CRUISE REPORT

R/V Aranda

Cruise 01/2026

20.1.2026 – 2.2.2026

This report is based on preliminary data and is subject to changes.

Objectives of the cruise

The objectives of the cruise were:

1) Sampling and analysis of water hydrography and chemistry for monitoring
2) Sampling and analysis of oil in surface layer for monitoring
3) Sampling of water for pharmaceuticals in water for monitoring
4) Sampling of sediment for harmful substances monitoring
5) Maintenance, installation and recovery of automated instruments (wave buoys, CT instruments, ADCP and hydrophones)
6) Sampling of water from wreck sites
7) Sampling of water for proficiency tests, laboratory standards, method development and ammunition chemicals
8) Sampling for *Mysis relicta* research
9) Additional sampling on zooplankton (testing a new net)
10) Studies and data collection of ice characteristics with electromagnetic equipment, and radar and satellite data.

Name	On board	Organization
Harri Kankaanpää	**20.-23.1.2026**	**Syke**
Henrik Hedberg	**20.-23.1.2026**	**Syke**
Tero Eklin	**20.-23.1.2026**	**Syke**
Tommi Kontto	**20.-23.1.2026**	**Syke**
Anne-Mari Lehto	**20.-23.1.2026**	**Syke**
Riikka Mattsson	**20.-23.1.2026**	**Syke**
Susanna Hyvärinen	**20.1-2.2.2026**	**Syke**
Antti Räike	**20.1-2.2.2026**	**Syke**
Tanja Kinnunen	**20.1-2.2.2026**	**Syke**
Ilkka Lastumäki	**20.1-2.2.2026**	**Syke**
Jere Riikonen	**24.1-2.2.2026**	**Syke**
Jyri Tirroniemi	**20.1-2.2.2026**	**Syke**
Mira Granlund	**20.1-2.2.2026**	**Syke**

Pekka Kotilainen	**24.1-2.2.2026**	**Syke**
Noora Haavisto	**20.1-2.2.2026**	**FMI**
Sami Rantapusa	**20.1-2.2.2026**	**FMI**
Jaakko Seppänen	**24.1-2.2.2026**	**FMI**
Henri Vuollekoski	**24.1-2.2.2026**	**FMI**

Table 1. The scientific crew of the 1st and 2nd legs of the cruise.

Cruise Route

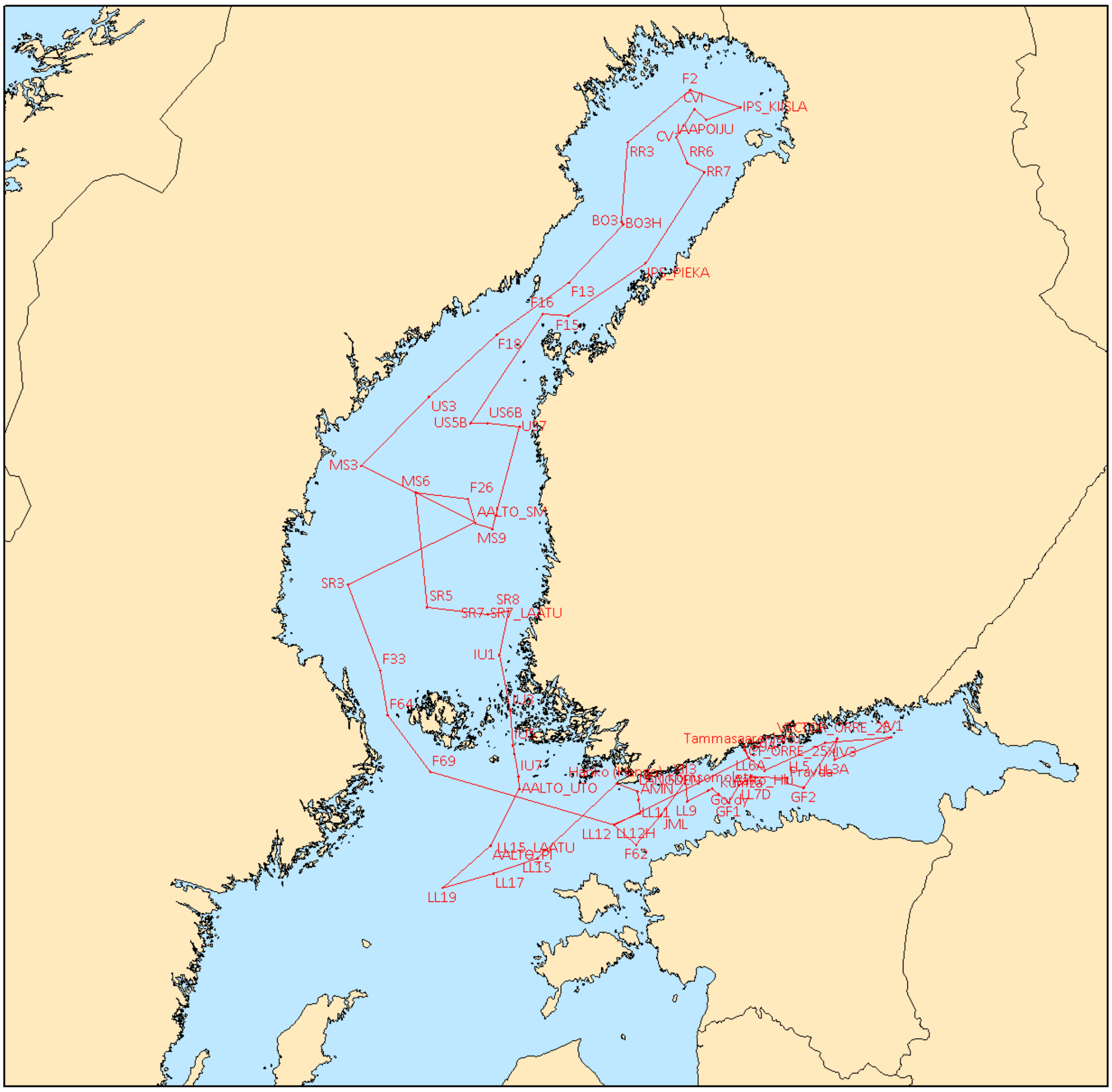
The cruise covered the Gulf of Finland, Northern Baltic Proper, the Gulf of Bothnia and the Archipelago Sea.

1st leg of the cruise

All planned activities were carried out. Prevailing weather was mainly low winds and no ice in the open sea. Departure was from Helsinki on January 20 at 10.00 local time. Return to Hanko occurred on January 23 at 20.16 local time. Altogether 25 stations from 39A to LANGDEN were visited (Table 2). Buoy retrieval occurred at station Aalto_Hki on January 20, a CT instrument retrieval at CT_Orre on January 21st, and landers plus ADCP retrieval also on January 21st, 2026. Sampling for water for additional laboratory testing and analyses external to the monitoring programme were carried out.

2nd leg of the Cruise

R/V Aranda left Hanko on the 24th of January at 11.03 (EET) towards the first stations LL15, LL17 and LL19/LL19LAATU. At the LAATU station H2S parameter was verified with parallel samples. After the monitoring AALTO_PI the wave buoy was replaced with a fresh one as well as in the Archipelago Sea outside Utö AALTO_UTO. In the Archipelago Sea stations IU7, IU5, IU3 and IU1 were monitored. The Cruise continued to the Bothnian Sea and to SR8 and SR7 and then headed to SR5 in the middle of the southern Bothnian Sea. MS6 was sampled late in the evening and F26 during the night. AALTO_SM was changed early in the morning of 27th of January. The cruise continued via MS9 to US transect US7, US6b and US5b. Next leg was to Quark F16 and F15: An ice radar was installed outside Kokkola and the cruise continued sampling at RR7, RR6, CV and CVI. JÒN the way to Oulu ice radar and ice buoy was cast on the ice. Station F2 was the northernmost station of the cruise and after that Aranda headed to RR3 BO3 and further to Kvarken F13 and F18. Close to BO3 a hydrophone to collect underwater noise was shot out to the bottom. The Cruise continued along the Swedish coast and stations US3, MS3 and SR3 were sampled. On the way to the south, a wave buoy was lifted as the risk, that ice conditions could damage the buoy was considered real as the winter and freezing seemed to continue. North of Åland islands station F33 and on the way to main basin F64 weas sampled.
As the Northern Baltic Proper was sampled already in the beginning of the leg F69 was considered the last one. Still the station LL12 was sampled for the second time to compare the movements of water between the main basin and the Gulf of Finland and the differences within a week. Before entering Helsinki on the 2nd of February some test water was collected at 39A: Ther s2nd leg arrived at Helsinki at 6.30 CET.



Cruise route

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Observations and conclusions

Observations of the 1st leg

The Gulf of Finland

In general, widespread hypoxia or anoxia was observed at several deep-water stations along the entire survey track. Anoxia occurred at two stations in the western Gulf of Finland, and hypoxia together with hydrogen sulfide at six monitoring stations. Ammonium concentrations were at record-high levels at multiple stations. Bottom-water phosphate and silicate concentrations were at or near record-high levels at several stations. Surface-water phosphate concentrations have decreased at most stations since 2025.

More specifically,

1. stations 39A (near Helsinki), XIV3 (near coastal, south of Loviisa), XII3 (near-coastal, between Porkkala and Hanko), LL11 (western Gulf of Finland) and LANGDEN remain close to average conditions or retain oxic conditions,

noteworthy deviations from long-term averages or winter 2025 occurred as follows:

2. Lowered surface layer phosphate concentration compared to winter 2025 at

39A, XIV3, XV1, LL3A, GF2, LL5, LL6A, LL7D, GF1, LL9, XII3, F62, LL12 and LL11

3. Low oxygen concentration at near-bottom layer at

- XV1 (hypoxia at 1.99 ml O_2 l^{-1}, 2nd lowest during winter)
- LL3A (hypoxia, 2nd lowest at 60 m after winter 2014)
- GF2 (hypoxia/anoxia at 0.1 ml O_2 l^{-1}; lowest winter-time value in history; H_2S present at 3.3 µM)
- LL5 (hypoxia; lowest winter-time concentration in history; H_2S present first time in winter period at 5.3 µM)
- LL6A (hypoxia; lowest winter-time concentration)
- LL7D (hypoxia at 0.15 ml O_2 l^{-1}; lowest concentration at 70–90 m layer; H_2S present at 7.6 µM at near-bottom layer)
- GF1 (hypoxia; 2nd lowest concentration in history; H_2S present at 19.9 µM)
- LL9 (hypoxia; lowest winter-time concentration; H_2S present first time in winter period at 7.7 µM)
- JML (anoxia; H_2S present at 33.6 µM)
- F62 (anoxia; H_2S present at 32.2 µM)
- LL12 (hypoxia; H_2S present at 18.1 µM)

4. Record-high ammonium concentrations at

- XV1 at 50–60 m
- GF2 at 60 m – bottom layer
- LL5 at near-bottom layer
- GF1 at 60 – 80 m

5. High winter-period phosphate concentrations

a) in surface layer at

JML (increased from 2025)

and in near-bottom layer at

- XV1 (2nd highest)
- GF2 (2nd highest since 2014)
- LL5 (2nd highest since 2014)
- LL7D (3rd highest since 2001 and 2004)
- GF1 (2nd highest since 2014)
- LL9 (highest)

6. High silicate concentrations at

- XV1 (near-bottom)
- GF2 (near-bottom)
- LL5 (near-bottom; highest since 1979)
- LL7D (70–100 m; highest during winter period)
- GF1 (near-bottom; winter period record)
- LL11 (record high at 15–30 m)

7. High nitrate concentrations at

- XV1 (near-bottom; above long-term average)
- AMN (record-high at 1–20 m)

Conclusions

Reductions in external phosphate inputs to the Baltic Sea are reflected in decreased surface-water phosphate concentrations at 14 of the 17 stations surveyed across the eastern and western Gulf of Finland.

Local oxygen consumption and/or the inflow of oxygen-depleted water masses have resulted in hypoxia or anoxia at 11 of the 17 pelagic stations in the Gulf of Finland. The coexistence of dissolved oxygen and hydrogen sulfide at six Gulf of Finland stations, all close to full anoxia, indicates active but spatially constrained sulfate reduction at the sediment–water interface, coupled with diffusive fluxes and microscale redox heterogeneity. These redox conditions are manifested as elevated ammonium concentrations in the central and eastern Gulf of Finland, increased near-bottom phosphate concentrations at six stations.

The elevated surface-water phosphate concentration at one station in the western Gulf of Finland may result from a combination of vertical mixing from phosphate-enriched subsurface waters and lateral transport of nutrient-rich waters from the adjacent mainland. Enhanced silicate concentrations in intermediate and near-bottom layers may reflect terrestrial inputs of mineral material as well as internal loading associated with the diagenetic reworking of soft sediments. The single occurrence of high surface nitrate concentration likely reflects localized agricultural runoff from the adjacent mainland.

Observations and conclusions of the 2nd leg

Northern Baltic Proper

Hydrography

The hypoxic layer at the main basin was observed at depth 70-75 m. At the station, F69, in deep waters, observed salinity value was exceptionally high and measured oxygen concentration was the lowest in wintertime since 2000. This indicates that an inflow of saline and hypoxic water from the main basin has occurred.

Nutrients and silicate
Observed concentrations were high, but normal for the basin. At the stations F69 and LL12 the intrusion of water from the main basin was also phosphate rich. The water flow near bottom can be fairly fast between the main basin and the Gulf of Finland having a quick impact to nutrient and oxygen concentrations in the western part of the Gulf of Finland. Station LL12 was observed twice during the cruise, first on the 23rd of January (1st leg) and again the 1st of February (2nd leg), but this time no major differences in water quality was observed.

Observed silicate concentrations were higher than the long-term average, which indicates mixing of water from deeper layers.

Archipelago Sea

Hydrography

Winter arrived in the Archipelago Sea, and some ice formation took place in the northern part of the region. Observed temperatures were close to 0°C or even below. The entire water column was well mixed in terms of oxygen and salinity, especially in the southern part of the region, at IU5 and IU7.

Nutrients and Silicate

Somewhat higher PO_4 concentrations were observed (0.8 – 0.95 µmol/l) than the wintertime long-term averages (0.6-0.8 µmol/l). Higher P_{tot} concentrations were observed as well, especially at IU3 and IU5 stations.

Silicate concentrations were beyond long-term averages at every station.

High PO_4, P_{tot} and SiO_4 concentrations indicate an inflow of nutrient rich water from land into the region.

Bothnian Sea

Hydrography

Observed temperature and salinity values in the deep waters were above the long-term average. At some stations oxygen below 100 m deep were even below 5 ml/l. Observed values were lower than before. The lowest oxygen concentration in the Bothnian Sea was 4.5 ml/l, between the Åland Islands and Sweden. This indicates that the saline and hypoxic water has flown into the Bothnian Sea.

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Nutrients

In general, observed dissolved nitrogen concentrations were close to winter-time long-term average (2000-2025) values and within the calculated deviation (95 %).

Observed phosphate concentrations in the first 50 m on the east side of the Bay were 0.5 µmol/l and slightly higher on the Swedish side. In deep layers, below 100 m, concentrations were as high as 1.7 µmol/l in the southern part of the Bothnian Sea.

Observed N_{tot} concentrations were high in deep layers, but close to long-term averages in surface layers. Similar to observed phosphate concentrations, also measured P_{tot} values were fairly high in the deep layers.

Observed silicate concentrations were exceptionally high in the entire water column.

The Quark

Hydrography

Slightly higher salinity values and lower oxygen concentrations than the long-term averages were observed in the southern part of the Quark at F18.

Nutrients

At the same station (F18), observed phosphate concentrations were 0.5 – 1.1 µmol/l, almost two times higher than at the other stations of the region. The impact of the Bothnian Sea with typically higher PO_4 concentrations, explain the difference.

Observed silicate concentrations were exceptionally high, 30 – 45 µmol/l also in the Quark.

The observed silicate concentration seem to be high in every basin, not only in the surface, which would indicate land-based discharge, but also in deep waters.

Bothnian Bay

The entire Bothnian Bay got an ice cover during the cruise. Ice formation was quick, and no storm hit the region. Real packed ice wasn’t observed.

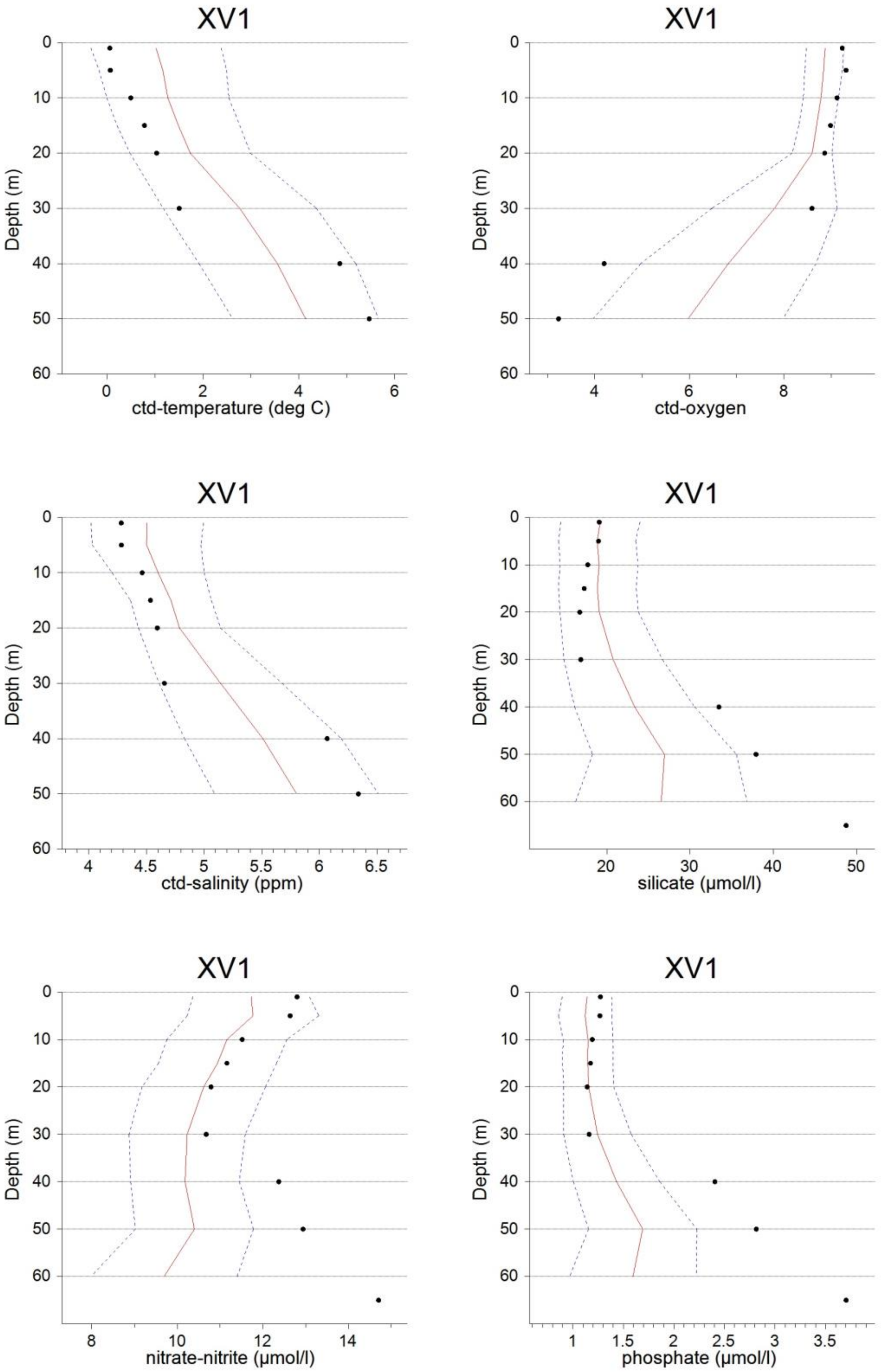
Hydrography

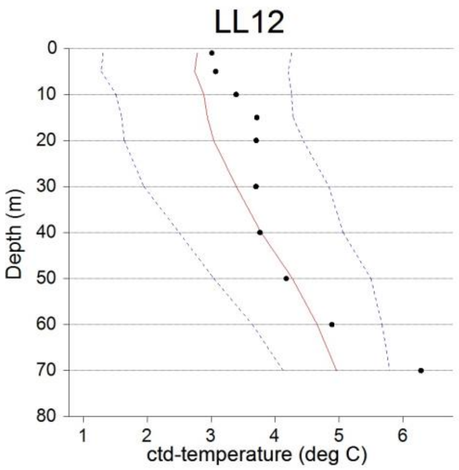
Observed temperatures in surface waters indicated recent cool down of the water column. Though the observed oxygen concentrations were high, they were lower than the long-term averages. Oxygen consumptive processes, like summertime algal blooms, may explain the declined concentrations.

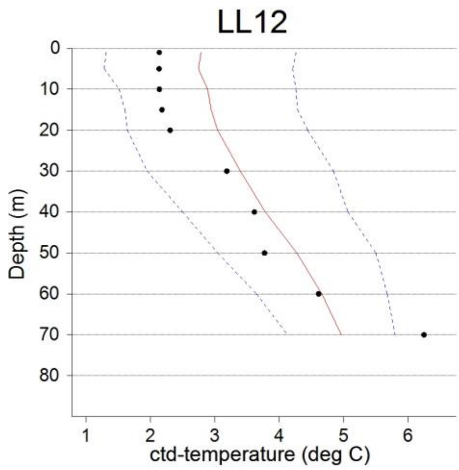
Nutrients and silicate

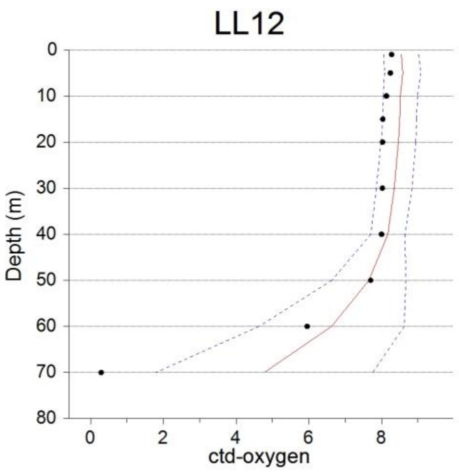
Observed nutrient concentrations were within the long-term wintertime averages and close to detection limit values. On the contrary, observed silicate concentrations were exceptionally high and was commonly observed in each region. Source of silicate is land-based of origin, autumn and summertime rain in 2025 may partly be behind the observed high silicate concentrations.

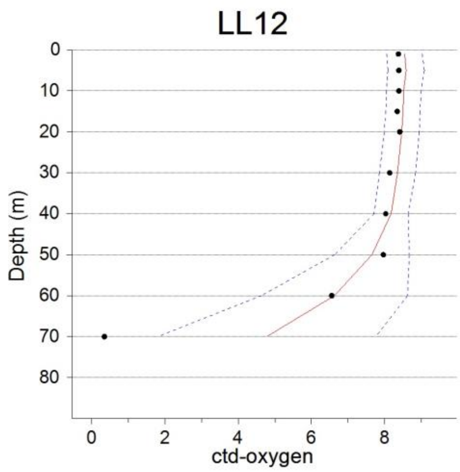
Annex 1. Selected variables at the stations XV1, LL12, LL17, F64, SR5, US5B, BO3 and F2. Mean (red solid line) and standard deviation (blue dotted lines) represent the data collected at the same time of season since the year 2000.

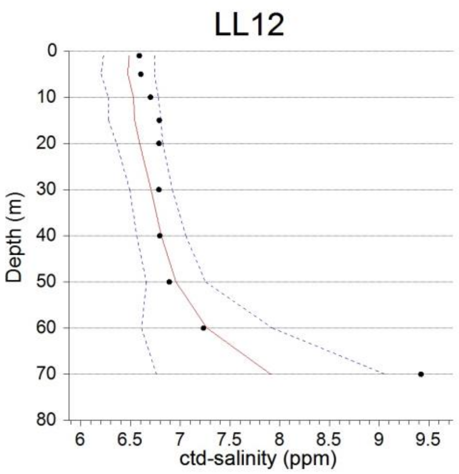


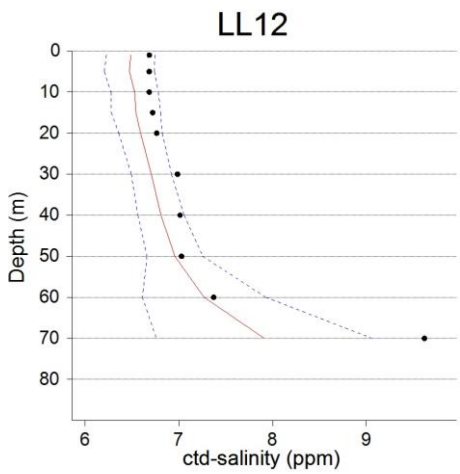

LL12
Depth (m)
ctd-temperature (deg C)

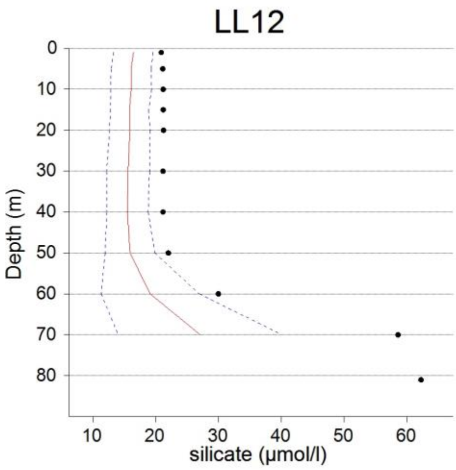

LL12
Depth (m)
ctd-temperature (deg C)

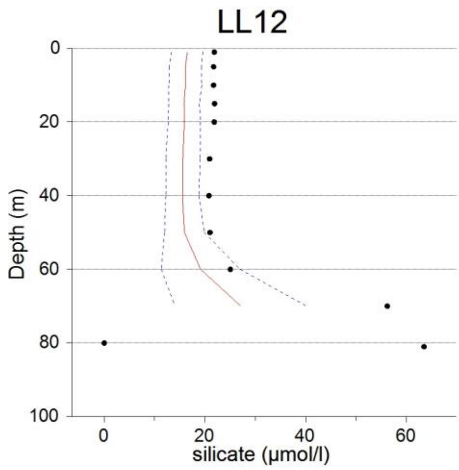

LL12
Depth (m)
ctd-oxygen

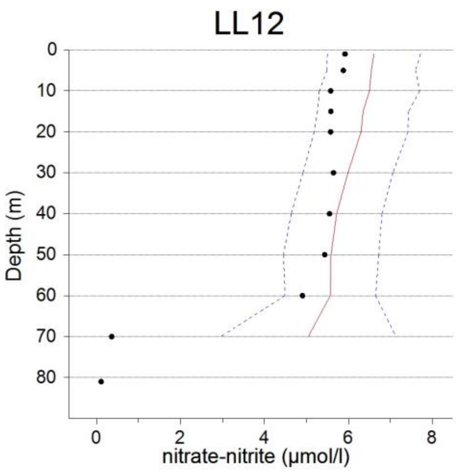

LL12
Depth (m)
ctd-oxygen

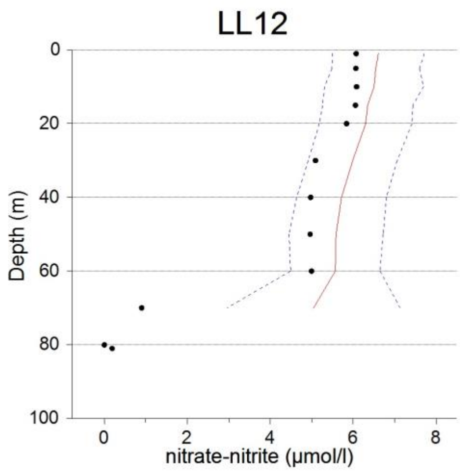

LL12
Depth (m)
ctd-salinity (ppm)

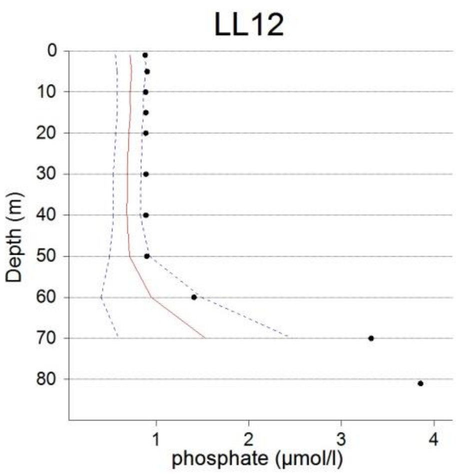

LL12
Depth (m)
ctd-salinity (ppm)

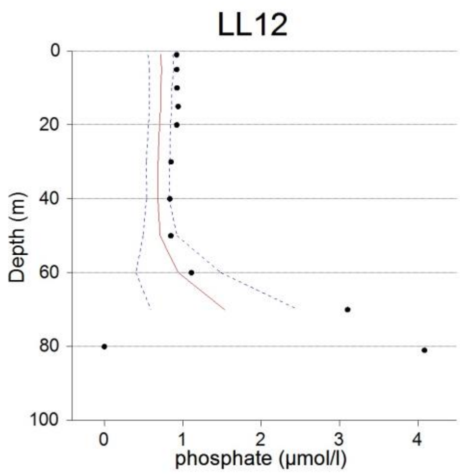

LL12
Depth (m)
0
10
20
30
40
50
60
70
80
10
20
30
40
50
60
silicate (µmol/l)

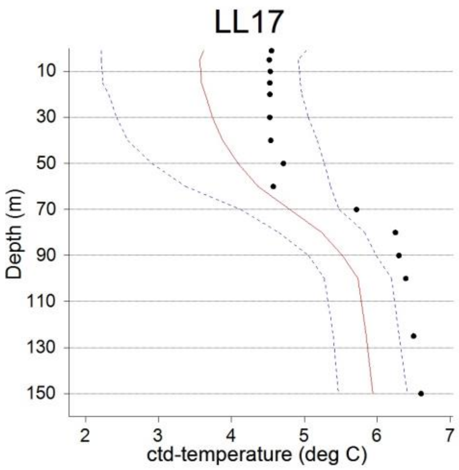

LL12
Depth (m)
0
20
40
60
80
100
0
20
40
60
silicate (µmol/l)

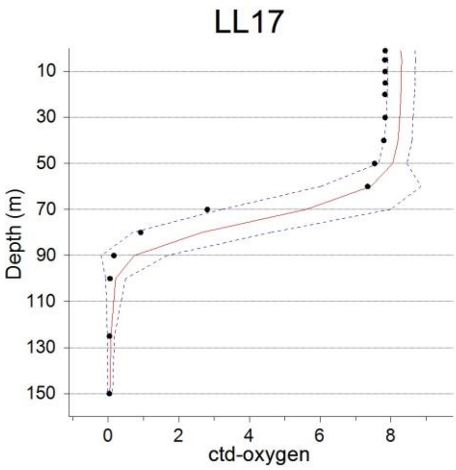

LL12
Depth (m)
0
10
20
30
40
50
60
70
80
0
2
4
6
8
nitrate-nitrite (µmol/l)

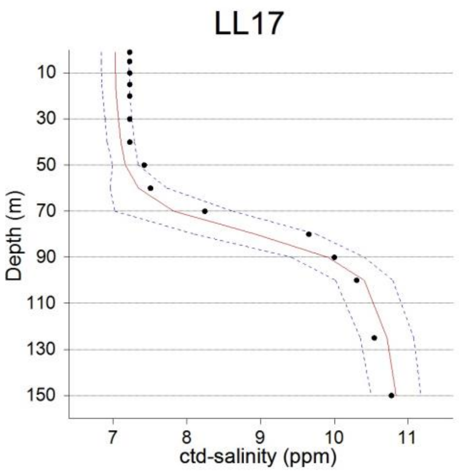

LL12
Depth (m)
0
20
40
60
80
100
0
2
4
6
8
nitrate-nitrite (µmol/l)

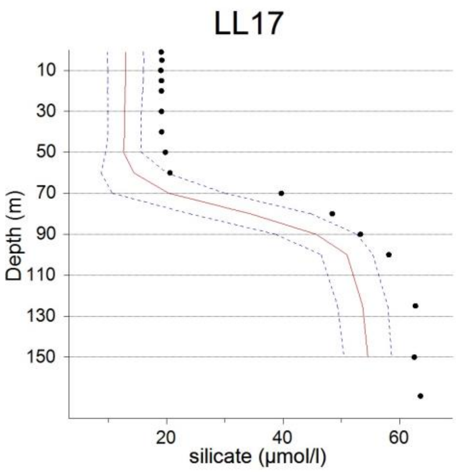

LL12
Depth (m)
0
10
20
30
40
50
60
70
80
1
2
3
4
phosphate (µmol/l)

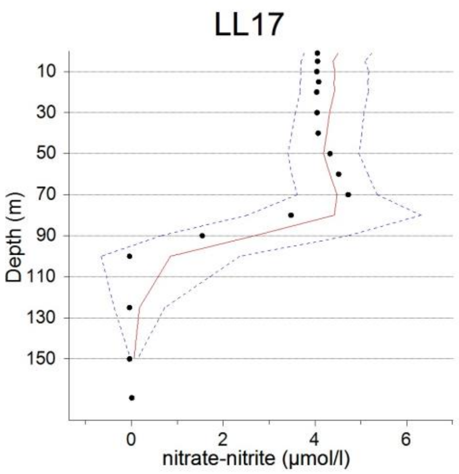

LL12
Depth (m)
0
20
40
60
80
100
0
1
2
3
4
phosphate (µmol/l)

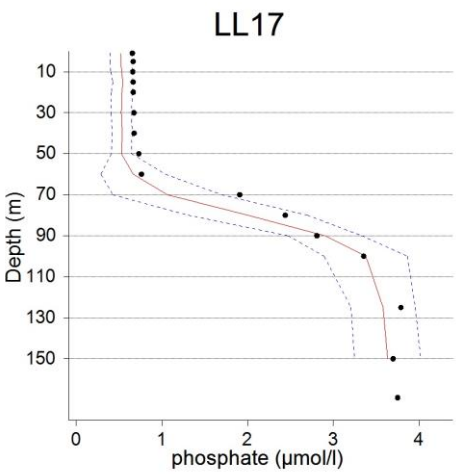

LL17
Depth (m)
10
30
50
70
90
110
130
150
2 3 4 5 6 7
ctd-temperature (deg C)

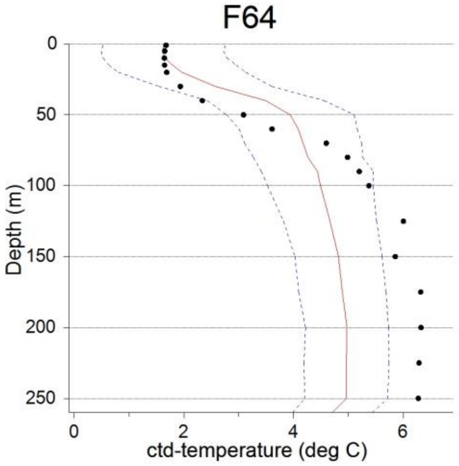

LL17
Depth (m)
10
30
50
70
90
110
130
150
0 2 4 6 8
ctd-oxygen

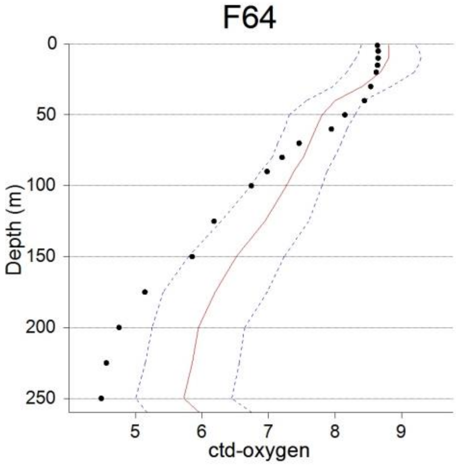

LL17
Depth (m)
10
30
50
70
90
110
130
150
7 8 9 10 11
ctd-salinity (ppm)

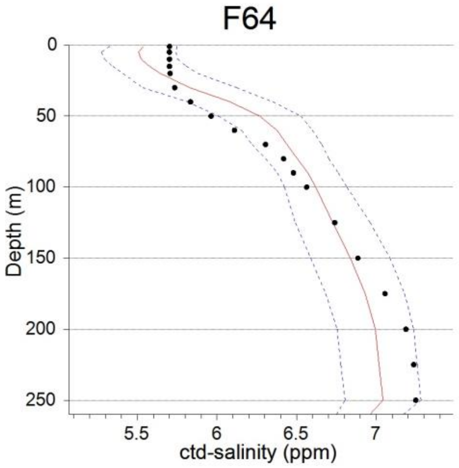

LL17
Depth (m)
10
30
50
70
90
110
130
150
20 40 60
silicate (µmol/l)

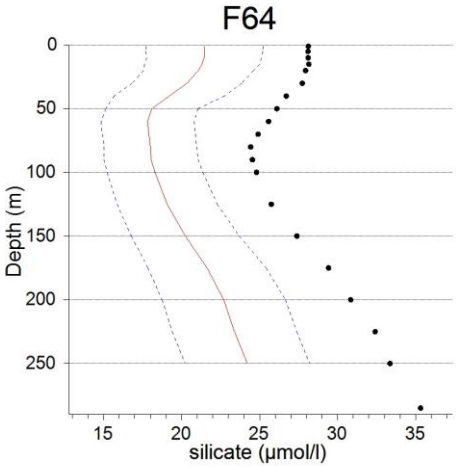

LL17
Depth (m)
10
30
50
70
90
110
130
150
0 2 4 6
nitrate-nitrite (µmol/l)

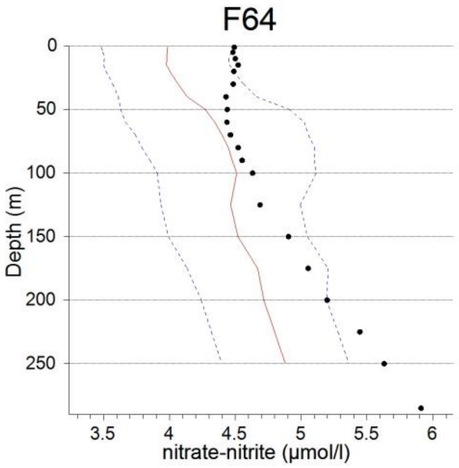

LL17
Depth (m)
10
30
50
70
90
110
130
150
0 1 2 3 4
phosphate (µmol/l)

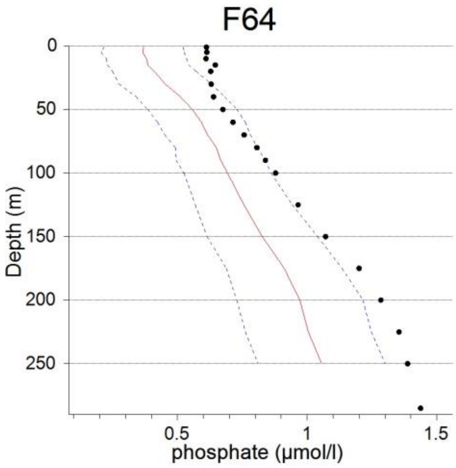

F64
Depth (m)
ctd-temperature (deg C)

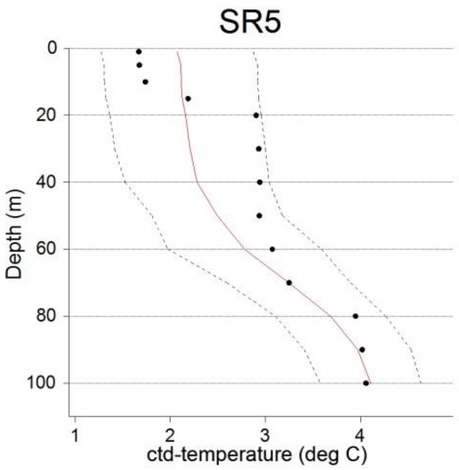

F64
Depth (m)
ctd-oxygen

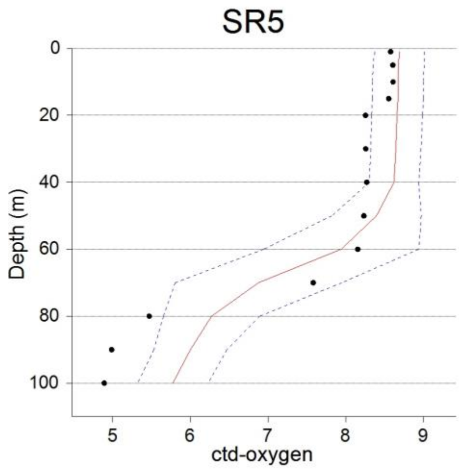

F64
Depth (m)
ctd-salinity (ppm)

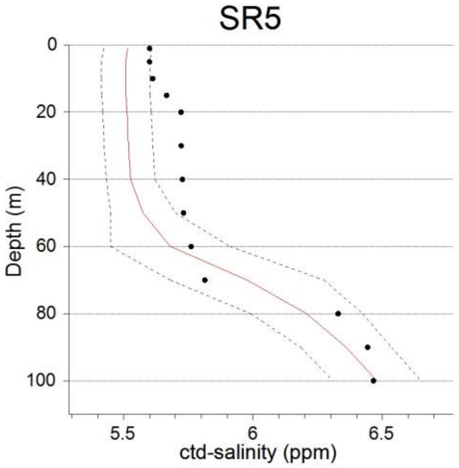

F64
Depth (m)
silicate (µmol/l)

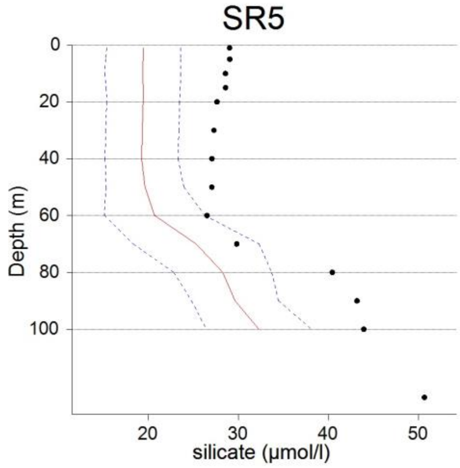

F64
Depth (m)
nitrate-nitrite (µmol/l)

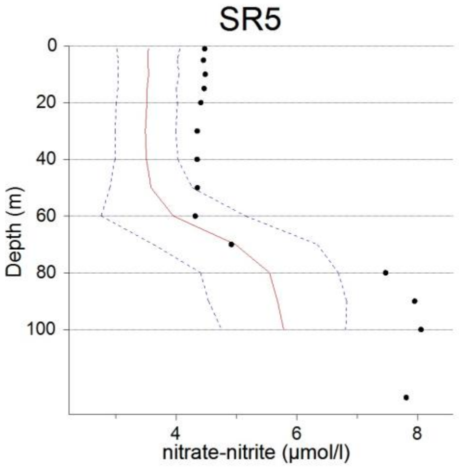

F64
Depth (m)
phosphate (µmol/l)

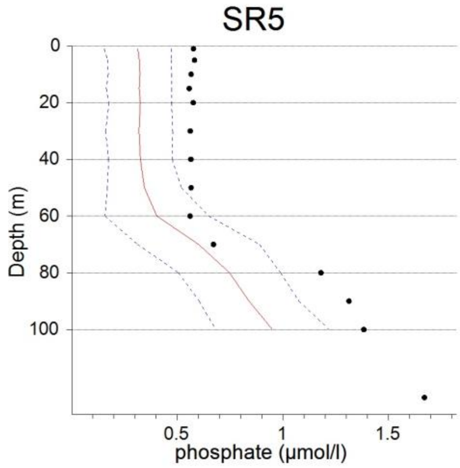

SR5
Depth (m)
ctd-temperature (deg C)

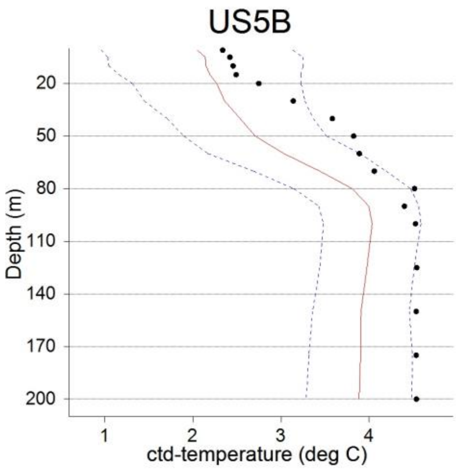

SR5
Depth (m)
ctd-oxygen

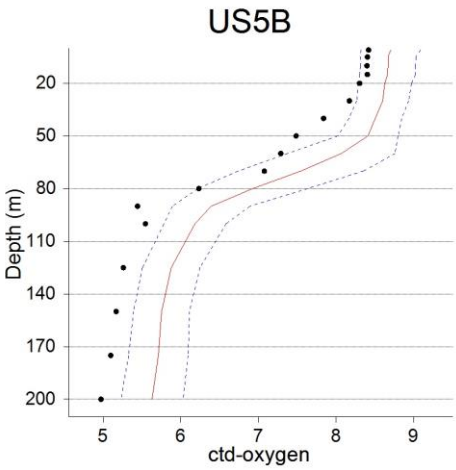

SR5
Depth (m)
ctd-salinity (ppm)

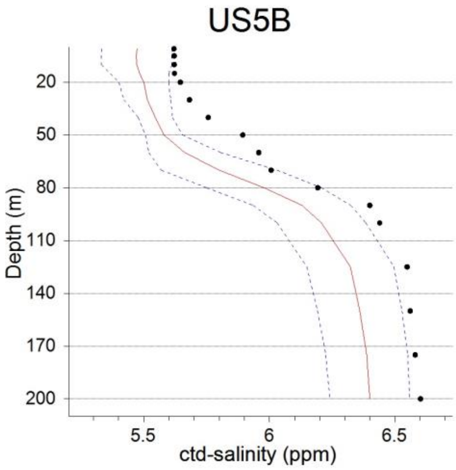

SR5
Depth (m)
silicate (µmol/l)

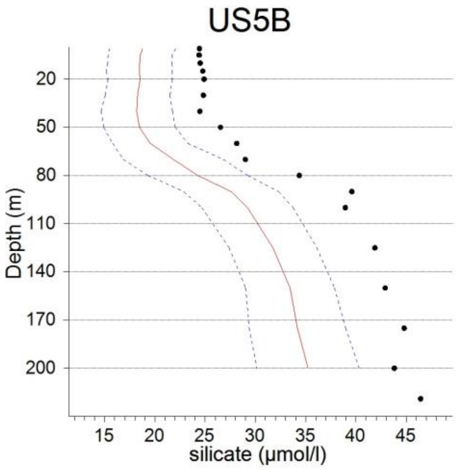

SR5
Depth (m)
nitrate-nitrite (µmol/l)

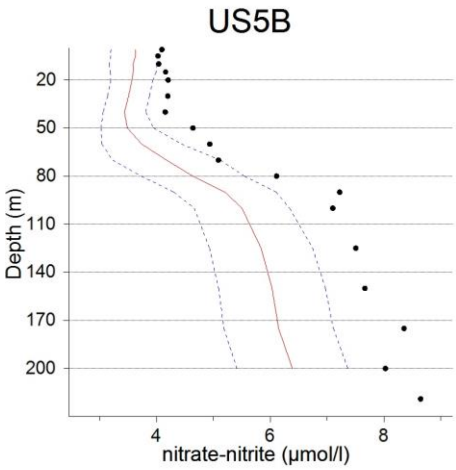

SR5
Depth (m)
phosphate (µmol/l)

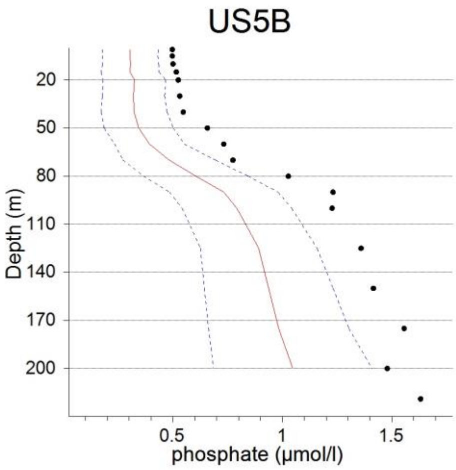

US5B
Depth (m)
20
50
80
110
140
170
200
1
2
3
4
ctd-temperature (deg C)

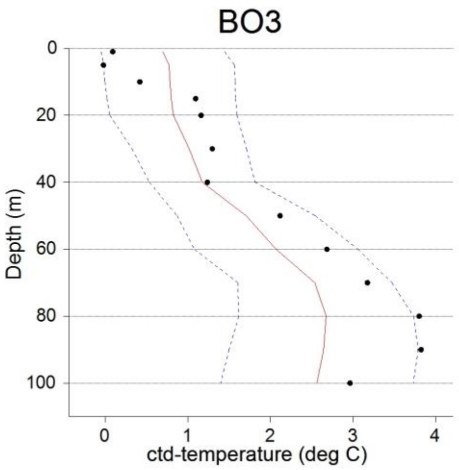

US5B
Depth (m)
20
50
80
110
140
170
200
5
6
7
8
9
ctd-oxygen

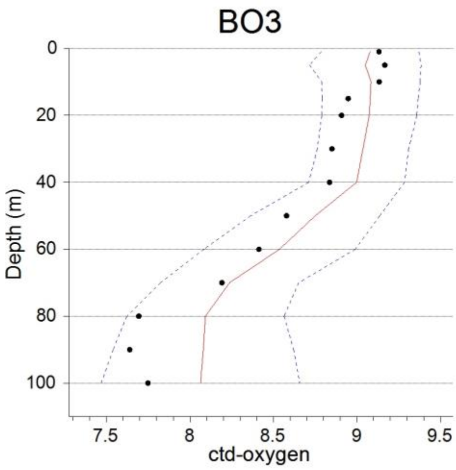

US5B
Depth (m)
20
50
80
110
140
170
200
5.5
6
6.5
ctd-salinity (ppm)

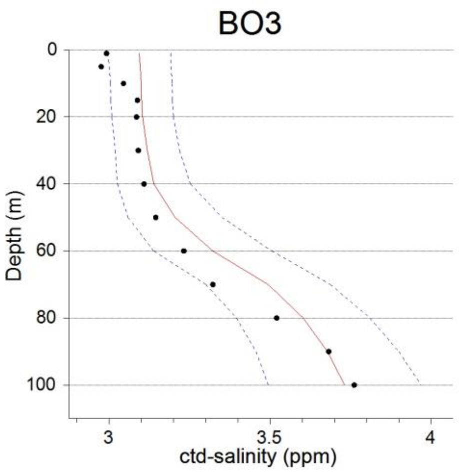

US5B
Depth (m)
20
50
80
110
140
170
200
15
20
25
30
35
40
45
silicate (µmol/l)

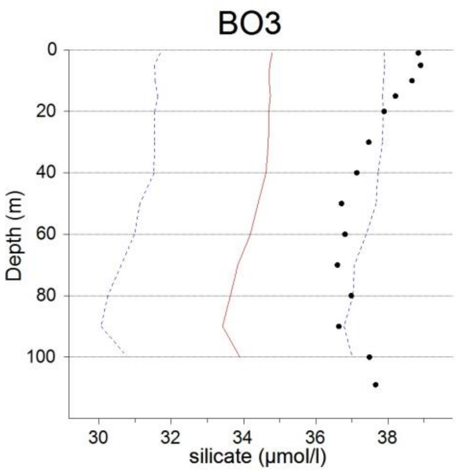

US5B
Depth (m)
20
50
80
110
140
170
200
4
6
8
nitrate-nitrite (µmol/l)

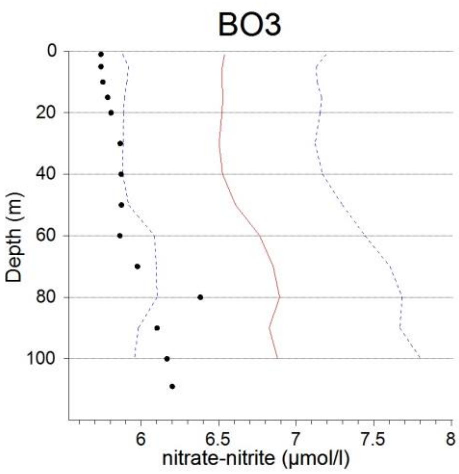

US5B
Depth (m)
20
50
80
110
140
170
200
0.5
1
1.5
phosphate (µmol/l)

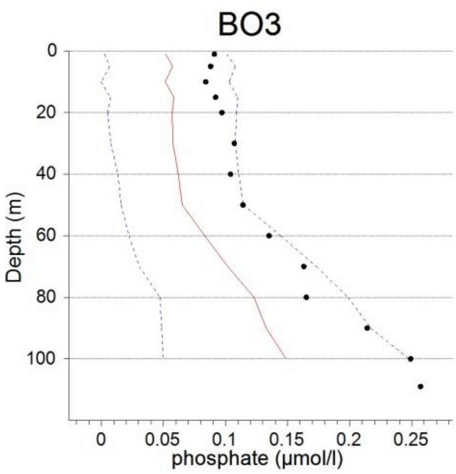

BO3
Depth (m)
ctd-temperature (deg C)

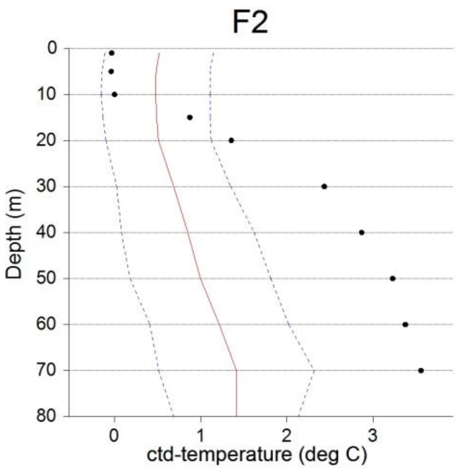

BO3
Depth (m)
ctd-oxygen

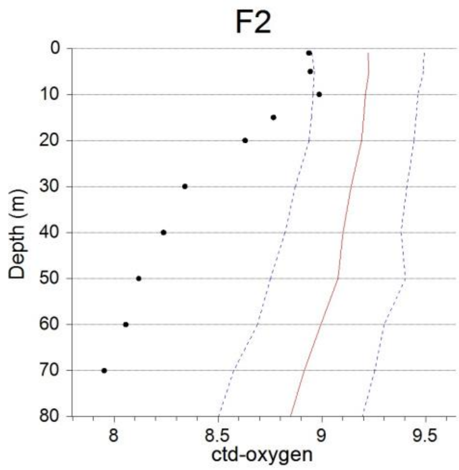

BO3
Depth (m)
ctd-salinity (ppm)

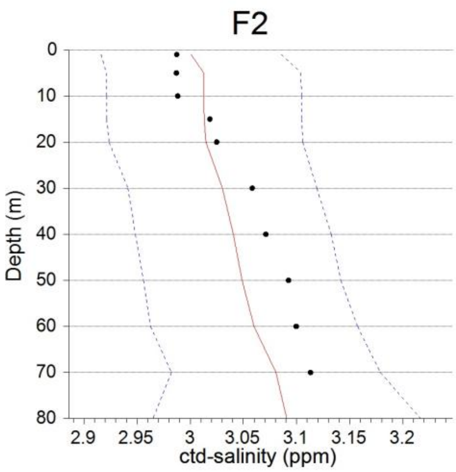

BO3
Depth (m)
silicate (µmol/l)

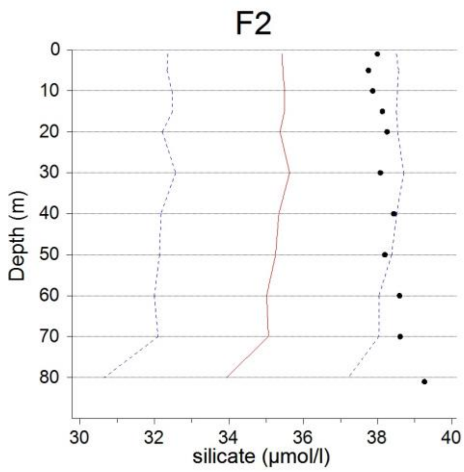

BO3
Depth (m)
nitrate-nitrite (µmol/l)

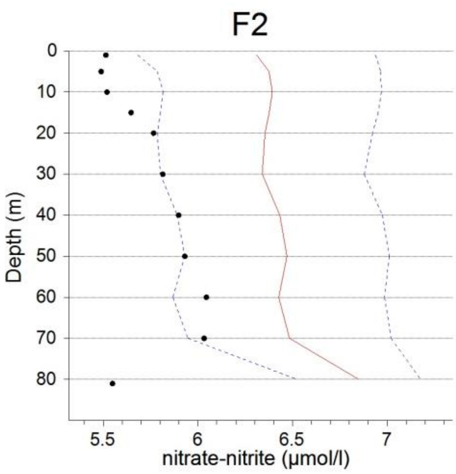

BO3
Depth (m)
phosphate (µmol/l)

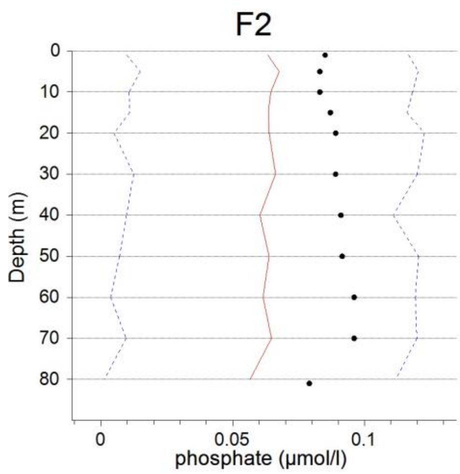

F2
Depth (m)
0 10 20 30 40 50 60 70 80
0 1 2 3
ctd-temperature (deg C)


F2
Depth (m)
0 10 20 30 40 50 60 70 80
8 8.5 9 9.5
ctd-oxygen


F2
Depth (m)
0 10 20 30 40 50 60 70 80
2.9 2.95 3 3.05 3.1 3.15 3.2
ctd-salinity (ppm)


F2
Depth (m)
0 10 20 30 40 50 60 70 80
30 32 34 36 38 40
silicate (µmol/l)


F2
Depth (m)
0 10 20 30 40 50 60 70 80
5.5 6 6.5 7
nitrate-nitrite (µmol/l)


F2
Depth (m)
0 10 20 30 40 50 60 70 80
0 0.05 0.1
phosphate (µmol/l)

Annex 2. List of sampled stations of the cruise

INDEX	STATION	latitude	longitude	depth	DATE	time	ctd	pH	ox	nu	ph	zo	be	chl	oil	tox	secchi
Tammasaarenlaituri	Tammasaarenlaitu	60.12915	24.90527		2026-01-20	08.17											
2026010001	39A	60.06683	24.98027	42	2026-01-20	09.01	x	x	x	x							x
2026010002	Aalto_Hki	59.96595	25.23420	70	2026-01-20	11.38											
2026010003	XIV3	60.20313	26.19278	78	2026-01-20	16.12	x	x	x	x							
2026010004	XV1	60.25005	27.24705	66	2026-01-20	20.55	x	x	x	x							
2026010005	LL3A	60.06718	26.34663	68	2026-01-21	03.14	x	x	x	x					x		
2026010006	CT_ORRE_25	60.12700	26.33477	65	2026-01-21	06.33	x										
2026010007	VECTOR_ORRE_25	60.23652	26.38250	19	2026-01-21	09.02											
2026010008	GF2	59.83847	25.85683	85	2026-01-21	13.31	x	x	x	x							
2026010009	Pravda	59.87437	25.60392	76	2026-01-21	16.55											
2026010010	LL5	59.91680	25.59677	68	2026-01-21	17.57	x	x	x	x							
2026010011	LL6A	59.91675	25.03005	72	2026-01-21	20.43	x	x	x	x							
2026010012	LL7D	59.84675	24.83813	101	2026-01-21	23.16	x	x	x	x							
2026010013	GF1	59.70498	24.68197	83	2026-01-22	02.52	x	x	x	x							
2026010014	Kumza	59.77278	24.51723	65	2026-01-22	07.15											x
2026010015	Komsomolets	59.81248	24.41513	55	2026-01-22	11.57											
2026010016	Gordy	59.79595	24.35497	63	2026-01-22	13.26											
2026010017	LL9	59.70020	24.02988	65	2026-01-22	15.21	x	x	x	x							
2026010018	XII3	59.86420	23.98543	35	2026-01-22	18.40	x	x	x	x							
2026010019	JML	59.58178	23.62670	80	2026-01-22	21.59	x	x	x	x							
2026010020	F62	59.33348	23.26343	97	2026-01-23	02.32	x	x	x	x							
2026010021	LL12	59.48353	22.89680	82	2026-01-23	06.30	x	x	x	x					x		
2026010022	LL12H	59.48582	22.89740	80	2026-01-23	08.10											
2026010023	LL11	59.58355	23.29682	66	2026-01-23	10.30	x	x	x	x							
2026010024	AMN	59.69050	23.25730	54	2026-01-23	13.35	x	x	x	x							
2026010025	LANGDEN	59.75695	23.23203	46	2026-01-23	15.13	x	x	x	x							
Hanko (Hango)	Hanko (Hango)	59.81102	22.90387		2026-01-23	18.15											
2026010026	LL15	59.18325	21.74665	130	2026-01-24	14.25	x	x	x	x							
2026010027	LL15_LAATU	59.18328	21.74668	126	2026-01-24	16.13	x										
2026010028	LL17	59.03325	21.07963	170	2026-01-24	20.20	x	x	x	x					x		
2026010029	LL19	58.88072	20.31105	164	2026-01-25	01.36	x	x	x	x					x		
2026010030	AALTO_PI	59.24988	20.99855	105	2026-01-25	06.31											
2026010031	AALTO_UTO	59.71718	21.36857	74	2026-01-25	10.45											
2026010032	IU7	59.81517	21.33675	91	2026-01-25	12.45	x	x	x	x							x

INDEX	STATION	latitude	longitude	depth	DATE	time	ctd	pH	ox	nu	ph	zo	be	chl	oil	tox	secchi
2026010033	IU5	60.05817	21.19825	89	2026-01-25	16.07	x	x	x	x							
2026010034	IU3	60.33337	21.11327	49	2026-01-25	19.25	x	x	x	x							
2026010035	IU1	60.76678	20.84680	33	2026-01-25	23.23	x	x	x	x							
2026010036	SR8	61.12657	20.93005	47	2026-01-26	02.13	x	x	x	x							
2026010037	SR7	61.08348	20.59647	78	2026-01-26	04.36	x	x	x	x							
2026010038	SR7_LAATU	61.08348	20.59648	78	2026-01-26	06.24	x	x	x	x							x
2026010039	SR5	61.08332	19.57953	125	2026-01-26	10.56	x	x	x	x					x		x
2026010040	MS6	61.98360	19.16352	72	2026-01-26	18.49	x	x	x	x							
2026010041	F26	61.98357	20.06288	137	2026-01-26	22.19	x	x	x	x							
2026010042	AALTO_SM	61.79918	20.23480	109	2026-01-27	02.10											
2026010043	MS9	61.76702	20.53053	100	2026-01-27	04.40	x	x	x	x							
2026010044	US7	62.60023	20.82963	27	2026-01-27	10.37	x	x	x	x							x
2026010045	US6B	62.60017	20.26302	81	2026-01-27	13.07	x	x	x	x							
2026010046	US5B	62.58623	19.96883	220	2026-01-27	15.56	x	x	x	x					x		
2026010047	F16	63.51680	21.06332	49	2026-01-28	01.10	x	x	x	x							
2026010048	F15	63.51697	21.51688	47	2026-01-28	03.45	x	x	x	x							
2026010049	IPS_PIEKA	63.98437	22.83067	18	2026-01-28	09.03											
2026010050	RR7	64.73410	23.81155	39	2026-01-28	16.50	x	x	x	x							
2026010051	RR6	64.80007	23.48113	86	2026-01-28	19.26	x	x	x	x							
2026010052	CV	65.00048	23.24612	86	2026-01-28	21.15	x	x	x	x							
2026010053	CVI	65.23293	23.56283	68	2026-01-29	00.17	x	x	x	x							
2026010054	JAAPOIJU	65.15450	23.78993	22	2026-01-29	02.37											
2026010055	IPS_KIISLA	65.26245	24.43068	23	2026-01-29	06.39											
2026010056	F2	65.38382	23.46188	82	2026-01-29	10.59	x	x	x	x					x		x
2026010057	RR3	64.93415	22.34538	93	2026-01-29	16.42	x	x	x	x							
2026010058	BO3	64.30087	22.34208	110	2026-01-29	21.54	x	x	x	x							
2026010059	BO3H	64.28092	22.37680	107	2026-01-30	02.01											
2026010060	F13	63.78368	21.47812	64	2026-01-30	06.32	x	x	x	x							
2026010061	F18	63.31442	20.27265	101	2026-01-30	12.02	x	x	x	x							x
2026010062	US3	62.75888	19.19552	174	2026-01-30	17.46	x	x	x	x							
2026010063	MS3	62.13452	18.16288	83	2026-01-30	23.32	x	x	x	x							
2026010064	AALTO_SM	61.80117	20.23427	108	2026-01-31	06.39											
2026010065	SR3	61.18330	18.23007	70	2026-01-31	13.48	x	x	x	x							
2026010066	F33	60.53317	18.93782	134	2026-01-31	19.11	x	x	x	x							
2026010067	F64	60.18895	19.14258	286	2026-01-31	23.52	x	x	x	x					x		
2026010068	F69	59.78338	19.93005	191	2026-02-01	06.06	x	x	x	x							x

INDEX	STATION	latitude	longitude	depth	DATE	time	ctd	pH	ox	nu	ph	zo	be	chl	oil	tox	secchi
2026010069	LL12	59.48345	22.89685	82	2026-02-01	17.53	x		x	x							
2026010070	39A	60.06665	24.97988	44	2026-02-02	03.03											
Tammasaarenlaituri	Tammasaarenlaitu	60.16183	24.90150		2026-02-02	06.39											

Parameters: ox = oxygen, nu = nutrients, ph = phytoplankton, zo = zooplankton, be = benthos, chl = chlorophyll a, oil = dissolved oil, tox = phytotoxins.