

Report from the SMHI monitoring cruise with R/V Svea January

**Survey period:**

2021-01-08 – 2021-01-15

Principal:Swedish Meteorological and Hydrological Institute (SMHI),
Swedish Agency for Marine and Water Management (SwAM)**Cooperation partners:**

Swedish University of Agricultural Sciences (SLU)

SUMMARY

The Skagerrak, the Kattegat, the Sound and the Baltic Proper was visited during this cruise, which is part of the national marine monitoring program in Sweden. The winter pool of nutrients was mapped in the Kattegat and the Sound.

Surface temperatures in January were above normal in the Baltic Proper and varied from 3.4 in the Kattegat to 6.8 in the Baltic Proper. In the Sound, the Kattegat and the Skagerrak the pycnocline was located from 5-25 m, whereas the surface water was well mixed down to 40-70 m in the Baltic Sea.

The concentrations of phosphate and silicate were normal to above normal for the whole investigated area. Dissolved inorganic nitrogen (DIN) was normal or below normal on the Swedish west coast and above normal in the Baltic Proper.

Oxygen levels in the Arkona- and Bornholm basins were normal or above normal for this time of the year. In the Eastern, Northern and Western Gotland Basin severe hypoxic conditions were observed (oxygen concentration <2 mL/L) below 65 – 90 m. At station BY15 low oxygen concentrations, around 0.1 mL/L was present from 95 – 110 m. At 90 m and from 125 m and below there were completely anoxic conditions and hydrogen sulphide were detected. Hydrogen sulphide were also present from 80 to 125 m in the Eastern, Northern and Western Gotland Basins.

The next cruise is planned to start on February the 9th and will perform mapping of the nutrient winter pool in the Baltic Sea.

RESULTS

The expedition was performed with the Swedish research vessel Svea and started in Lysekil on the 8th of January 2021 and ended in the same harbour on the 15th. The weather was grey and cloudy with winds that were mostly brisk coming from shifting directions. In the Eastern Gotland Basin, the wind intensified into a storm which made it impossible to sample station BY20 Fårödjupet. Air temperature varied from -3.3 to 5.0°C. During the expedition the winter pool of nutrients were mapped in the Sound and the Kattegat.

This report is based on data that have passed a first quality control. When data are published later at the National Oceanographic Data centre some values can change after further quality controls. Data from this cruise will be published as soon as possible on the data centres webpage, normally within a week after the cruise. Some of the analyses are made after the cruise and data are published later.

Data can be downloaded from the SHARKweb:

<http://www.smhi.se/klimatdata/oceanografi/havsmiljodata>

The Skagerrak

The temperature in the surface water varied from 4.3°C in the southern and off shore part to 6.4°C closer to the coast, which is normal for this time of the year. Surface salinity varied between 24 and 28 psu, with lowest values in the south. This is somewhat below normal for the off-shore area but elevated closer to the coast. A sharp density stratification (both thermo- and halocline) was observed at 5-10 m depth.

Nutrient concentrations in the surface waters of the Skagerrak varied, for phosphate around 0.64 µmol/L, for DIN between 5.7 – 7.3 µmol/L and for silicate 9.6 – 12.1 µmol/L, highest closer to the coast. Concentrations of phosphate and silicate were normal or high above normal, whereas DIN-concentrations were normal for this time of the year.

The oxygen condition in the Skagerrak is good with concentrations normal for the season. Lowest concentration was found at the bottom at station Å13, of 5.2 mL/L.

Chlorophyll fluorescence, measured with the CTD was low in the whole area, indicating low phytoplankton activity.

The Kattegat and the Sound

The sea surface temperature in the Kattegat and the Sound was normal for the season and varied between 3.4 – 5.6°C. The sea surface salinity varied between 21-23 psu in the Kattegat, which is slightly lower than normal, and in the Sound, it was 9 psu. In the Kattegat and the Sound the surface water was well-mixed down to 10 – 25 m where temperature- and salinity stratification coincided.

The surface concentrations of phosphate (0.64 – 0.82 µmol/l) and silicate (10.9 – 17.5 µmol/l) were slightly higher than normal for this time of the year. At the station Anholt E the silicate concentration was high above normal. The concentration of DIN (4.16 – 7.16 µmol/l) was lower than normal.

Oxygen condition was mostly good in the bottom waters, however lowest concentration in the Sound 3.3 mL/L and in the Kattegat 4.6 mL/L.

Chlorophyll fluorescence was low in the whole area, indicating low phytoplankton activity.

The Baltic Proper

The sea surface temperature was warmer than normal for the season and varied from 5.7 – 6.8°C. The salinity in the surface water (6.6 – 8.5 psu) varied from normal to above normal throughout the investigated area. The halocline was observed between 40 to 70 m.

The oxygen concentrations in the Arkona- and Bornholm basins were normal or above normal for the season. The Eastern, Northern and Western Gotland Basins experienced severe oxygen depletion (<2 mL/L) from 65 – 90 m. At station BY15 low oxygen concentrations, around 0.1 mL/L was present from 95 – 110 m. At 90 m and from 125 m and below there were completely anoxic conditions and hydrogen sulphide were detected. Hydrogen sulphide were also present from 80 to 125 m in the Eastern, Northern and Western Gotland Basins.

The nutrient concentrations in the surface waters were normal to above normal in the area. Concentration of phosphate varied between 0.61 – 0.85 µmol/L, DIN between 3.25 – 4.92 µmol/L and silicate between 13.6 – 19.8 µmol/L.

Phytoplankton activity was low in the whole Baltic Proper.

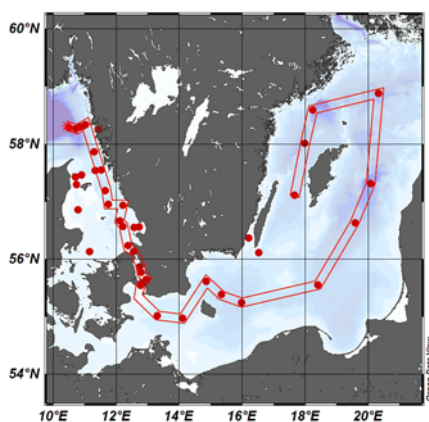
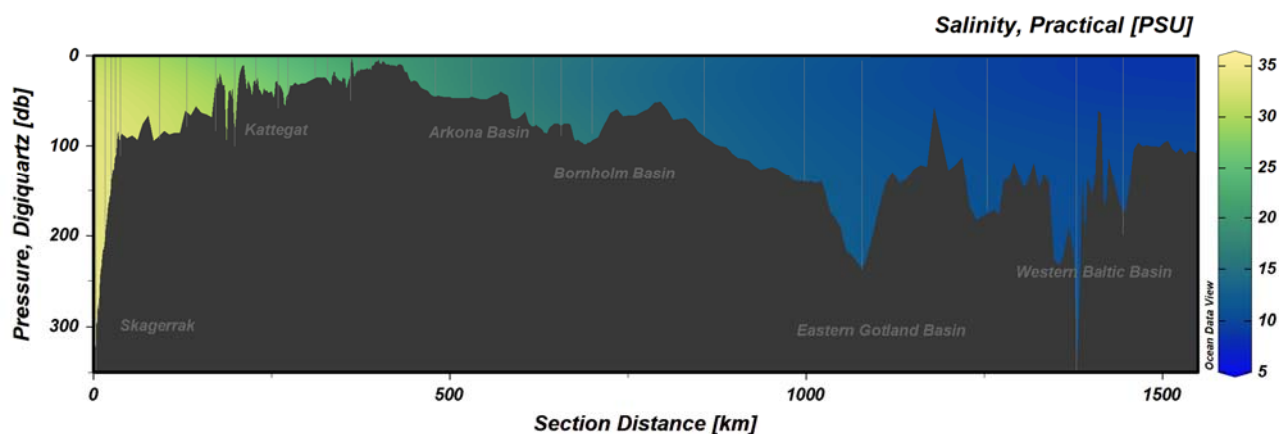
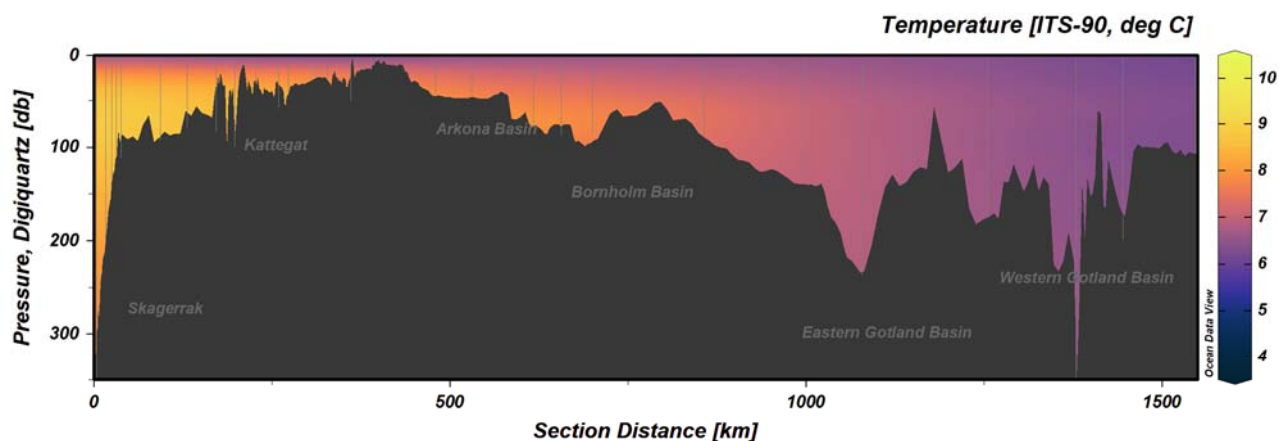
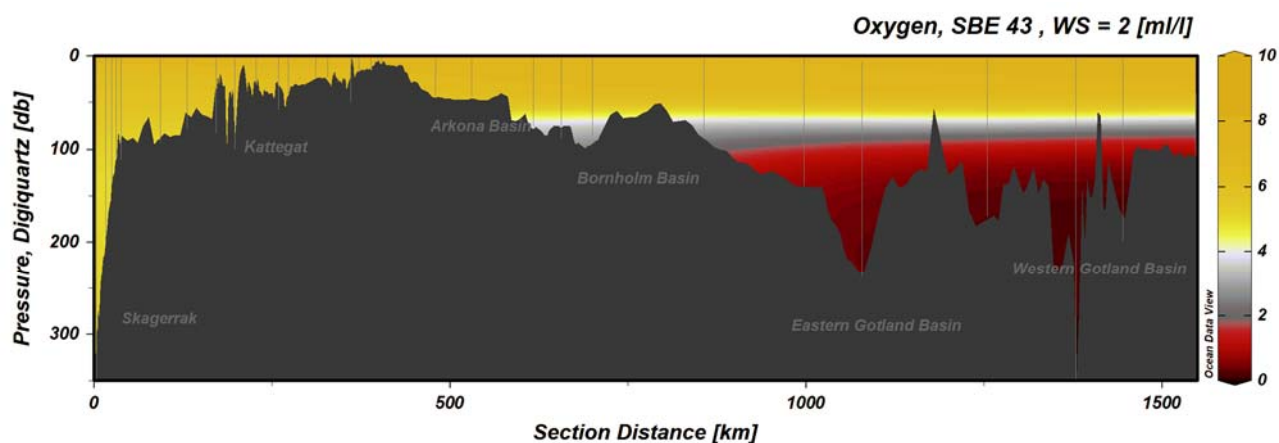


Fig 1. Transects showing oxygen, salinity and temperature going from the Skagerrak, through the Kattegat and the Sound, further in to the Baltic Proper and ends in the Western Gotland Basin. Grey vertical lines indicate the positions where data is collected, also shown in the map.

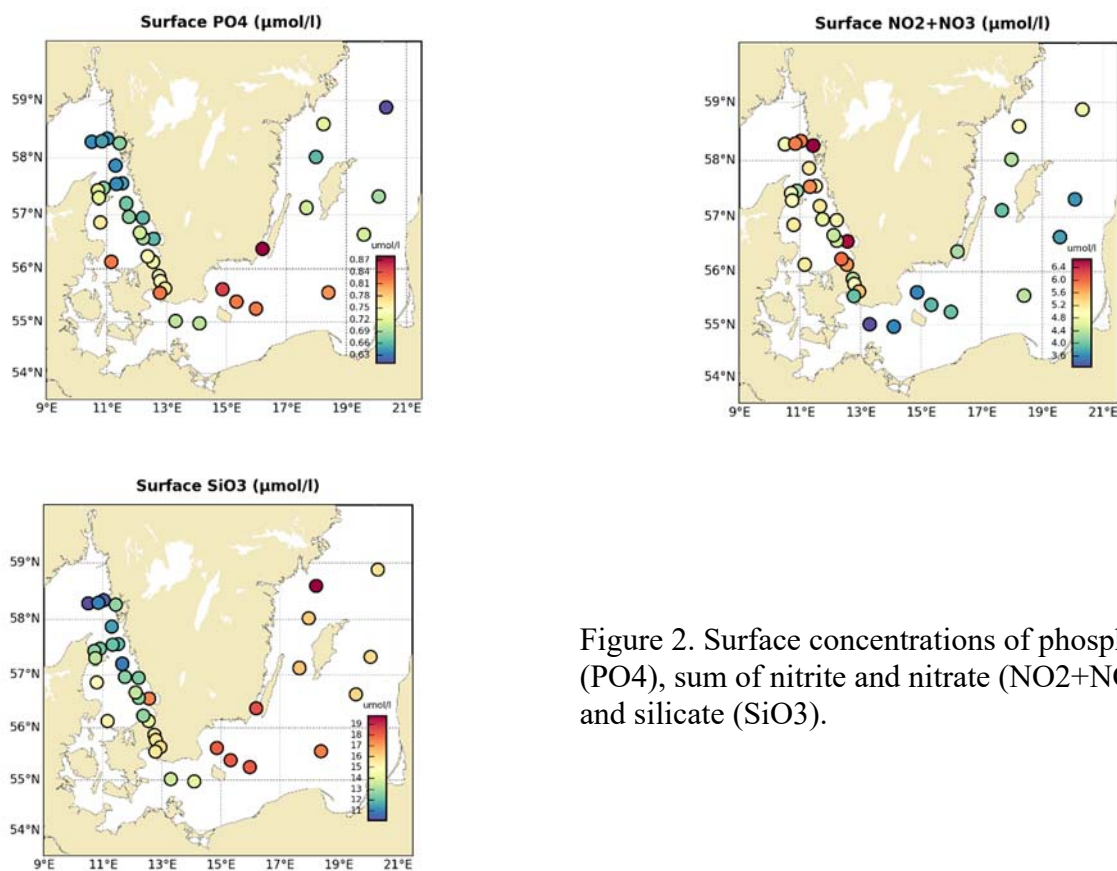


Figure 2. Surface concentrations of phosphate (PO₄), sum of nitrite and nitrate (NO₂+NO₃) and silicate (SiO₃).

PARTICIPANTS

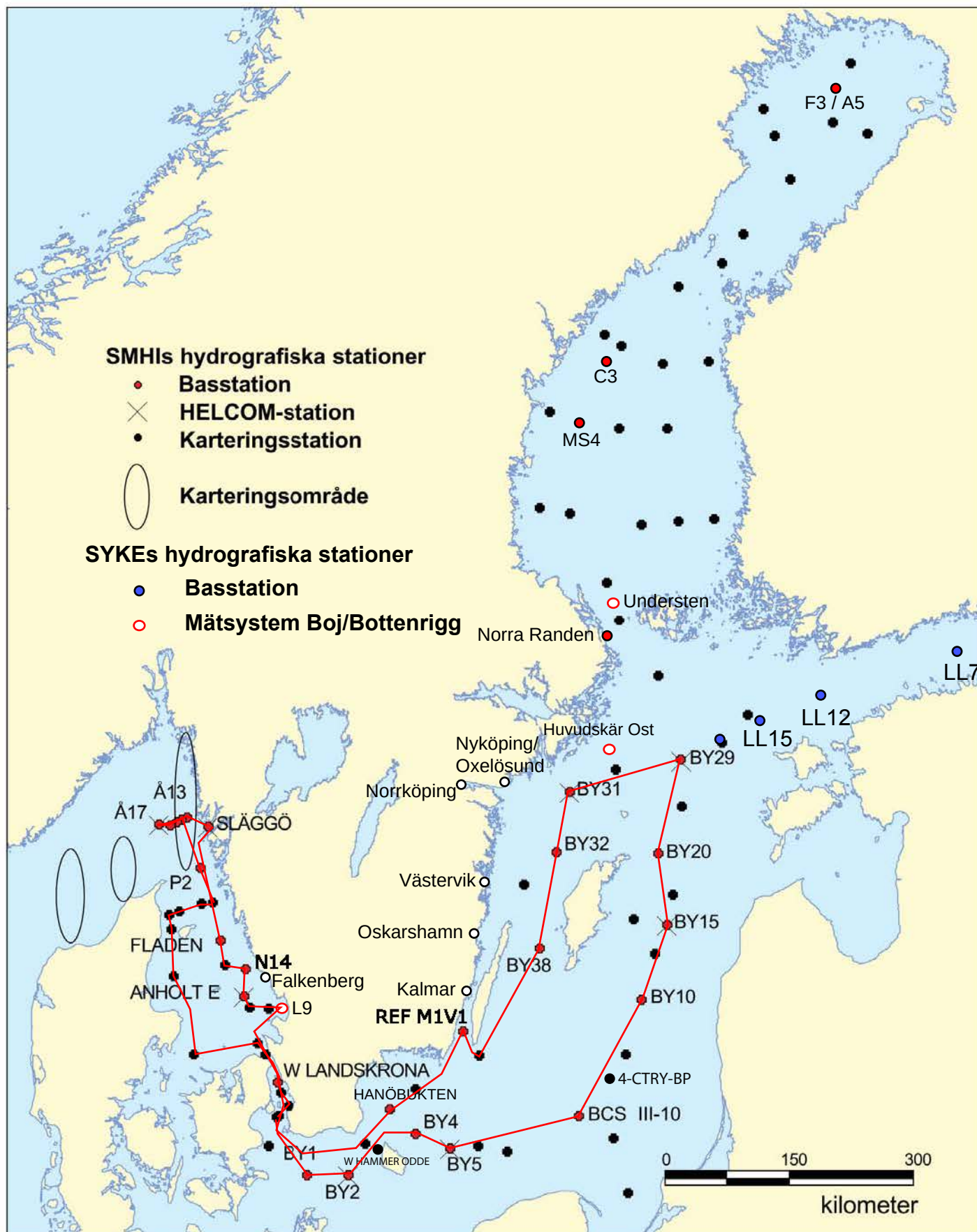
Name	Role	From
Anna-Kerstin Thell	Chief Scientist	SMHI
Kristin Andreasson		SMHI
Ola Kalén		SMHI
Monica Lindner		SMHI
Madeleine Nilsson		SMHI

APPENDICES

- Track chart
- Table over stations, sampled parameters and number of sampling depths
- Map showing bottom oxygen concentrations
- Vertical profiles for regular monitoring stations
- Monthly average surface water plots for regular monitoring stations



TRACKCHART	
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Ship:	R/V Svea
Date:	210108-210115
Series:	0001-0042



Date: 2021-02-01
Time: 19:09

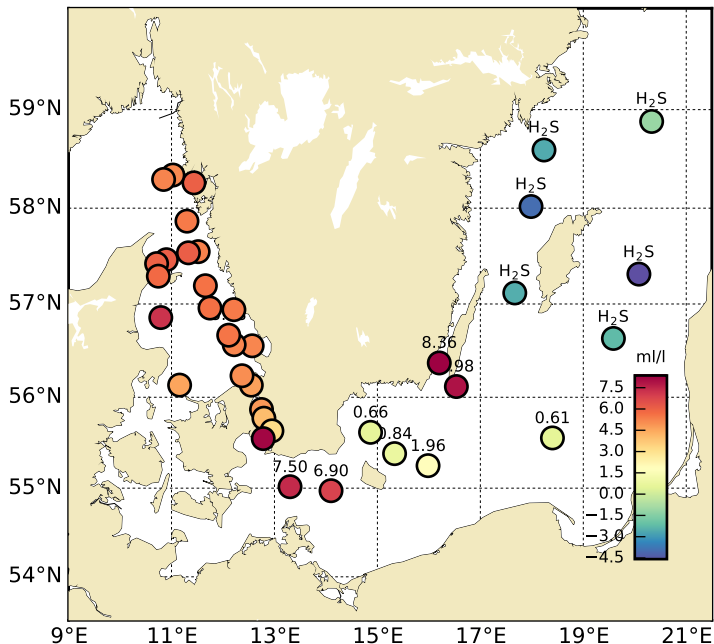
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0001	01	FIBG27	BAS...	SLÄGGÖ	5815.58	01126.12	20210108	1120	77				1018	1620	-xx-	9		x	x	x	x	-	x	x	-	x	-	x	x	x	x	-	-	x	-	-
0002	01	SKEX14	BAS...	Å13	5820.35	01101.61	20210108	1400	114		02 9	-0.7	1019	2630	----	10		x	x	x	x	-	x	x	-	x	-	x	x	x	x	-	-	x	-	-
0003	01	SKEX18	BAS...	Å17	5817.05	01030.27	20210108	1720	351		04 10	-0.1	1020	9999	--x-	15		x	x	-	x	x	x	x	-	x	-	x	x	x	x	-	-	x	-	-
0004	01	SKEX17	BAS...	Å16	5816.1	01043.49	20210108	2000	200			-0.5	1021	9990	----	13		-	x	-	x	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-
0005	01	SKEX16	BAS...	Å15	5817.66	01050.75	20210108	2130	137			-0.4	1022	9990	----	12		x	x	x	x	-	x	-	x	-	x	x	x	x	-	-	x	-	-	
0006	01	SKEX15	BAS...	Å14	5818.95	01056.61	20210108	2250	107		36 8	-0.3	1022	9990	----	11		-	x	-	x	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-
0007	01	SKEX23	BAS...	P2	5751.97	01118	20210109	0220	94		04 5	0.6	1022	9990	----	10		x	x	x	x	-	x	-	x	-	x	x	x	x	-	-	x	-	-	
0008	01	KANX02	BAS...	SW VINGA GF4	5732.97	01131.11	20210109	0455	80		06 4	0.9	1023	9990	----	12		x	x	x	x	-	x	-	x	-	x	x	x	x	-	-	x	-	-	
0009	01	KANX04	BAS...	GF6	5732.24	01119.7	20210109	0630	47		05 2	0.9	1023	9990	----	9		x	x	x	x	-	x	-	x	-	x	x	x	x	-	-	x	-	-	
0010	01	KANX06	BAS...	GF8	5727.94	01054.02	20210109	1000	42	9	36 1	2.1	1024	2820	----	8		x	x	x	x	-	x	-	x	-	x	x	x	x	-	-	x	-	-	
0011	01	KANX07	BAS...	GF9	5725.48	01042.6	20210109	1015	27	7	36 1	1.8	1024	2820	----	6		x	x	x	x	-	x	-	x	-	x	x	x	x	-	-	x	-	-	
0012	01	KANX09	BAS...	LÄSÖ RÄNNA	5717.59	01044.63	20210109	1145	46	7	18 1	1.9	1023	2820	----	9		x	x	x	x	-	x	-	x	-	x	x	x	x	-	-	x	-	-	
0013	01	KAWA11	BAS...	409 ÅLBORG BUGT	5651.36	01047.49	20210109	1520	15		21 1	2.0	1024	2720	----	4		x	x	x	x	-	x	-	x	-	x	x	x	x	-	-	x	-	-	
0014	01	KAWX14	BAS...	925 KATTEGAT SW	5607.91	01109.44	20210109	2020	49		24 4	2.0	1024	9990	----	9		x	x	x	x	-	x	-	x	-	x	x	x	x	-	-	x	-	-	
0015	01	SOCX39	BAS...	W LANDSKRONA	5552	01244.9	20210110	0300	52		22 5	1.8	1022	9990	----	9		x	x	x	x	-	x	-	x	-	x	x	x	x	-	-	x	-	-	
0016	01	SOCX41	BAS...	ÖRESUND-7	5546.31	01247.68	20210110	0430	20		22 7	2.3	1022	9990	----	5		x	x	x	x	-	x	-	x	-	x	x	x	x	-	-	x	-	-	
0017	01	SOCX44	BAS...	ÖRESUND-4	5538	01257.03	20210110	0600	16		23 7	2.6	1022	9990	----	4		x	x	x	x	-	x	-	x	-	x	x	x	x	-	-	x	-	-	
0018	01	SOSX00	EXT...	FLINTEN 7	5535.32	01250.62	20210110	0720	7		23 12	2.4	1021	1320	----	2		-	x	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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0023	01	BPSB07	BAS...	BY5 BORNHOLMSDJ	5515.00	01559.03	20210111	0245	90		28 6	5	1010	9990	--x-	12		x	x	x	x	x	-	x	-	x	x	x	x	-	-	x	-	-		
0024	01	BPSE11	BAS...	BCS III-10	5533.34	01824.03	20210111	1130	90	13	09 13	3.2	1009	2840	--xx	12		x	x	x	x	x	x	-	x	-	x	x	x	x	-	-	x	-	-	
0025	01	BPEX13	BAS...	BY10	5638.02	01935.10	20210111	1950	143		20 16	4	1001	9990	----	15		x	x	x	x	-	x	-	x	-	x	x	x	x	-	-	x	-	-	
0026	01	BPEX21	BAS...	BY15 GOTLANDSDJ	5718.88	02004.83	20210112	0045	241		18 18	3.9	999	9990	--x-	24		x	x	-	x	x	x	x	-	x	-	x	x	x	x	-	-	x	-	-
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0034	01	SONX33	BAS...	ÖRESUND-12X	5607.89	01232.99	20210114	1515	26		04 4	-0.5	1020	9990	----	6		x	x	x	x	-	x	-	x	-	x	x	x	x	-	-	x	-	-	
0035	01	KAEX33	BAS...	KULLEN	5613.99	01222.16	20210114	1645	25		02 6	0.0	1020	9990	----	6		x	x	x	x	-	x	-	x	-	x	x	x	x	-	-	x	-	-	
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0038	01	KAEX30	BAS...	ST MIDDELGRUND	5634.02	01213.03	20210114	2245	51		13 9	-1.7	1022	9990	----	9		x	x	x	x	-	x	-	x	-	x	x	x	x	-	-	x	-	-	
0039	01	KAEX29	BAS...	ANHOLT E	5640.09	01206.65	20210115	0130	60		02 8	-2.0	1022	9990	--x-	10		x	x	x	x	x	-	x	-	x	x	x	x	-	-	x	-	-		
0040	01	KANX50	BAS...	N14 FALKENBERG	5656.40	01212.71	20210115	0255	31		01 7	-3.3	1023	9990	--xx	7		x	x	x	x	x	-	x	-	x	x	x	x	-	-	x	-	-		
0041	01	KANX26	BAS...	L:A MIDDELGRUND	5657.41	01144.83	20210115	0530	102		03 7	-2.5	1024	9990	----	14		x	x	x	x	-	x	-	x	-	x	x	x	x	-	-	x	-	-	
0042	01	KANX25	BAS...	FLADEN	5711.56	01139.47	20210115	0800	85		06 7	-2.3	1025	1220	----	13		x	x	x	x	-	x	-	x	-	x	x	x	x	-	-	x	-	-	

Bottom water oxygen concentration (ml/l)

Ship: R/V Svea

Date: 20210108-20210115

Series: 0001-0042



STATION SLÄGGÖ SURFACE WATER (0-10 m)

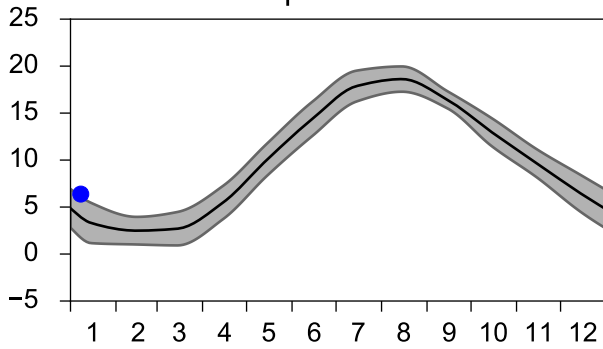
Annual Cycles

— Mean 2001-2015

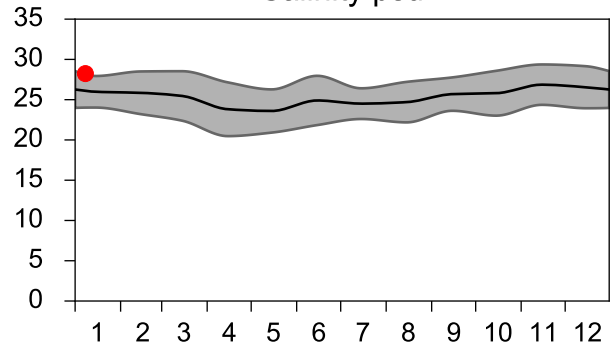
■ St.Dev.

● 2021

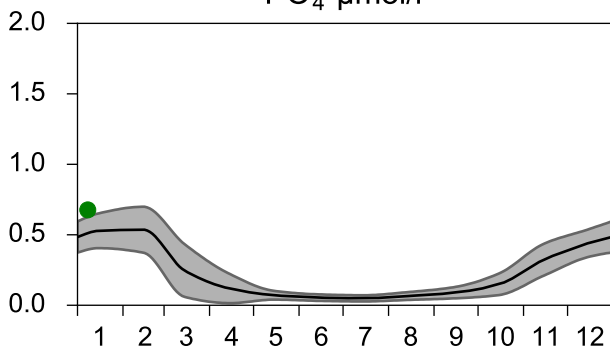
Temperature °C



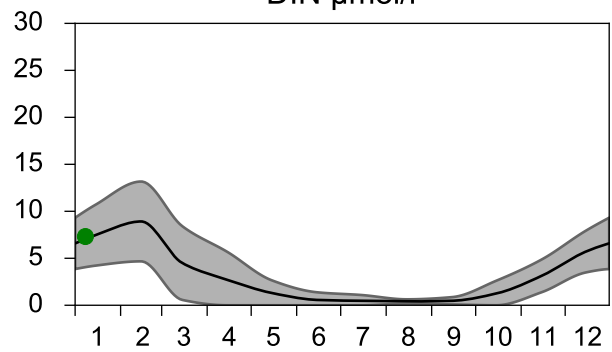
Salinity psu



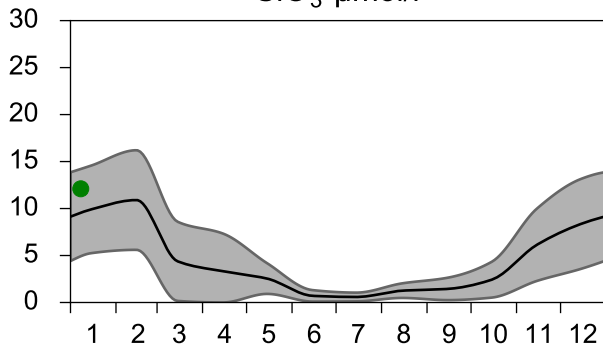
PO₄ µmol/l



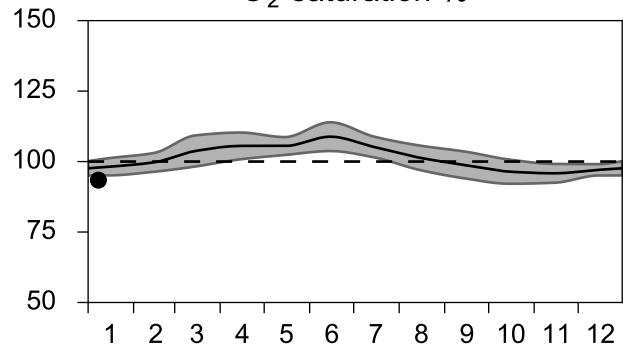
DIN µmol/l



SiO₃ µmol/l

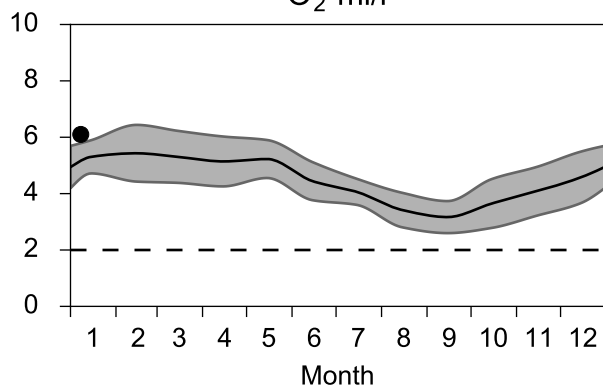


O₂ saturation %

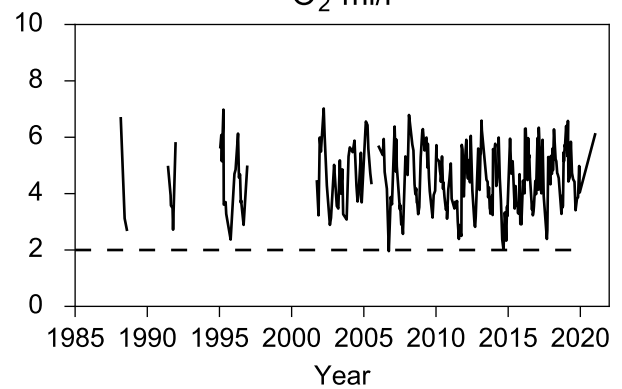


OXYGEN IN BOTTOM WATER (depth >= 64 m)

O₂ ml/l



O₂ ml/l

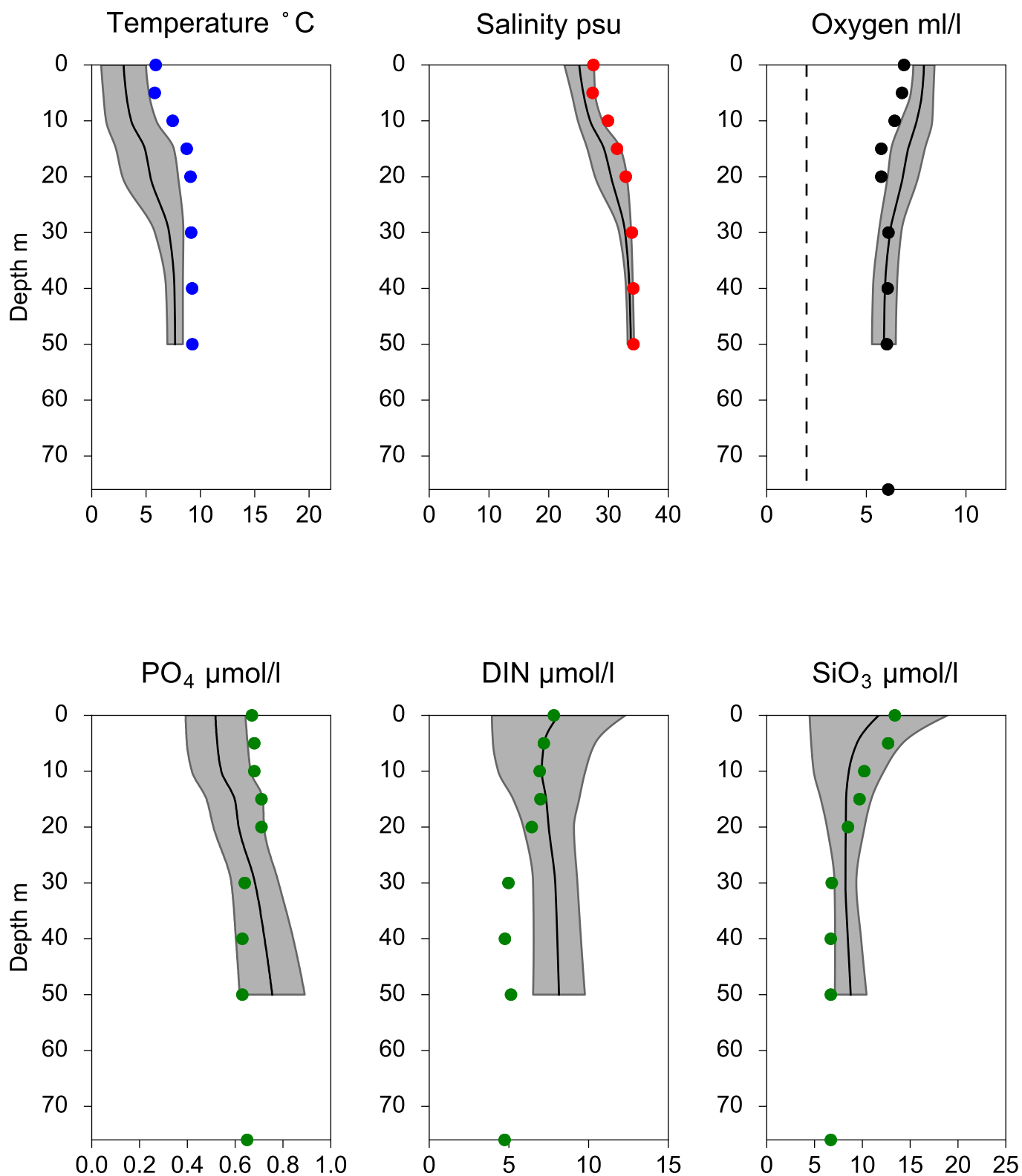


Vertical profiles SLÄGGÖ January

— Mean 2001-2015

■ St.Dev.

● 2021-01-08



STATION Å13 SURFACE WATER (0-10 m)

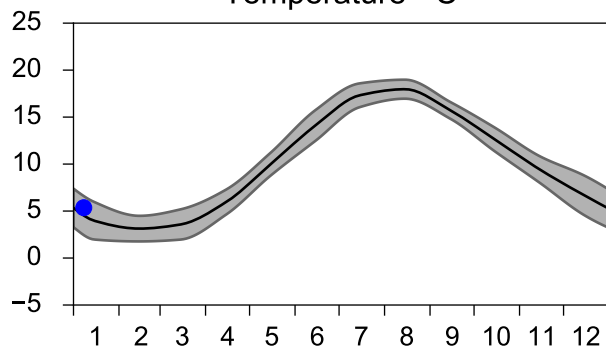
Annual Cycles

— Mean 2001-2015

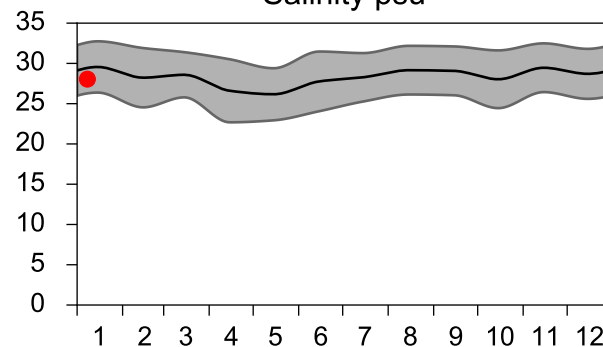
■ St.Dev.

● 2021

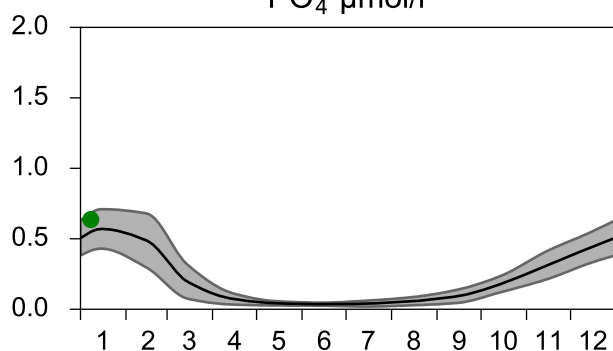
Temperature °C



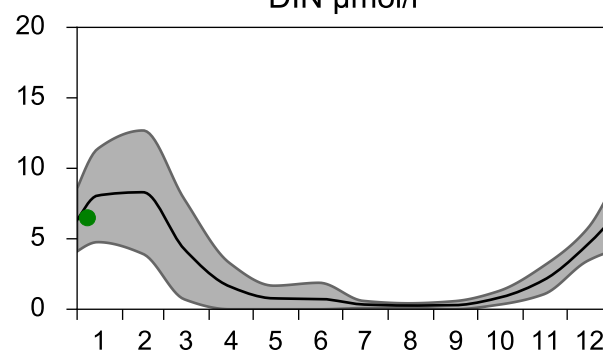
Salinity psu



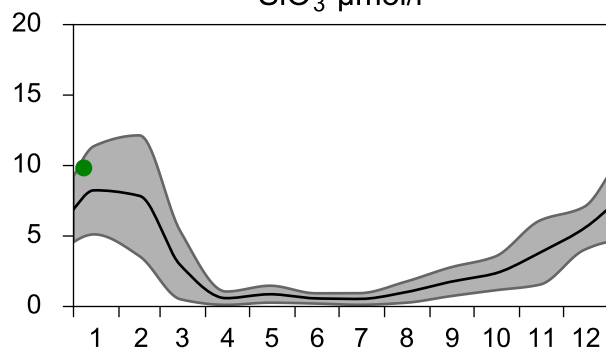
PO₄ µmol/l



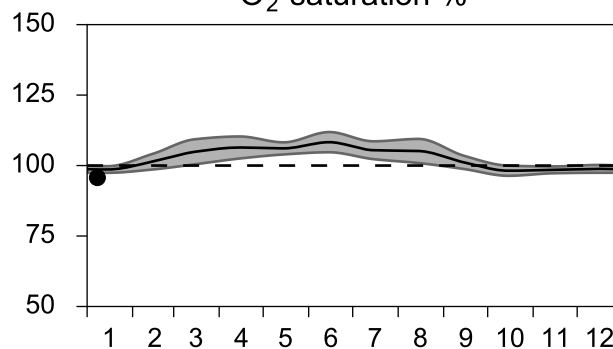
DIN µmol/l



SiO₃ µmol/l

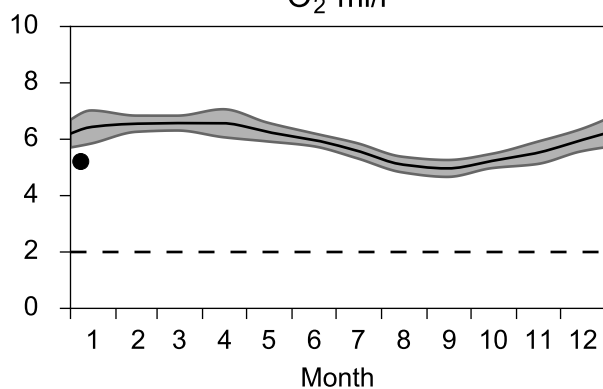


O₂ saturation %

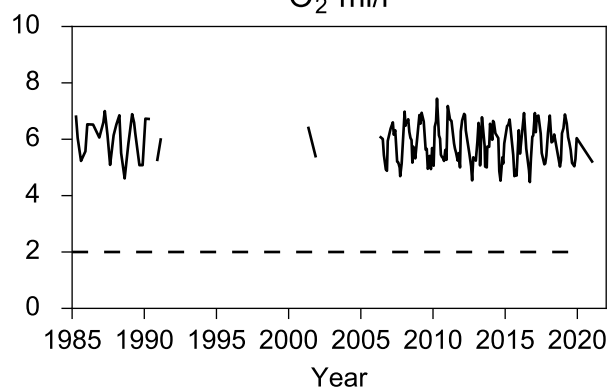


OXYGEN IN BOTTOM WATER (depth >= 80 m)

O₂ ml/l



O₂ ml/l

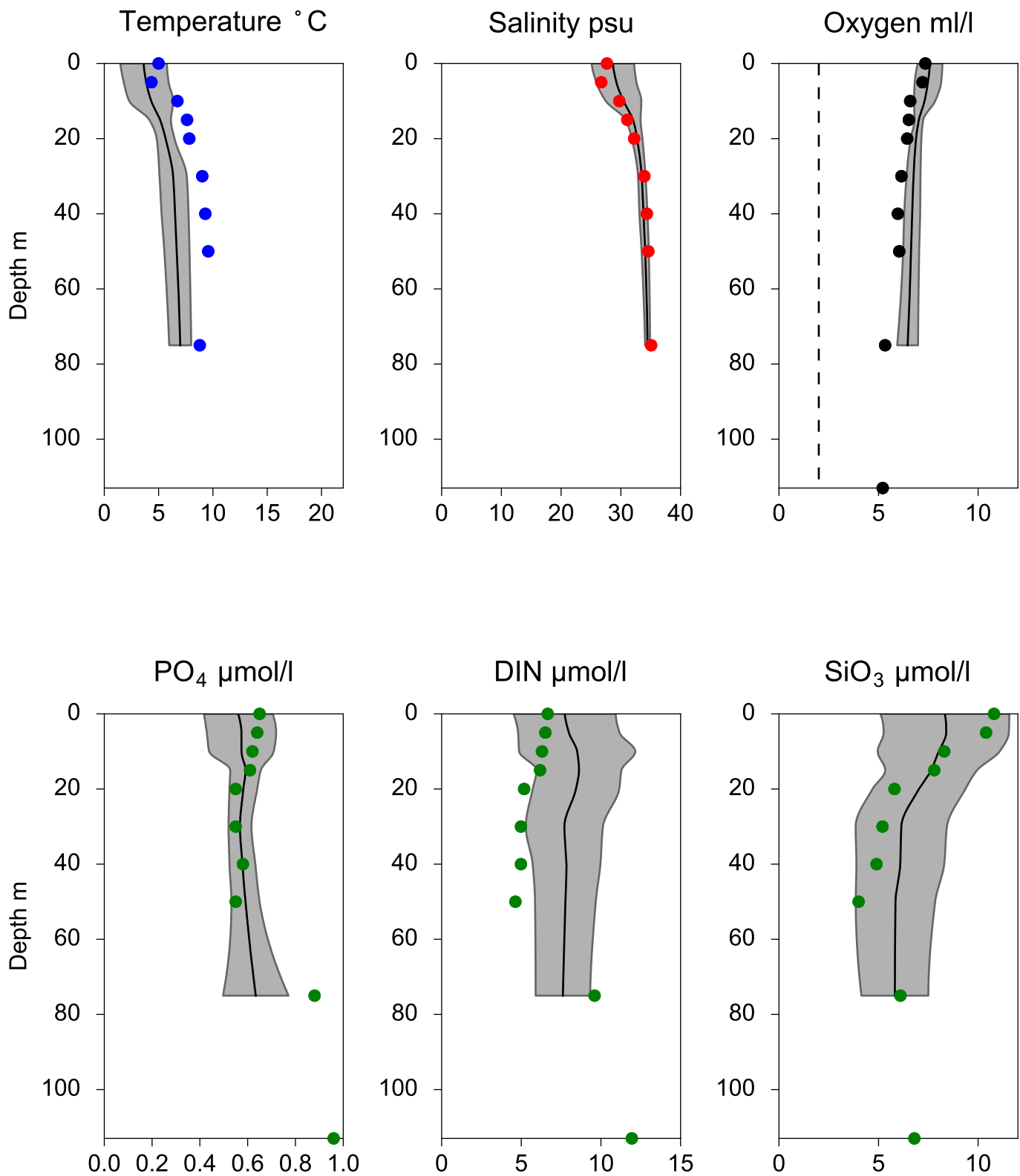


Vertical profiles A13 January

— Mean 2001-2015

■ St.Dev.

● 2021-01-08



STATION Å17 SURFACE WATER (0-10 m)

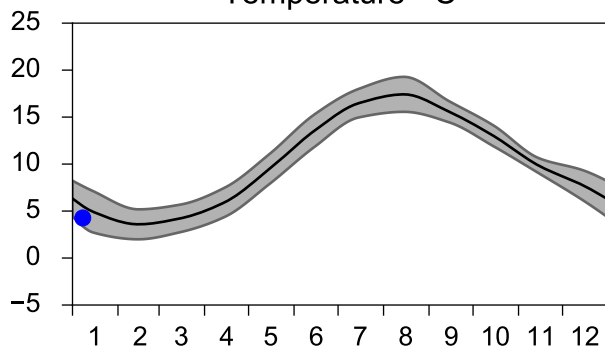
Annual Cycles

— Mean 2001-2015

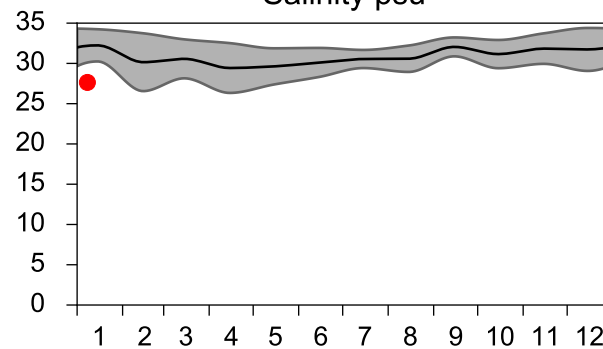
■ St.Dev.

● 2021

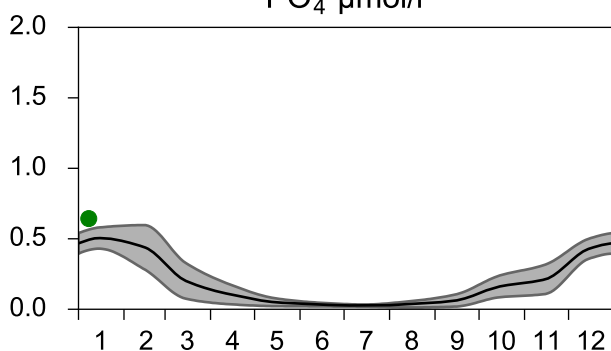
Temperature °C



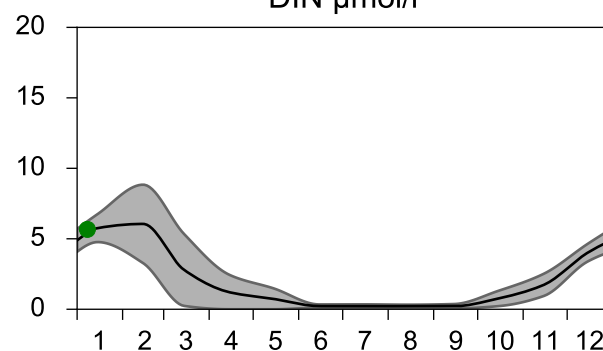
Salinity psu



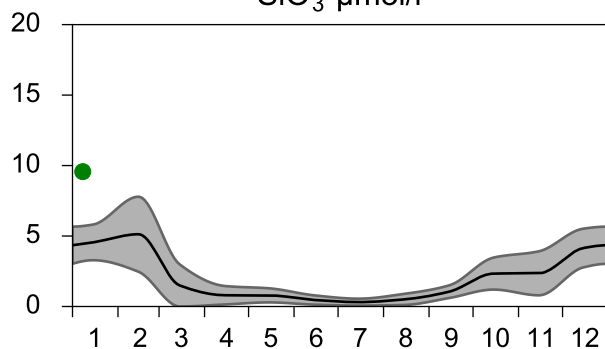
PO₄ µmol/l



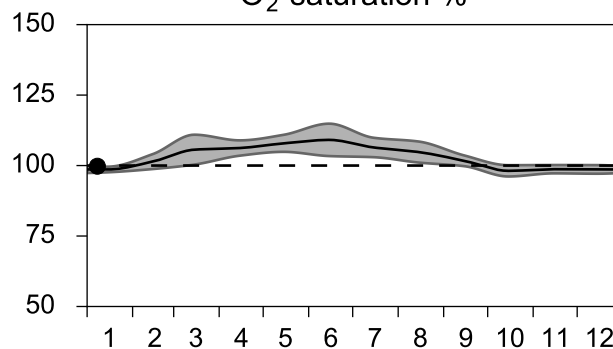
DIN µmol/l



SiO₃ µmol/l

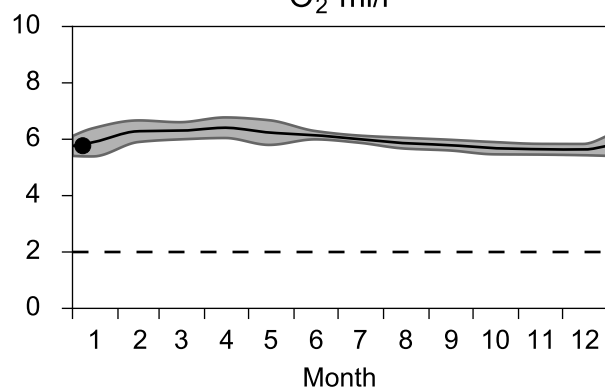


O₂ saturation %

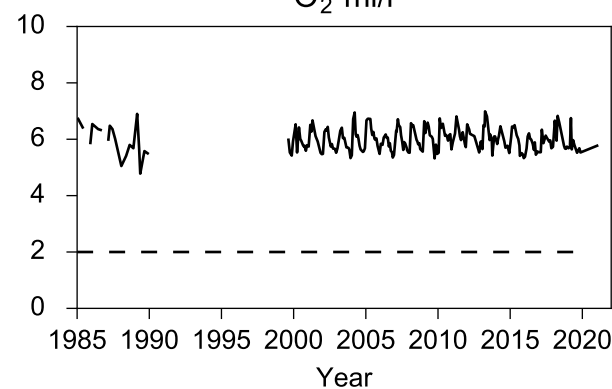


OXYGEN IN BOTTOM WATER (depth >= 300 m)

O₂ ml/l



O₂ ml/l

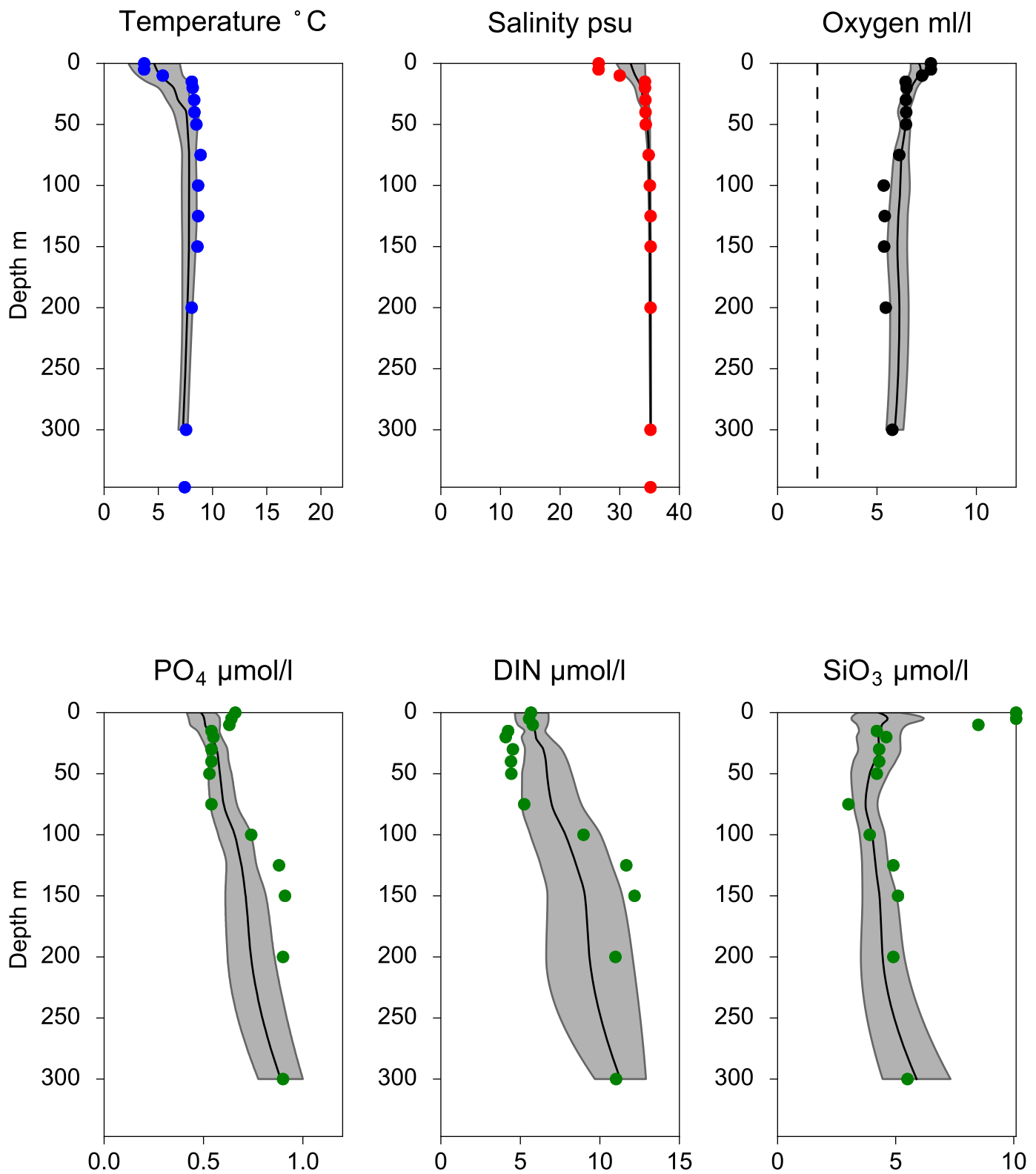


Vertical profiles Å17 January

— Mean 2001-2015

■ St.Dev.

● 2021-01-08



STATION Å15 SURFACE WATER (0-10 m)

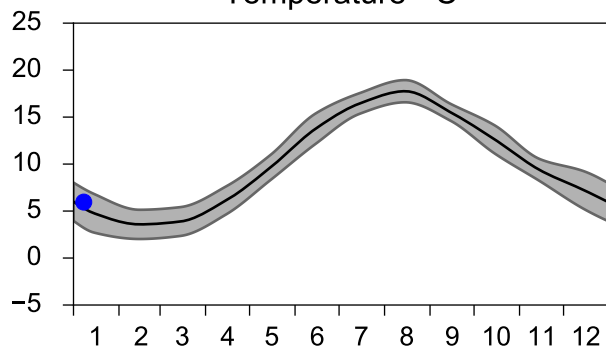
Annual Cycles

— Mean 2001-2015

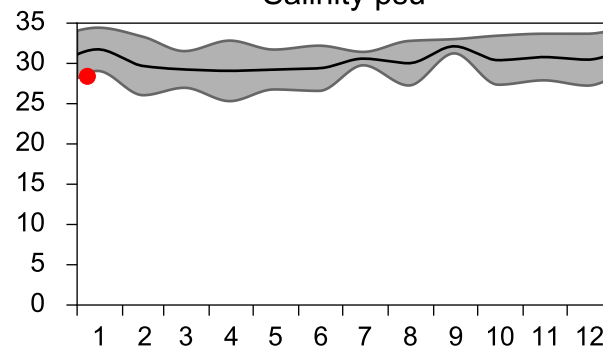
■ St.Dev.

● 2021

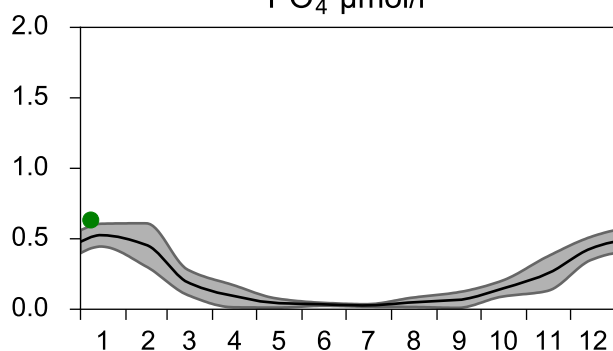
Temperature °C



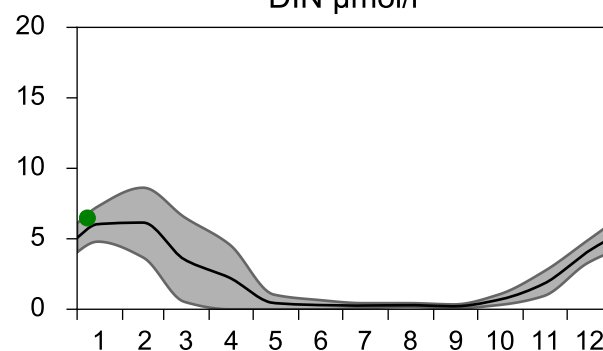
Salinity psu



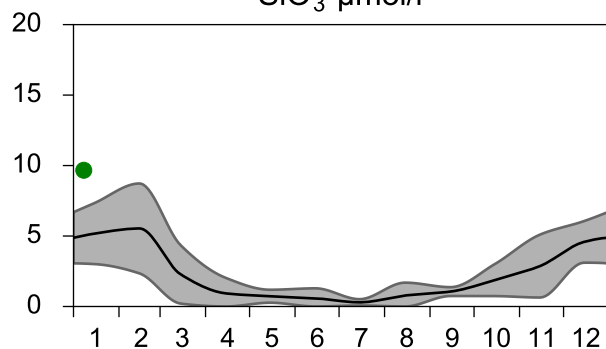
PO₄ µmol/l



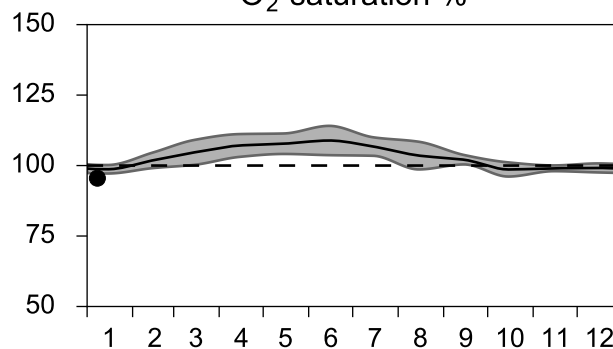
DIN µmol/l



SiO₃ µmol/l

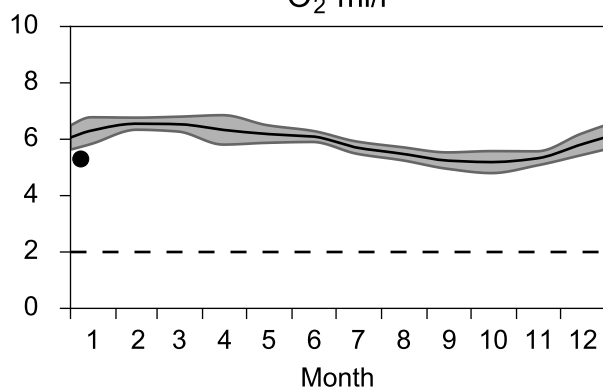


O₂ saturation %

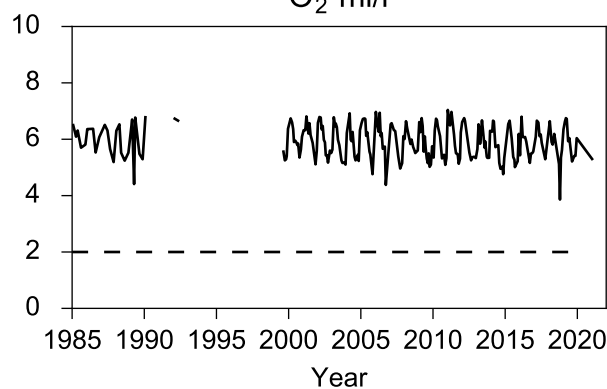


OXYGEN IN BOTTOM WATER (depth >= 125 m)

O₂ ml/l



O₂ ml/l

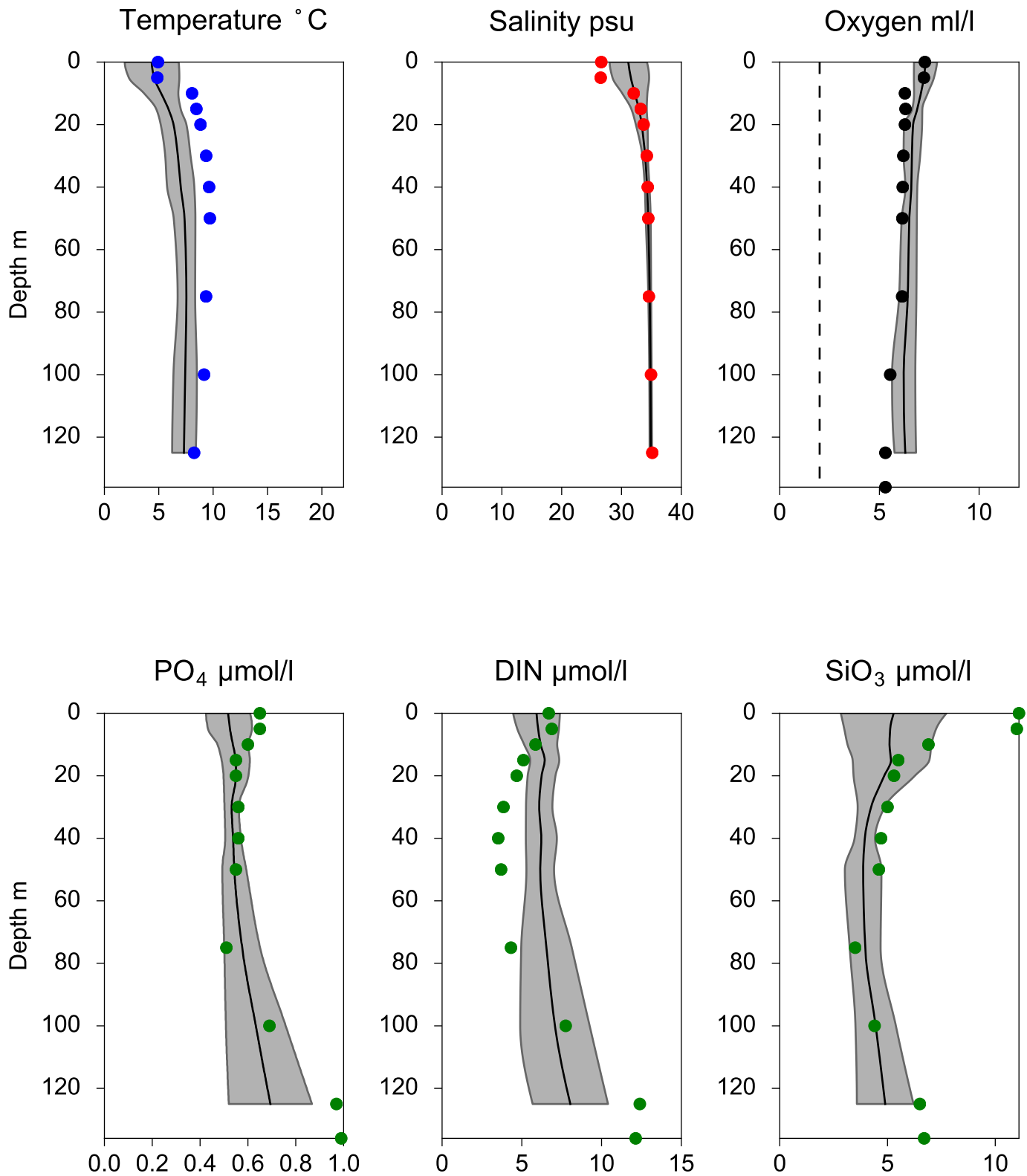


Vertical profiles Å15 January

— Mean 2001-2015

■ St.Dev.

● 2021-01-08



STATION P2 SURFACE WATER (0-10 m)

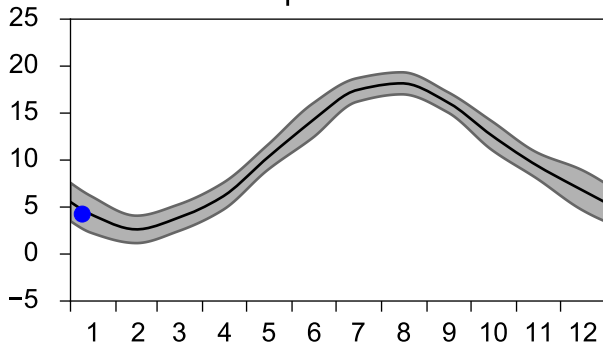
Annual Cycles

— Mean 2001-2015

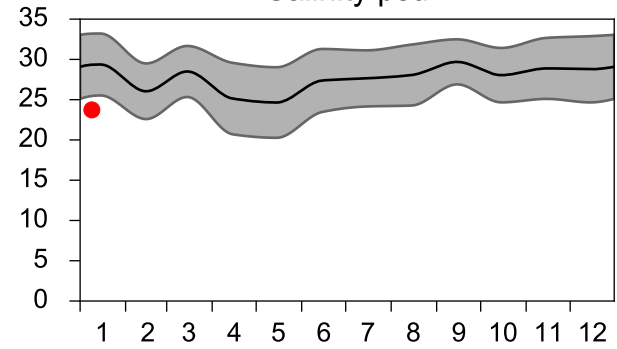
■ St.Dev.

● 2021

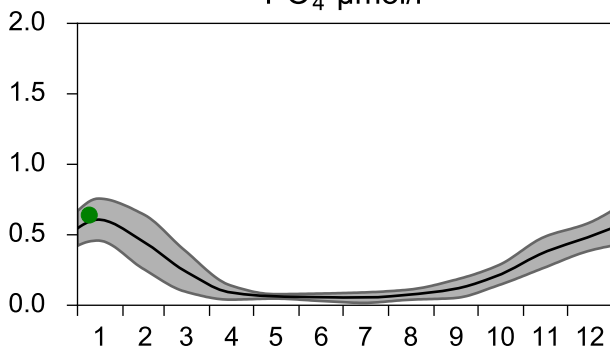
Temperature °C



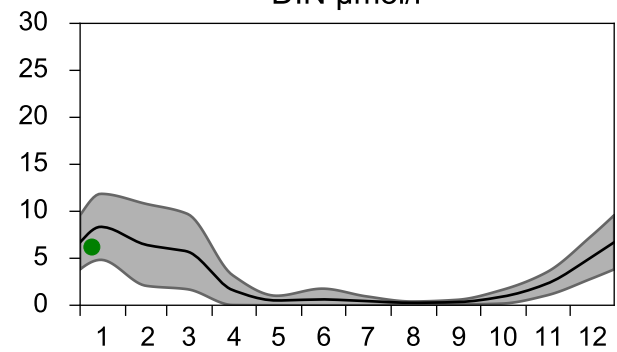
Salinity psu



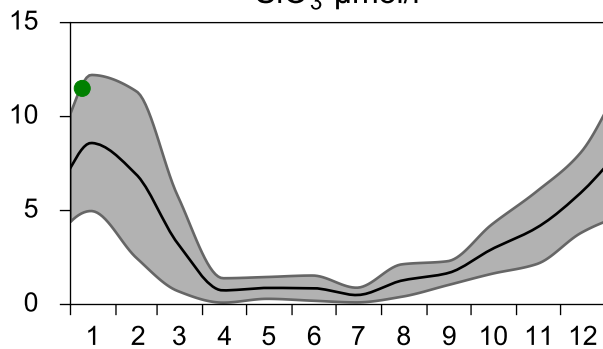
PO₄ µmol/l



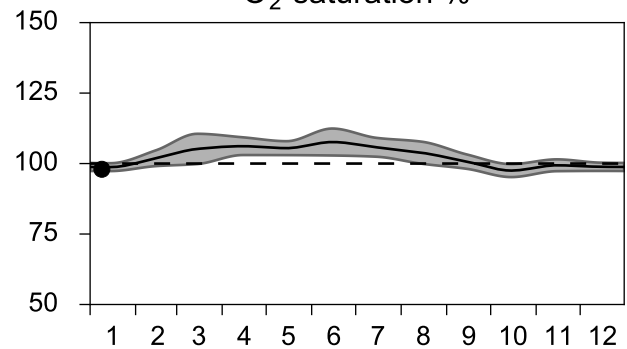
DIN µmol/l



SiO₃ µmol/l

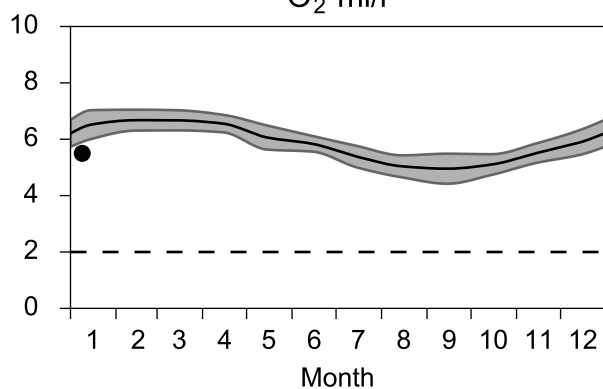


O₂ saturation %

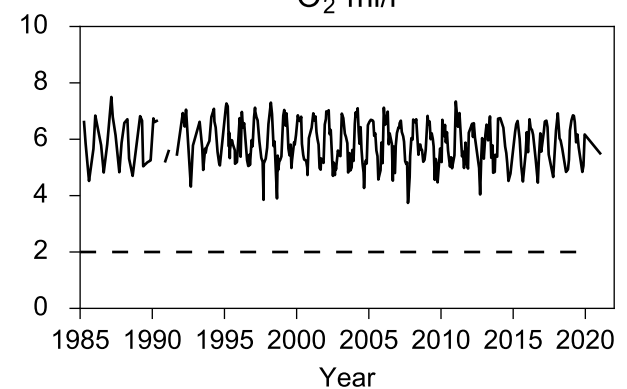


OXYGEN IN BOTTOM WATER (depth >= 75 m)

O₂ ml/l



O₂ ml/l

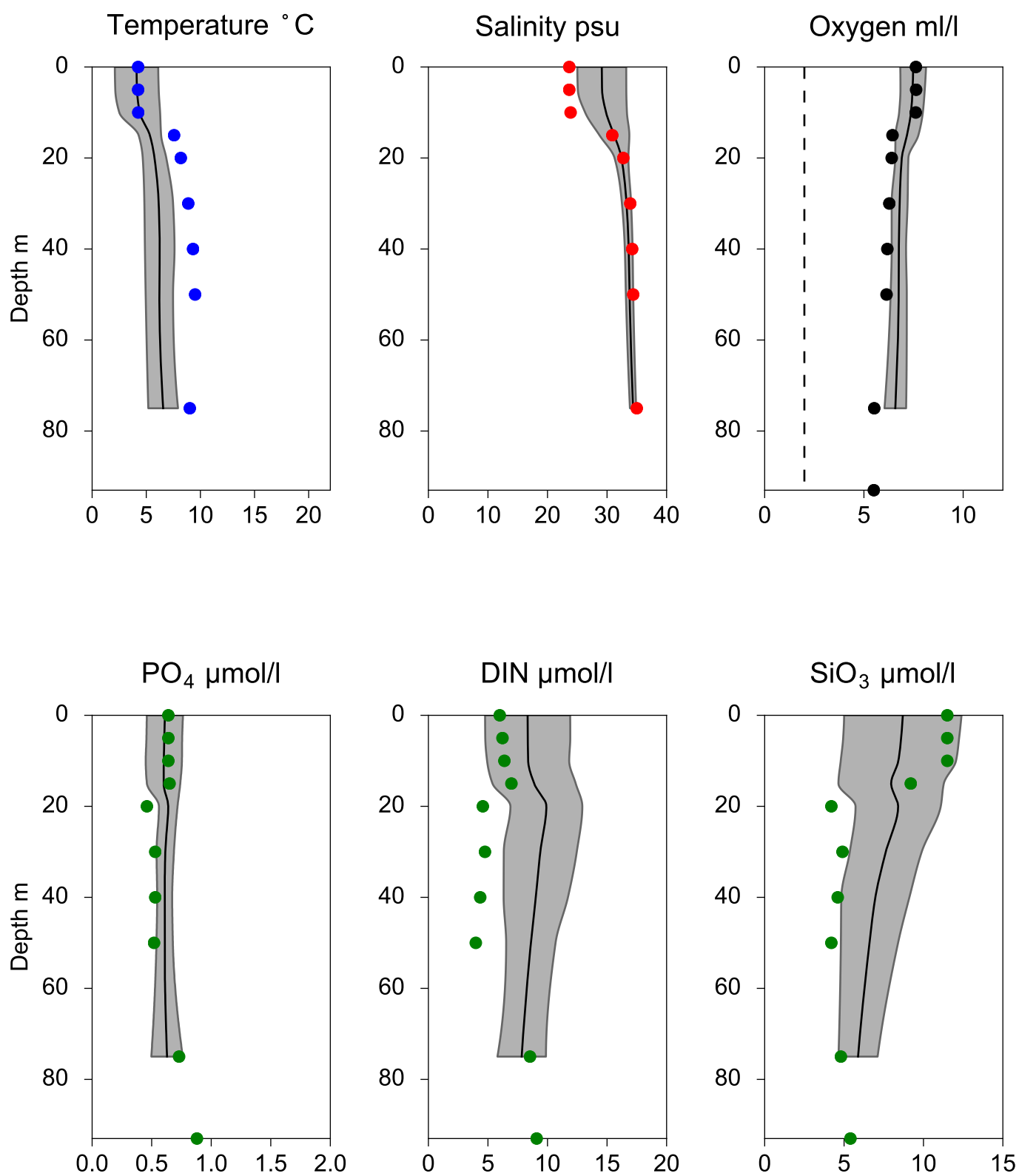


Vertical profiles P2 January

— Mean 2001-2015

■ St.Dev.

● 2021-01-09



STATION W LANDSKRONA SURFACE WATER (0-10 m)

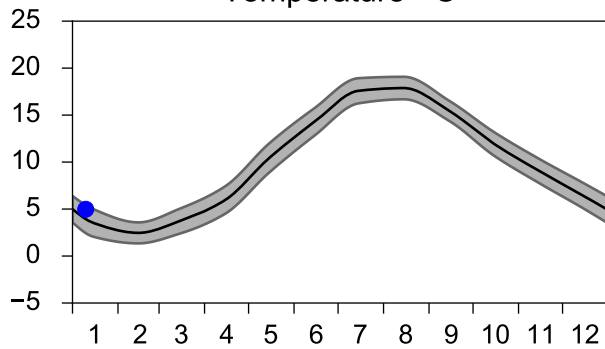
Annual Cycles

— Mean 2001-2015

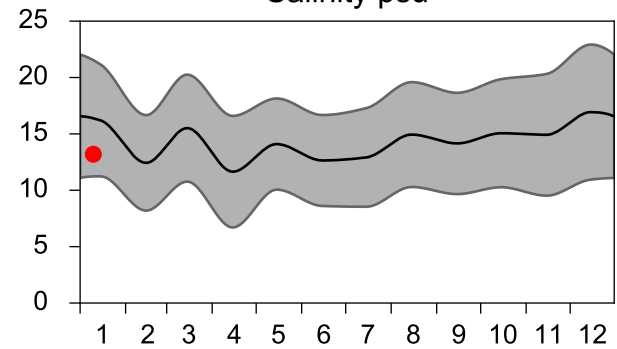
■ St.Dev.

● 2021

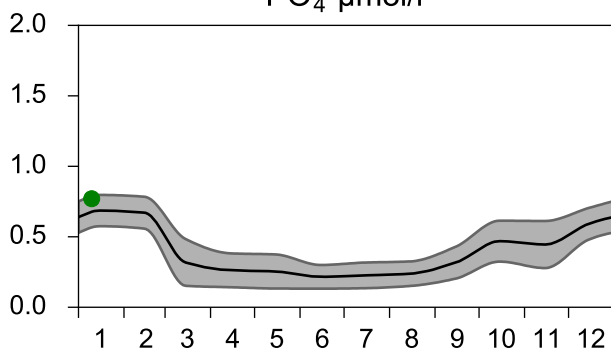
Temperature °C



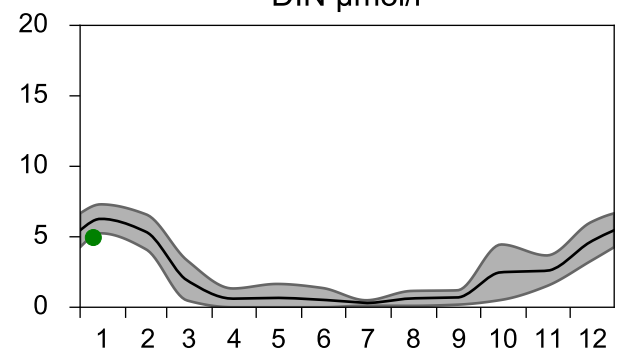
Salinity psu



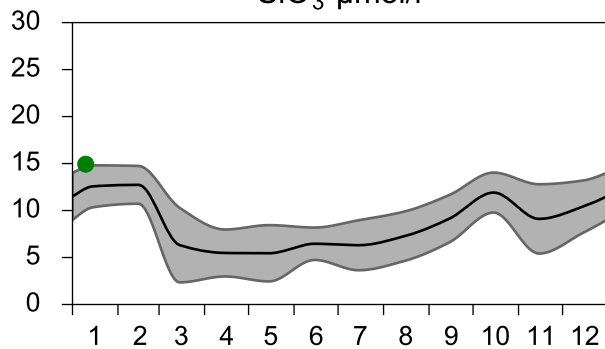
PO₄ µmol/l



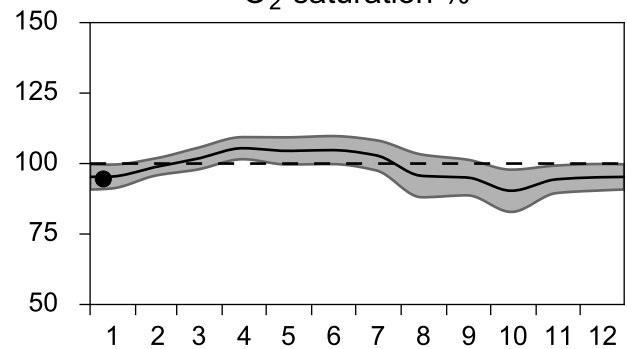
DIN µmol/l



SiO₃ µmol/l

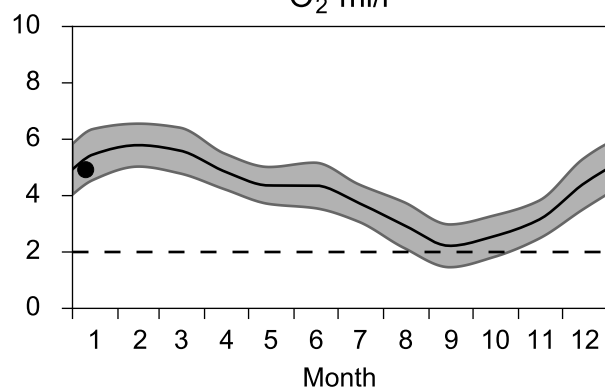


O₂ saturation %

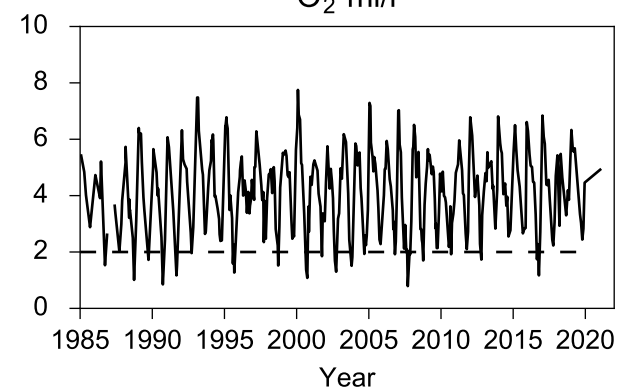


OXYGEN IN BOTTOM WATER (depth >= 40 m)

O₂ ml/l

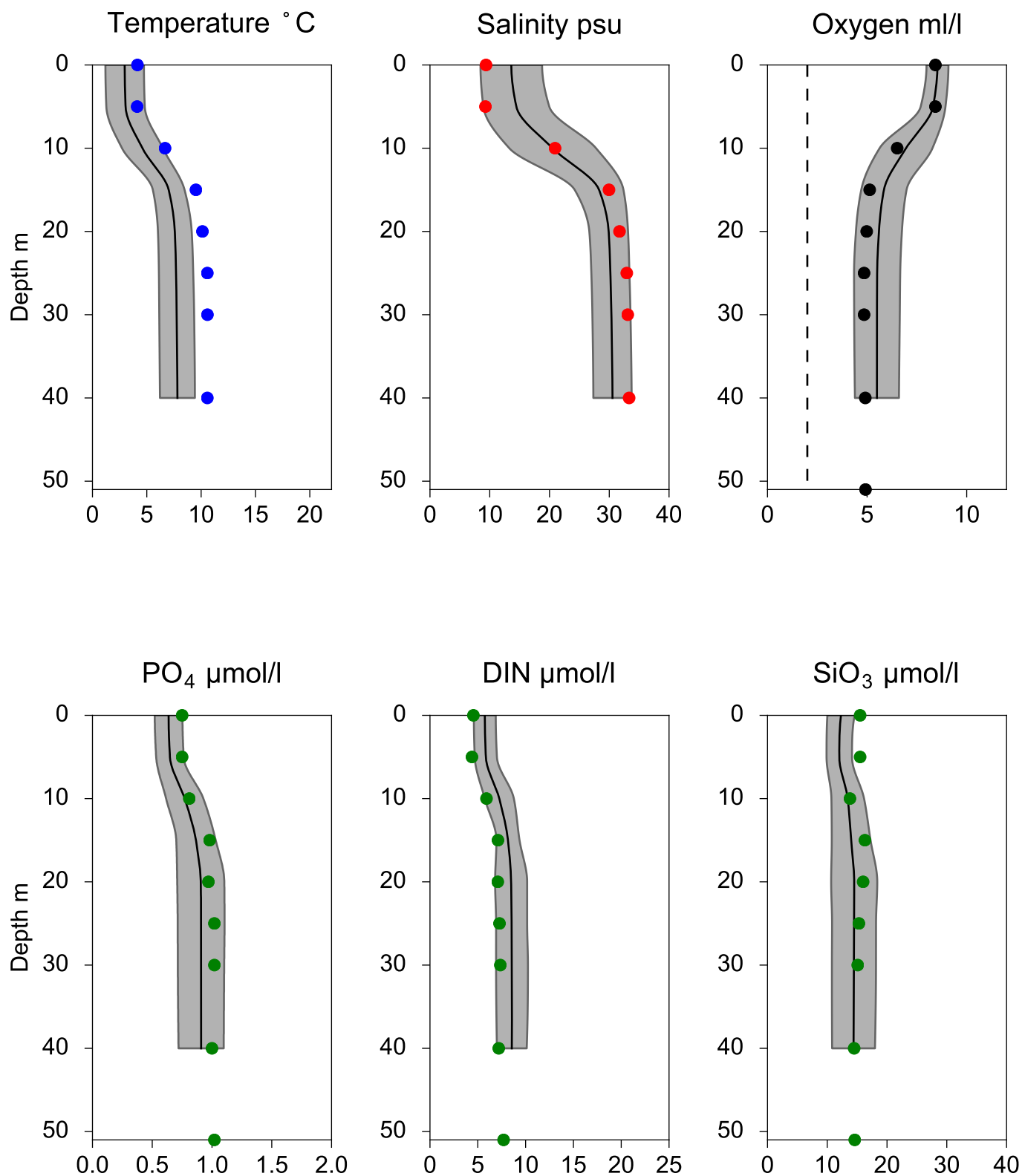


O₂ ml/l



Vertical profiles W LANDSKRONA January

— Mean 2001-2015 St.Dev. • 2021-01-10



STATION BY1 SURFACE WATER (0-10 m)

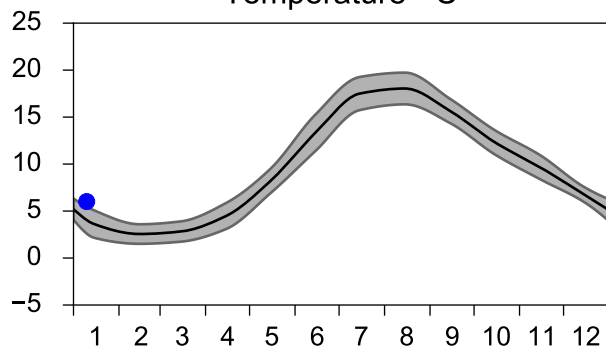
Annual Cycles

— Mean 2001-2015

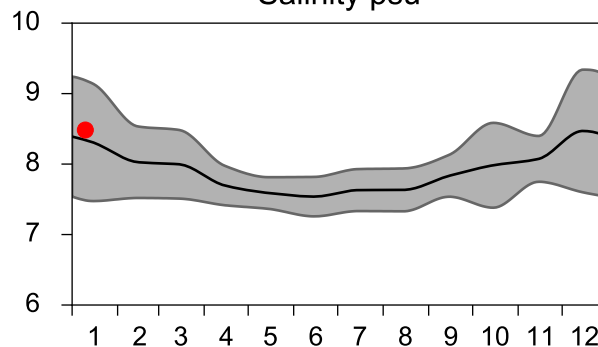
■ St.Dev.

● 2021

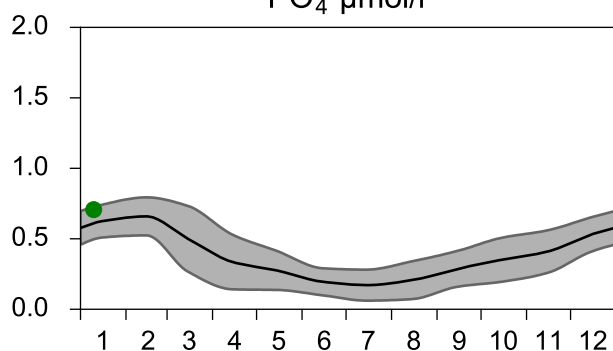
Temperature °C



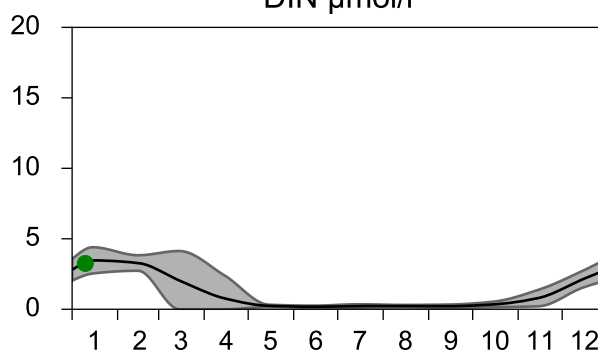
Salinity psu



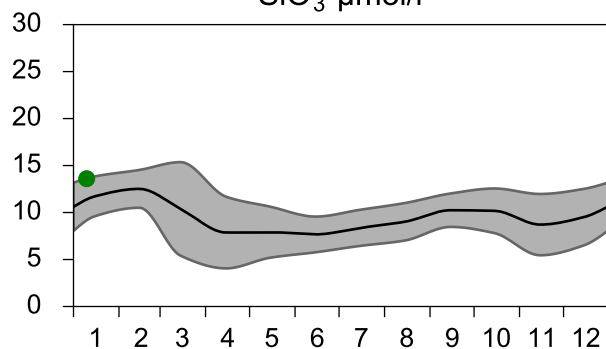
PO₄ μmol/l



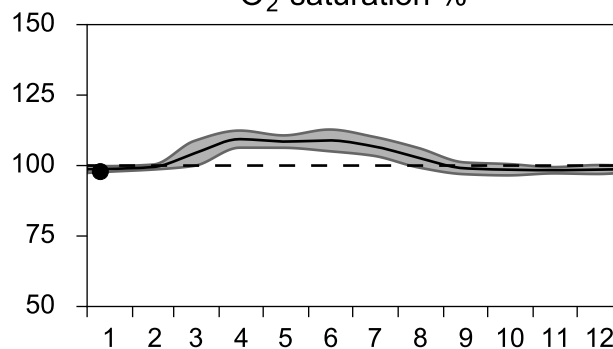
DIN μmol/l



SiO₃ μmol/l

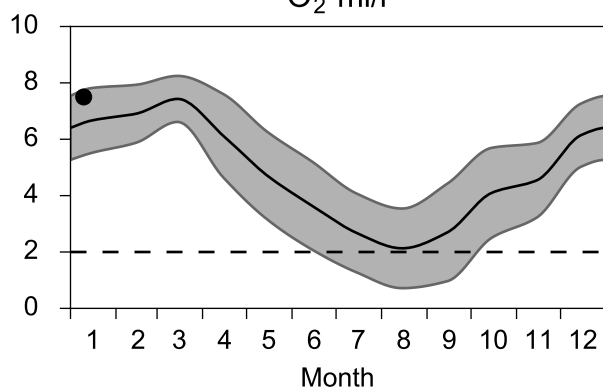


O₂ saturation %

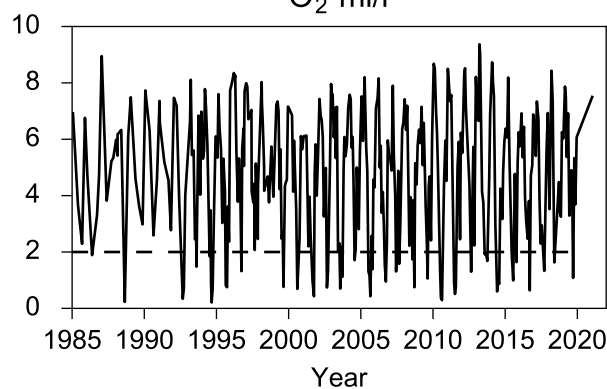


OXYGEN IN BOTTOM WATER (depth >= 40 m)

O₂ ml/l

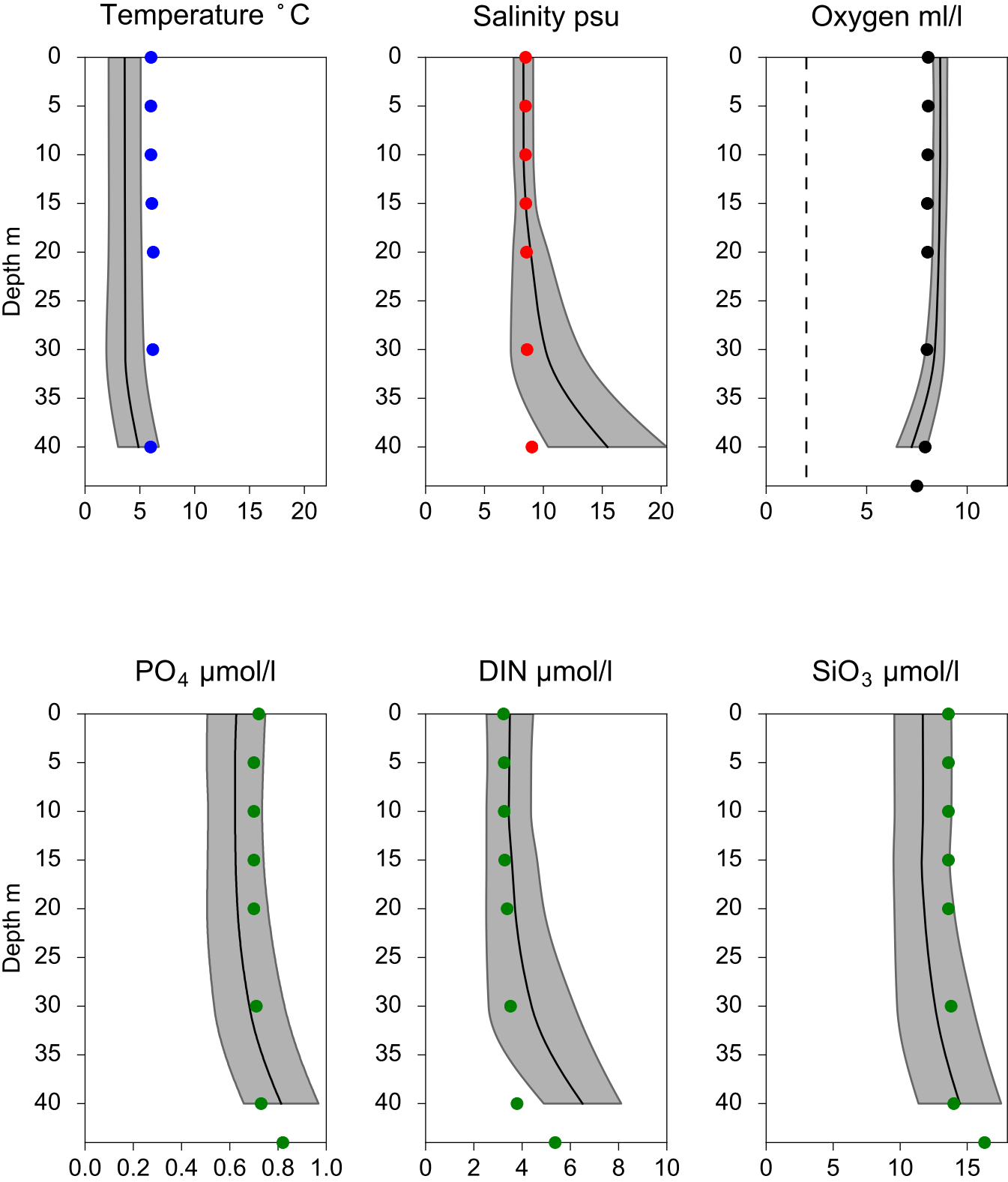


O₂ ml/l



Vertical profiles BY1
January

— Mean 2001-2015 St.Dev. • 2021-01-10



STATION BY2 ARKONA SURFACE WATER (0-10 m)

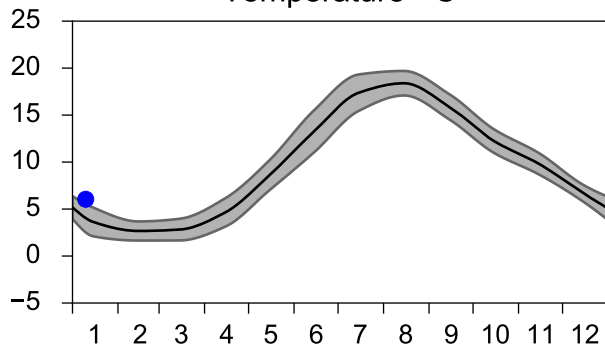
Annual Cycles

— Mean 2001-2015

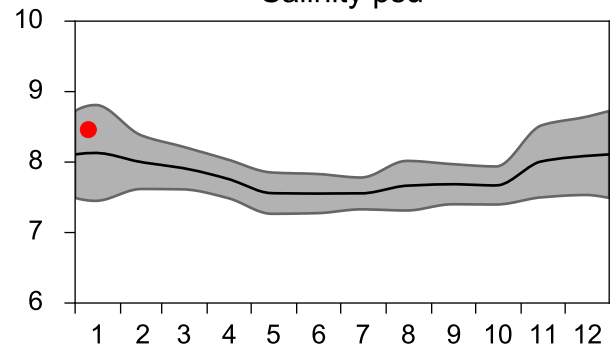
■ St.Dev.

● 2021

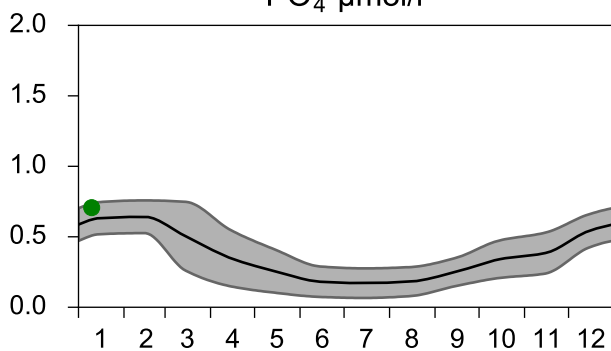
Temperature °C



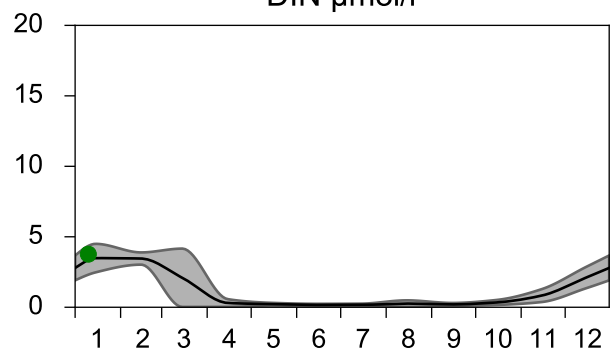
Salinity psu



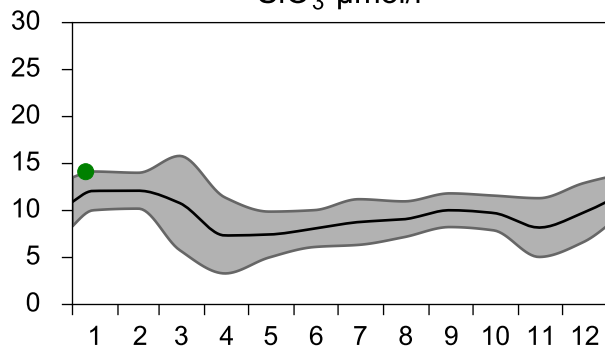
PO₄ µmol/l



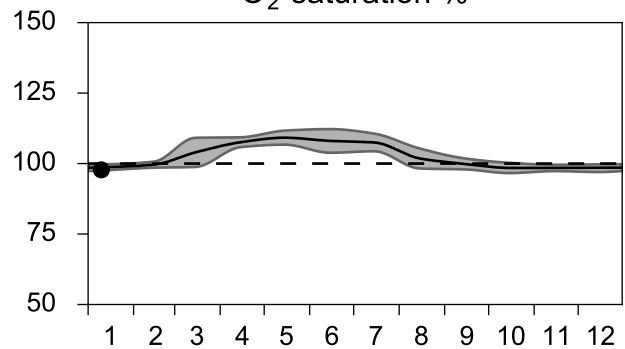
DIN µmol/l



SiO₃ µmol/l

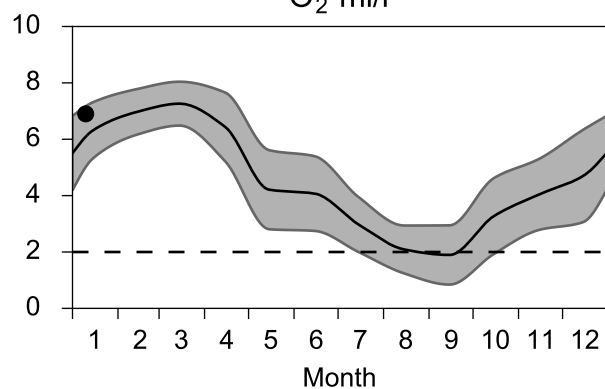


O₂ saturation %

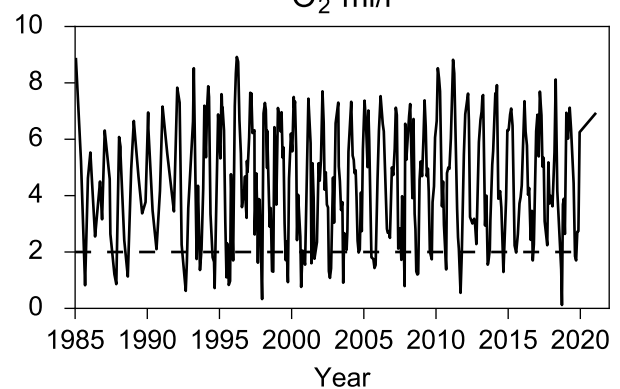


OXYGEN IN BOTTOM WATER (depth >= 40 m)

O₂ ml/l



O₂ ml/l

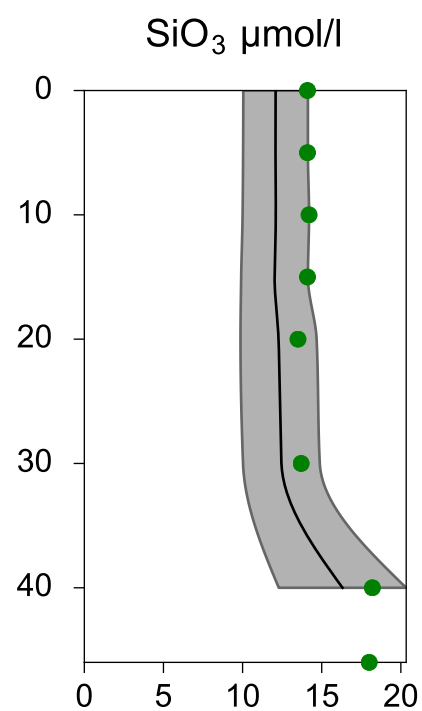
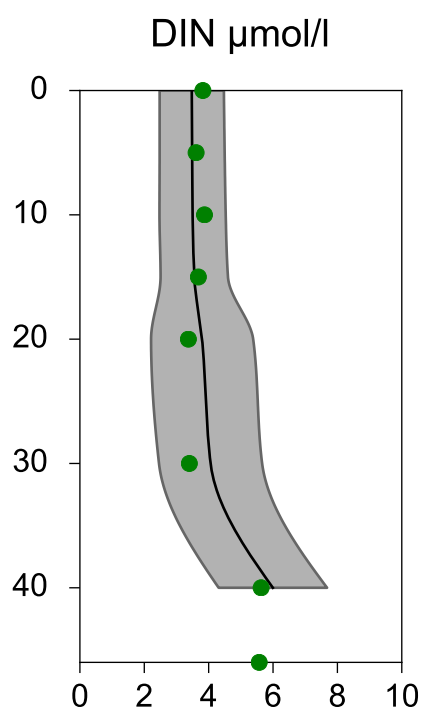
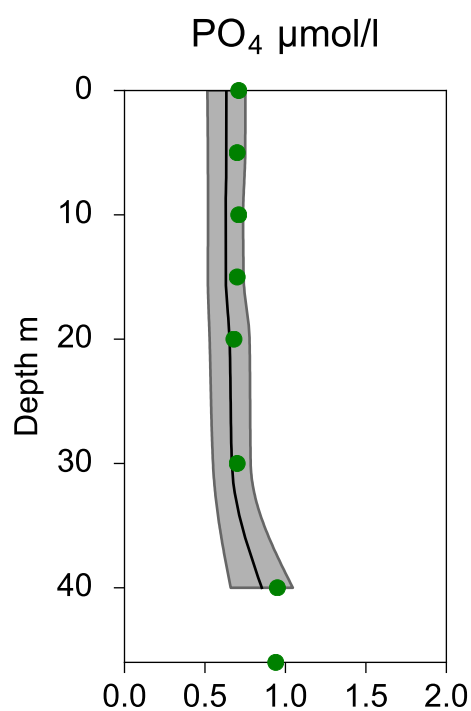
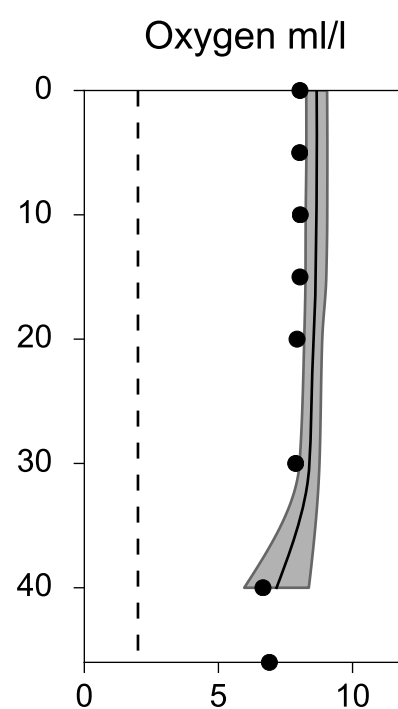
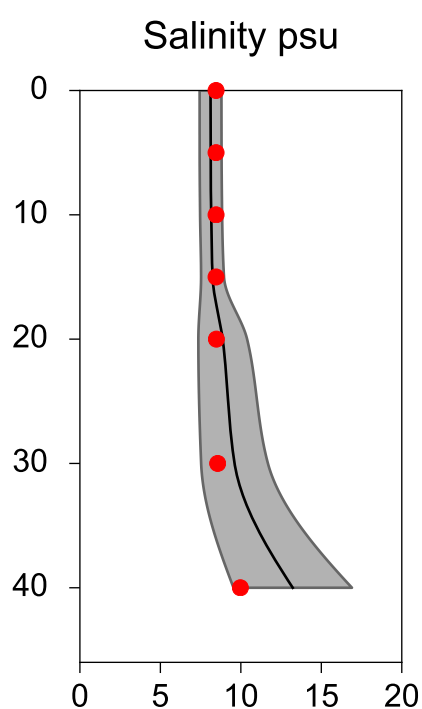
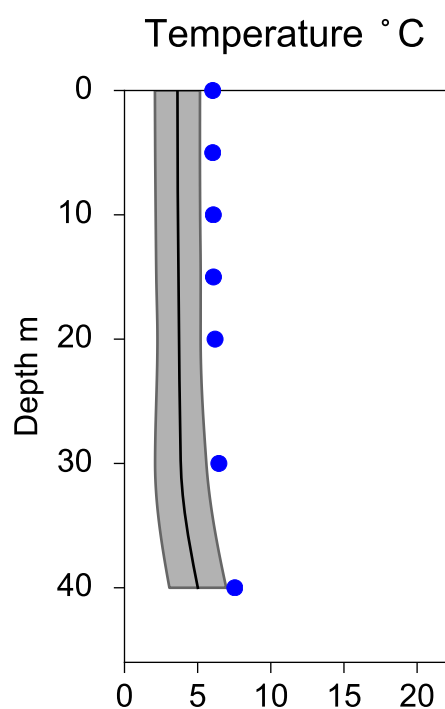


Vertical profiles BY2 ARKONA January

— Mean 2001-2015

■ St.Dev.

● 2021-01-10



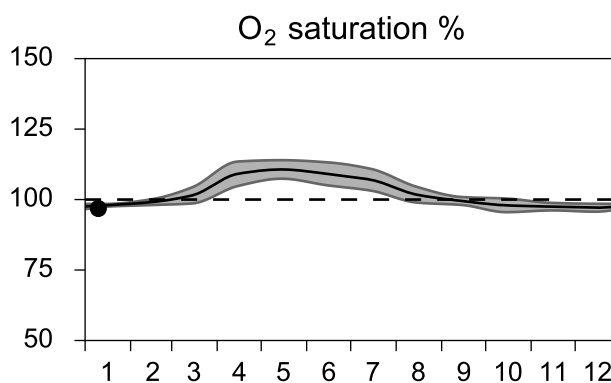
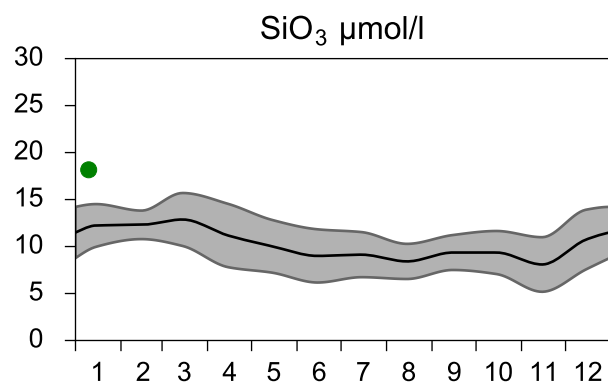
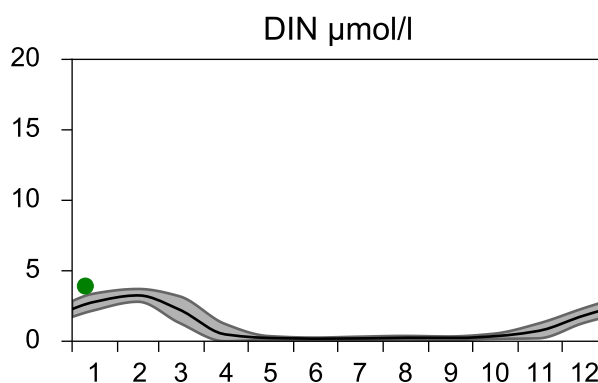
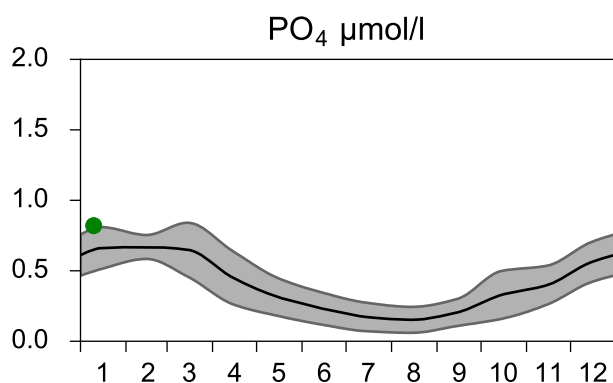
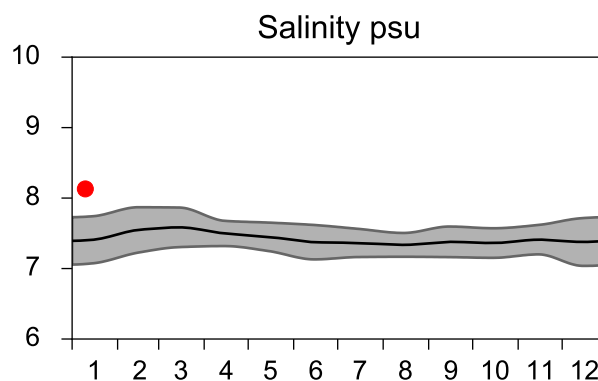
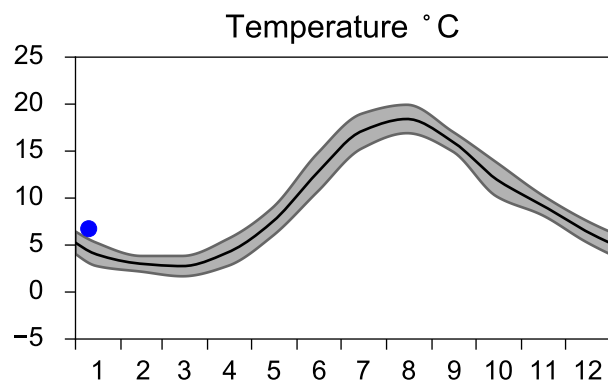
STATION BY4 CHRISTIANSÖ SURFACE WATER (0-10 m)

Annual Cycles

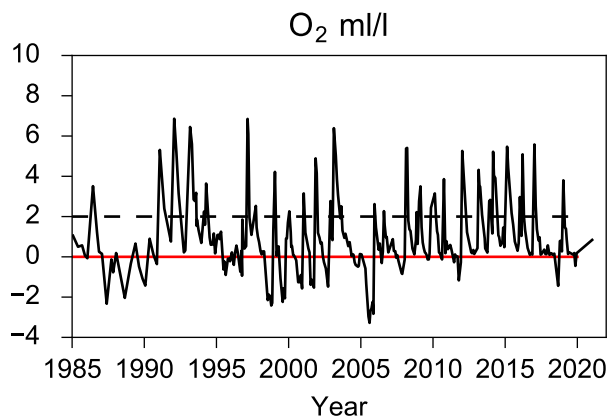
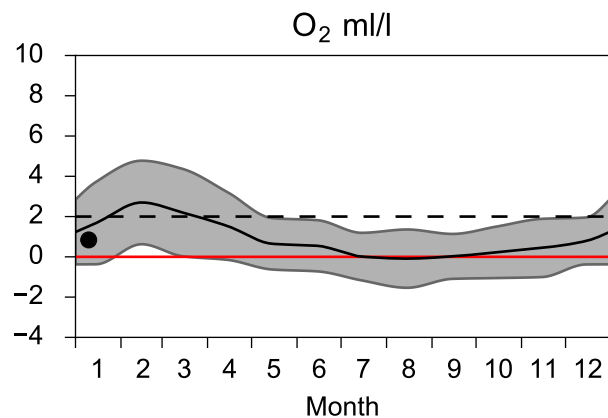
— Mean 2001-2015

■ St.Dev.

● 2021



OXYGEN IN BOTTOM WATER (depth >= 80 m)

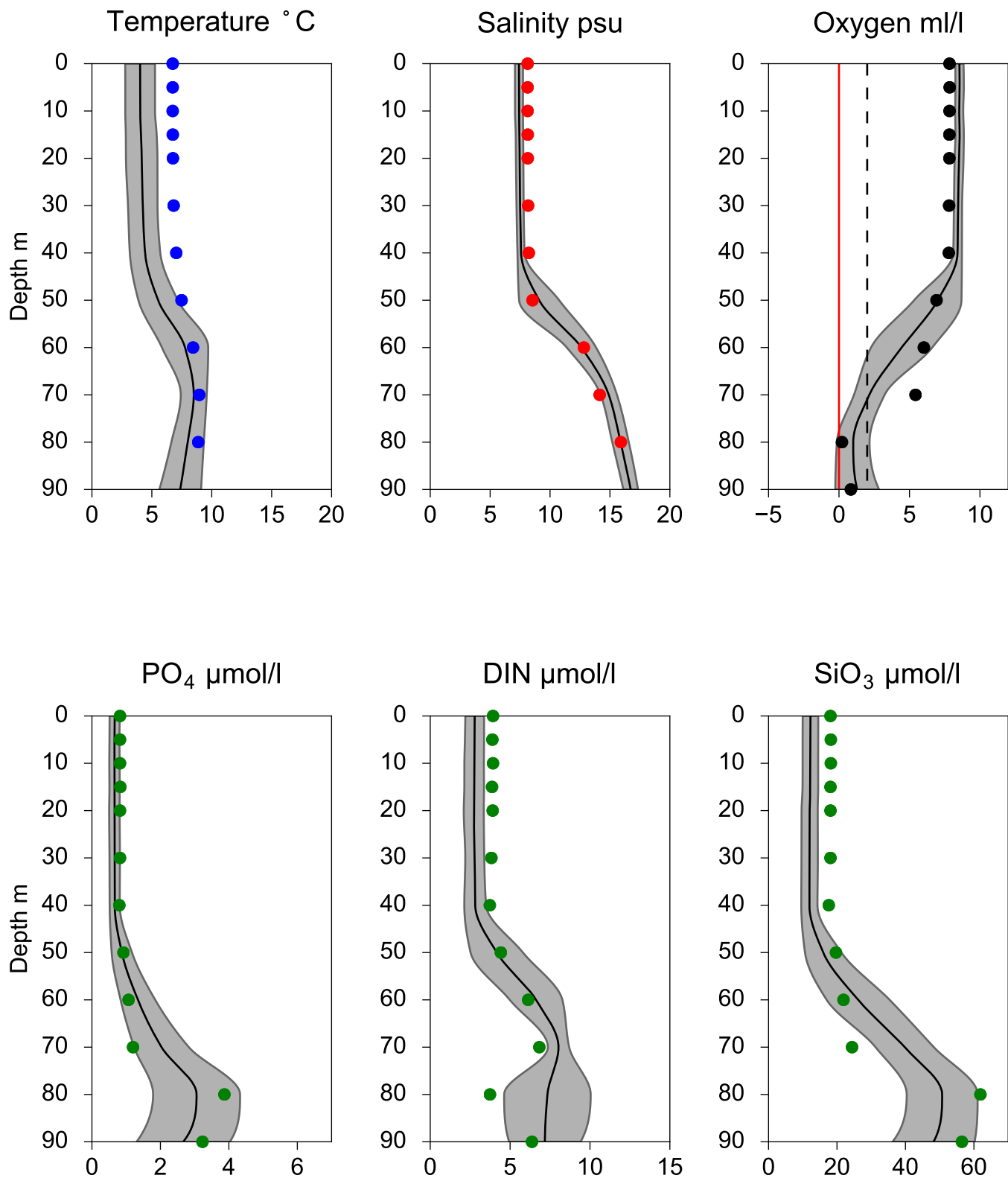


Vertical profiles BY4 CHRISTIANSÖ January

— Mean 2001-2015

■ St.Dev.

● 2021-01-10



STATION BY5 BORNHOLMSDJ SURFACE WATER (0-10 m)

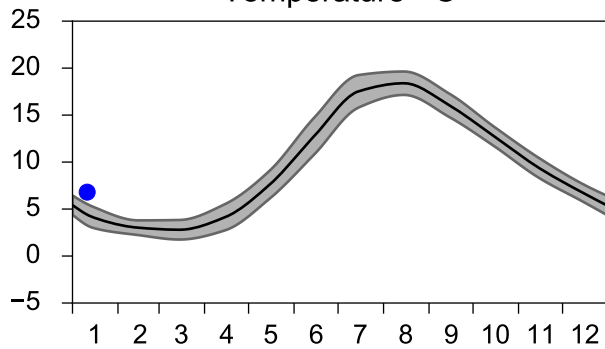
Annual Cycles

— Mean 2001-2015

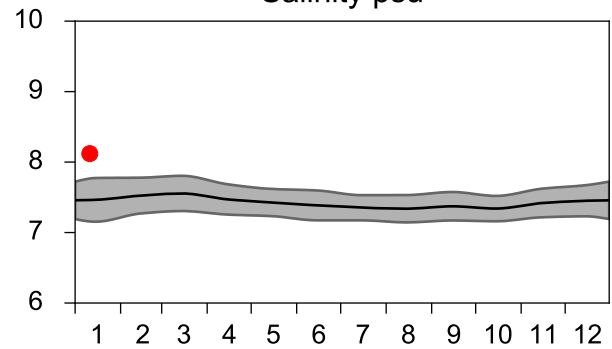
■ St.Dev.

● 2021

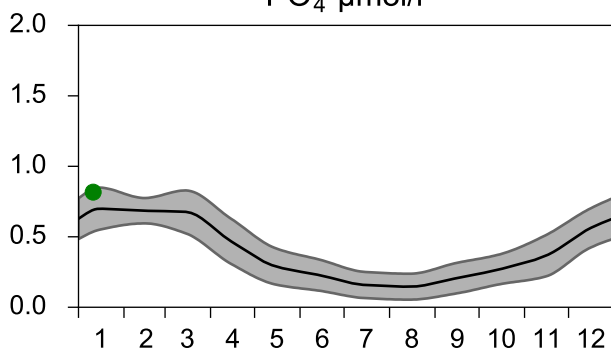
Temperature °C



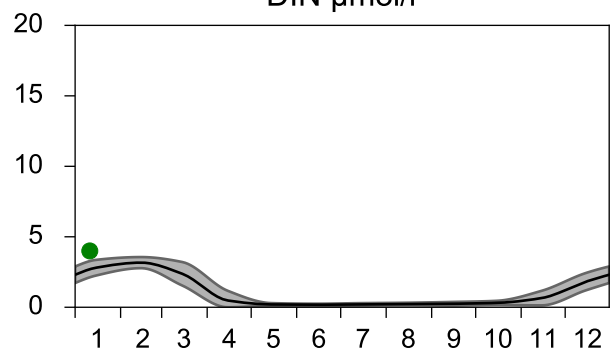
Salinity psu



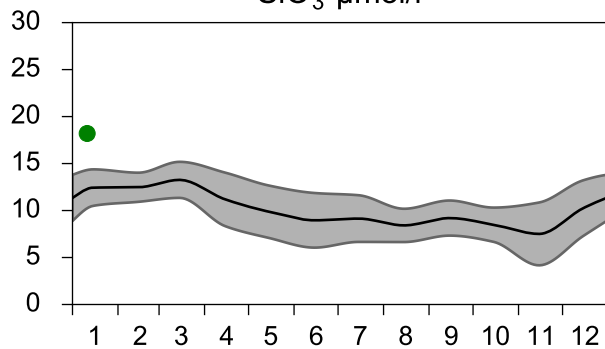
PO₄ µmol/l



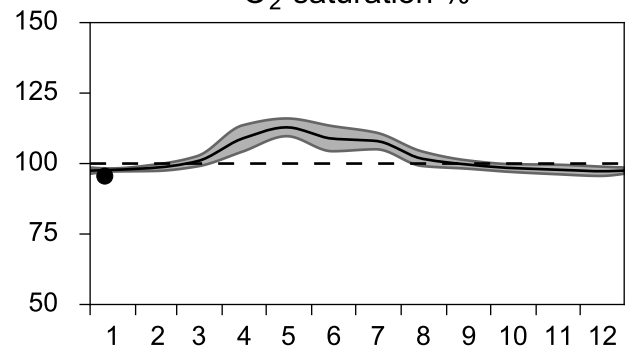
DIN µmol/l



SiO₃ µmol/l

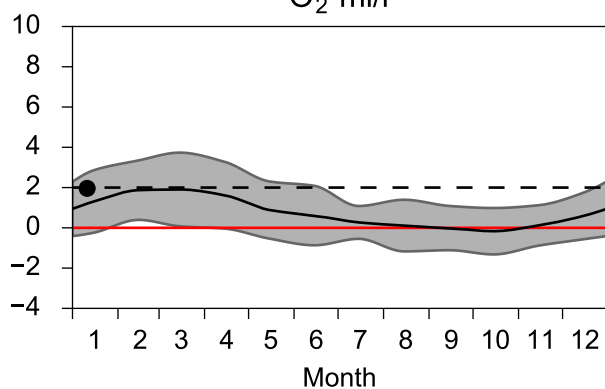


O₂ saturation %

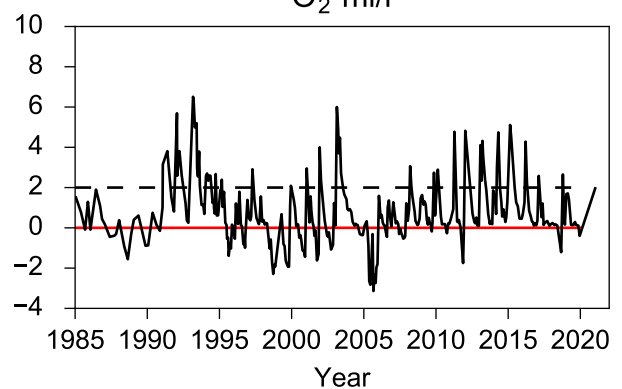


OXYGEN IN BOTTOM WATER (depth >= 80 m)

O₂ ml/l

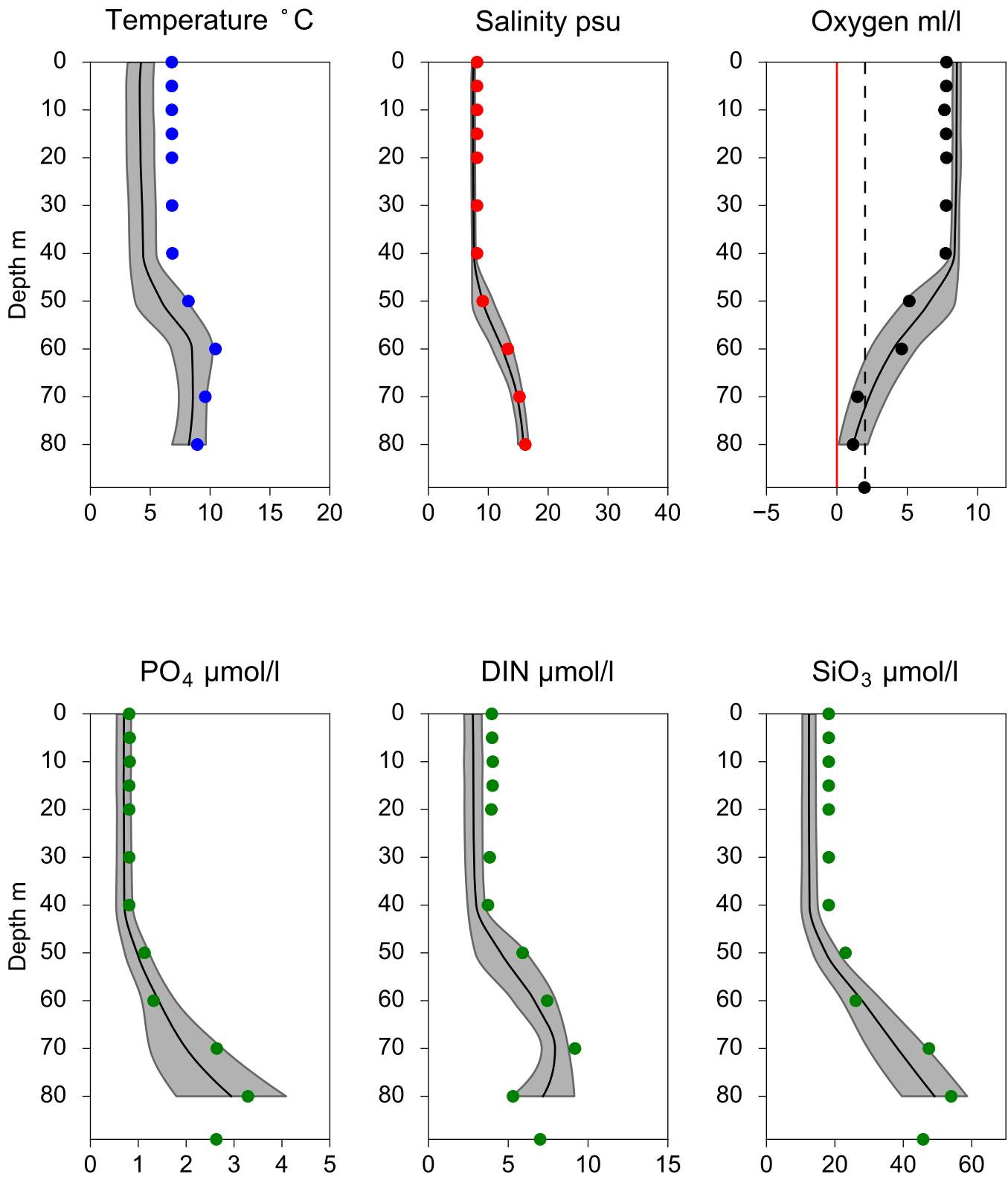


O₂ ml/l



Vertical profiles BY5 BORNHOLMSDJ January

— Mean 2001-2015 St.Dev. • 2021-01-11



STATION BCS III-10 SURFACE WATER (0-10 m)

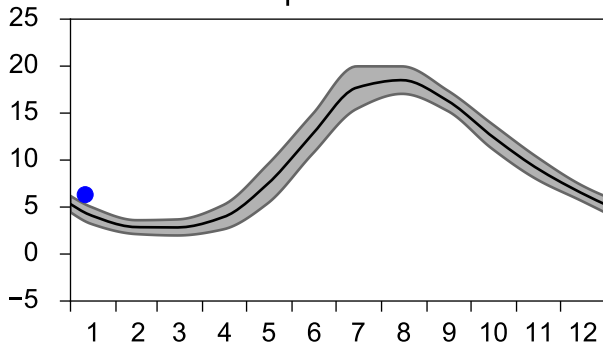
Annual Cycles

— Mean 2001-2015

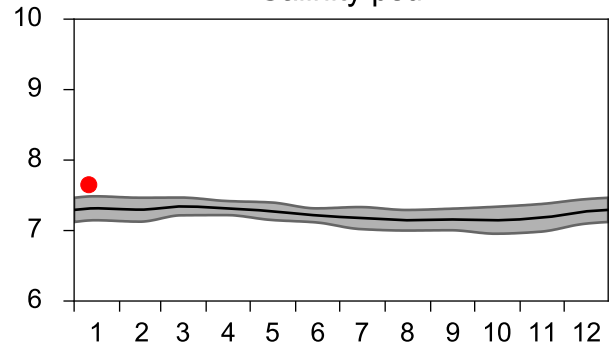
■ St.Dev.

● 2021

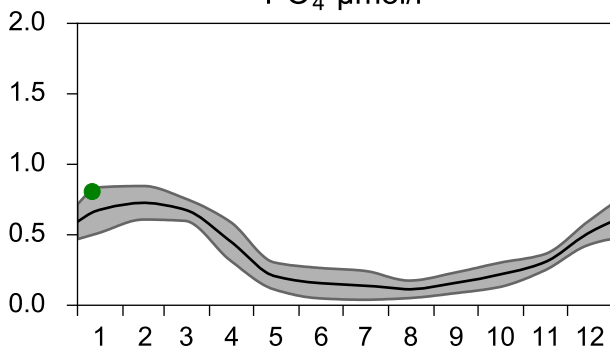
Temperature °C



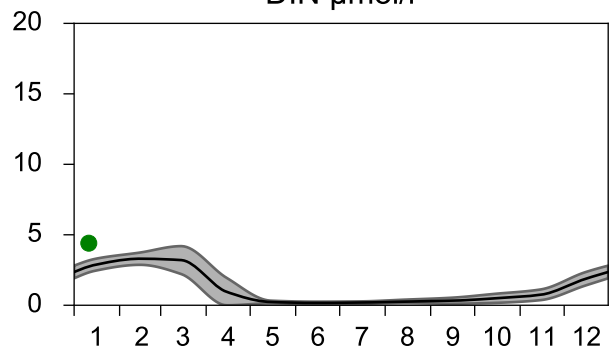
Salinity psu



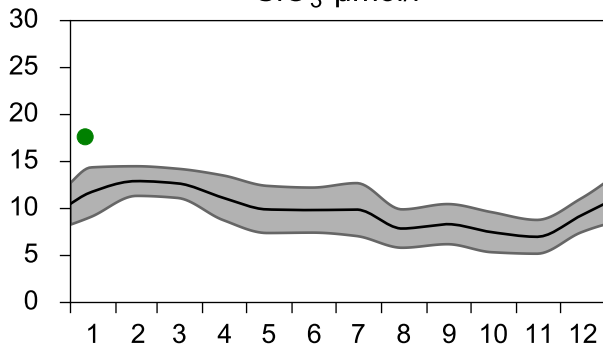
PO₄ µmol/l



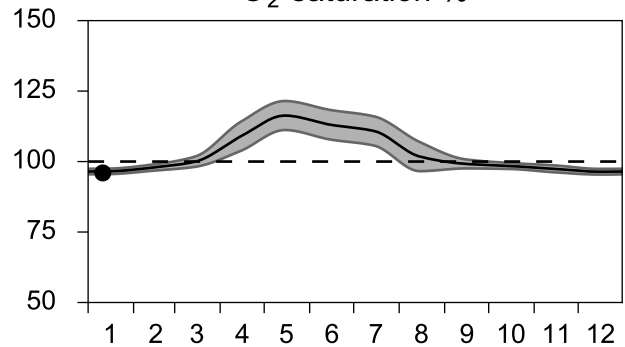
DIN µmol/l



SiO₃ µmol/l

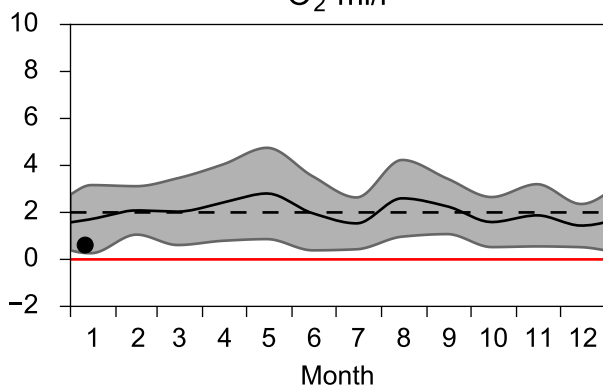


O₂ saturation %

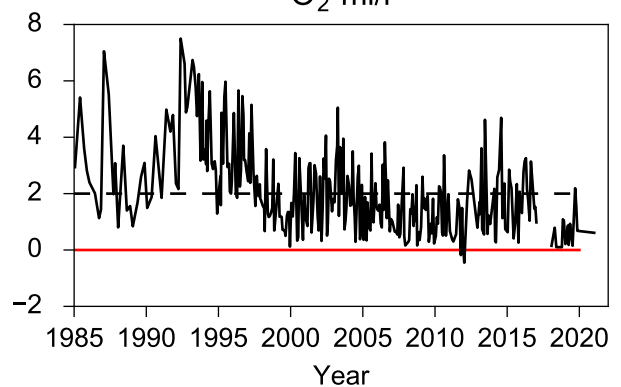


OXYGEN IN BOTTOM WATER (depth >= 80 m)

O₂ ml/l



O₂ ml/l

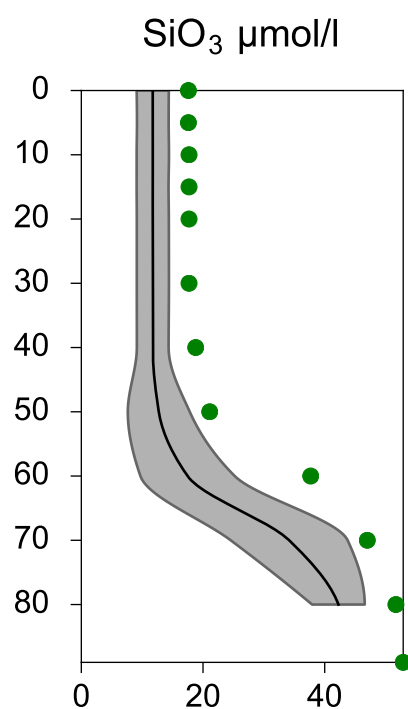
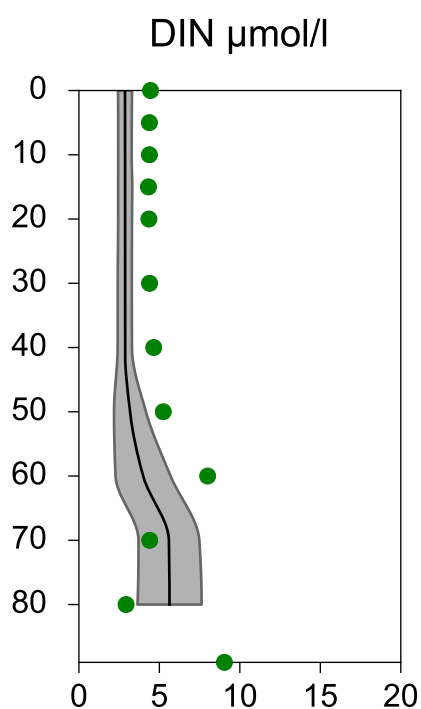
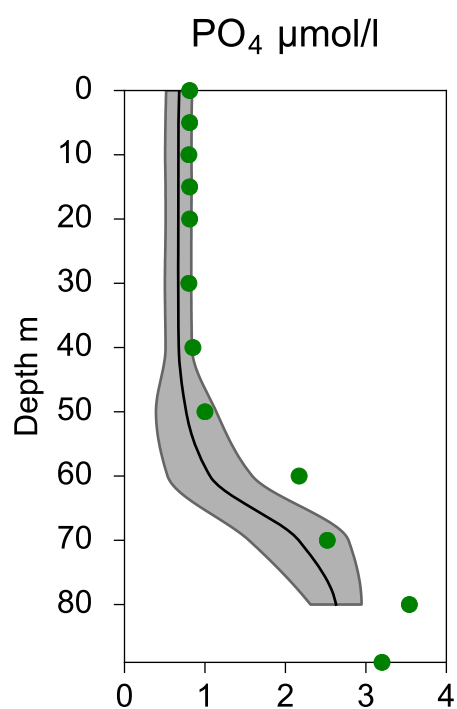
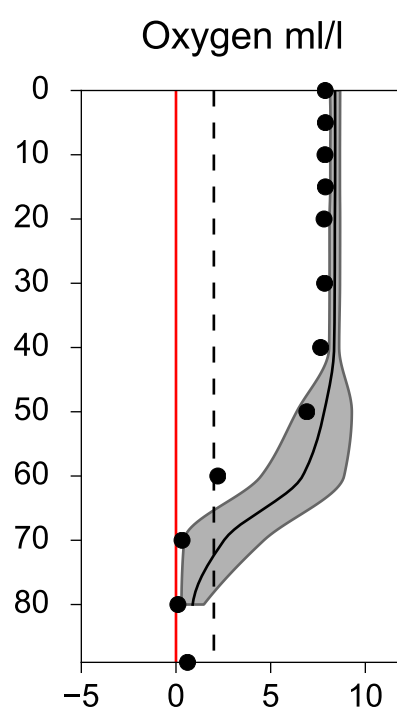
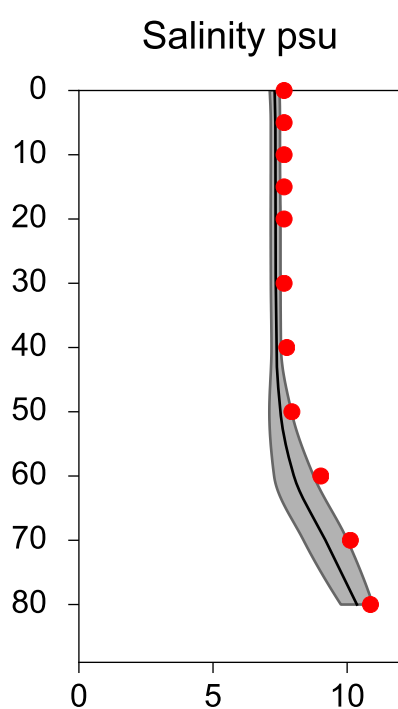
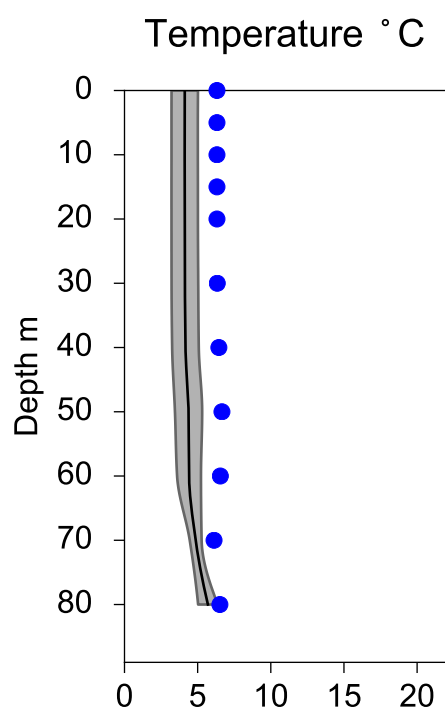


Vertical profiles BCS III-10 January

— Mean 2001-2015

■ St.Dev.

● 2021-01-11



STATION BY10 SURFACE WATER (0-10 m)

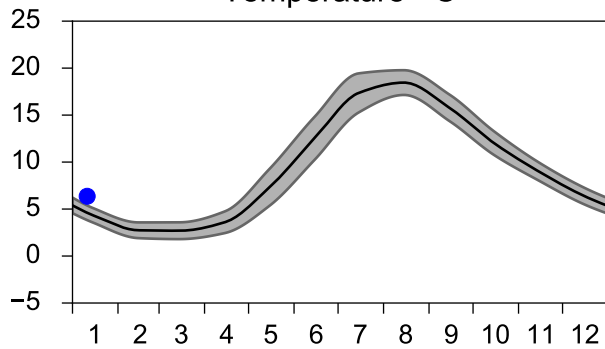
Annual Cycles

— Mean 2001-2015

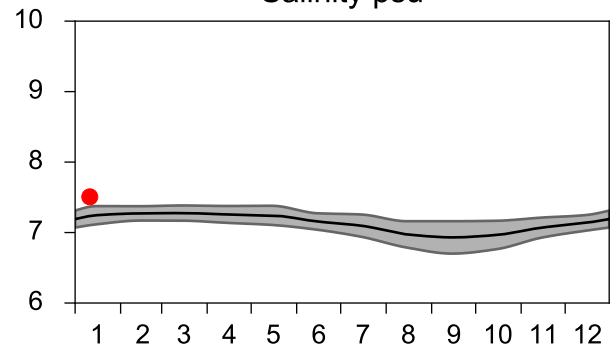
■ St.Dev.

● 2021

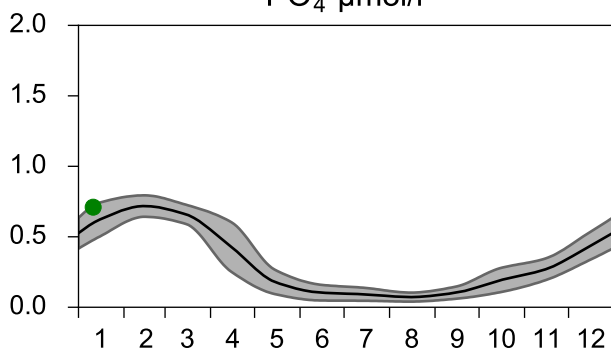
Temperature °C



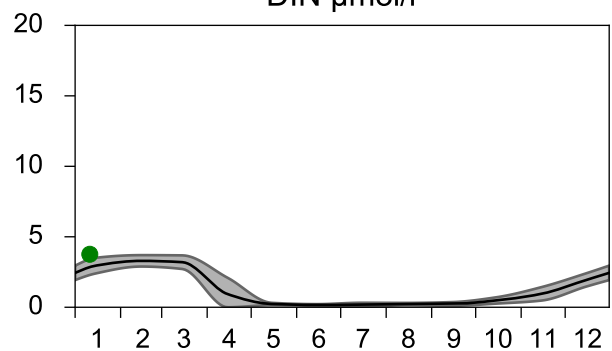
Salinity psu



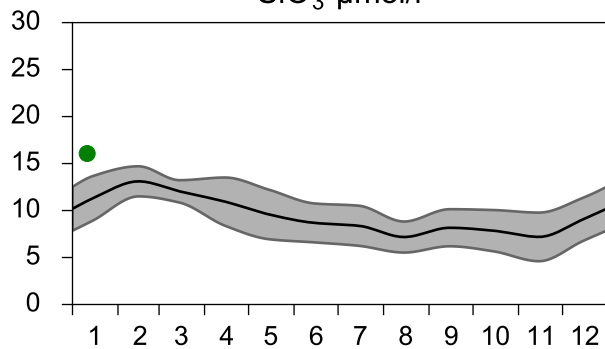
PO₄ μmol/l



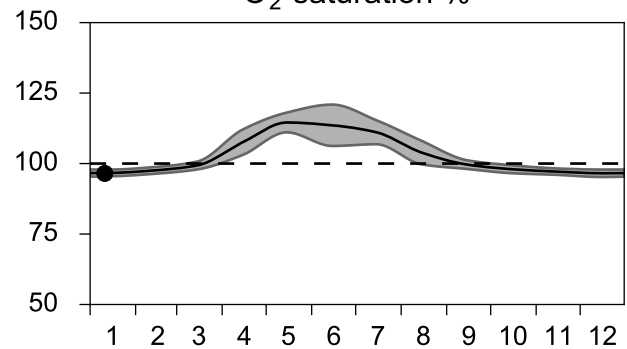
DIN μmol/l



SiO₃ μmol/l

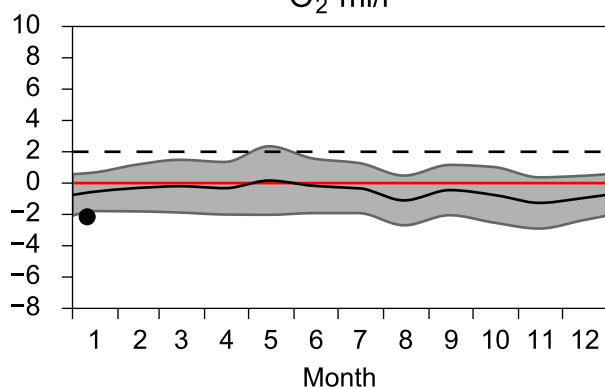


O₂ saturation %

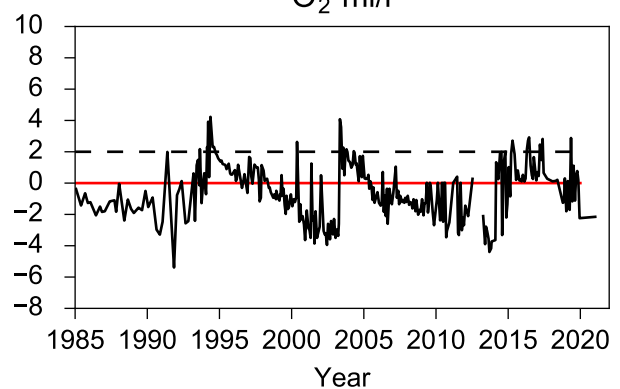


OXYGEN IN BOTTOM WATER (depth >= 125 m)

O₂ ml/l



O₂ ml/l

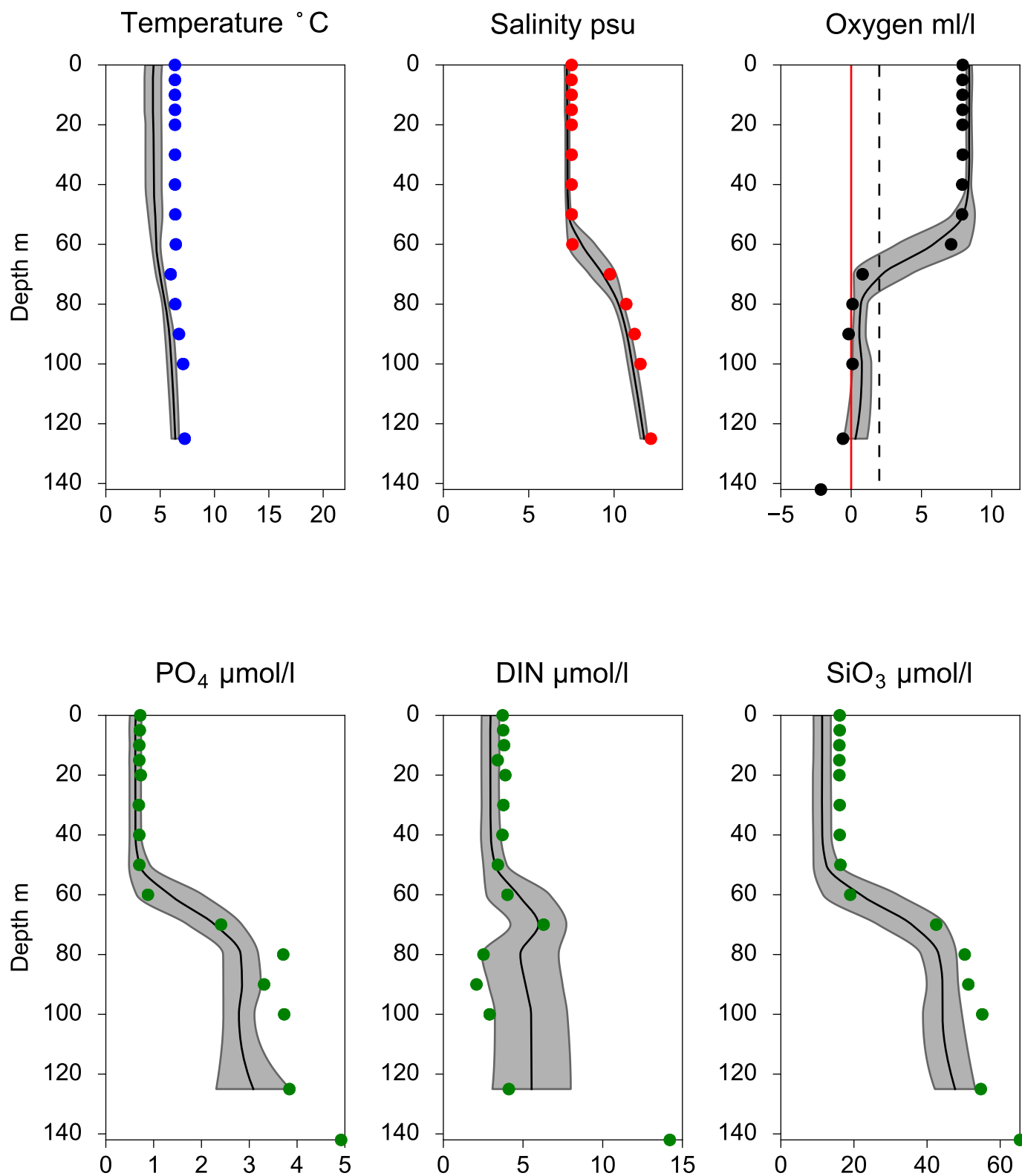


Vertical profiles BY10 January

— Mean 2001-2015

■ St.Dev.

● 2021-01-11



STATION BY15 GOTLANDSDJ SURFACE WATER (0-10 m)

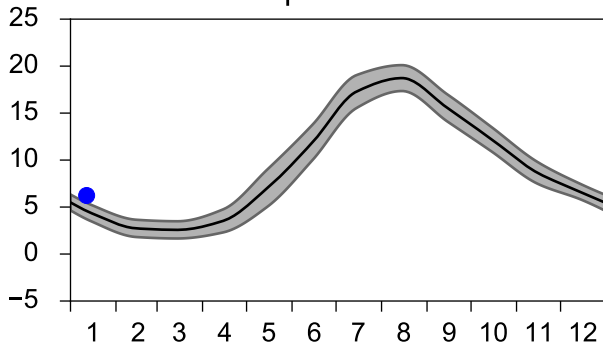
Annual Cycles

— Mean 2001-2015

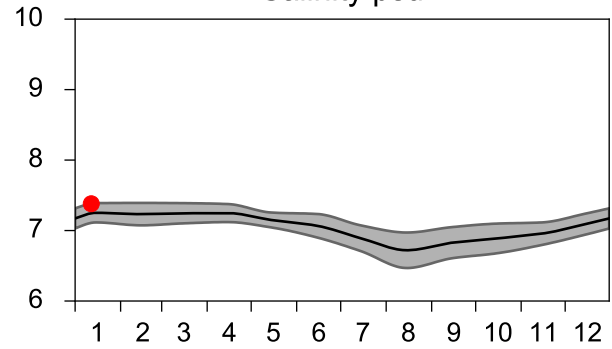
■ St.Dev.

● 2021

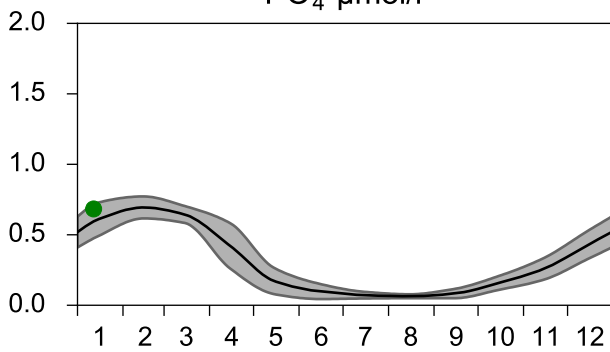
Temperature °C



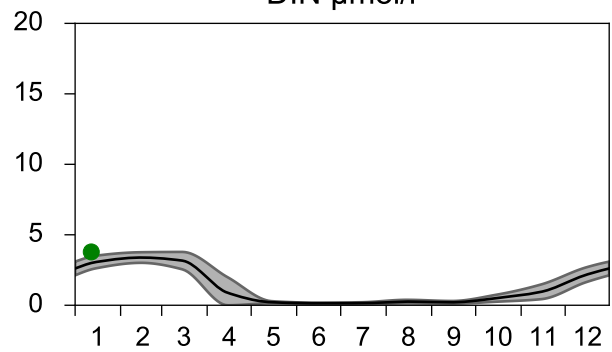
Salinity psu



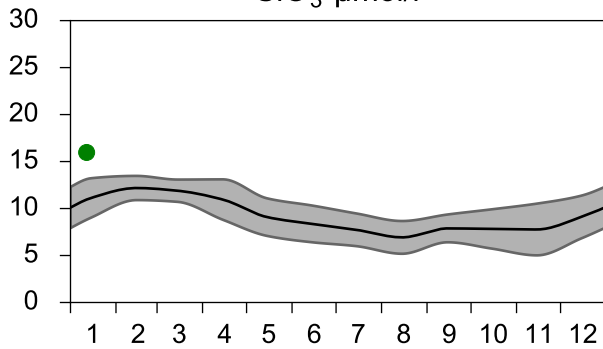
PO₄ µmol/l



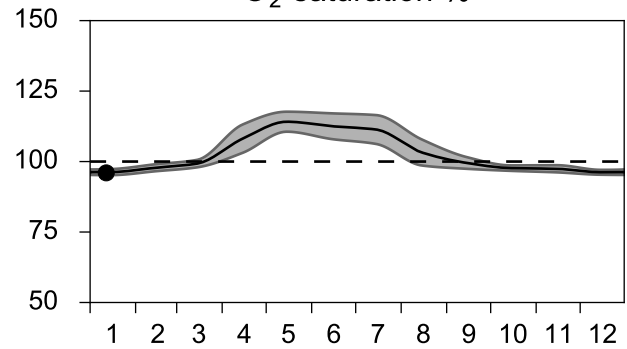
DIN µmol/l



SiO₃ µmol/l

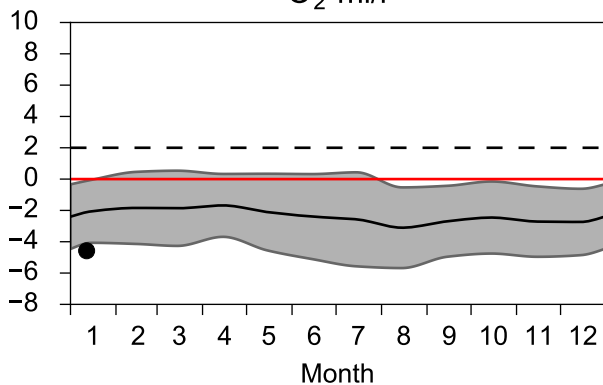


O₂ saturation %

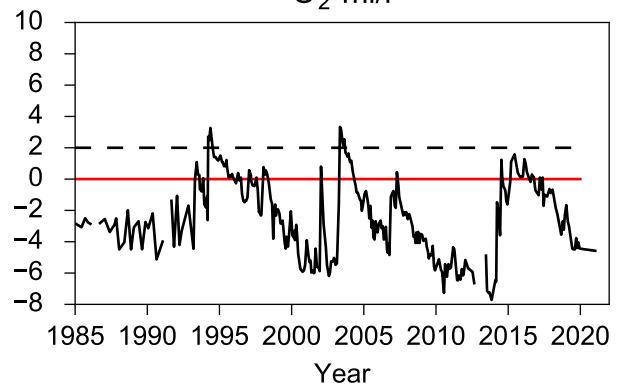


OXYGEN IN BOTTOM WATER (depth >= 225 m)

O₂ ml/l

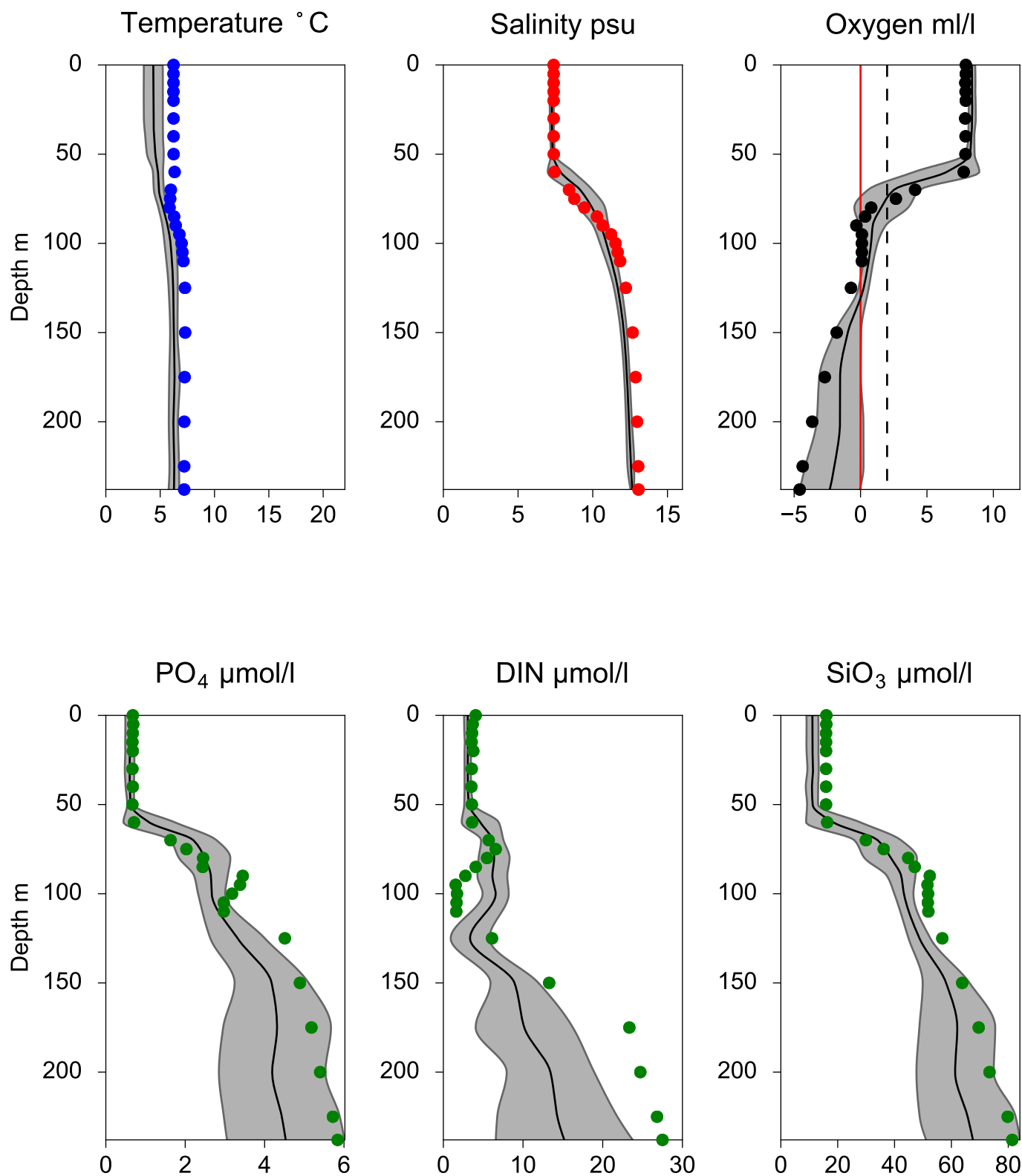


O₂ ml/l



Vertical profiles BY15 GOTLANDSDJ January

— Mean 2001-2015 St.Dev. • 2021-01-12



STATION BY29 / LL19 SURFACE WATER (0-10 m)

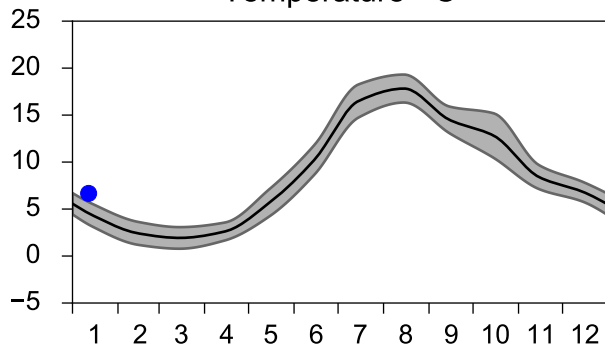
Annual Cycles

— Mean 2001-2015

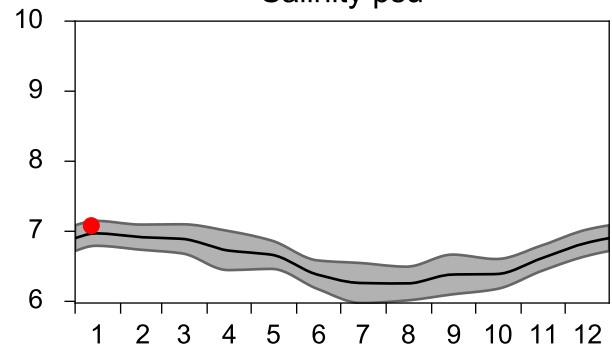
■ St.Dev.

● 2021

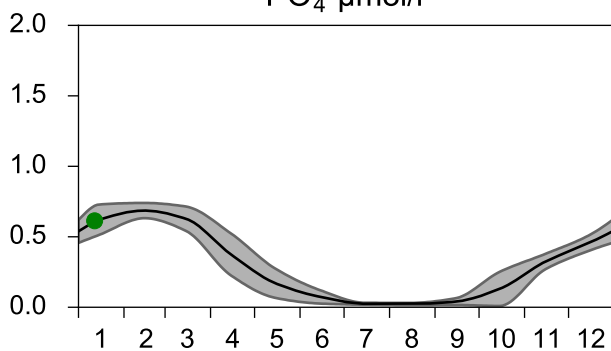
Temperature °C



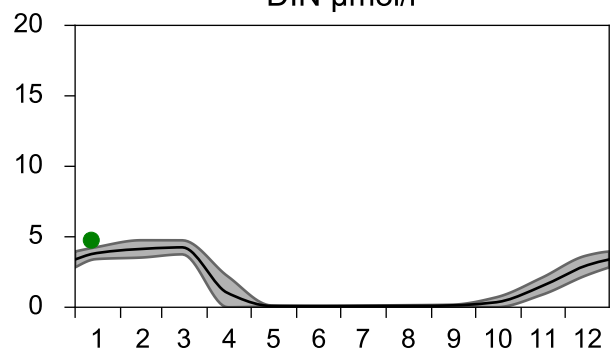
Salinity psu



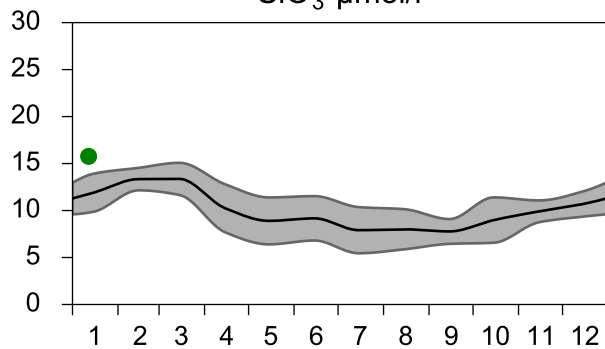
PO₄ µmol/l



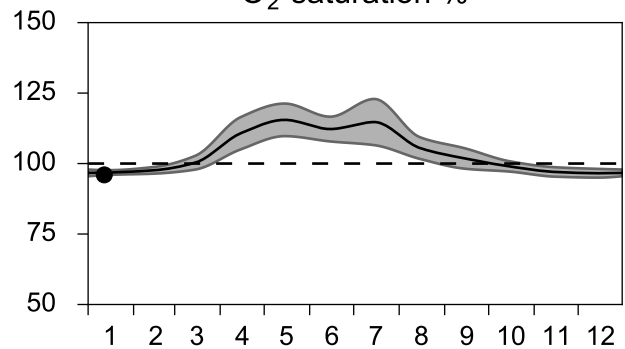
DIN µmol/l



SiO₃ µmol/l

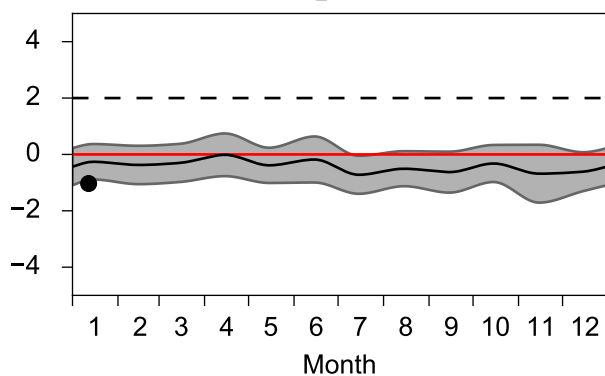


O₂ saturation %

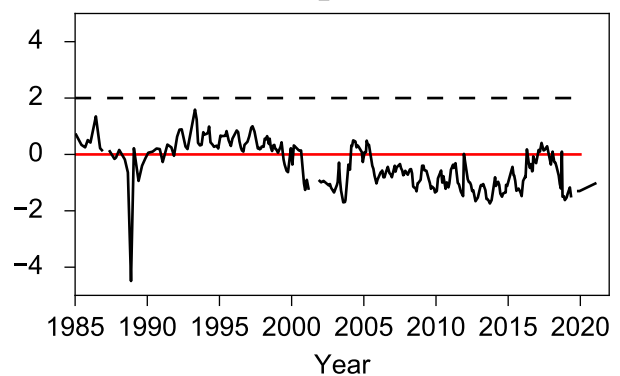


OXYGEN IN BOTTOM WATER (depth >= 150 m)

O₂ ml/l



O₂ ml/l

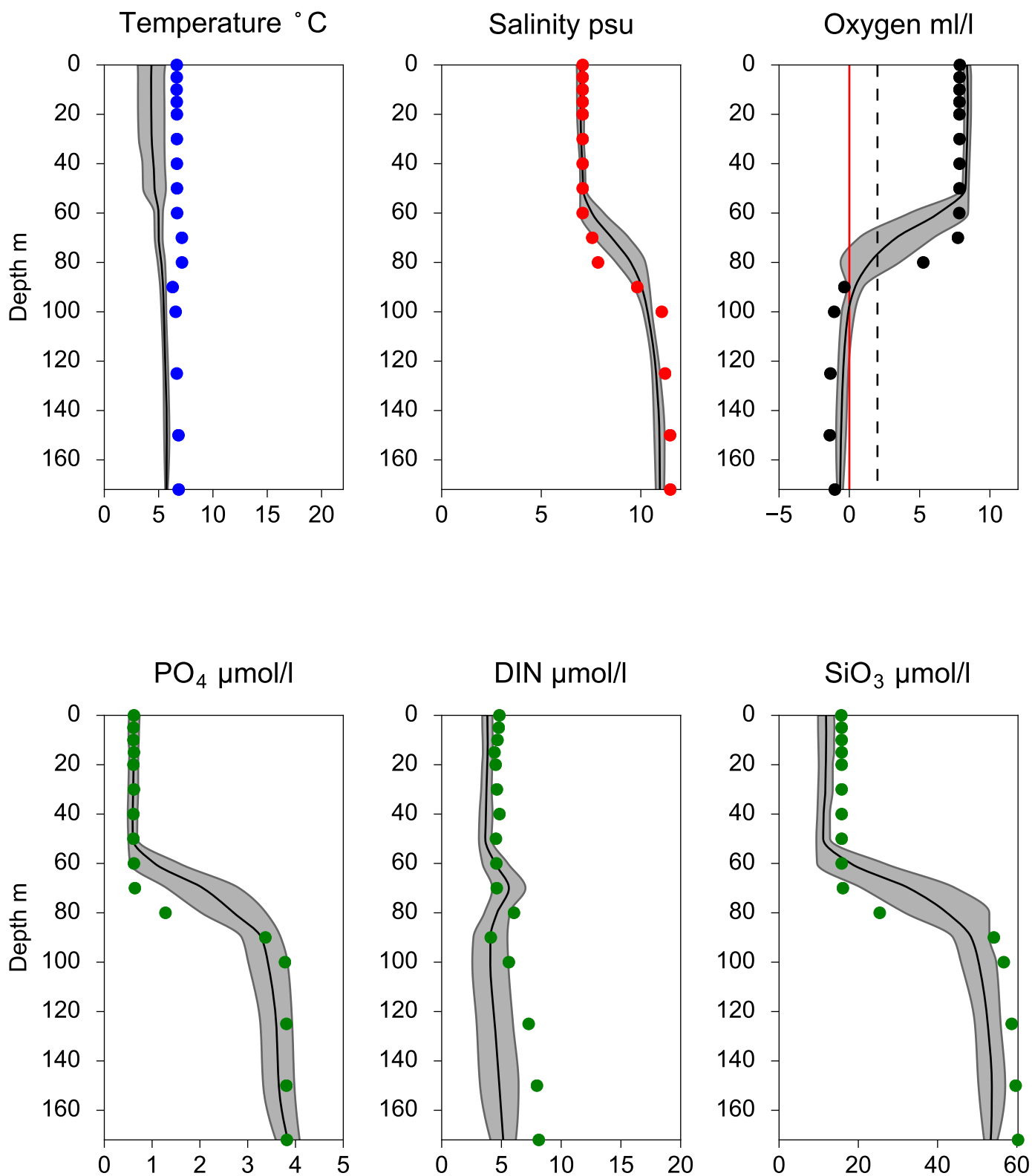


Vertical profiles BY29 / LL19 January

— Mean 2001-2015

■ St.Dev.

● 2021-01-12



STATION BY31 LANDSORTSDJ SURFACE WATER (0-10 m)

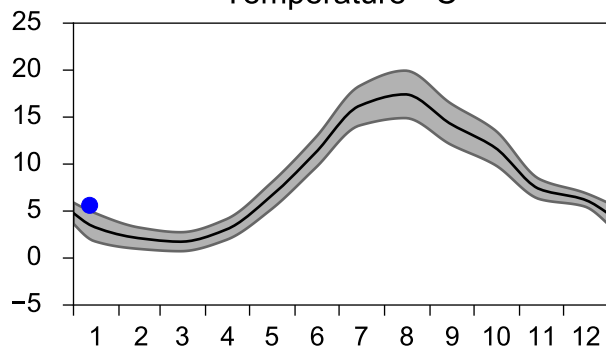
Annual Cycles

— Mean 2001-2015

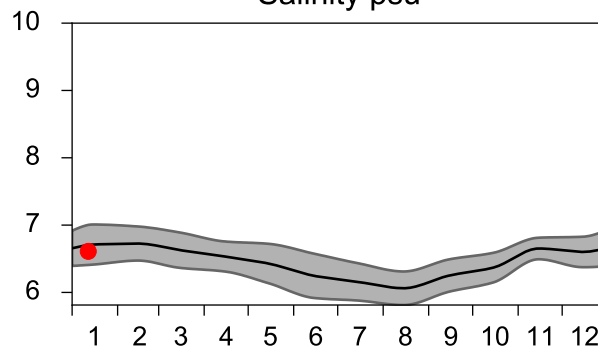
■ St.Dev.

● 2021

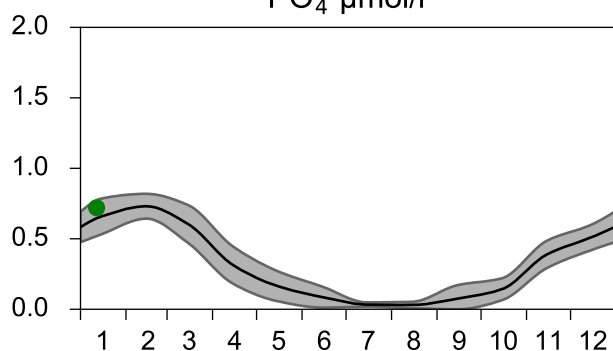
Temperature °C



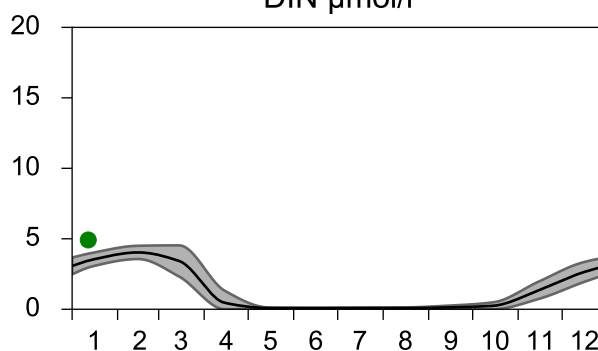
Salinity psu



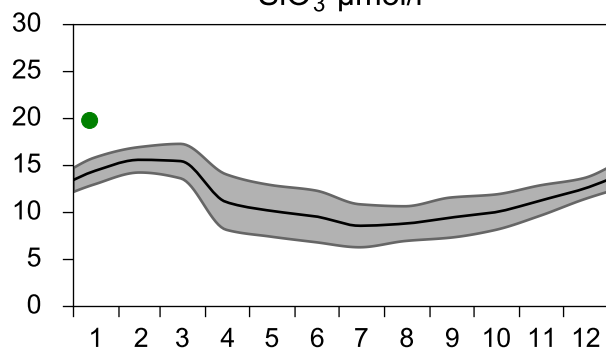
PO₄ µmol/l



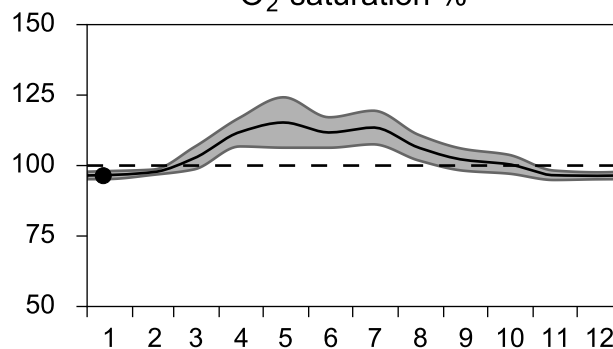
DIN µmol/l



SiO₃ µmol/l

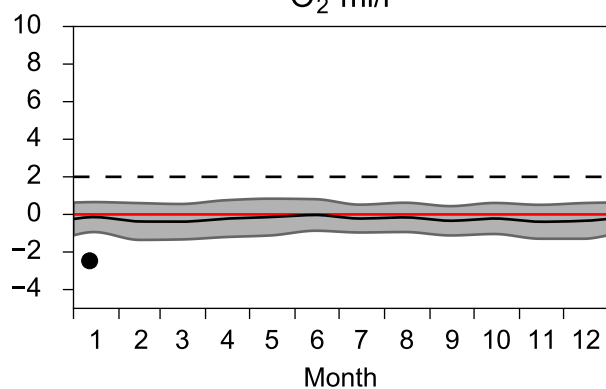


O₂ saturation %

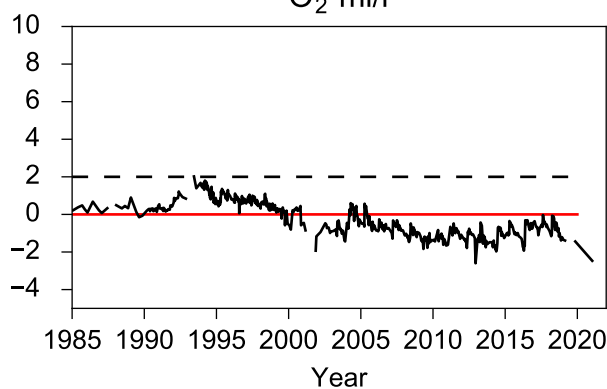


OXYGEN IN BOTTOM WATER (depth >= 419 m)

O₂ ml/l

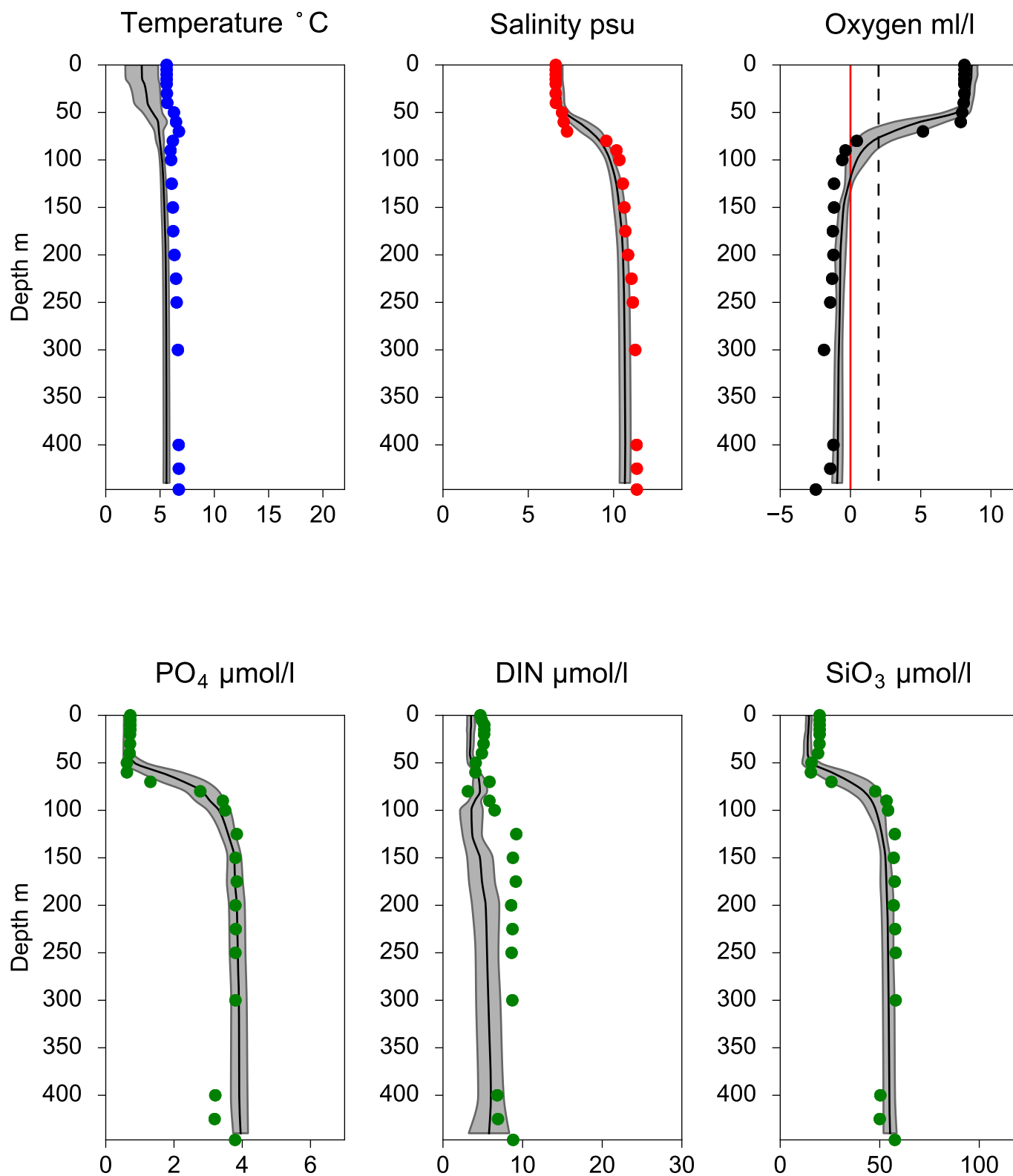


O₂ ml/l



Vertical profiles BY31 LANDSORTSDJ January

— Mean 2001-2015 St.Dev. • 2021-01-12



STATION BY32 NORRKÖPINGSDJ SURFACE WATER (0-10 m)

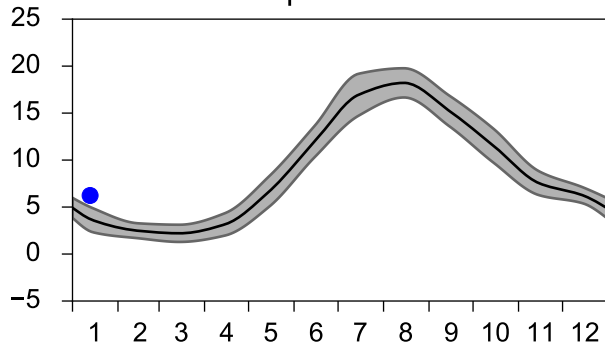
Annual Cycles

— Mean 2001-2015

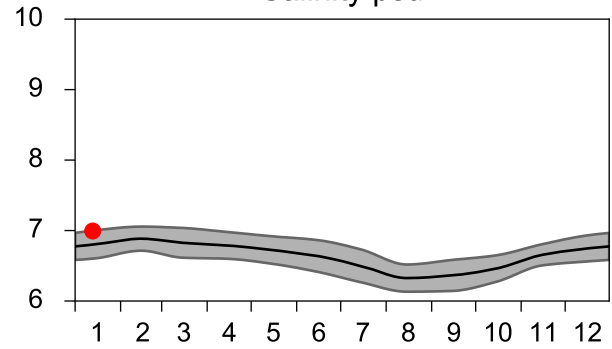
■ St.Dev.

● 2021

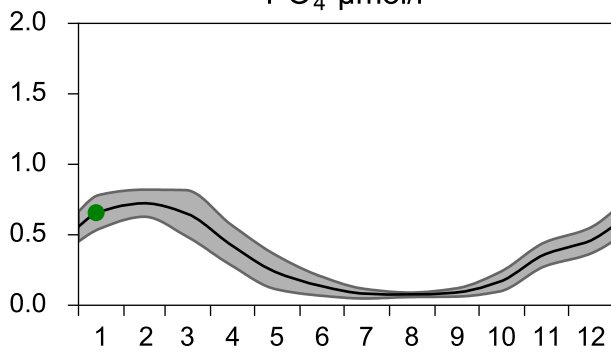
Temperature °C



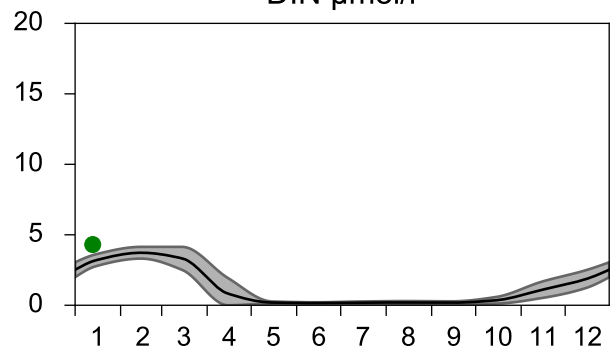
Salinity psu



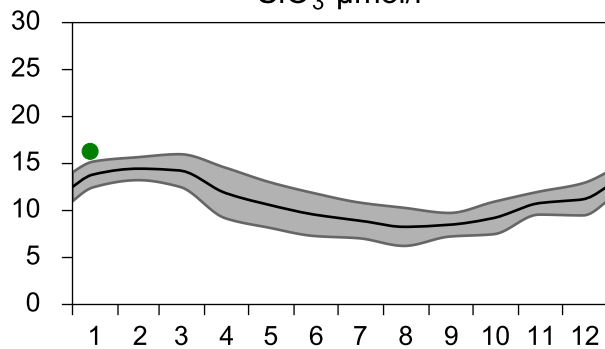
PO₄ µmol/l



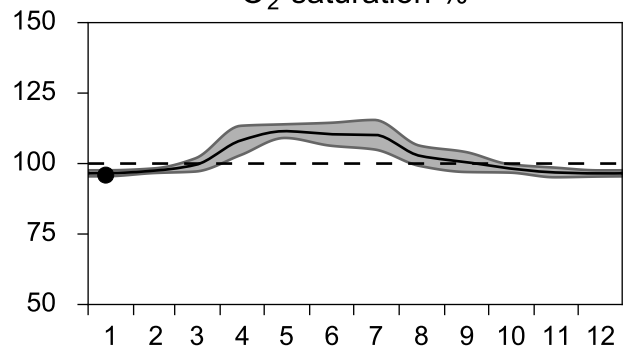
DIN µmol/l



SiO₃ µmol/l

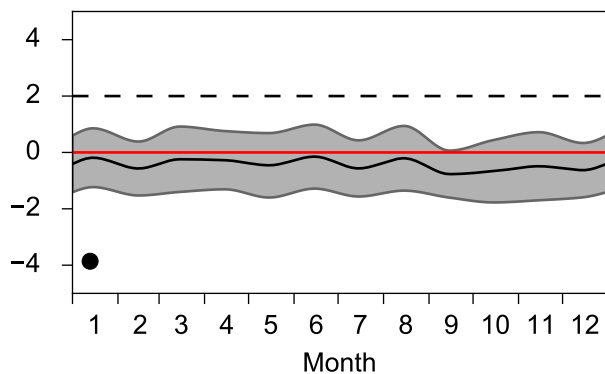


O₂ saturation %

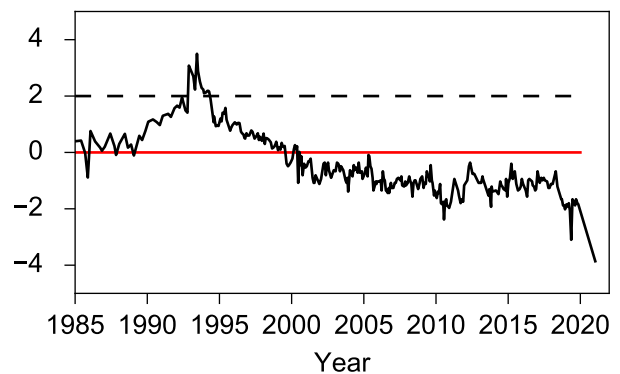


OXYGEN IN BOTTOM WATER (depth >= 175 m)

O₂ ml/l

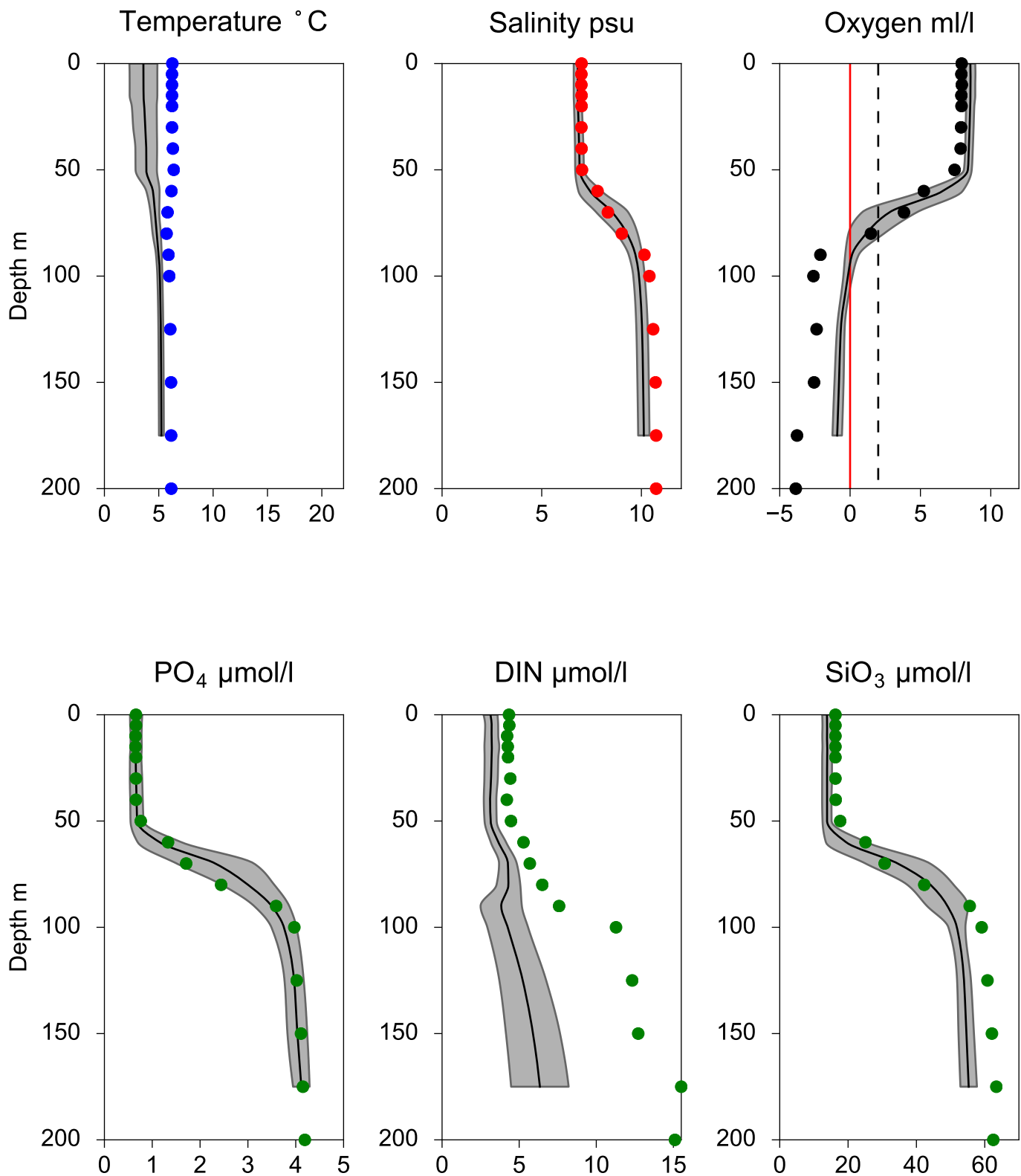


O₂ ml/l



Vertical profiles BY32 NORRKÖPINGSDJ January

— Mean 2001-2015 St.Dev. • 2021-01-13



STATION BY38 KARLSÖDJ SURFACE WATER (0-10 m)

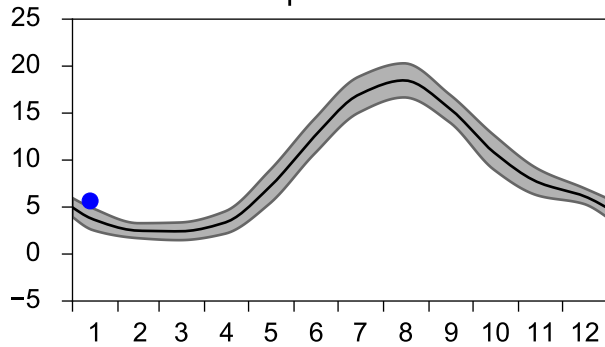
Annual Cycles

— Mean 2001-2015

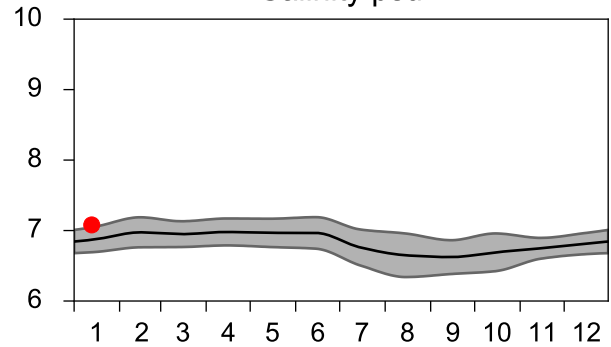
■ St.Dev.

● 2021

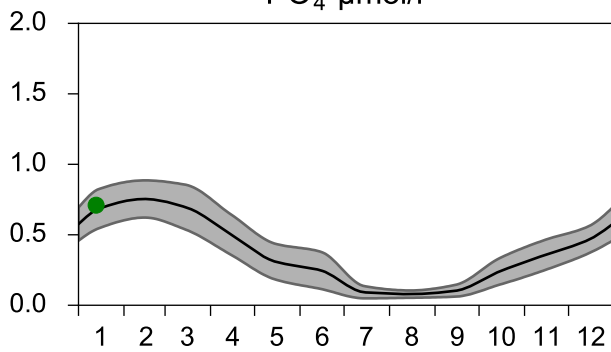
Temperature °C



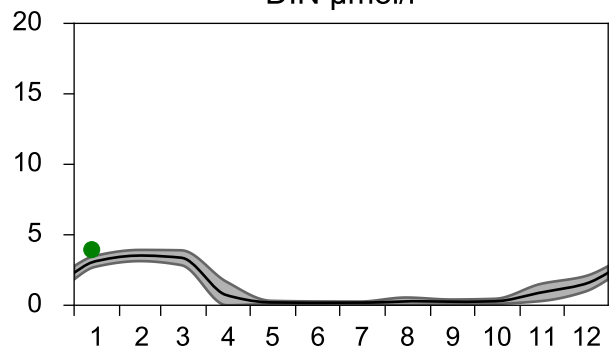
Salinity psu



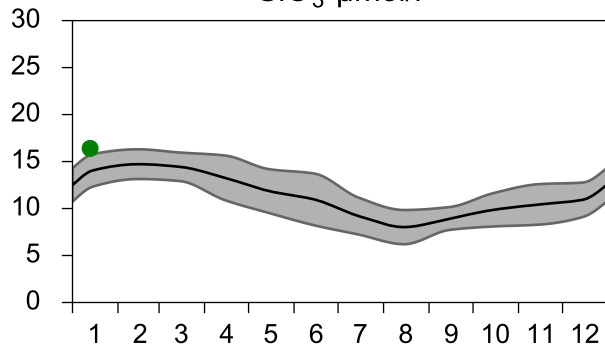
PO₄ µmol/l



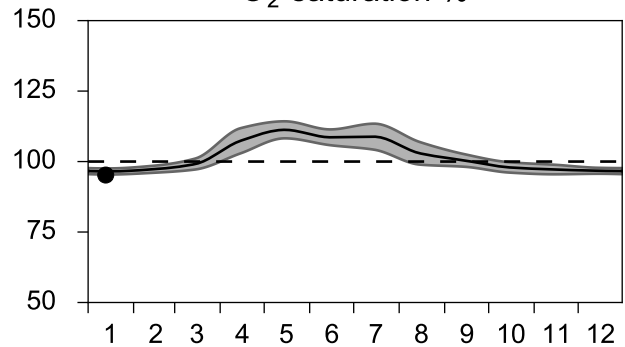
DIN µmol/l



SiO₃ µmol/l

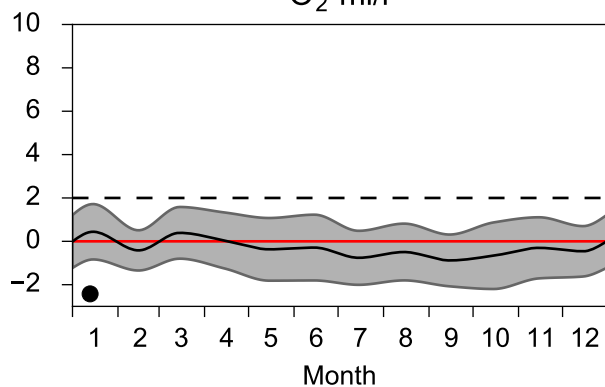


O₂ saturation %

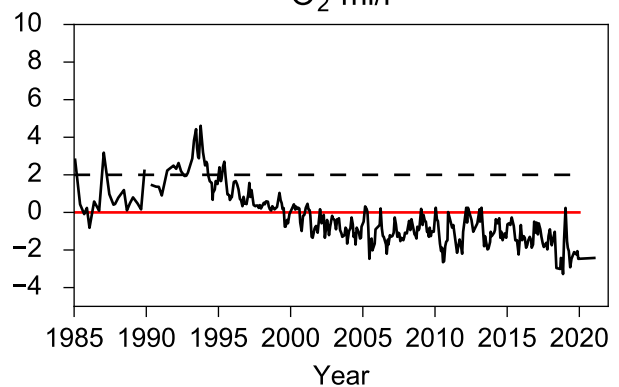


OXYGEN IN BOTTOM WATER (depth >= 100 m)

O₂ ml/l



O₂ ml/l

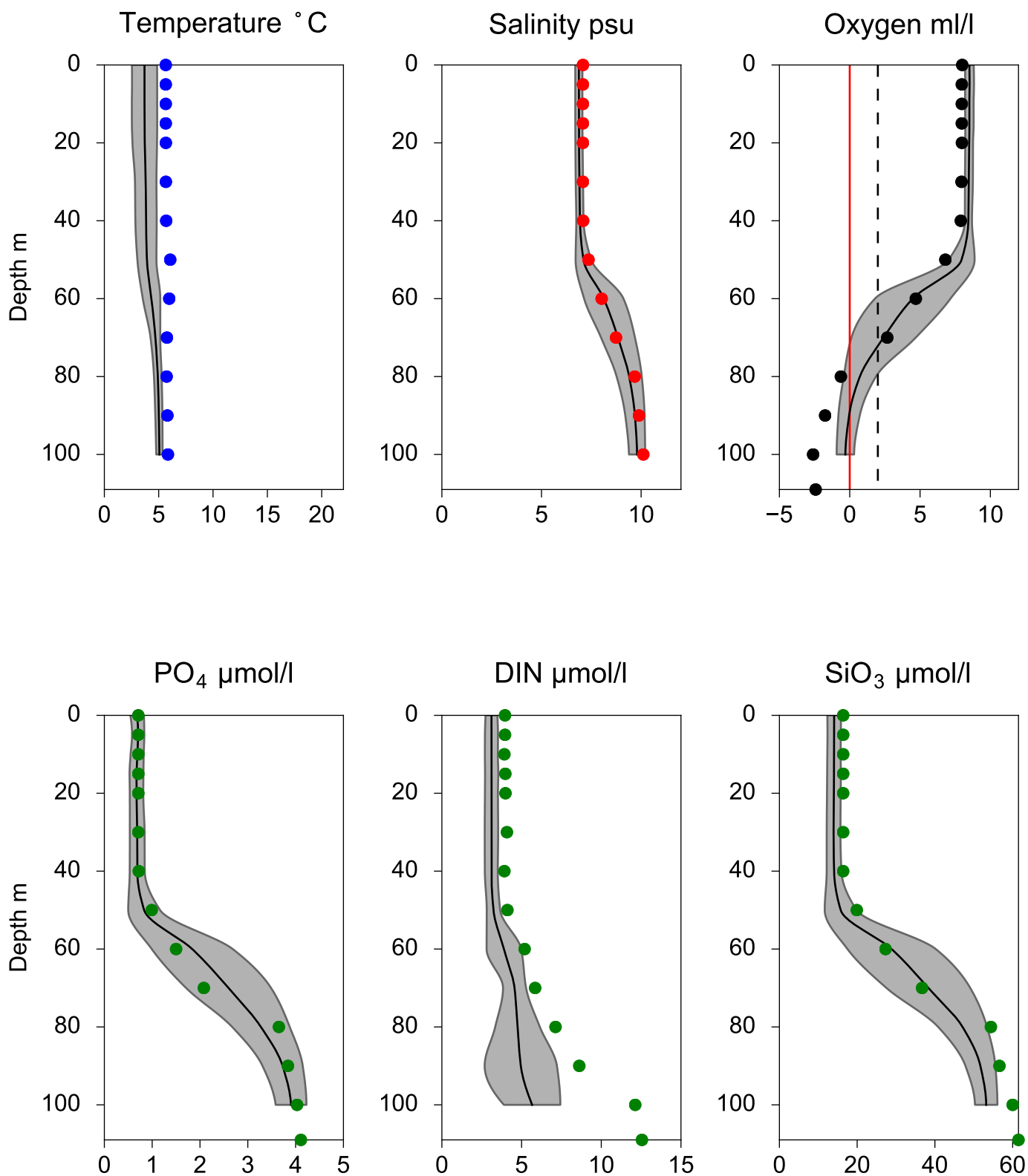


Vertical profiles BY38 KARLSÖDJ January

— Mean 2001-2015

■ St.Dev.

● 2021-01-13



STATION REF M1V1 SURFACE WATER (0-10 m)

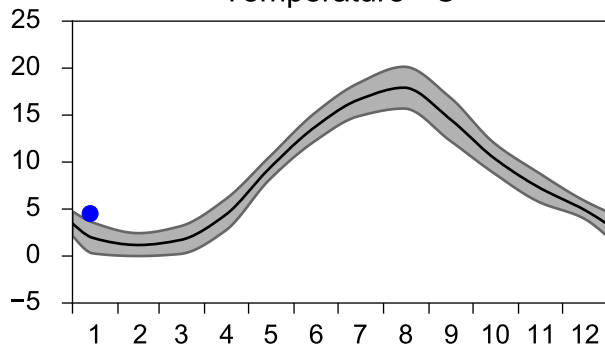
Annual Cycles

— Mean 2001-2015

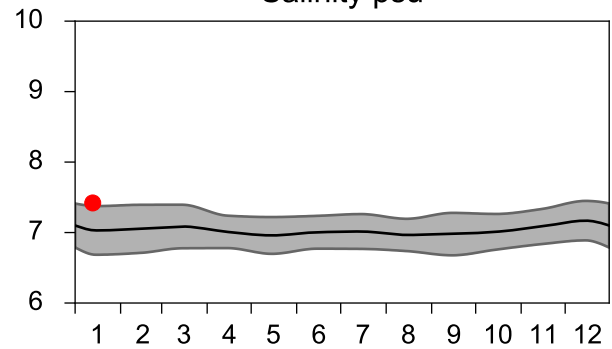
■ St.Dev.

● 2021

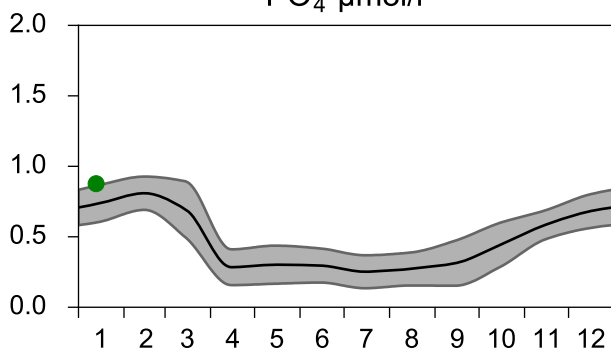
Temperature °C



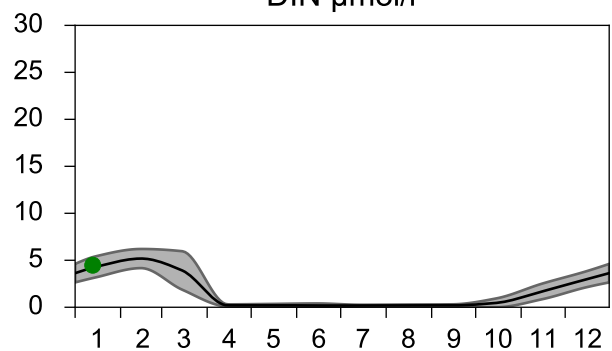
Salinity psu



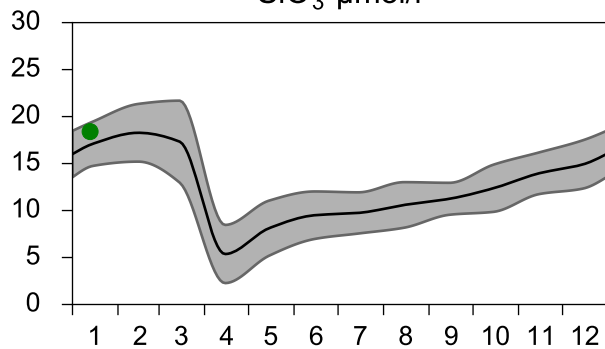
PO₄ µmol/l



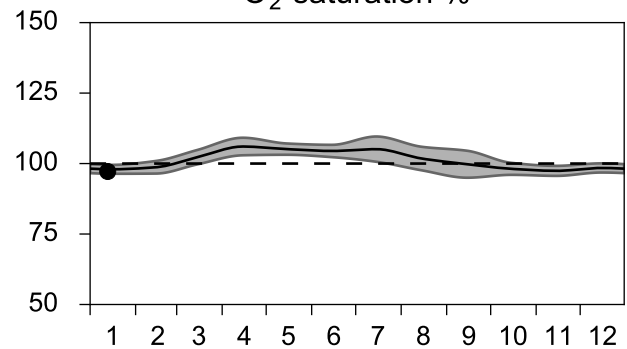
DIN µmol/l



SiO₃ µmol/l

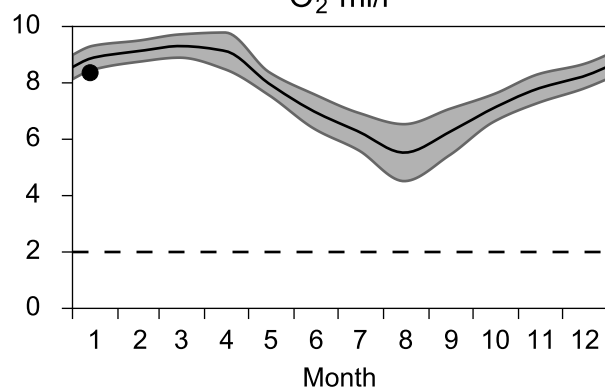


O₂ saturation %

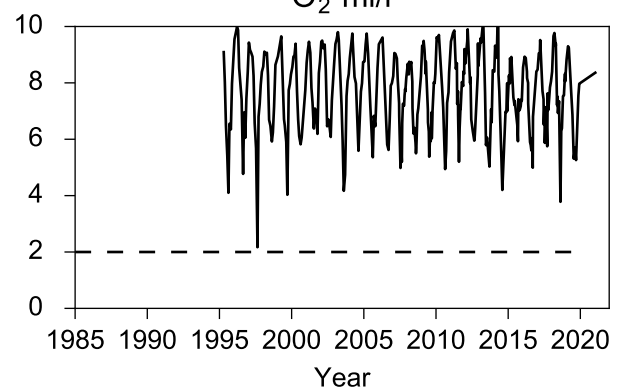


OXOGEN IN BOTTOM WATER (depth >= 15 m)

O₂ ml/l



O₂ ml/l

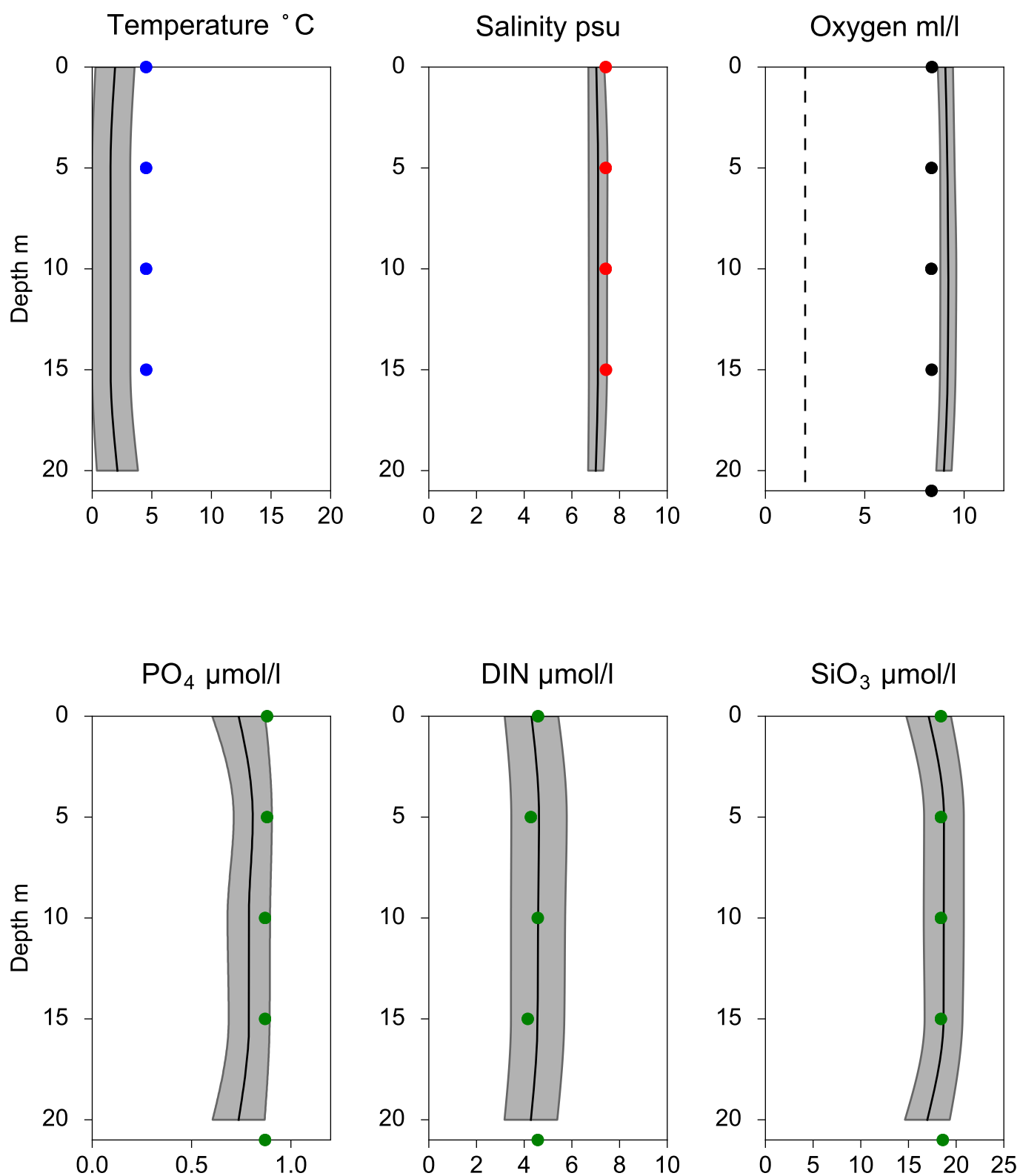


Vertical profiles REF M1V1 January

— Mean 2001-2015

■ St.Dev.

● 2021-01-13



STATION HANÖBUKTEN SURFACE WATER (0-10 m)

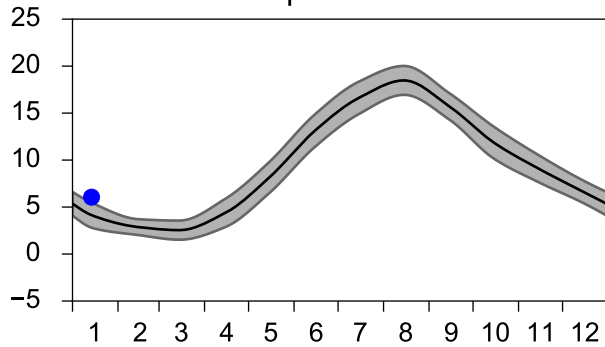
Annual Cycles

— Mean 2001-2015

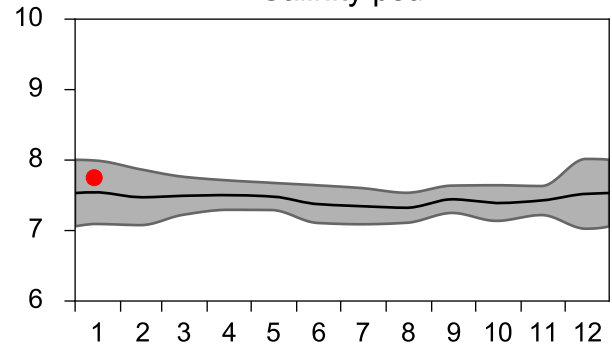
■ St.Dev.

● 2021

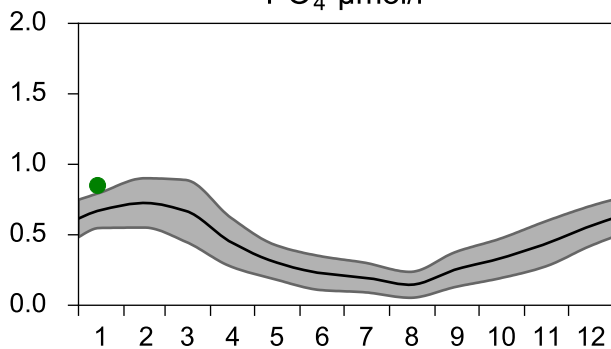
Temperature °C



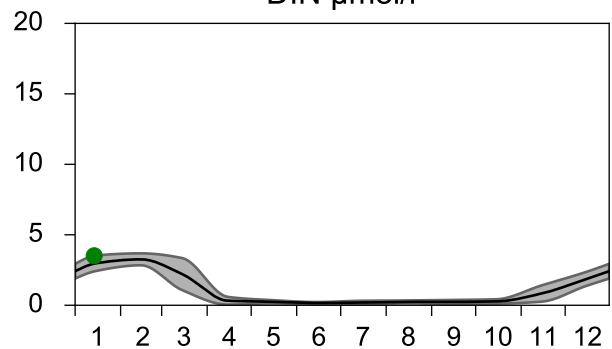
Salinity psu



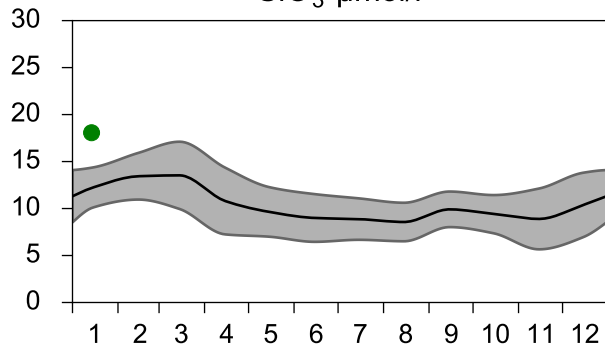
PO₄ µmol/l



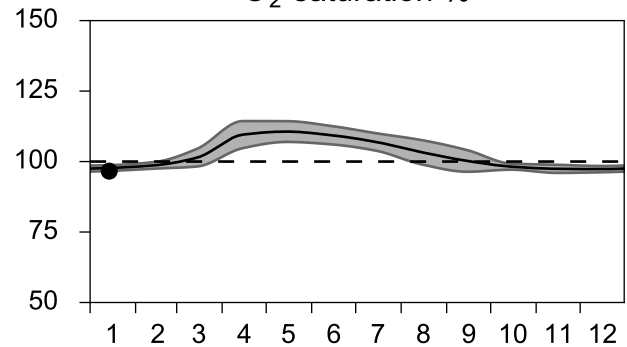
DIN µmol/l



SiO₃ µmol/l

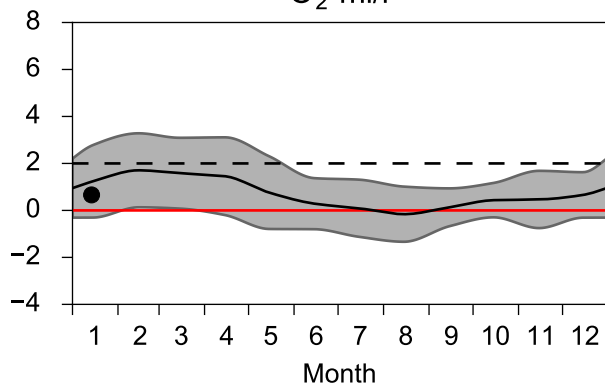


O₂ saturation %

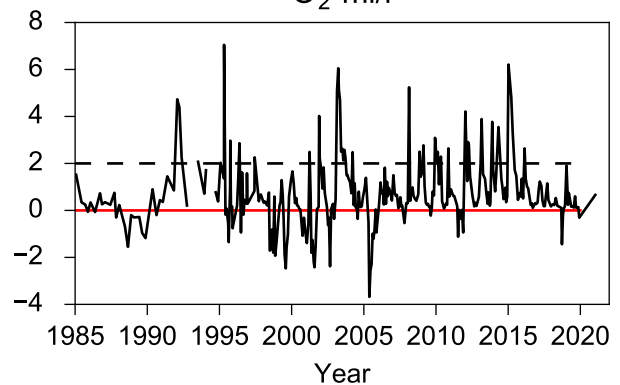


OXYGEN IN BOTTOM WATER (depth >= 70 m)

O₂ ml/l



O₂ ml/l



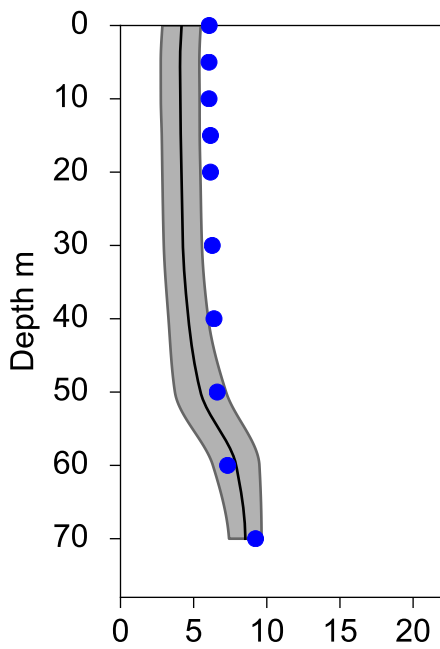
Vertical profiles HANÖBUKTEN January

— Mean 2001-2015

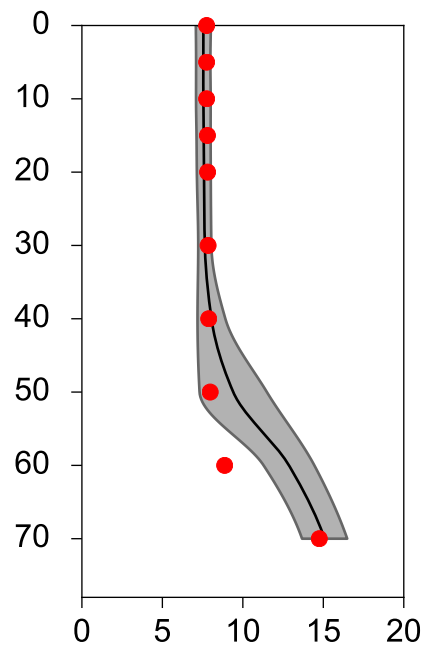
■ St.Dev.

● 2021-01-14

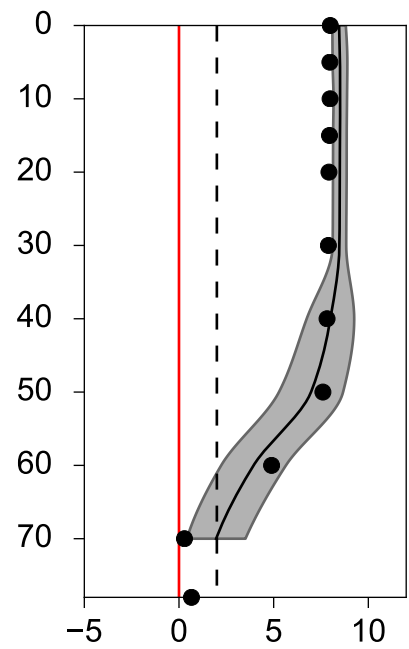
Temperature °C



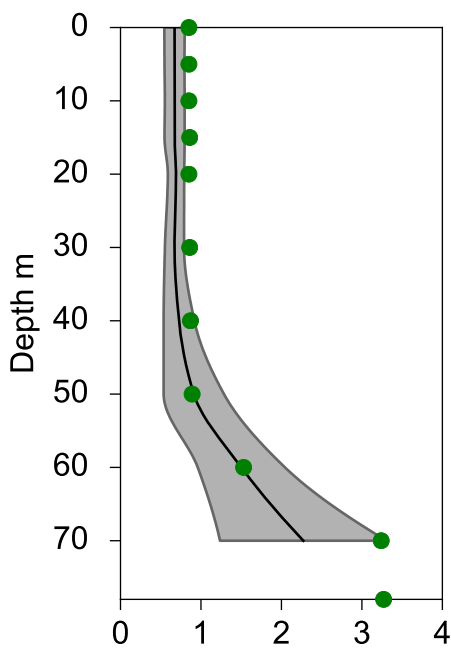
Salinity psu



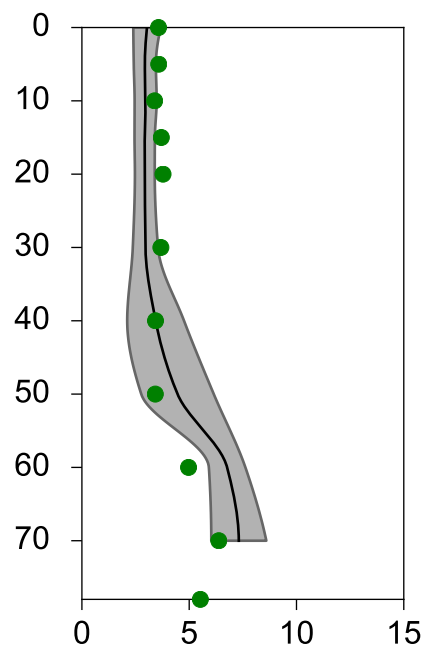
Oxygen ml/l



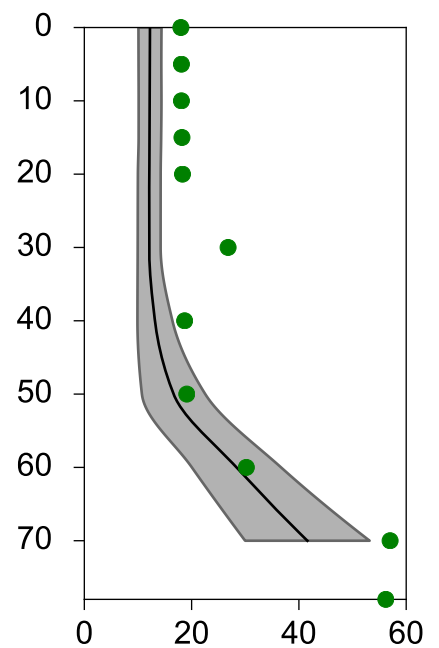
PO₄ μmol/l



DIN μmol/l



SiO₃ μmol/l



STATION ANHOLT E SURFACE WATER (0-10 m)

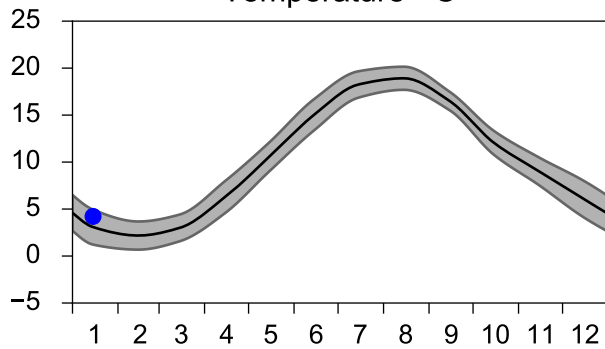
Annual Cycles

— Mean 2001-2015

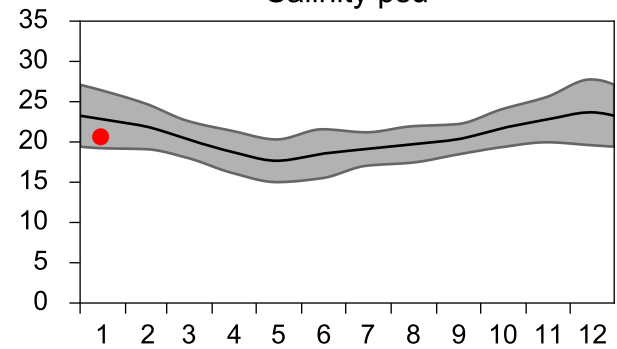
■ St.Dev.

● 2021

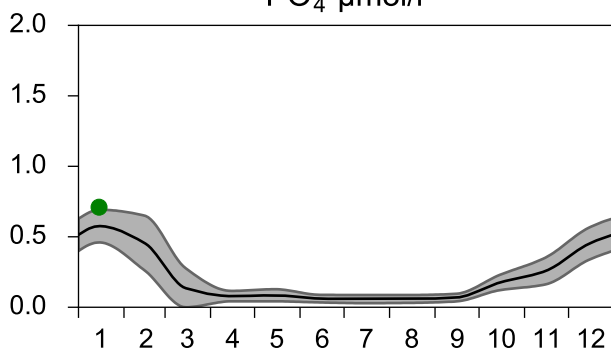
Temperature °C



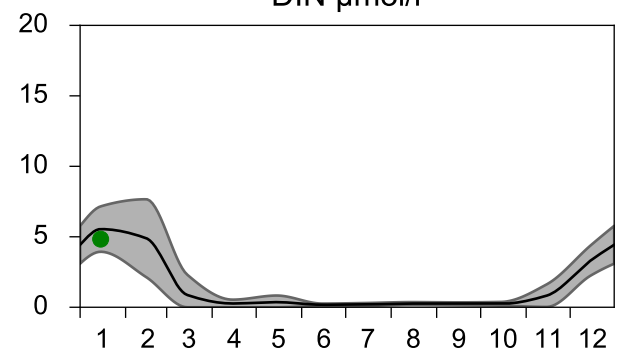
Salinity psu



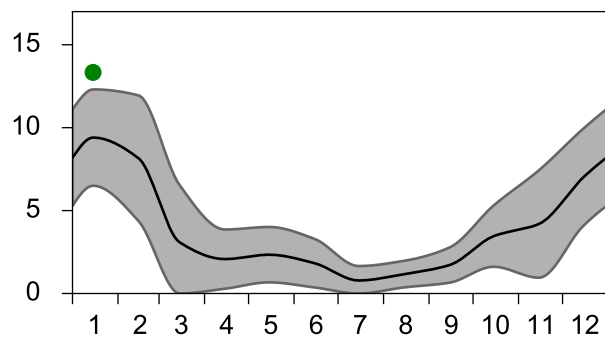
PO₄ µmol/l



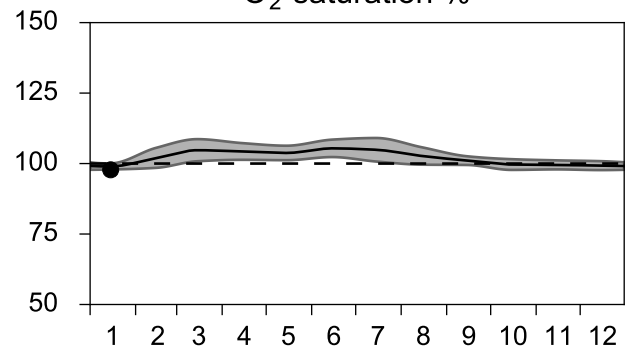
DIN µmol/l



SiO₃ µmol/l

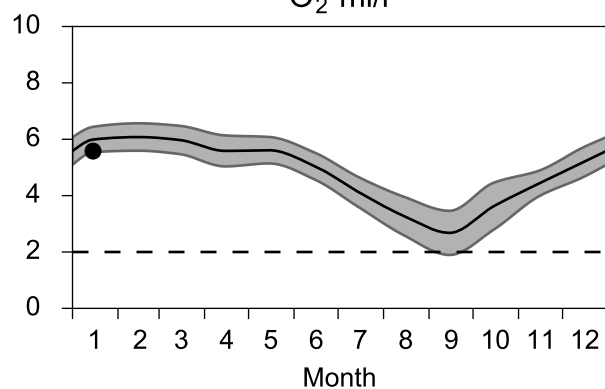


O₂ saturation %

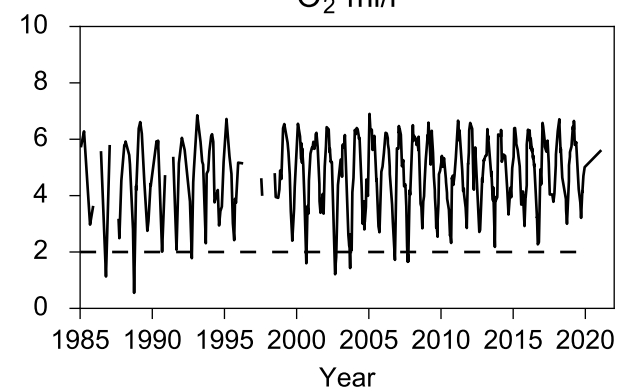


OXYGEN IN BOTTOM WATER (depth >= 52 m)

O₂ ml/l



O₂ ml/l

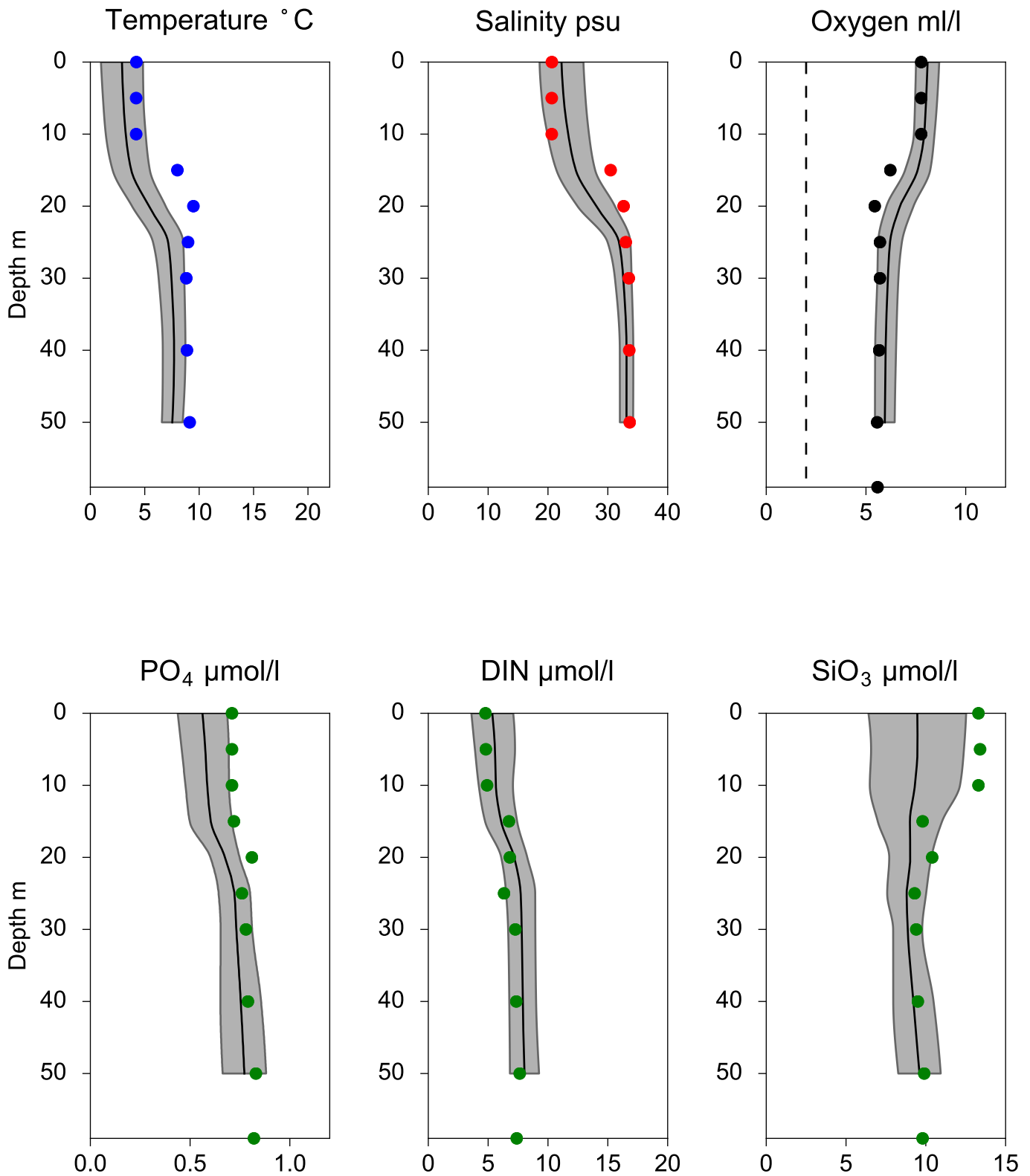


Vertical profiles ANHOLT E January

— Mean 2001-2015

■ St.Dev.

● 2021-01-15



STATION N14 FALKENBERG SURFACE WATER (0-10 m)

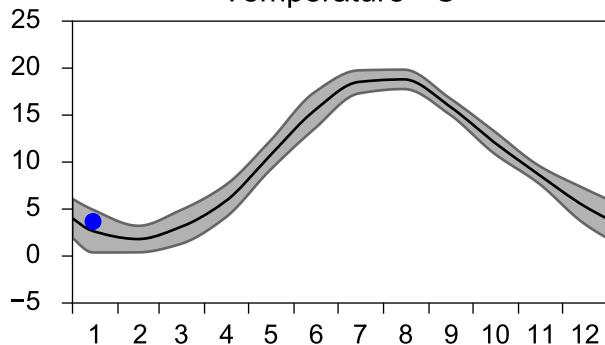
Annual Cycles

— Mean 2001-2015

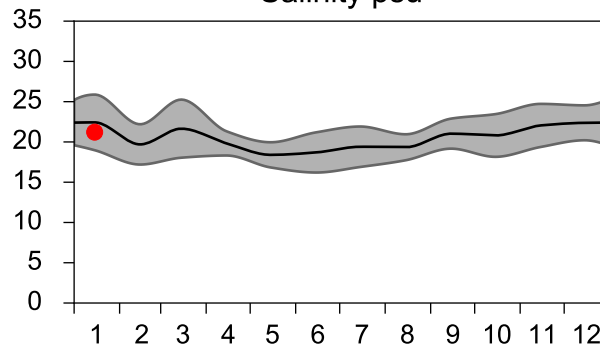
■ St.Dev.

● 2021

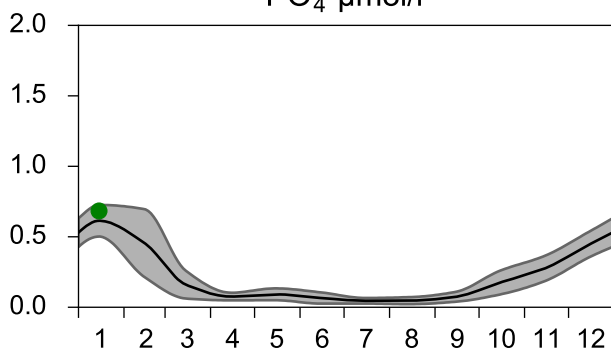
Temperature °C



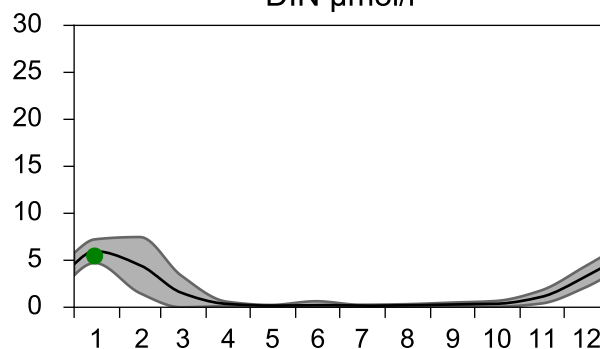
Salinity psu



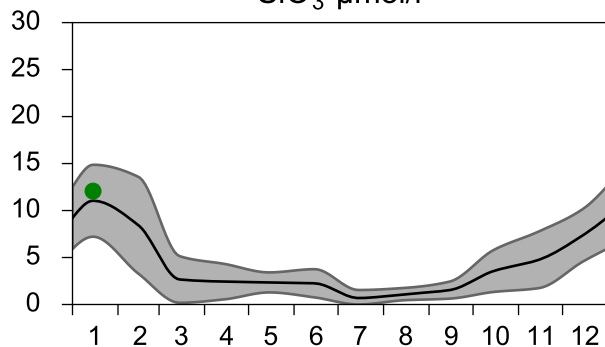
PO₄ µmol/l



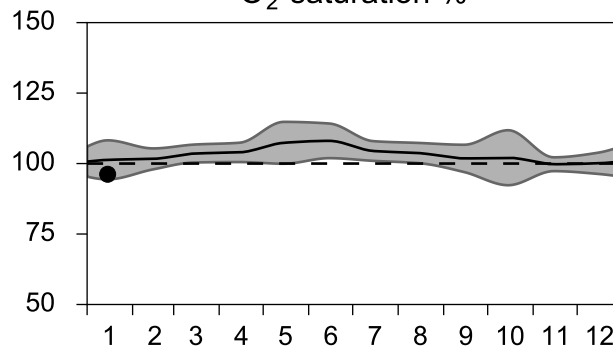
DIN µmol/l



SiO₃ µmol/l

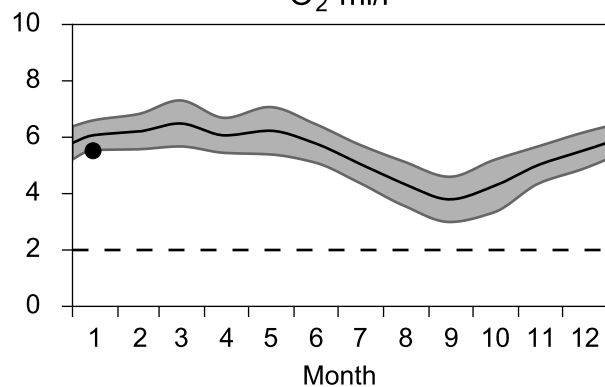


O₂ saturation %

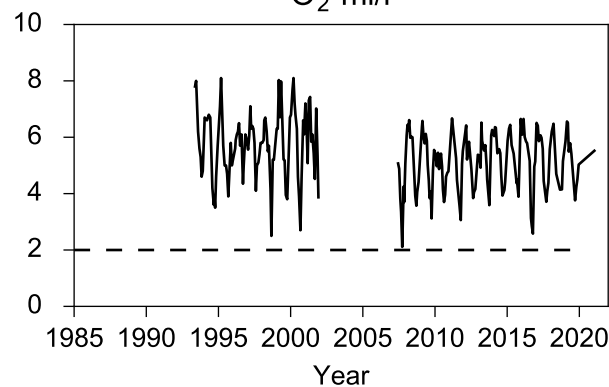


OXYGEN IN BOTTOM WATER (depth >= 20 m)

O₂ ml/l



O₂ ml/l

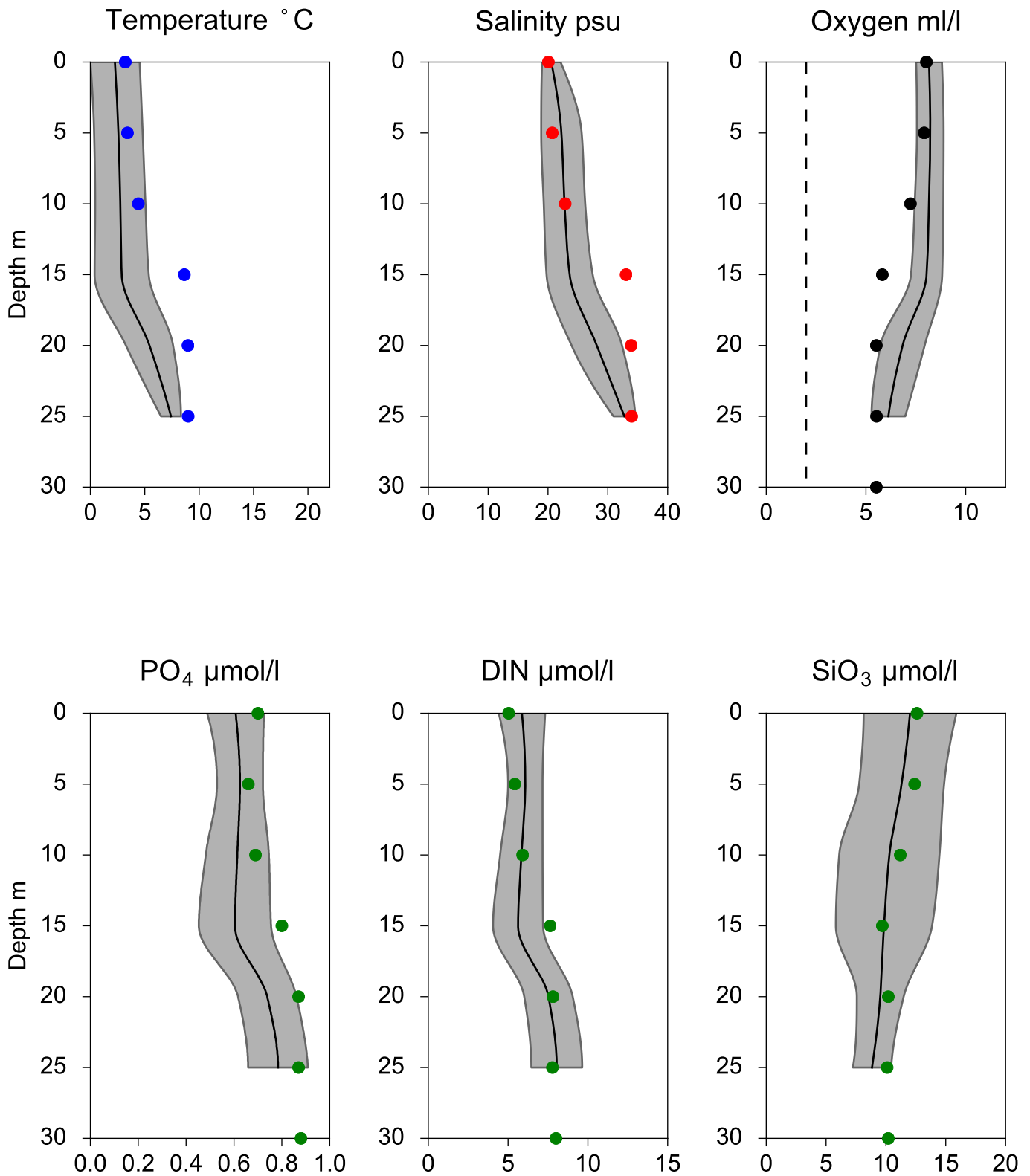


Vertical profiles N14 FALKENBERG January

— Mean 2001-2015

■ St.Dev.

● 2021-01-15



STATION FLADEN SURFACE WATER (0-10 m)

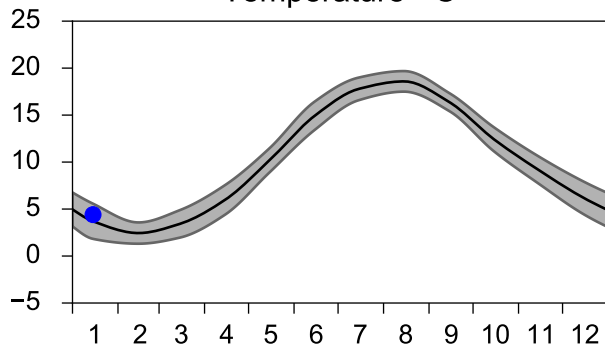
Annual Cycles

— Mean 2001-2015

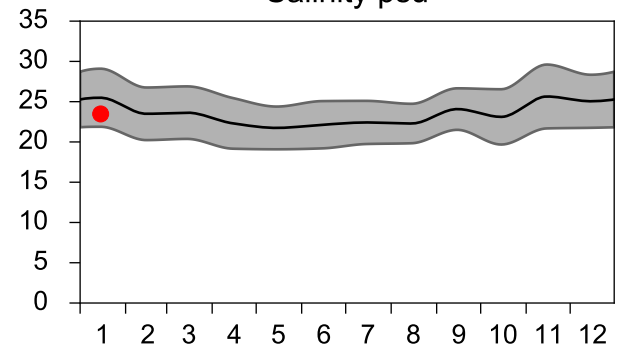
■ St.Dev.

● 2021

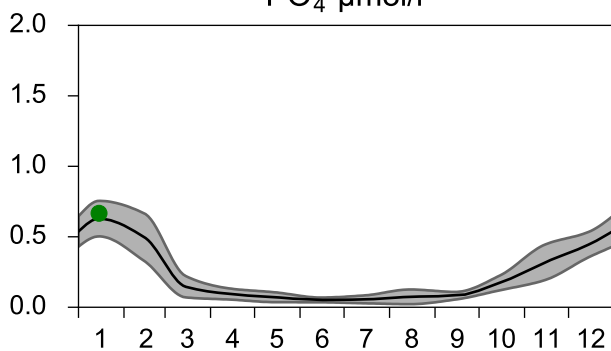
Temperature °C



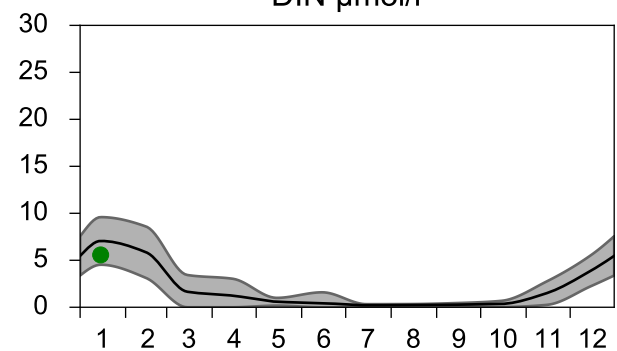
Salinity psu



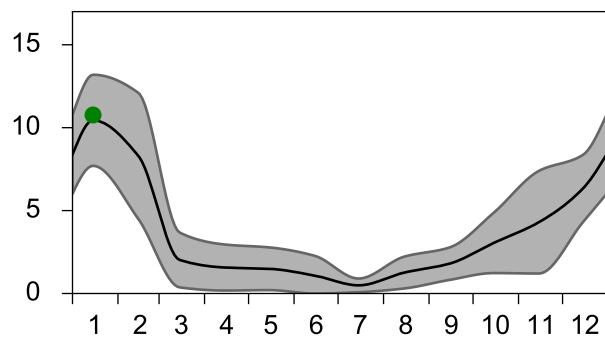
PO₄ µmol/l



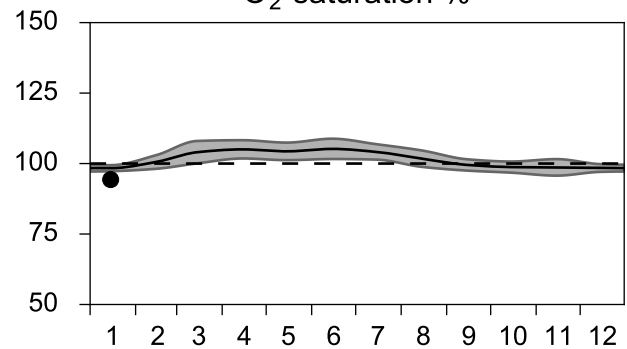
DIN µmol/l



SiO₃ µmol/l

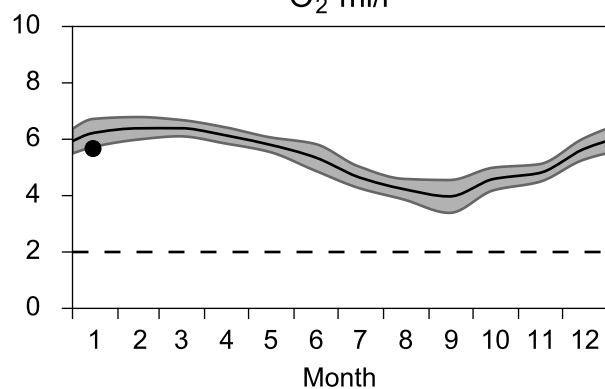


O₂ saturation %

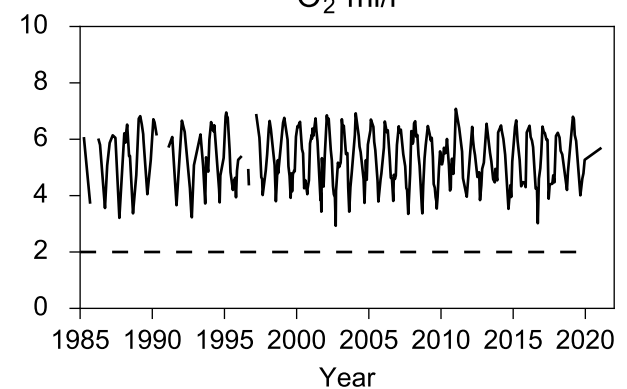


OXYGEN IN BOTTOM WATER (depth >= 74 m)

O₂ ml/l



O₂ ml/l



Vertical profiles FLADEN January

— Mean 2001-2015 St.Dev. • 2021-01-15

