 60°14'22.9"N, 21°57'41.1"E
- **Variables:** Species occurrence
- **Period:** April–October (weekly, when night temperature >1°C), from 1993–2022
- **Light period:** fixed, 22:00-06:00
- **Instrumentation:** Light trap (Jalas) with 160 W lamp
- **Collected by:** ARI, species analysis: Dep. of Biology
- **For:** [SYKE / ELY Centre](#) (national moth monitoring program)
- **Repositories:** [Suomen lajietokeskus](#), [laji.fi website](#)
- **Data access:** Open

### **Macrobutterfly Monitoring 2**

- **Coordinates:** 60°14'22.9"N, 21°57'41.1"E
- **Variables:** Species occurrence
- **Period:** April–October (weekly, when night temperature >1°C), from 2022–ongoing
- **Light period:** variable, from sun down to rise
- **Instrumentation:** freezer trap
- **Collected by:** ARI, species analysis: Dep. of Biology
- **For:** [SYKE / ELY Centre](#) (national moth monitoring program)
- **Repositories:** [Suomen lajietokeskus](#), [laji.fi website](#)
- **Data access:** Open

### **Spawning herring monitoring**

- **Period:** Annually each spring, 1984–ongoing. Samples from other seasons and areas also sporadically available.
- **Variables:** Length, weight, sex, age, gonad stage, gonad weight, parasites and other abnormal observations. Some data also on muscle and ovarian lipid content (%), fatty acid composition, stomach contents etc.
- **Instrumentation:** Trap nets
- **Collected by:** ARI
- **Repository:** UTU server
- **Data access:** by separate request and agreement
- **Further information:** [Baltic herring project website](#)

## **Zooplankton Monitoring: Päiväluoto Station**

- **Location:** 60°15'18.9972"N, 21°57'3.744"E
- **Variables:** Species occurrence and abundance (ind./m<sup>3</sup>)

### **Zooplankton - Time Series 1**

- **Period:** ca. 21st of each month, 1967–1985
- **Sampling Depth:** 0–25 m
- **Instrumentation:** Plankton net (150 µm, Ø 70 cm)
- **Collected by:** ARI
- **For/analysed by:** Finnish Marine Research Institute (MTL)
- **Repository:** UTU server, Syke server
- **Data access:** by separate request and agreement

### **Zooplankton - Time Series 2**

- **Period:** ca. 21st of each month, 1990–ongoing
- **Sampling Depth:** 0–25 m
- **Instrumentation:** Plankton net (150 µm, Ø 35 cm)
- **Collected by:** ARI
- **Analysed by:** zwerfer.fi
- **Repository:** UTU server
- **Data access:** Hertta open data base (until 2021)

### **Zooplankton - Time Series 3**

- **Period:** ca. 21st of each month, 2015–ongoing
- **Sampling Depth:** 20–40 m
- **Instrumentation:** Closing plankton net (150 µm, mouth opening 30 cm)
- **Collected by:** ARI
- **Analysed by:** zwerfer.fi
- **Repository:** UTU server
- **Data access:** by separate request and agreement

## **Radioactive Substance Monitoring in Herring and Pike**

- **Location:** Coastal waters, Seili
- **Variables:** Radioactive isotopes (Cs-137, Sr-90, Pu-239 & -240)
- **Frequency:** Annually; spring (pike), autumn (herring), 1984-2022
- **Sample size:** 5 kg fish per batch
- **Method:** Fish nets
- **Collected by:** ARI
- **On behalf of:** [STUK](#)
- **Reporting:** Annual reports available via [Julkari online publication](#)

## Tick abundance

- **Period:** April–October, every 2–3 weeks, 2012-2021
- **Sampling:** 15 transects across various habitats; 50 m per site
- **Instrumentation:** Drag cloth
- **Collected by:** ARI
- **For:** University of Turku Biology Department/Biodiversity Unit
- **Repository:** UTU server
- **More information:** <https://sites.utu.fi/puutiaiset/>

## Bat Species Occurrence

- **Period:** April–October, from 2015-2021
- **Sampling Sites:** Kirkkonieni, forest path, beach sauna (up to 2017)
- **Variables:** Species occurrence
- **Instrumentation:** Bat detector
- **Collected by:** ARI
- **For:** University of Turku Biology Department/Biodiversity Unit
- **Repository:** UTU Server

## Meadow species occurrence

- **Period:** Original monitoring sites: June-August (*Melampyrum arvense* 2017-ongoing, other vascular plants every other year since 2017 (ongoing). Other sites: Sampling varies between sites and years (2020/2022-ongoing).
- **Sampling Sites:** Four original monitoring sites: located outside the pastures and the Natura 2000 protected area. Three other monitoring sites: located within the pasture.
- **Variables:** Species occurrence, *Melampyrum arvense* abundance, cover of vascular plants, trees and shrubs, mosses and lichens, bare ground, rocks and litter.
- **Instrumentation:** 1 m<sup>2</sup> quadrat
- **Collected by:** ARI, Economic Development Centre of Southwest Finland
- **For:** ARI, Economic Development Centre of Southwest Finland
- **Repository:** UTU Server
- **Data access:** by separate request and agreement

## Additional Metadata

### Weather Monitoring at Seili

- **Variables:** Outside temperature, humidity (%), dew point (°C), wind chill (°C), THW index (°C), heat index (°C), UV index, solar radiation (W/m<sup>2</sup>), wind direction (°), 10-min average wind speed, instantaneous wind speed, barometric pressure (hPa), daily/ storm/ monthly/ annual rainfall (mm), rain rate (mm/hr)
- **Sampling Period:** Year-round, 2011-ongoing

- **Location:** Main building, roof
- **Instrumentation:** Davis Vantage Pro 2 Plus
- **Collected by:** ARI
- **Repository:** UTU server
- **Data access:** <https://saaristomeri.utu.fi/seilinsaa/>
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