

Rapport från SMHIs utsjöexpedition med R/V Svea – februari 2025



Foto: Madeleine Nilsson, SMHI

Expeditionens varaktighet: 2025-02-06 till 2025-02-13

Uppdragsgivare: Sveriges Meteorologiska och Hydrologiska Institut (SMHI),
Havs- och Vattenmyndigheten (HaV)

Samarbetspartners: Sveriges Lantbruksuniversitet (SLU), Sjöfartsverket (SjöV)

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SAMMANFATTNING

Under expeditionen, som ingår i det svenska pelagiala övervakningsprogrammet, besöktes Skagerrak, Kattegatt, Öresund och Egentliga Östersjön. I Egentliga Östersjön genomfördes kartering av näringsämnen.

I samtliga havsområden var ytvattentemperaturen över normal vid de flesta stationer. I Skagerrak varierade temperaturen mellan 4,0–7,0°C, medan den i Kattegatt och Öresund låg runt 4°C. I Egentliga Östersjön var medeltemperaturen 3,3–4,8°C, med de största avvikelserna i de södra bassängerna. Salthalten i ytvattnet var över normal vid flera stationer i Egentliga Östersjön, medan den i Skagerrak och Kattegatt varierade utan större avvikelser.

I Skagerrak observerades ett mycket tunt, kallt och sött ytskikt nära kusten, liknande förhållandena i januari. I Kattegatt och Öresund fanns ett välblandat ytlager med ett språngskikt vid ca 15 meters djup. I Egentliga Östersjön låg haloklinen på varierande djup: runt 30 m i Arkonabassängen, 60 m i Västra Gotlandsbassängen och 70 m i Östra Gotlandsbassängen. Under haloklinen var temperaturen fortsatt hög vid många stationer, och i Bornholmsbassängen sågs tecken på ett mindre inflöde.

Koncentrationerna av näringsämnen i ytvattnet skilde sig mellan havsområdena. I Skagerrak var kiselkoncentrationerna över normala vid de flesta stationer, medan fosfat- och kvävekoncentrationerna var något lägre vid de yttre stationerna. I Kattegatt och Öresund varierade näringsämnena endast marginellt, men kiselhalterna var genomgående över normala. I Egentliga Östersjön var kvävehalterna normala vid de flesta stationer, men fosfat var över normal i de södra bassängerna. Kiselkoncentrationerna var högre än normalt vid nästan alla stationer, särskilt i de södra delarna.

Syresituationen var generellt god i Skagerrak, Kattegatt och Öresund, där inga tecken på syrebrist observerades. I Egentliga Östersjön var situationen mer varierad.

Syrekoncentrationerna i Arkonabassängen var fortsatt goda, men i Hanöbukten hade syrehalterna vid botten sjunkit sedan januari och var nu nära noll. I Bornholmsbassängen uppmättes akut syrebrist och i Egentliga Östersjön var det syrefritt från 80–90 m djup. Station BY38, som syresatts efter stormen Charly i januari, var nu åter syrefri.

Nästa expedition med R/V Svea är planerad att starta 7 mars i Kalmar och avslutas i Göteborg 13 mars.

EXPEDITIONSÖVERSIKT

Expeditionen genomfördes med forskningsfartyget R/V Svea och startade i Lysekil den 6:e februari och avslutades i Göteborg den 13:e februari. I Egentliga Östersjön utfördes kartering av näringsämnen.

Det var fint vädret under expeditionen med svaga till måttliga vindar i varierande riktning. Lufttemperaturen låg mellan -2 och +6 °C hela veckan. Alla planerade stationer kunde provtas.

Profiler av salt, temperatur, syre och fluorescens i vattenkolumnen mättes med CTD¹ monterad på en rosett med plats för 24 vattenhämtare. Vid samtliga stationer stängdes vattenhämtarna med så kallad autofire under nedkastet. Detta sparar tid på stationerna och har möjliggjorts genom utveckling av det försystem som används vid CTD-provtagning som utvecklats och underhålls av SMHI, sharktools. Auto heave compensation (AHC) användes vid flertalet stationer och bidrar också till förbättrad precision av djupet som provtas med vattenhämtarna.

Referensmätning vid Flinten 7 utfördes på väg söderut genom Öresund.

Sveas ferrybox var ur funktion på grund av problem med flödet under hela expeditionen. Orsaken till problemet är identifierat och den kommer att vara igång igen till nästa expedition i mars. Instrumentet för att mäta profiler under gång; Moving Vessel Profiler (MVP), kördes under senare delen av expeditionen främst i östra, norra och västra Gotlandsbassängerna. Sveas instrument för strömmätning, ADCP, kördes kontinuerligt under hela expeditionen.

Rapporten är baserad på data som genomgått en första kvalitetskontroll och som är jämförd mot månadsmedelvärde för perioden 1991 – 2020. När ytterligare kvalitetsgranskning genomförts kan vissa värden komma att ändras. Värden som anges i rapporten har avrundats till närmaste tiondel och kan därför skilja sig från publicerade värden. Data publiceras så fort som möjligt på datavärdens hemsida, normalt inom ca en vecka efter avslutad expedition. Vissa analyser utförs efter expeditionen och publiceras därför senare.

Mer information om vårt datavärdskap och för att ladda ner data se denna länk:

<https://www.smhi.se/data/oceanografi/datavardskap-oceanografi-och-marinbiologi>

Mer information om algsituationen finns att läsa i Algaware-rapporten:

<https://www.smhi.se/publikationer-fran-smhi>

¹ CTD är ett profilerande mätinstrument och står för Conductivity, Temperature, Depth.

Skagerrak

Temperaturen i ytvattnet var över det normala vid de tre västligaste stationerna och inom det normala vid övriga stationer och varierade mellan 4,0–7,0 grader. Salthalten i ytvattnet varierade mellan 25–35 psu och var under normal vid stationen P2 utanför Marstrand (25,8 psu). Liksom i januari fanns ett mycket tunt, sött och kallt ytskikt, grundare än 5 m längs kusten. Under detta ökade salthalten och temperaturen. Salthalten i djupvattnet var 34–35 psu och temperaturen 6,5–8,3 grader, kallast vid stationen P2.

För koncentrationerna av näringsämnen i ytvattnet syntes en tydlig skillnad mellan de två västligaste stationerna Å17 och Å15 och stationerna närmre kusten som hade med högre koncentrationer. Tydligast var skillnaden i kisel där koncentrationen var normal vid Å17 och Å15 (ca 4 µmol/l) och långt över normal vid övriga stationer (13–25 µmol/l). Skillnaden i koncentrationer av fosfat och löst oorganiskt kväve var mindre uttalad. Vid de yttre stationerna uppmättes fosfathalter på 0,5 µmol/l och kvävehalter på 4–6 µmol/l, medan koncentrationerna var högre vid de inre stationerna, med fosfat på 0,7 µmol/l och kväve på 6–11 µmol/l.

Fluorescensmätningen visade viss aktivitet i ytvatten med en topp på ca 15 m vid stationen P2.

Kattegatt och Öresund

Temperaturen i ytvattnet var runt 4 grader och salthalten varierade mellan 15–24 psu i Kattegatt och i Öresund var den ca 10 psu. Vid samtliga stationer fanns ett välblandat ytlager och ett språngskikt på ca 15 meters djup.

Koncentrationen av kisel, löst oorganiskt kväve och fosfor i ytvattnet varierade lite inom området (DIN 5,5–6,5 µmol/l, fosfat 0,7 µmol/l och kisel 14–17 µmol/l). Koncentrationen av kisel var över normal vid samtliga stationer, koncentrationen av fosfat var över normal utom vid Falkenberg och i Öresund och koncentrationen av löst oorganiskt kväve var normal.

Syrehalterna i Kattegatts och Öresunds bottenvatten visade inte på någon syrebrist och var normala vid alla stationer, mellan 5,6–6,8 ml/l.

Klorofyllfluorescensen var som högst mellan 0 och 15 meter och de högsta värdena uppmättes vid Anholt och Fladen.

Egentliga Östersjön

Medeltemperaturen i ytvattnet varierade mellan 3,3–4,8 grader vilket var över normalt vid de flesta stationer. Endast i Västra Gotlandsbassängen och Hanöbukten var temperaturen inom det normala. Även salthalten var över normal vid flera stationer och varierade mellan 6,6–9,1 psu.

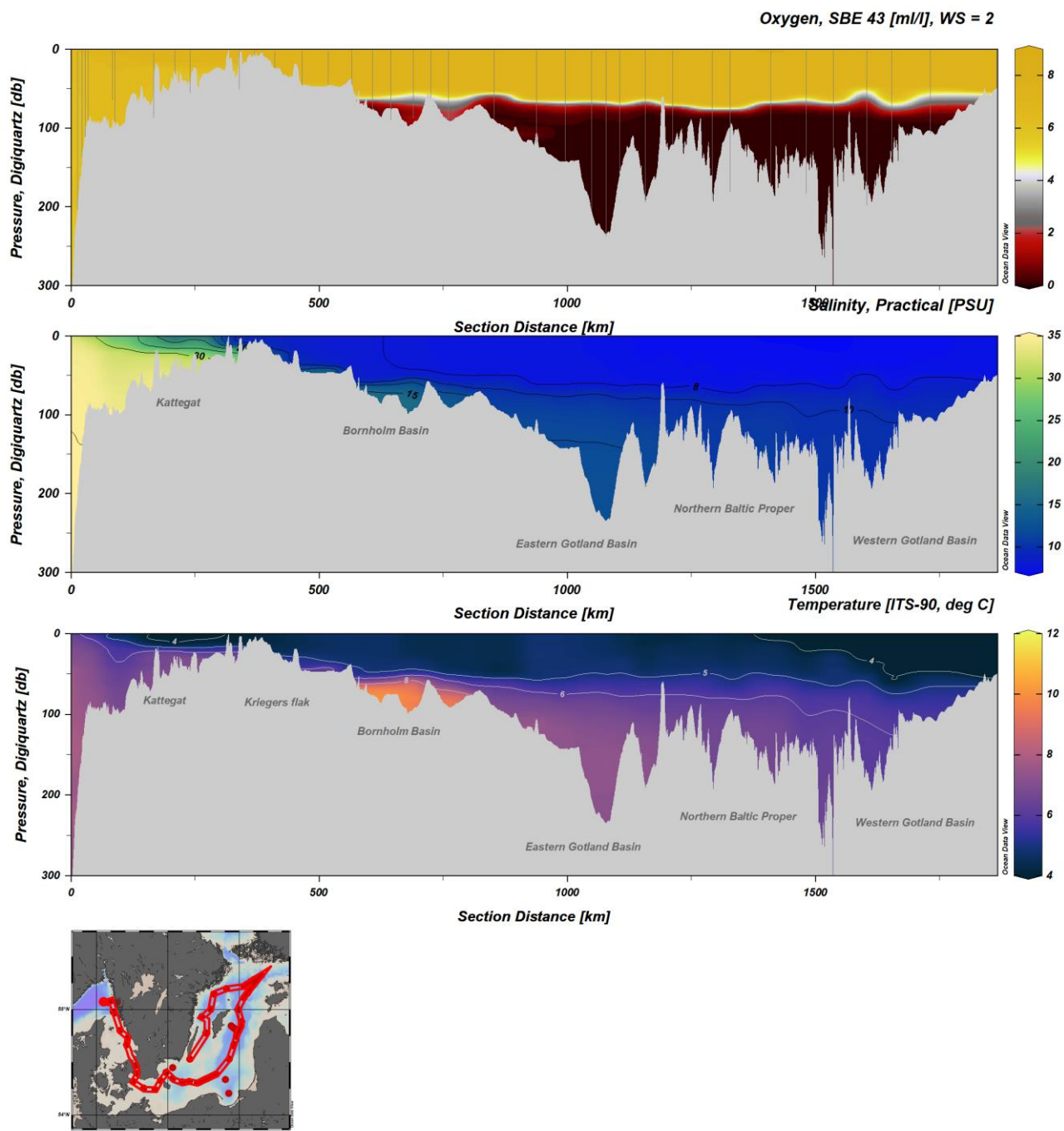
I Arkonabasängen observerades en haloklin vid 30 m med ett saltare vatten på 14–18 psu närmast botten. Även temperaturen ökade något under haloklinen till 6–8 grader närmast botten. I Bornholmsbassängen sammanföll temperatur och salthaltsskiktning vid omkring 60 m djup, ytvattnet hade en temperatur på 4°C och en salthalt på 8 psu medan djupvattnet

hade en temperatur omkring 10°C och salthalten var 16 psu. Vid BY5 i Bornholmsbassängen varierade temperaturen under haloklinen mellan 8,9–10,2 grader vilket troligen är spår av ett mindre inflöde. I Östra Gotlandsbassängen låg haloklinen runt 70 m, i Västra Gotlandsbassängen något grundare ca 60 m. Temperaturen under haloklinen var över normal vid de flesta stationer, ca 6 grader i Västra Gotlandsbassängen och ca 7 grader i Östra Gotlandsbassängen. Salthalten i bottenvattnet var normal.

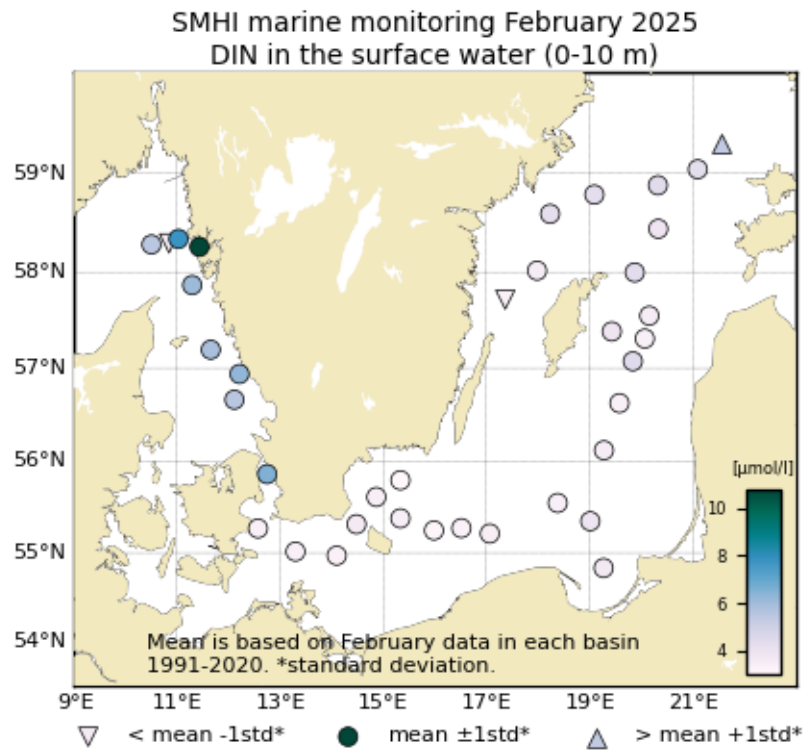
Koncentrationen av löst oorganiskt kväve (DIN) var inom det normala vid alla stationer utom två, BY36 i Västra Gotlandsbassängen (under normal) och BY27 i Norra Egentliga Östersjön (över normal). Koncentrationen var lägst i de södra bassängerna och ökade norrut, och varierade mellan 3,0–5,3 µmol/l. Till skillnad från kväve var koncentrationerna av fosfat över normala vid alla stationer i de södra bassängerna (Arkona, Hanöbukten och Bornholm) men normal i bassängerna runt Gotland. I de södra delarna låg koncentrationen mellan 0,7–1,0 µmol/l, variationen mellan stationer var lägre i Gotlandsbassängerna och varierade där mellan 0,7–0,8 µmol/l. Mest avvikande från normalt var koncentrationerna av kisel, som var över normal vid alla utom tre stationer i Norra Egentliga Östersjön (BY21, BY28, BY27), koncentrationen varierade mellan 15–22 µmol/l och koncentrationerna i Östra Gotlandsbassängen var generellt lägre än i övriga bassänger.

Syresituationen var god i Arkonabassängen och koncentrationen av syre i bottenvattnet låg mellan 5,5–5,7 ml/l. I Hanöbukten hade halten syre vid botten fortsatt att minska sedan i december och var nu endast 0,2 ml/l. I Bornholmsbassängen skilde sig syrekonzentrationen i bottenvattnet en hel del mellan de två stationerna BY4 och BY5, där det vid BY5 var strax över 2 ml/l (akut syrebrist) och vid BY4 endast 0,4 ml/l. Även in över Stolpe tröskel låg syrekonzentrationen precis över gränsen för akut syrebrist. Vid resterande stationer uppmättes svavelväte i bottenvattnet med undantag av de två stationerna i Gdanskbukten (PL-P1 och PL-P63) samt BY10 i södra delen av Östra Gotlandsbassängen. Vid stationen BY38 där bottenvattnet syresatts i samband med stormen Charly i januari var nu vattnet åter syrefritt.

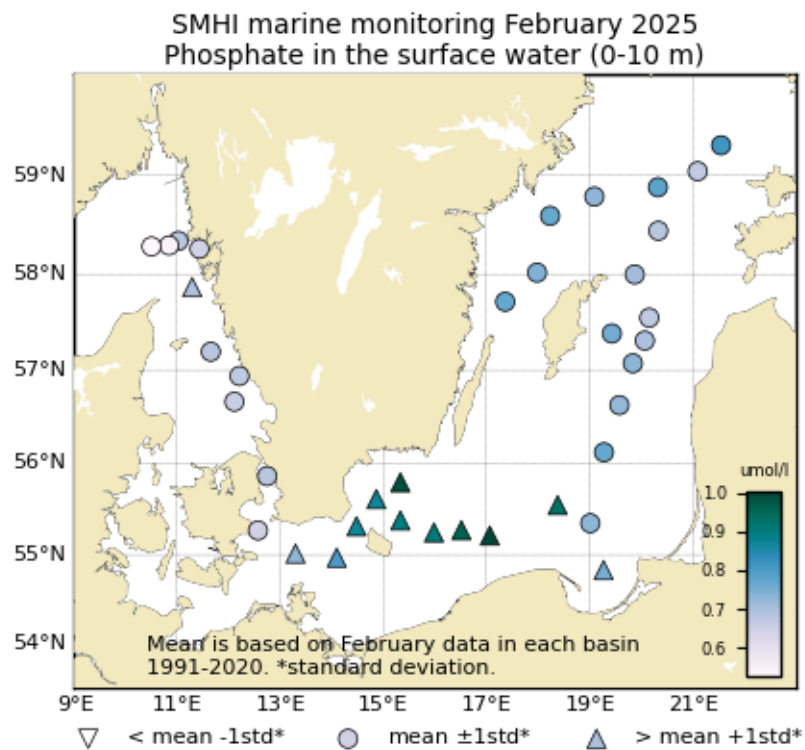
Fluorescensmätningarna visade generellt låg planktonaktivitet i ytlagret, men visst utslag i Arkona- och Bornholmsbassängen och i Hanöbukten.



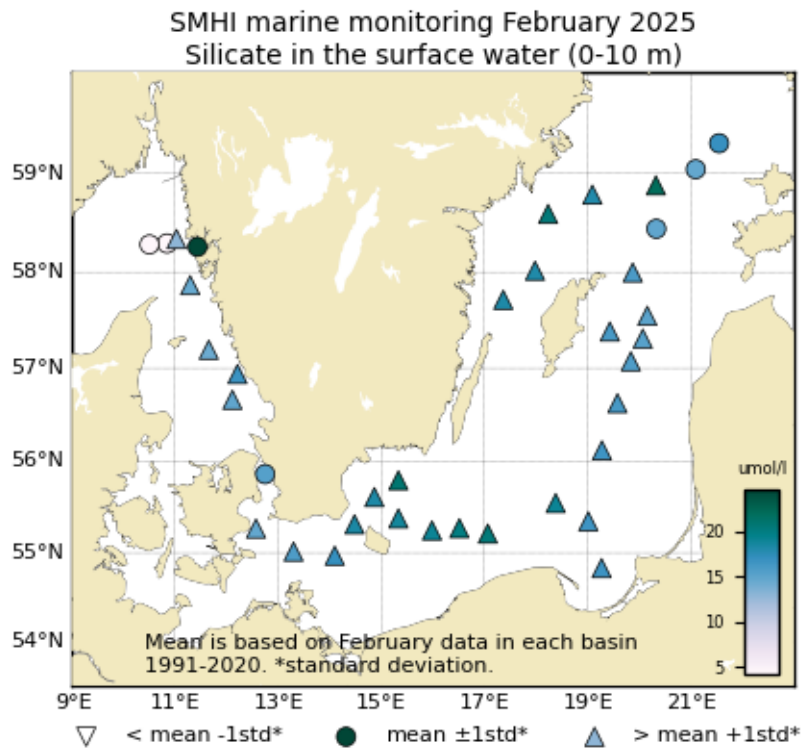
Figur 1. Snitt som visar syrekonscentration, salthalt och temperatur från mätningar med CTD, från Skagerrak genom Kattegatt och vidare in i Egentliga Östersjön, enligt kartan (nederst).



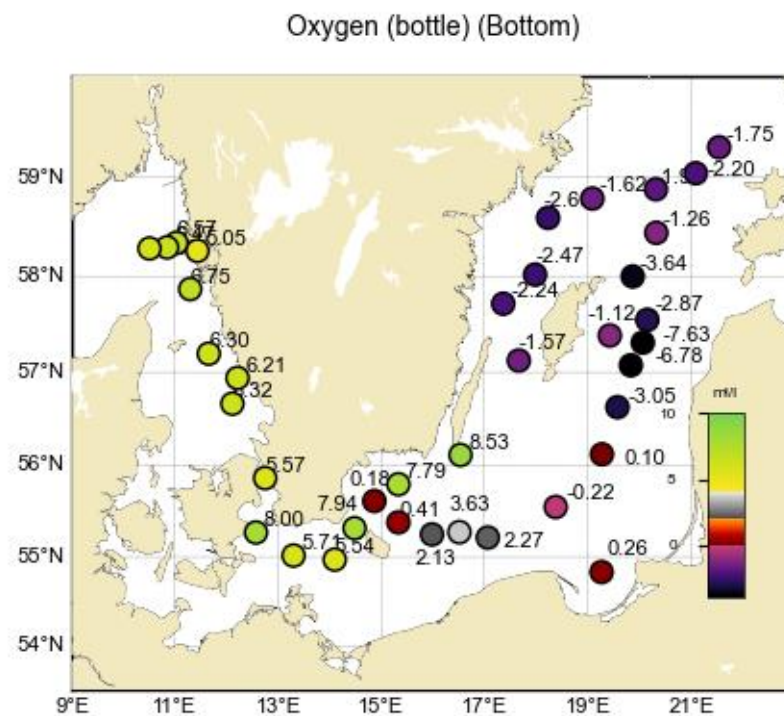
Figur 2. Koncentrationen ($\mu\text{mol/l}$) av oorganiskt kväve (DIN) i ytvattnet (0 – 10 m). Medelvärdet är baserat på aktuell månads data för respektive havsbassäng 1991 – 2020.



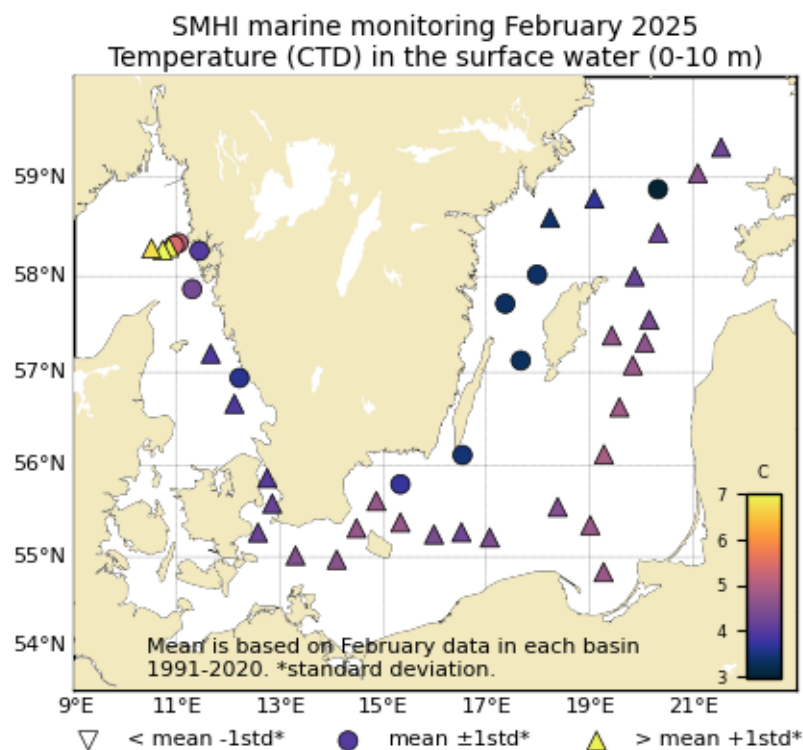
Figur 3. Koncentrationen ($\mu\text{mol/l}$) av fosfat i ytvattnet (0 – 10 m). Medelvärdet är baserat på aktuell månads data för respektive havsbassäng 1991 – 2020.



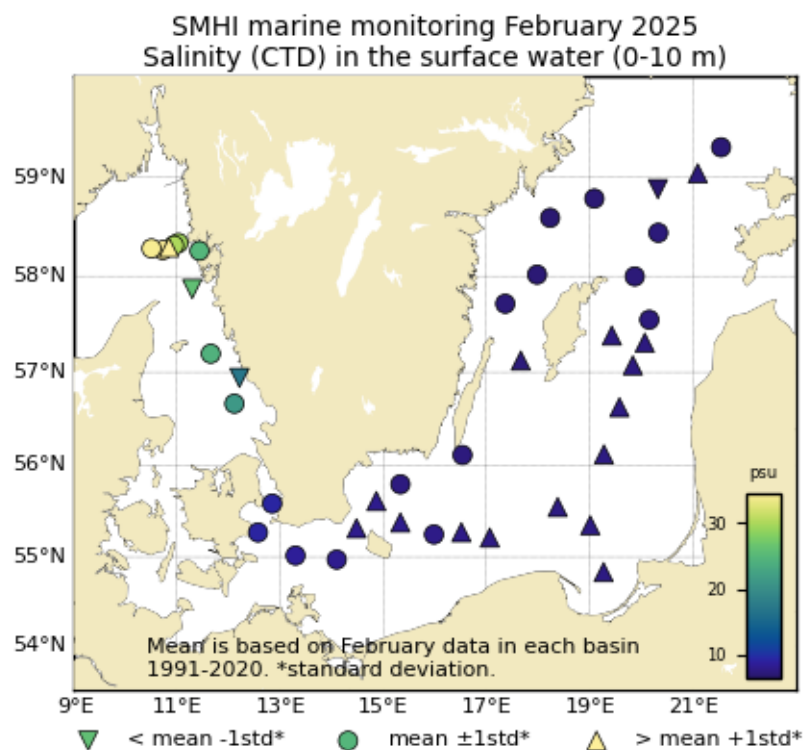
Figur 4. Koncentrationen ($\mu\text{mol/l}$) av silikat i ytvattnet (0 – 10 m). Medelvärdet är baserat på aktuell månads data för respektive havsbassäng 1991 – 2020.



Figur 5. Syrekoncentrationen (ml/l) i bottenvattnet. Förekomst av svavelväte visas som H_2S i. Notera att värdena inte har jämförts mot statistik som i liknande figurer och enbart cirklar visas.



Figur 6. Temperaturen i ytvattnet (0 – 10 m). Medelvärde är baserat på aktuell månads data för respektive havsbassäng 1991 – 2020.



Figur 7. Salthalten i ytvattnet (0 – 10 m). Medelvärde är baserat på aktuell månads data för respektive havsbassäng 1991 – 2020.

DELTAGARE

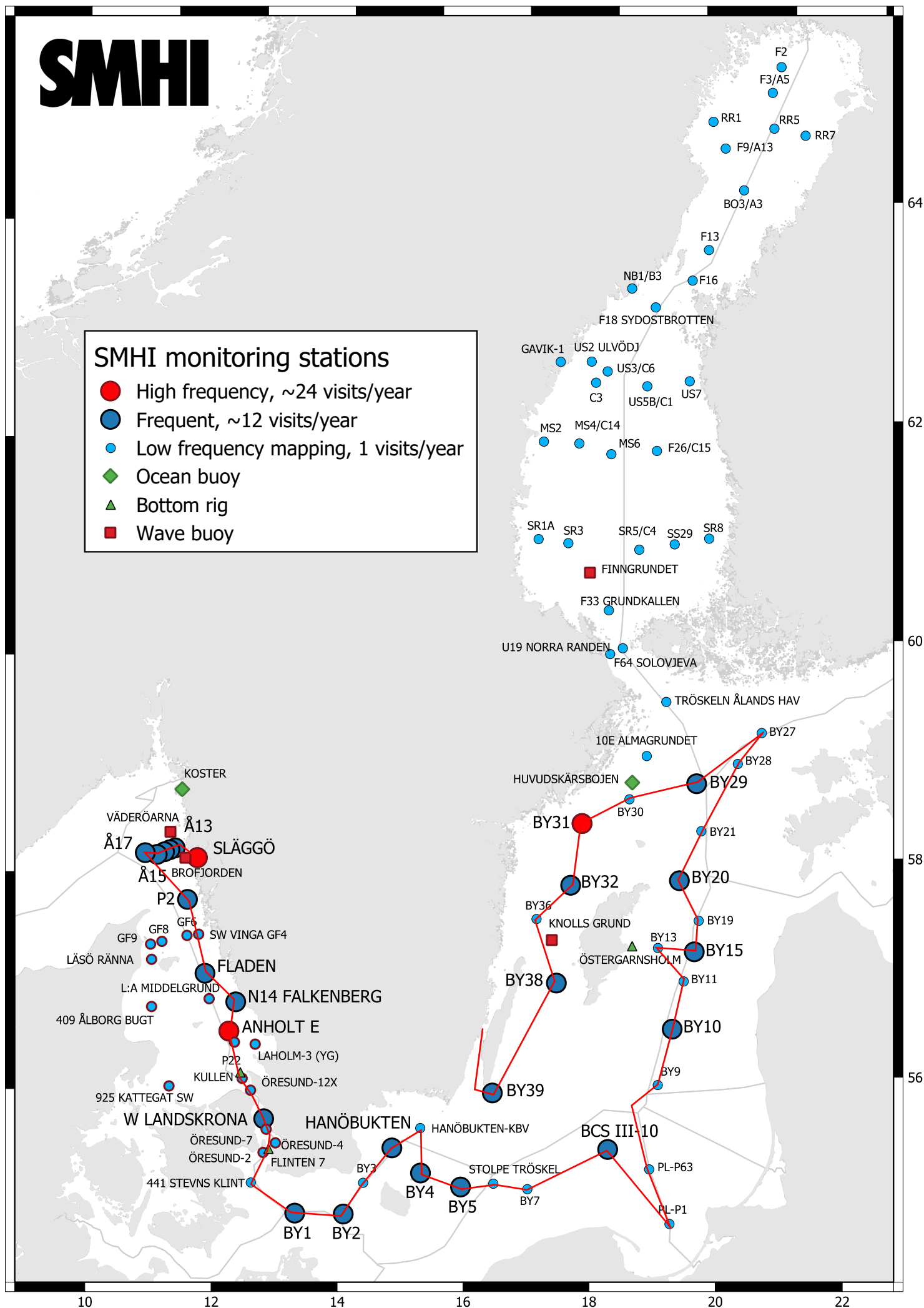
Namn	Roll	Från
Anna-Kerstin Thell	Expeditionsledare, CTD-arbete och analyser	SMHI
Sara Johansson	Vattenprovtagning och analys	SMHI
Monica Lindner	Närsaltsanalyser, kvalitetsansvarig	SMHI
Ann-Turi Skjevik	CTD-arbete och analyser	SMHI
Sari Sipilä	Vattenprovtagning och analys	SMHI

BILAGOR

- Färdkarta
- Tabell över stationer, analyserade parametrar och antal provtagningsdjup
- Figurer över månadsmedelvärden
- Vertikalprofiler

SMHI monitoring stations

- High frequency, ~24 visits/year
- Frequent, ~12 visits/year
- Low frequency mapping, 1 visits/year
- ◆ Ocean buoy
- ▲ Bottom rig
- Wave buoy



Ship: 77SE
Year: 2025

Ser no	Cru no	Stat code	Proj	Stat name	Lat	Lon	Start date yyyymmdd	Start time hhmm	Bottom depth m	Secchi depth m	Wind dir vel	Air temp C	Air pres hPa	WCWI elac aoe	CZPP hohp loy	No de btl	T e e	T a a	S s	P p	D d	H h	P p	N n	N n	A a	N a	S s	H h	C c	C c	
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0151	05	FIBG27	BAS...	SLÄGGÖ	5815.58	01126.13	20250206	1335	74	4	08 1	5.7 1048	1110	xxx-	9 9	9	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	-	-	-	
0152	05	SKEX14	BAS...	Å13	5820.39	01101.73	20250206	1845	90		07 3	3.9 1050	9990	x---	10 10	10	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	-	-	-	
0153	05	SKEX15	BAS...	Å14	5818.94	01056.52	20250206	1945	110		07 3	3.9 1050	9990	----	11 0	0	-	x -	x -	-	x -	-	-	-	-	-	-	-	-	-	-	
0154	05	SKEX16	BAS...	Å15	5817.67	01050.72	20250206	2040	135		07 2	3.6 1050	9990	x---	12 12	12	x x x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	
0155	05	SKEX17	BAS...	Å16	5816.02	01043.40	20250206	2145	202		07 2	5.6 1050	9990	----	13 0	0	-	x -	x -	-	x -	-	-	-	-	-	-	-	-	-	-	
0156	05	SKEX18	BAS...	Å17	5817.02	01030.29	20250206	2310	340		07 2	5.9 1050	9990	xxx-	15 15	15	-	x -	x x	x x	-	x x	x x	x x	x x	x x	x x	x x	x x	-	-	
0157	05	SKEX23	BAS...	P2	5752.06	01117.67	20250207	0430	93		09 4	2.4 1049	9990	x---	10 10	10	x x x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	
0158	05	KANX25	BAS...	FLADEN	5711.75	01139.29	20250207	0930	84	9	10 8	0.5 1047	1130	x---	13 13	13	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	
0159	05	KANX50	BAS...	N14 FALKENBERG	5656.41	01212.71	20250207	1255	30	8	06 8	2.0 1045	1530	xxx-	7 7	7	x x x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	
0160	05	KAEX29	BAS...	ANHOLT E	5640.05	01206.78	20250207	1520	62	8	08 10	2.9 1042	1630	xxxx	10 10	10	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	
0161	05	SOCX39	BAS...	W LANDSKRONA	5552.01	01244.90	20250207	2210	50		09 9	2.9 1038	9990	x---	9 9	9	x x x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	
0162	05	SOSX00	EXT...	FLINTEN-7	5535.34	01250.77	20250208	0110	8		11 10	1.9 1038	9990	----	3 0	0	-	x -	x -	-	x -	-	-	-	-	-	-	-	-	-	-	
0163	05	BPSA01	BAS...	441 STEVNS KLINT	5516.29	01234.26	20250208	0425	26		11 12	2.0 1035	9990	----	6 6	6	x x x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	
0164	05	BPSA02	BAS...	BY1	5500.95	01317.95	20250208	0825	47		12 10	1.5 1034	2840	x---	8 8	8	x x x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	
0165	05	BPSA03	BAS...	BY2 ARKONA	5458.27	01405.9	20250208	1150	47	10	12 9	1.4 1035	2840	xxx-	8 8	8	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	
0166	05	BPSA04	BAS...	BY3 HAMRARNE SUND	5519.11	01428.93	20250208	1520	48		13 9	1.9 1035	2840	----	8 8	8	x x x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	
0167	05	BPSH05	BAS...	HANÖBUKTEN	5537.03	01451.98	20250208	1810	80		13 10	2.8 1035	9990	x---	11 11	11	x x x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	
0168	05	BPSH51	BAS...	HANÖBUKTEN-KBV	5548.01	01519.99	20250208	2040	60		14 9	2.6 1036	9990	----	9 9	9	x x x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	
0169	05	BPSB06	BAS...	BY4 CHRISTIANSÖ	5522.97	01520.00	20250208	2340	94		11 5	2.0 1036	9990	x---	12 12	12	x x x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	
0170	05	BPSB07	BAS...	BY5 BORNHOLMSDJ	5515.01	01559.07	20250209	0330	91		09 6	1.5 1036	9990	xxxx	12 12	12	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	
0171	05	BPSE08	BAS...	STOLPE TRÖSKEL	5516.50	01630.95	20250209	0655	63		10 7	1.1 1036	2730	----	9 9	9	x x x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	
0172	05	BPSE09	BAS...	BY7 STOLPE RÄNNA	5512.93	01704.03	20250209	0935	91	10	09 6	0.8 1037	2830	----	12 12	12	x x x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	
0173	05	BPSE11	BAS...	BCS III-10	5533.11	01823.04	20250209	1505	90	9	09 8	0.1 1039	2830	x---	12 12	12	x x x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	
0174	05	BPSG71	BAS...	PL-P1	5449.95	01916.45	20250209	2040	110		14 5	-1.2 1039	9990	----	14 14	14	x x x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	
0175	05	BPSE70	BAS...	PL-P63	5521.06	01900.98	20250210	0025	83		11 5	-1.3 1039	9990	----	11 11	11	x x x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	
0176	05	BPSE12	BAS...	BY9 KLAIPEDA	5607.50	01916.89	20250210	0615	127		07 9	-0.9 1040	9990	----	14 14	14	x x x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	
0177	05	BPEX13	BAS...	BY10	5637.83	01934.92	20250210	1000	147	12	08 9	-0.3 1043	2830	x--x	15 15	15	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	-	x x x x x x x x	
0178	05	BPEX14	BAS...	BY11	5704.45	01950.53	20250210	1340	213		07 9	-1.1 1043	2730	----	17 17	17	-	x -	x -	-	x x	x x	x x	x x	x x	x x	x x	x x	x x	-	-	
0179	05	BPEX19	BAS...	BY13	5723.18	01926.05	20250210	1655	122		07 10	-0.1 1044	9990	----	14 14	14	x x x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	
0180	05	BPEX21	BAS...	BY15 GOTLANDSDJ	5718.72	02004.43	20250210	1930	249		07 10	-0.1 1044	9990	xxx-	24 24	24	-	x -	x x	x x	x x	x x	x x	x x	x x	x x	x x	x x	x x	x x	-	-
0181	05	BPEX25	BAS...	BY19	5733.02	02009.64	20250210	2240	160		06 8	0.4 1044	9990	----	15 15	15	-	x -	x -	-	x x	x x	x x	x x	x x	x x	x x	x x	x x	-	-	
0182	05	BPEX26	BAS...	BY20 FÄRÖDJ	5759.86	01952.73	20250211	0200	203		08 5	1.3 1044	9990	x---	17 17	17	-	x -	x -	-	x x	x x	x x	x x	x x	x x	x x	x x	-	-	-	
0183	05	BPNX27	BAS...	BY21	5826.58	02020.11	20250211	0545	122		11 3	0.9 1043	9990	----	14 14	14	x x x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	x x -	
0184	05	BPNX34	BAS...	BY28	5902.49	02106.03	20250211	1040	200		14 3	1.1 1043	2830	----	17 17	17	-	x -	x -	-	x x	x x	x x	x x	x x	x x	x x	x x	x x	-	-	
0185	05	BPNX33	BAS...	BY27	5917.95	02133.22	20250211	1320	180		20 2	1.3 1042	2830	----	16 16	16	-	x -	x -	-	x x	x x	x x	x x	x x	x x	x x	x x	x x	-	-	

Ship: 77SE
Year: 2025

Ser no	Cru no	Stat code	Proj	Stat name	Lat	Lon	Start date yyyymmdd	Start time hhmm	Bottom depth m	Secchi depth m	Wind dir vel	Air temp C	Air pres hPa	WCVI elac tues	CZPP hoapt o p	No de	No btl	T e m m l p p t t l d	T e m m l p p t t l d	S a a c h o o x x s o o r r r o o k o m m i v s m i p t	P d d h P P N N N A S H C	D o o t t t t t m t l i u o o
0186	05	BPNX35	BAS... BY29 / LL19		5852.89	02019.68	20250211	1820	178		15 4	-1.4	1041	9990	x---	16 16	- x - x - x x x x x x x x - x - -					
0187	05	BPNX36	BAS... BY30		5847.29	01905.73	20250211	2240	191		16 3	-0.6	1040	9990	----	16 16	- x - x - x x x x x x x x - x - -					
0188	05	BPNX37	BAS... BY31 LANDSORTSDJ		5835.64	01814.22	20250212	0210	459		15 3	-0.3	1038	9990	xxx-	20 20	- x - x x x x x x x x x x x x -					
0189	05	BPWX38	BAS... BY32 NORRKÖPINGS DJ		5800.98	01759.05	20250212	0720	205		17 3	-1.5	1035	2830	x--x	17 17	- x - x x x x x x x x x x x x - x -					
0190	05	BPWX42	BAS... BY36		5742.99	01722.00	20250212	1040	140	12	11 3	-1.8	1034	2830	----	15 15	x x x x - x x x x x x x x x x - x - -					
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0192	05	BPSE49	BAS... BY39 ÖLANDS S UDDE		5607.03	01632.22	20250212	2225	50		10 7	0.2	1027	9990	xxxx- 8	8	x x x x x x x - x x x x x x x x -					

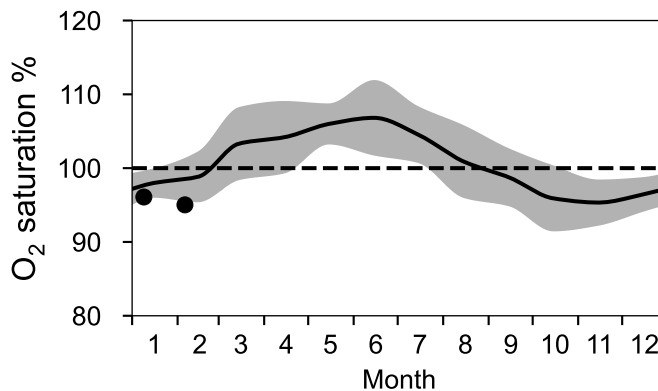
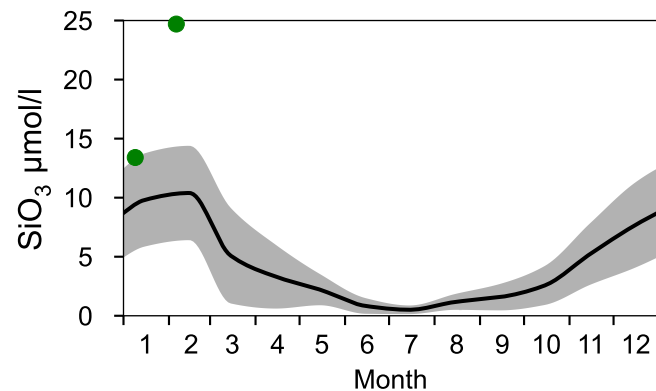
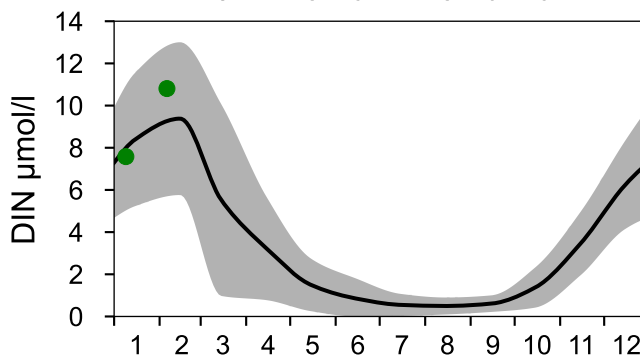
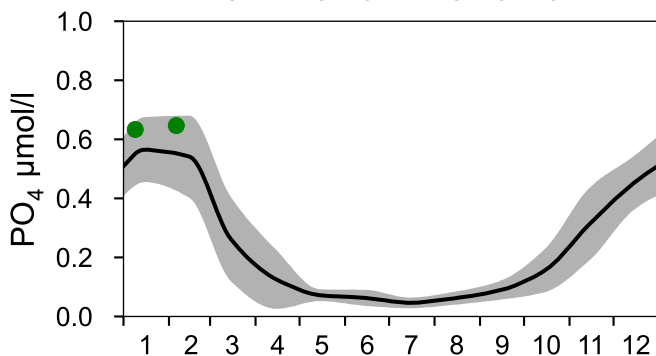
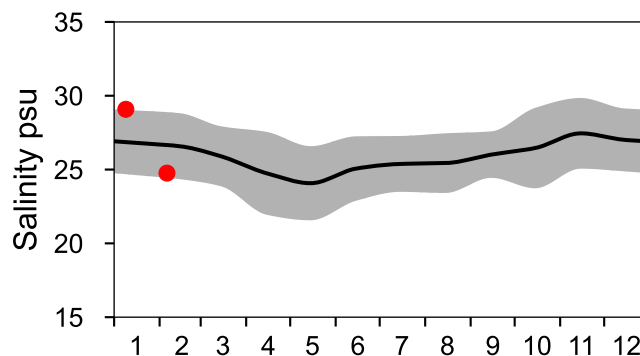
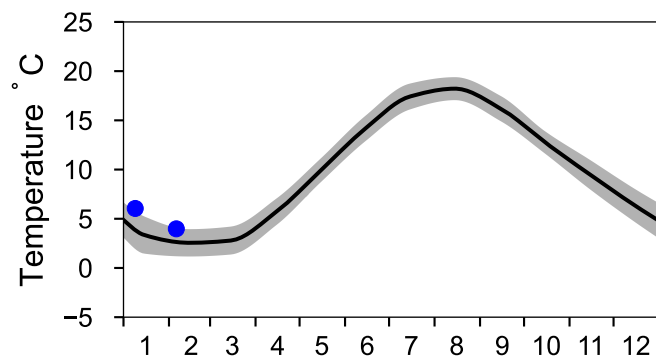
STATION SLÄGGÖ SURFACE WATER (0-10 m)

Annual Cycles

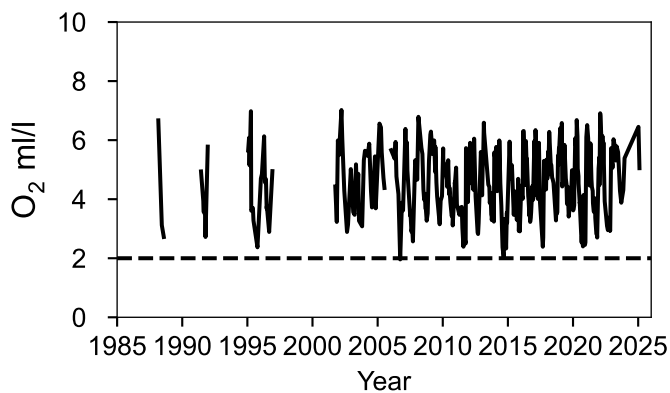
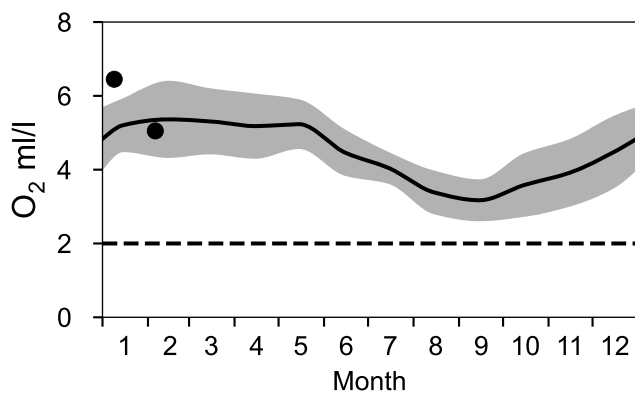
— Mean 1991-2020

■ St.Dev.

● 2025



OXYGEN IN BOTTOM WATER (depth >= 64 m)

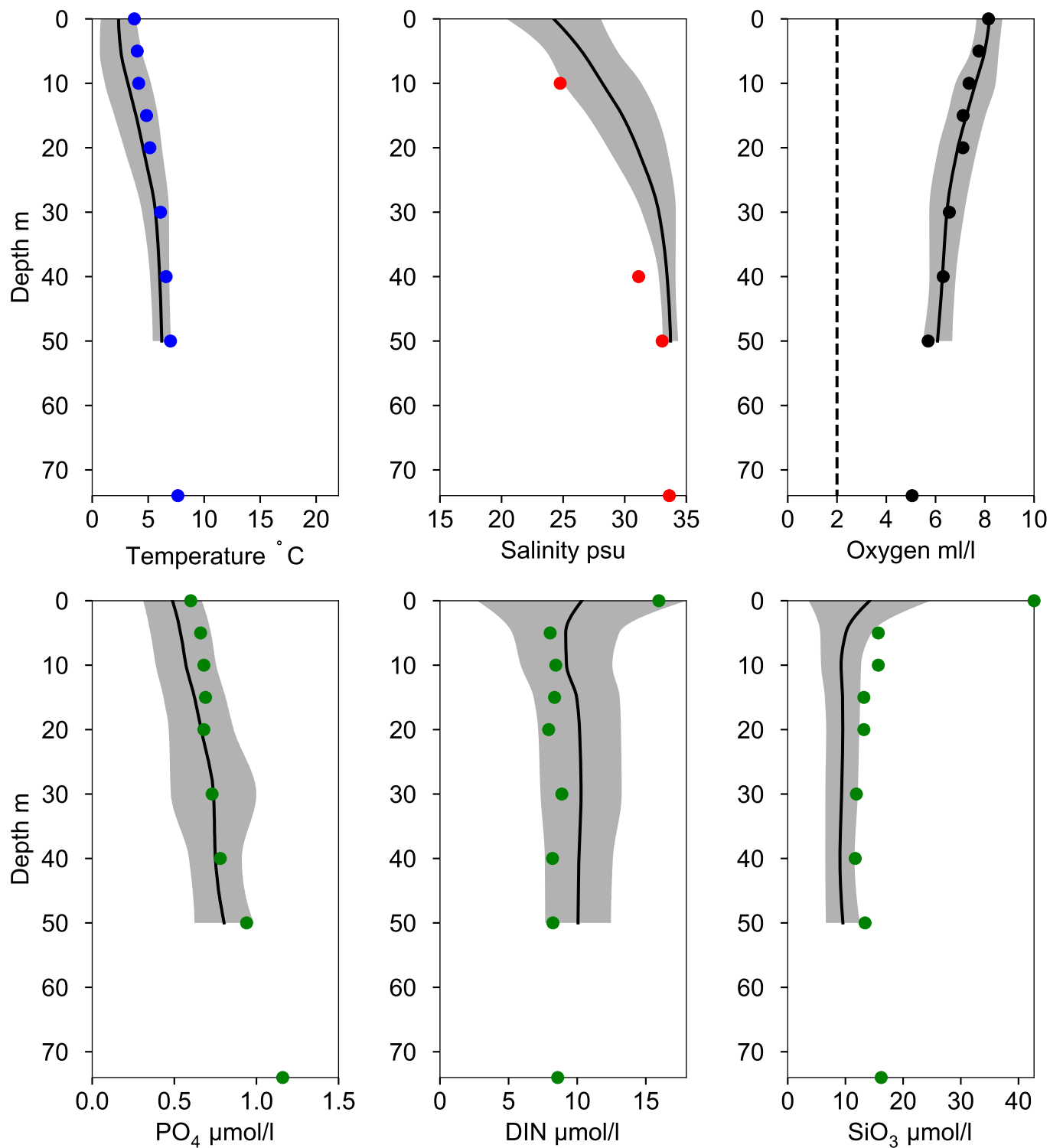


Vertical profiles SLÄGGÖ February

— Mean 1911-2020

■ St.Dev.

● 2025-02-06



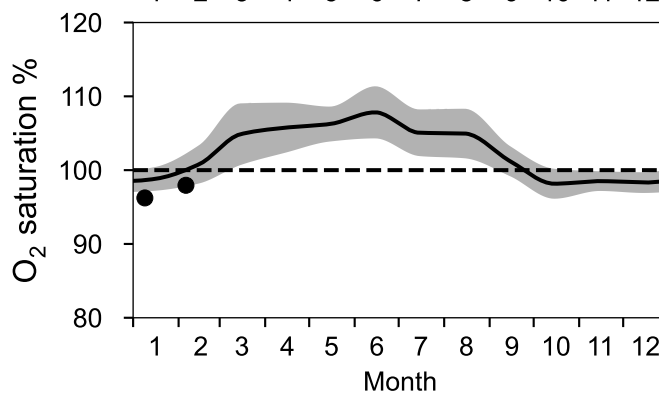
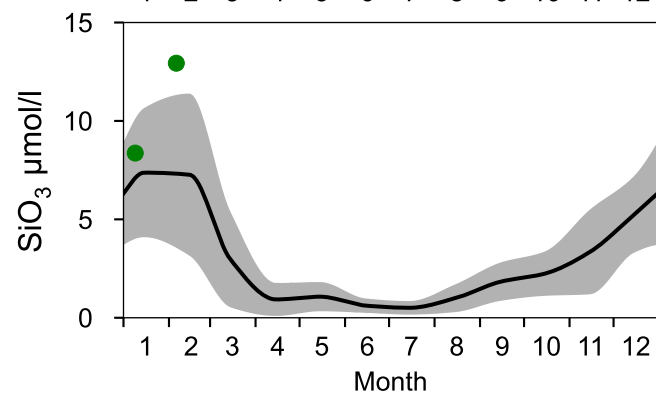
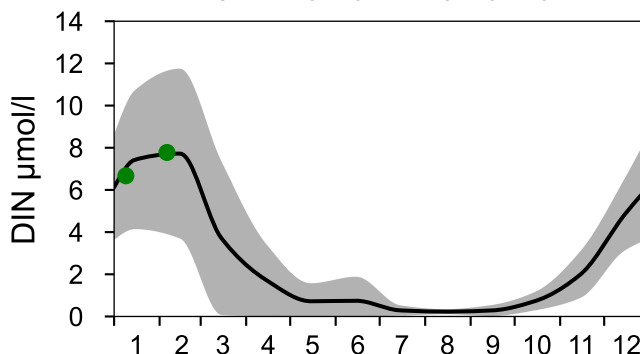
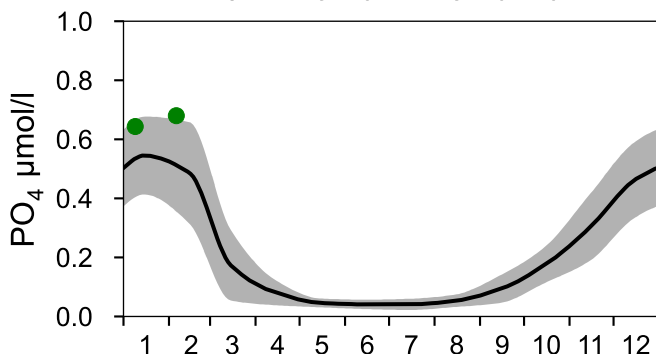
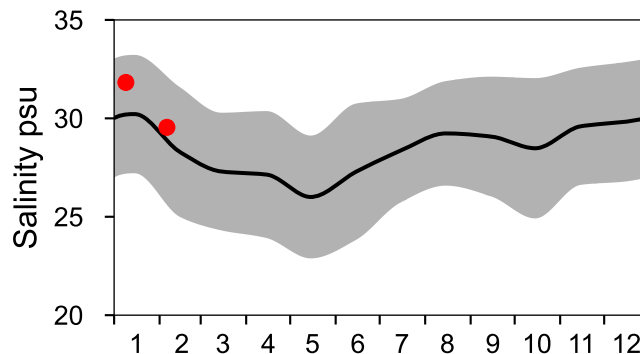
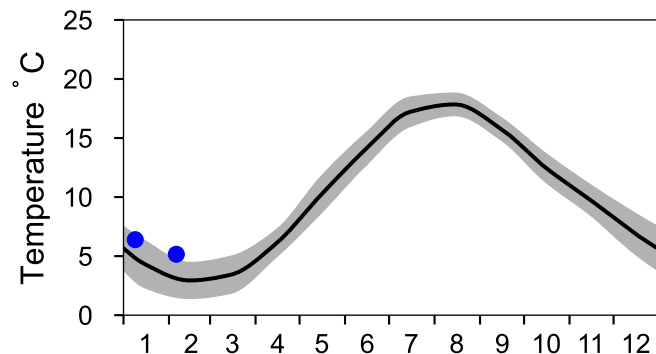
STATION Å13 SURFACE WATER (0-10 m)

Annual Cycles

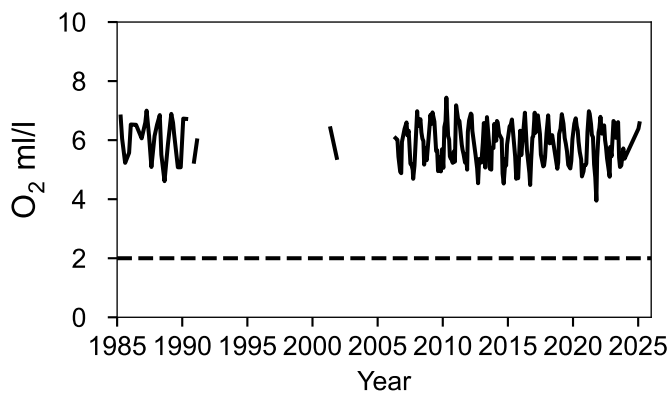
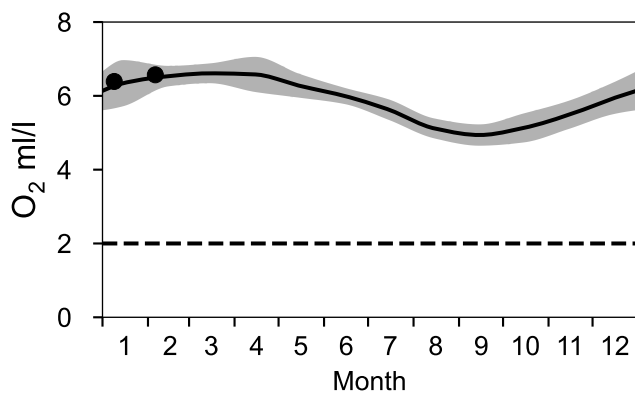
— Mean 1991-2020

■ St.Dev.

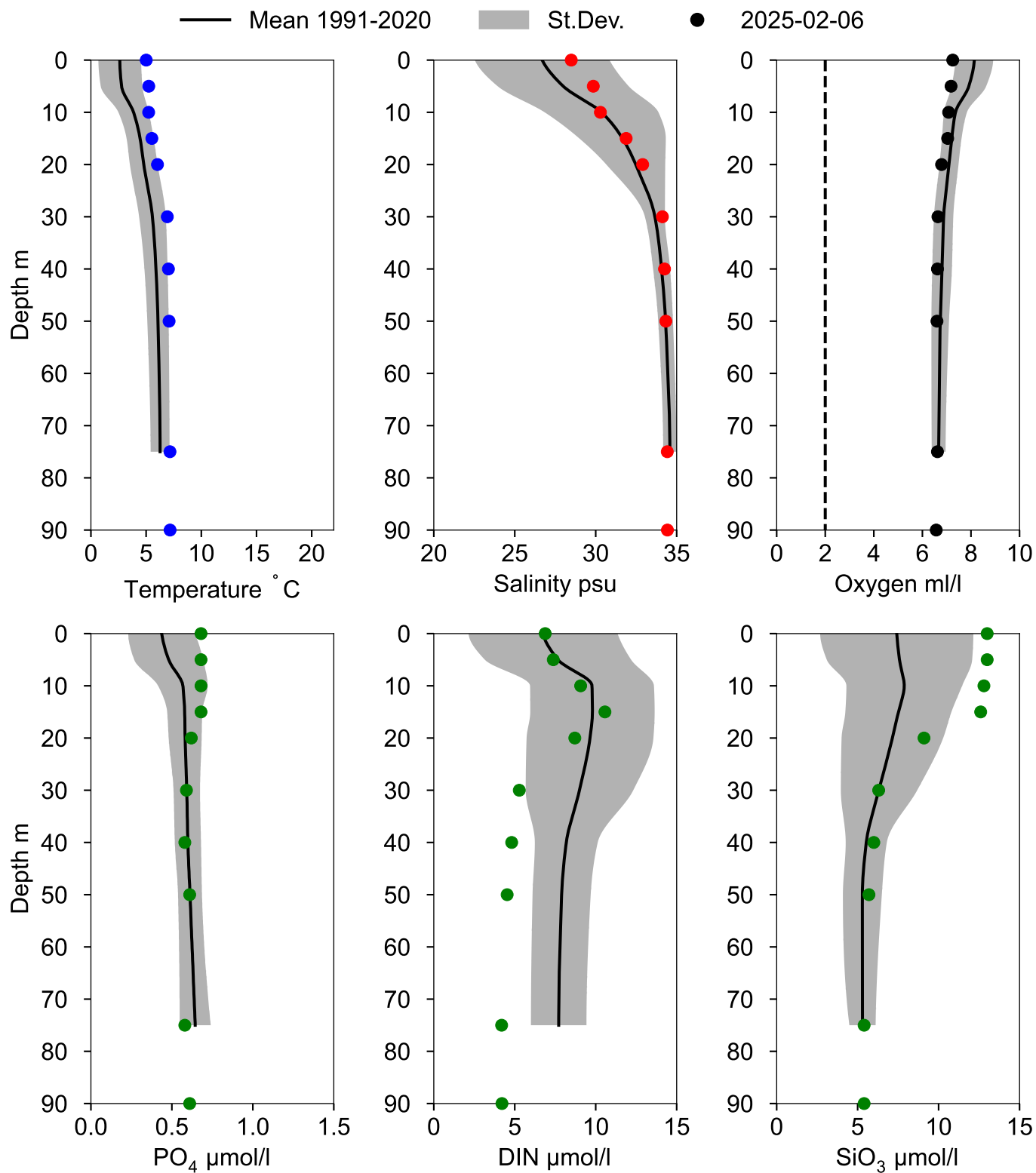
● 2025



OXYGEN IN BOTTOM WATER (depth >= 82 m)



Vertical profiles Å13 February



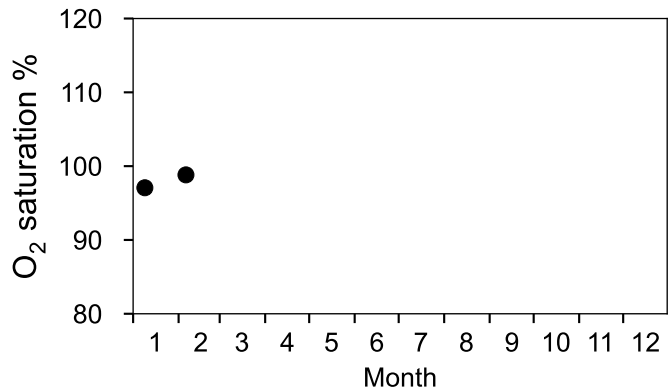
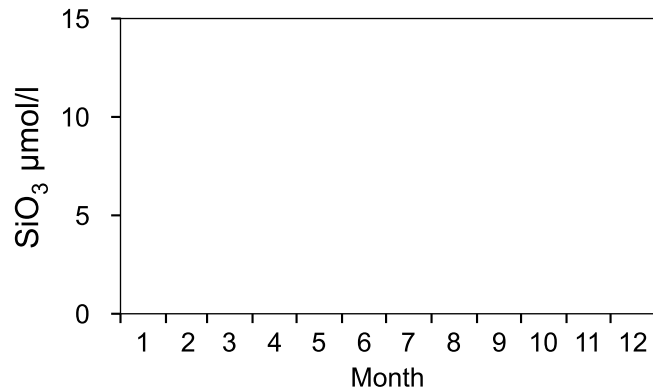
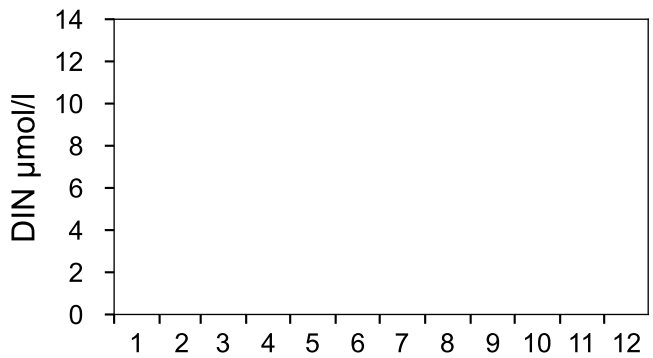
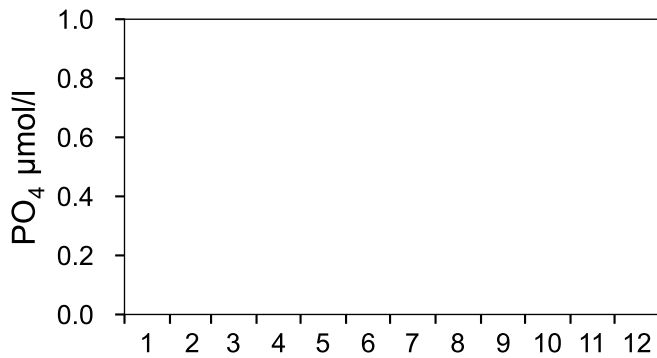
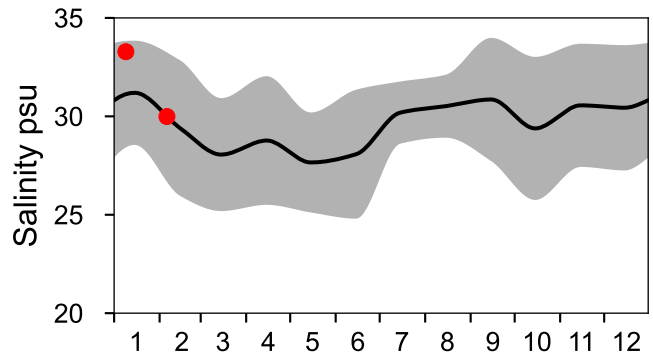
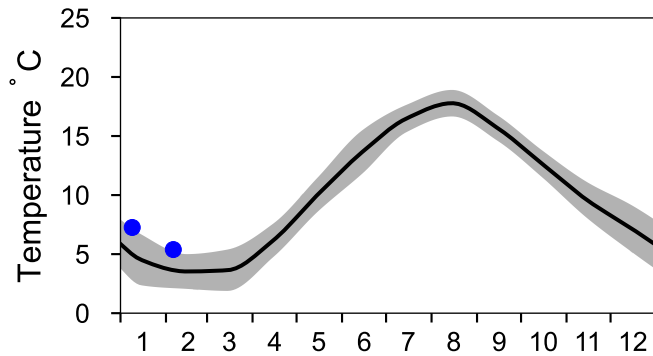
STATION Å14 SURFACE WATER (0-10 m)

Annual Cycles

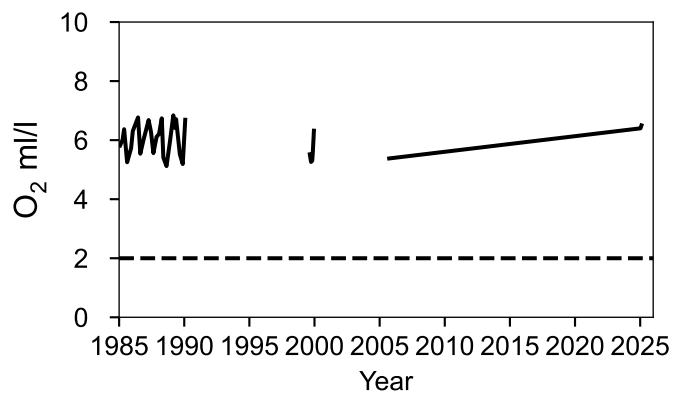
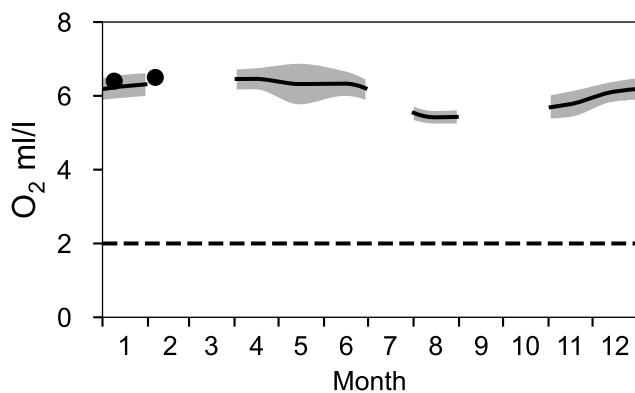
— Mean 1991-2020

■ St.Dev.

● 2025



OXYGEN IN BOTTOM WATER (depth >= 100 m)

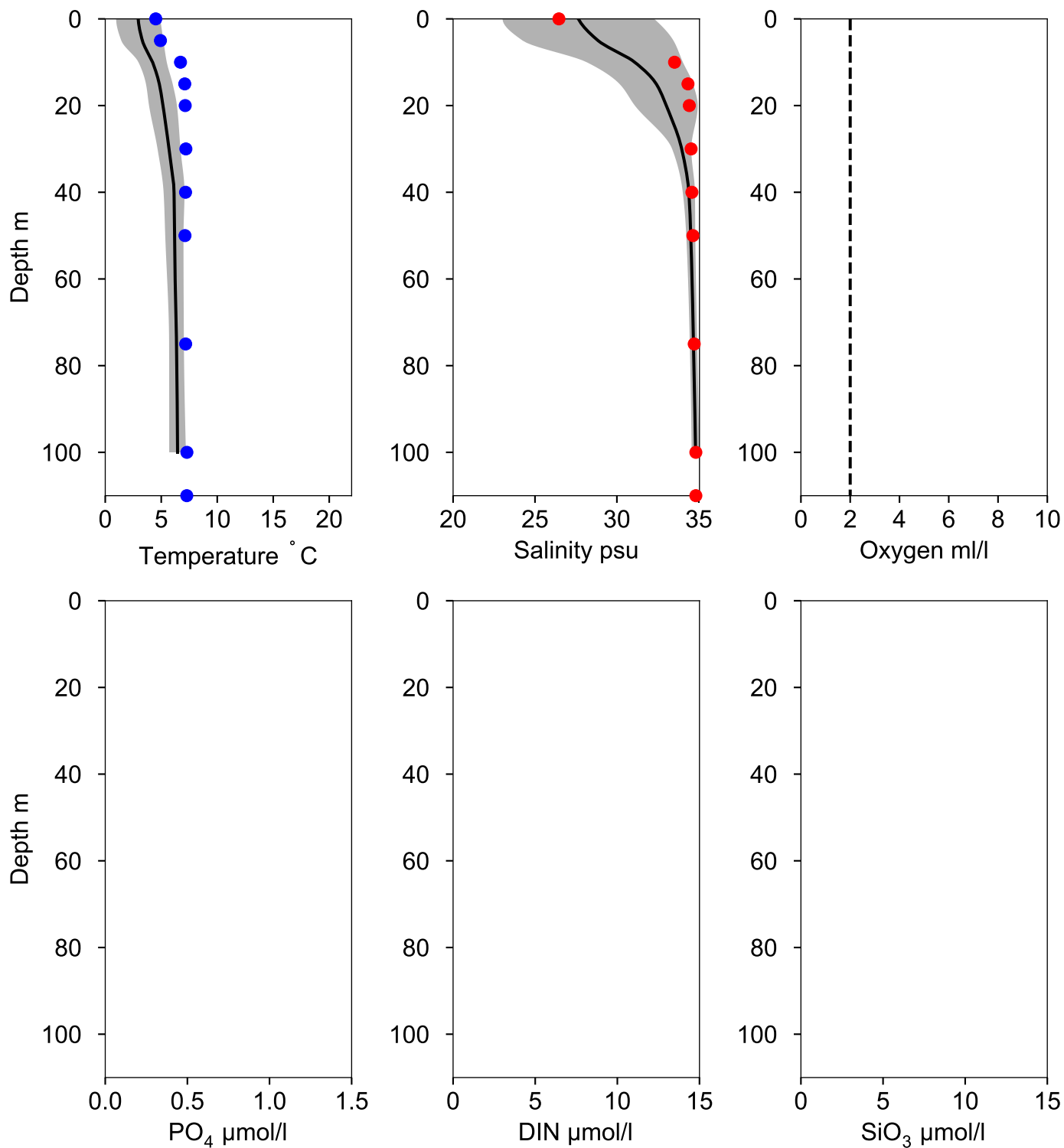


Vertical profiles Å14 February

— Mean 1991-2020

■ St.Dev.

● 2025-02-06



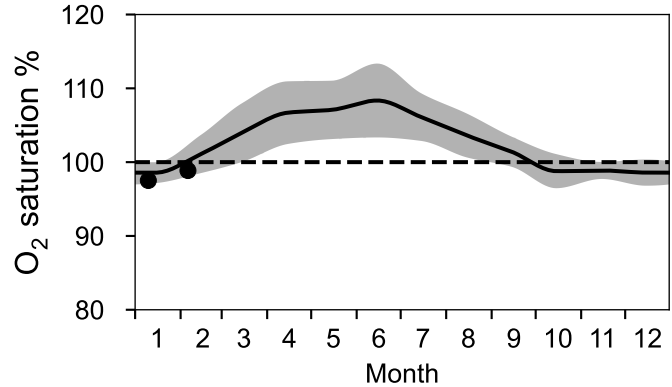
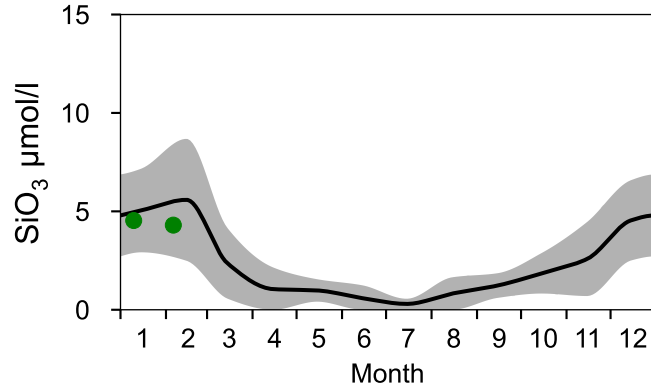
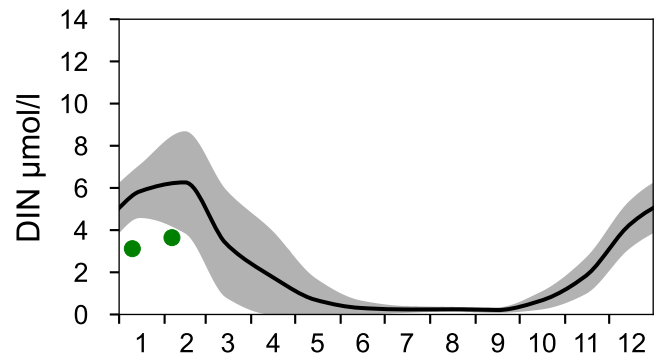
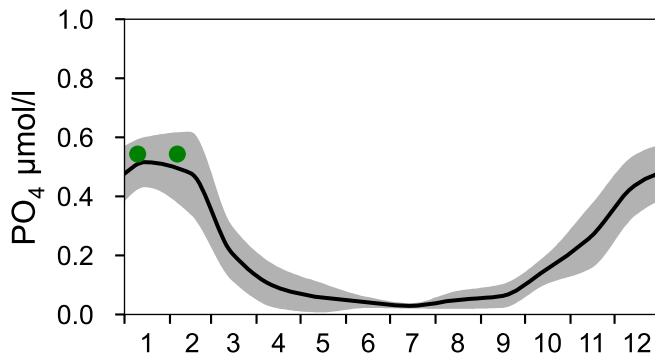
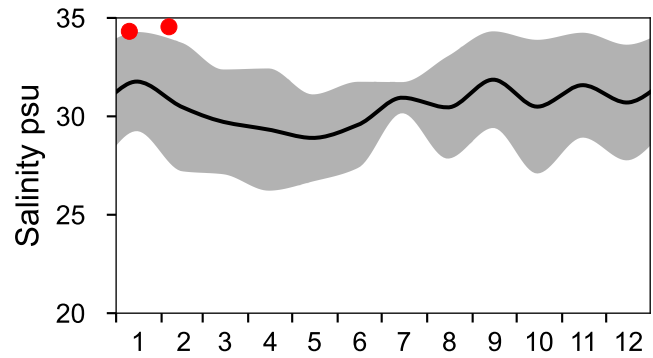
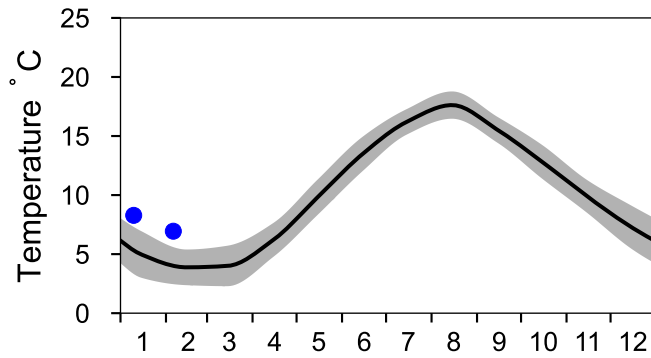
STATION Å15 SURFACE WATER (0-10 m)

Annual Cycles

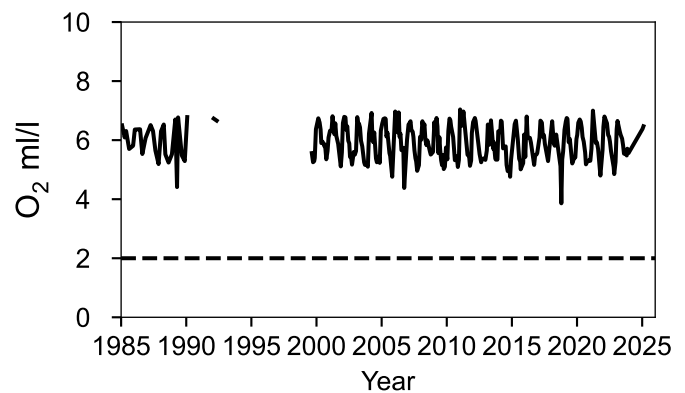
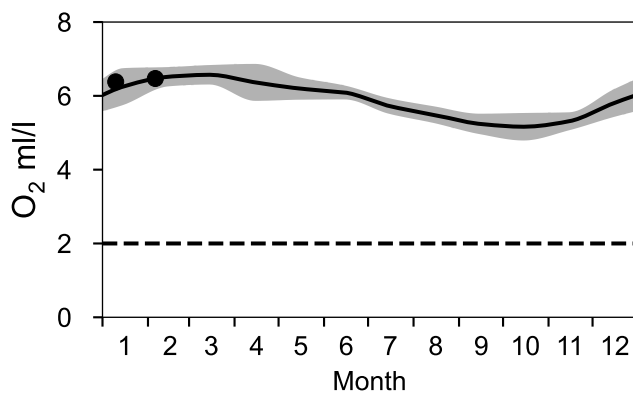
— Mean 1991-2020

■ St.Dev.

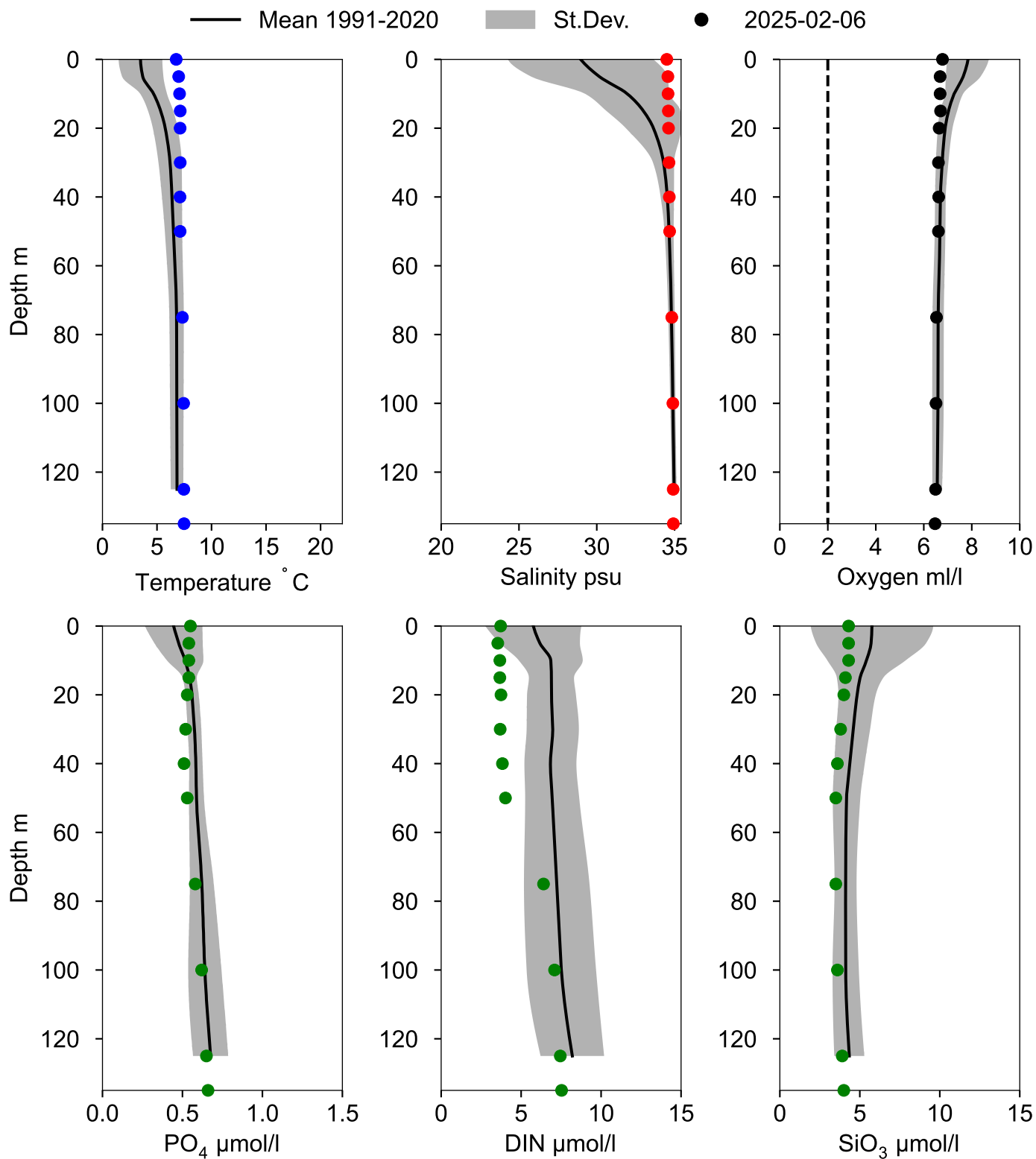
● 2025



OXYGEN IN BOTTOM WATER (depth >= 125 m)



Vertical profiles Å15 February



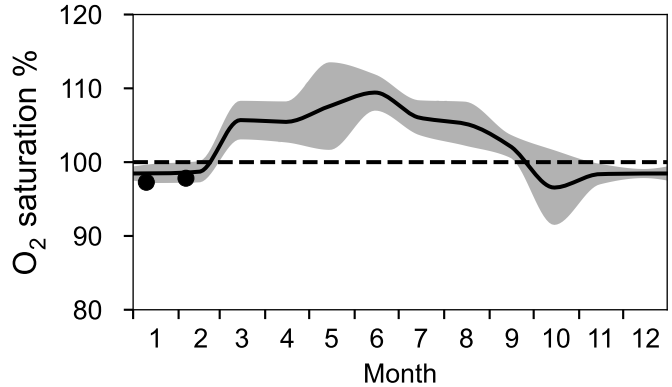
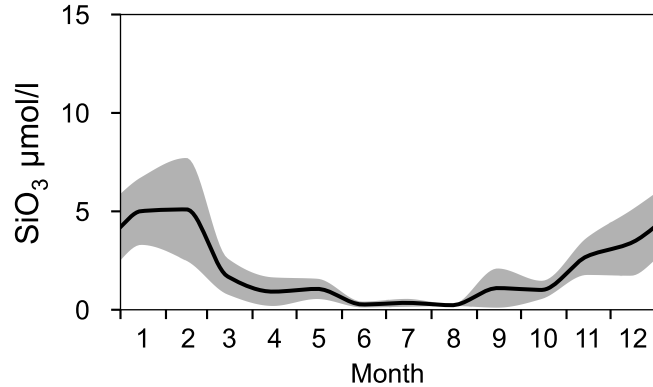
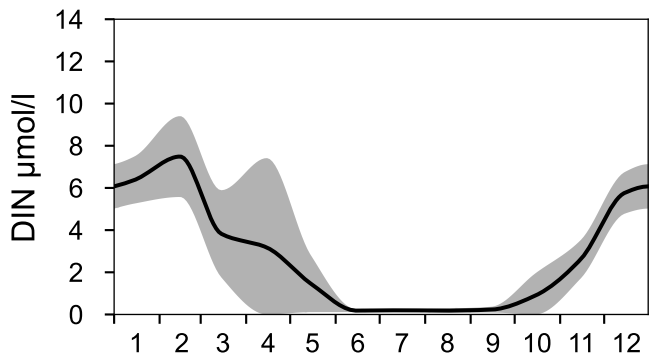
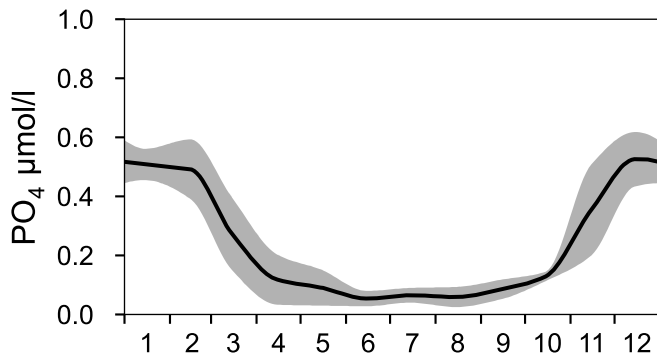
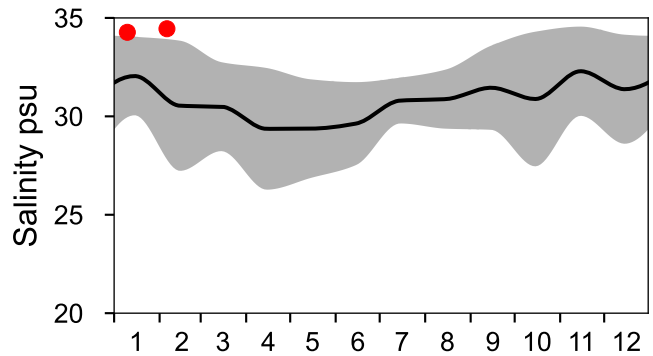
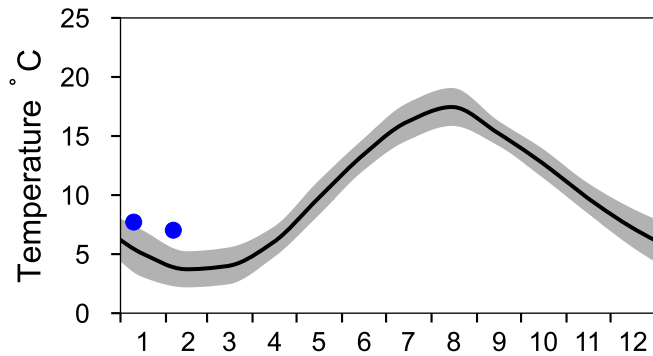
STATION Å16 SURFACE WATER (0-10 m)

Annual Cycles

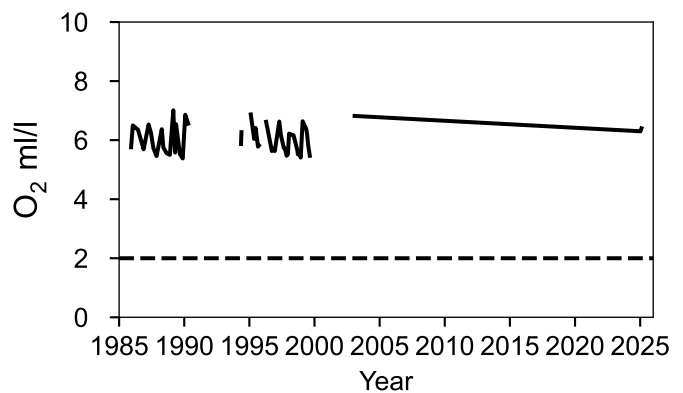
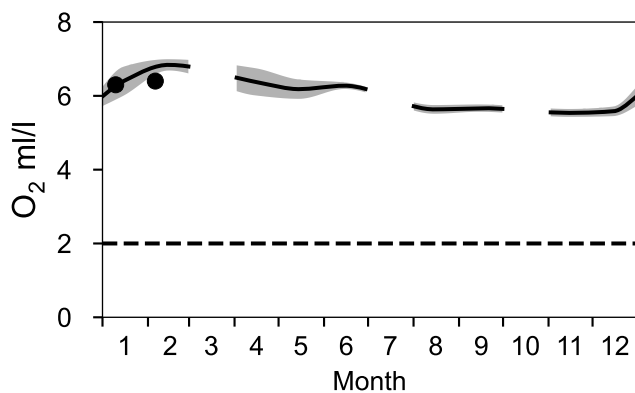
— Mean 1991-2020

■ St.Dev.

● 2025



OXYGEN IN BOTTOM WATER (depth >= 193 m)

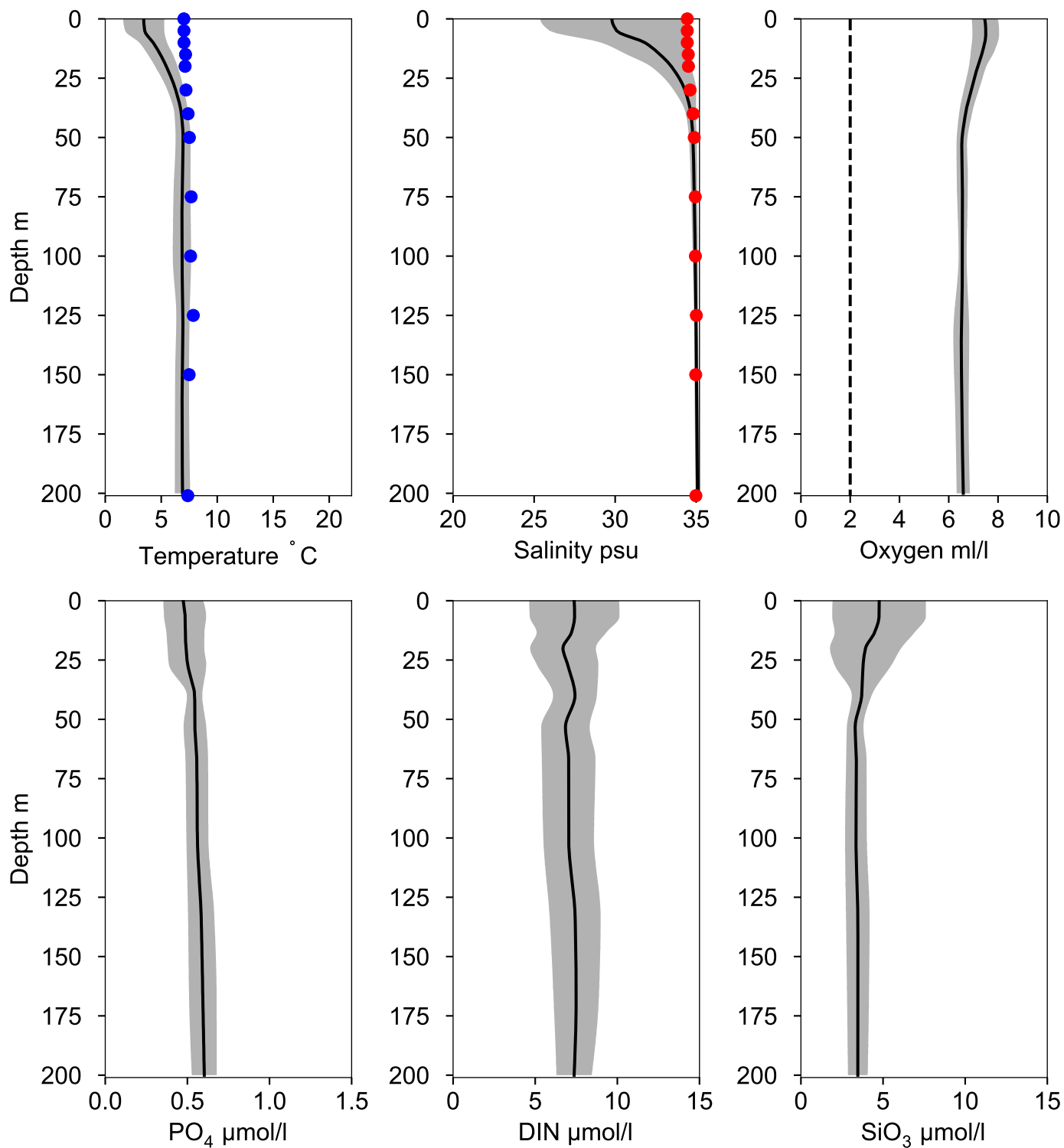


Vertical profiles A16 February

— Mean 1991-2020

■ St.Dev.

● 2025-02-06



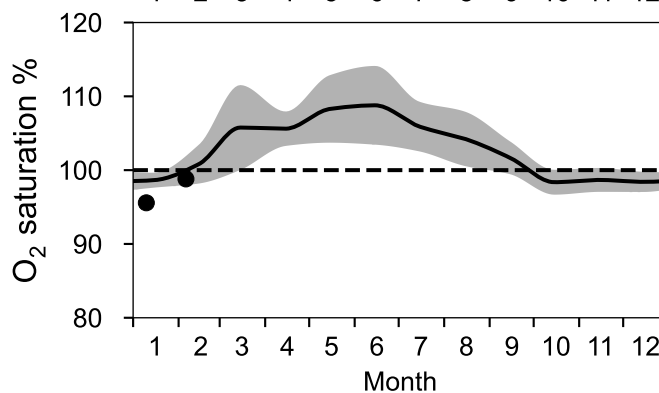
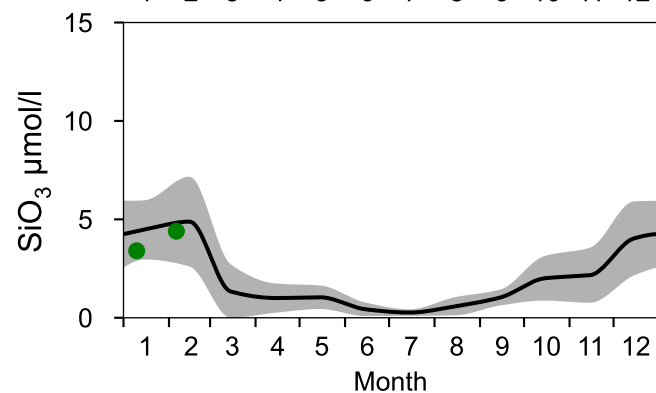
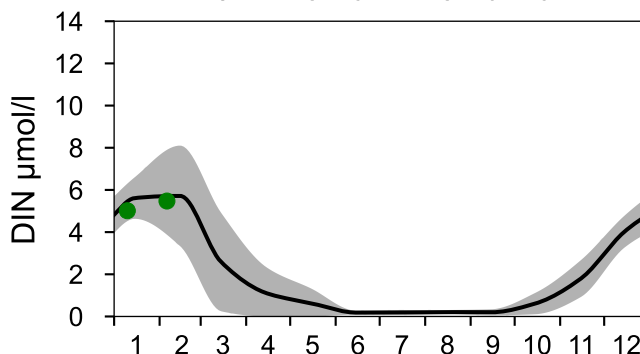
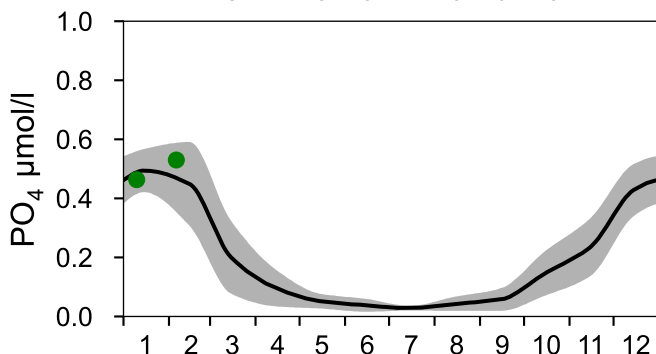
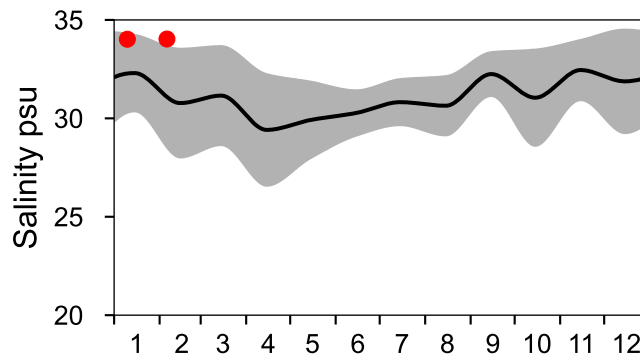
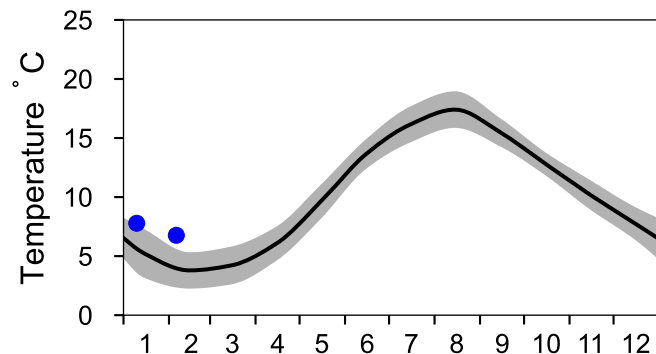
STATION Å17 SURFACE WATER (0-10 m)

Annual Cycles

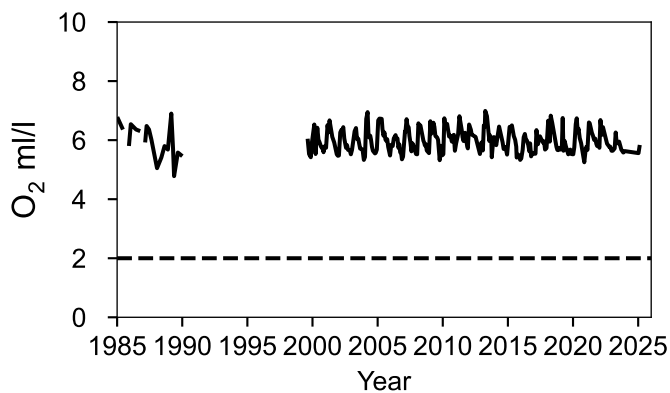
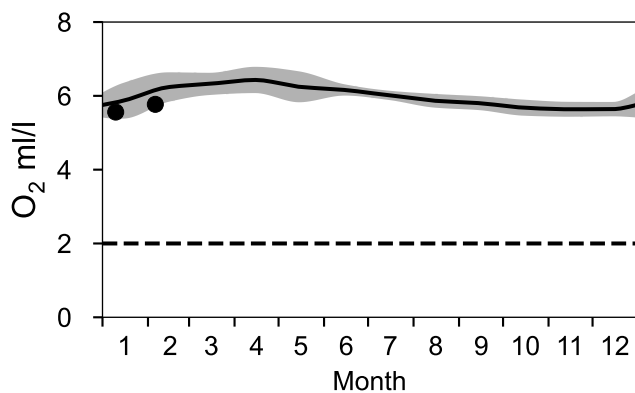
— Mean 1991-2020

■ St.Dev.

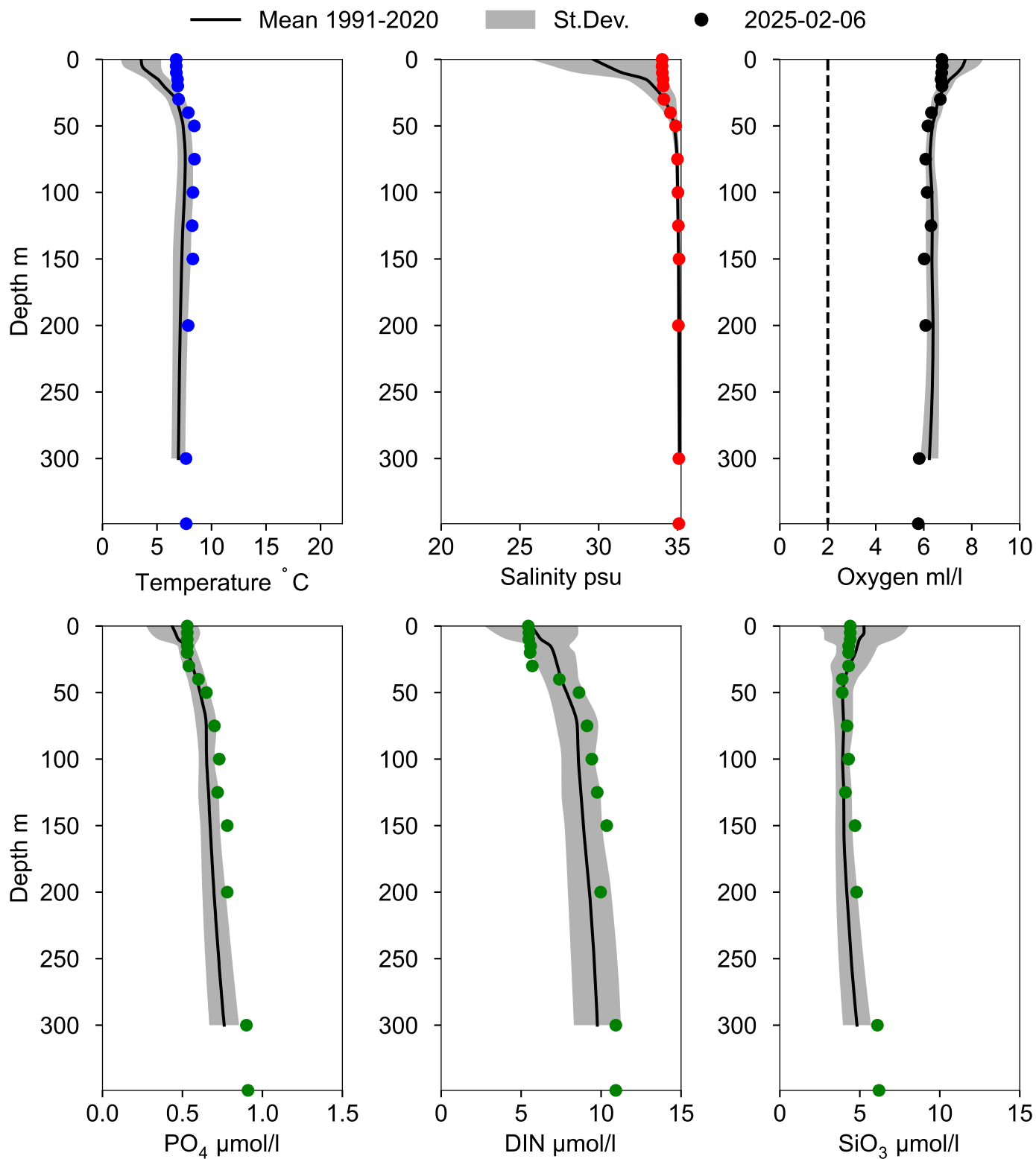
● 2025



OXYGEN IN BOTTOM WATER (depth >= 300 m)



Vertical profiles A17 February



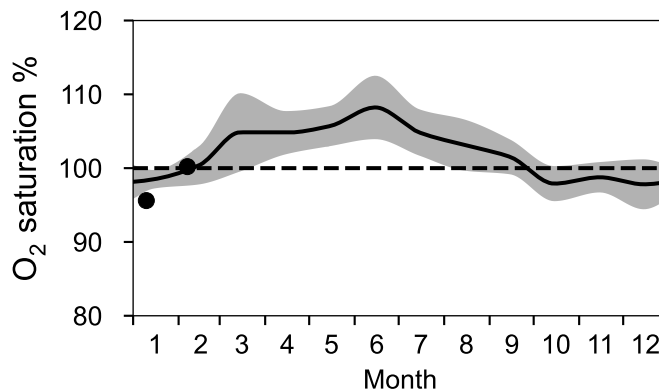
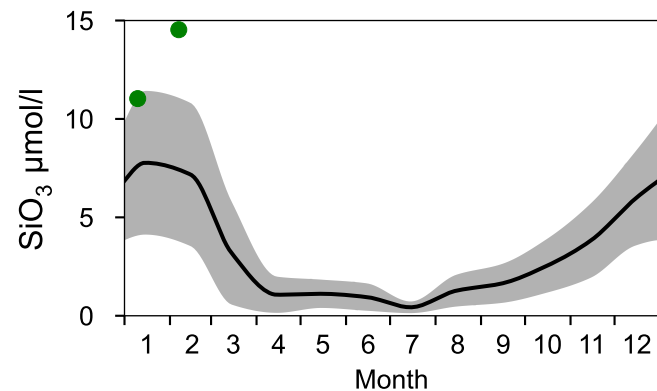
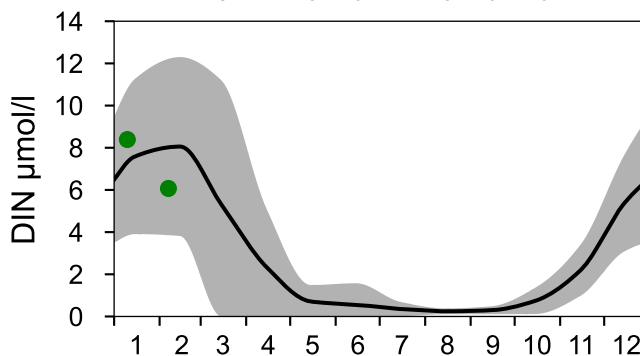
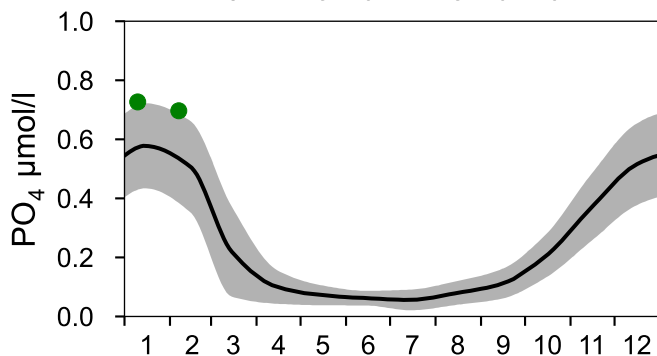
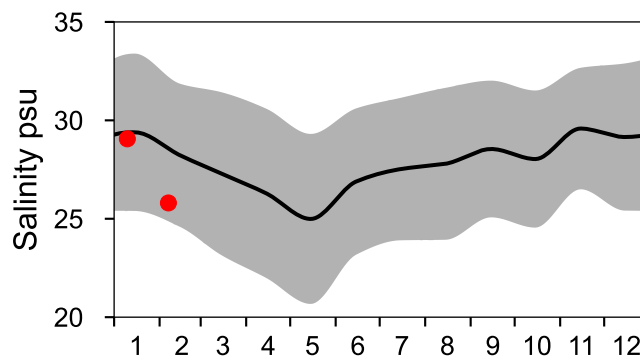
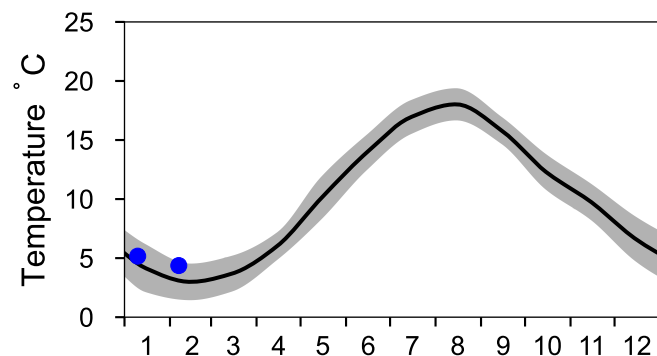
STATION P2 SURFACE WATER (0-10 m)

Annual Cycles

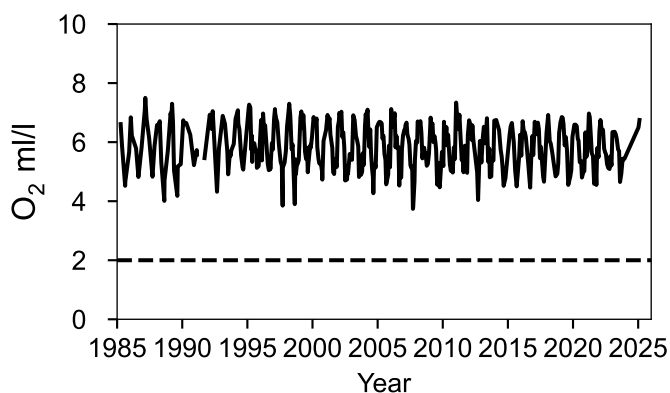
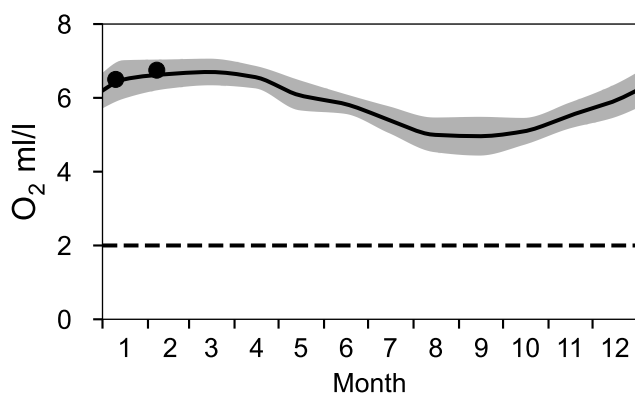
— Mean 1991-2020

■ St.Dev.

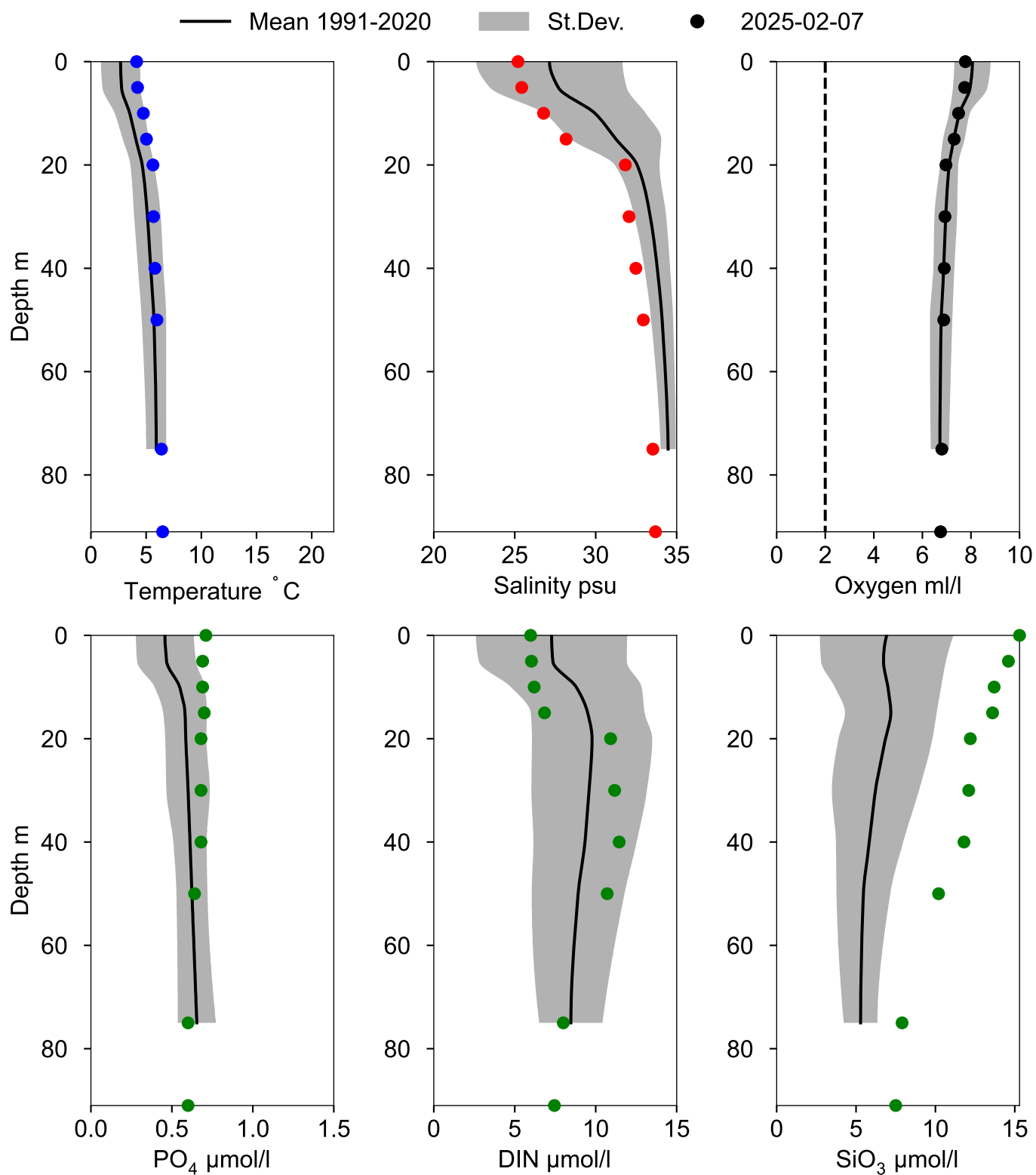
● 2025



OXYGEN IN BOTTOM WATER (depth >= 75 m)



Vertical profiles P2 February



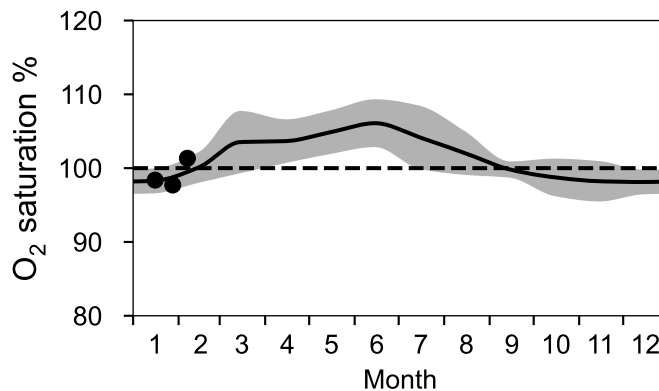
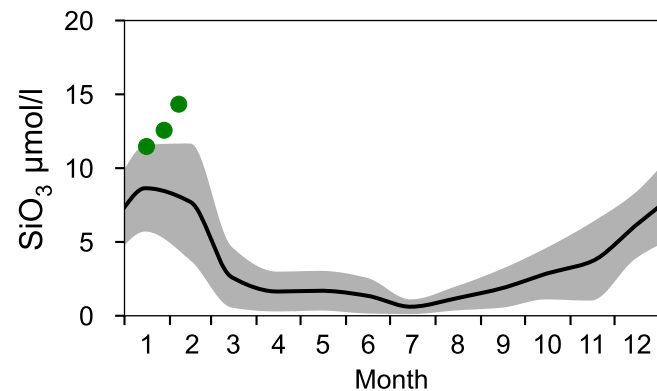
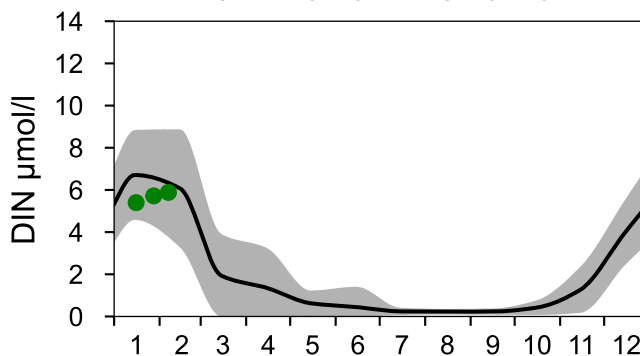
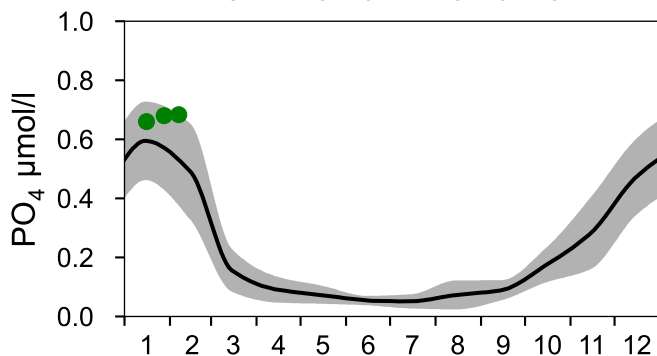
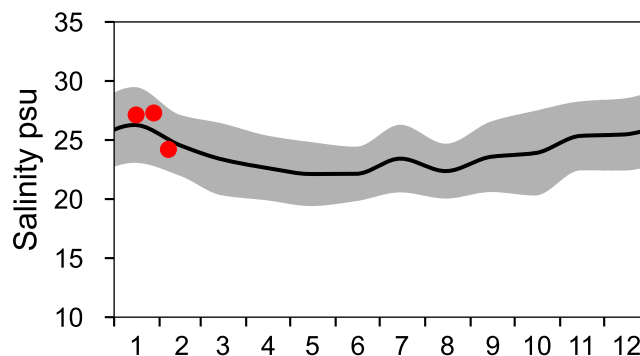
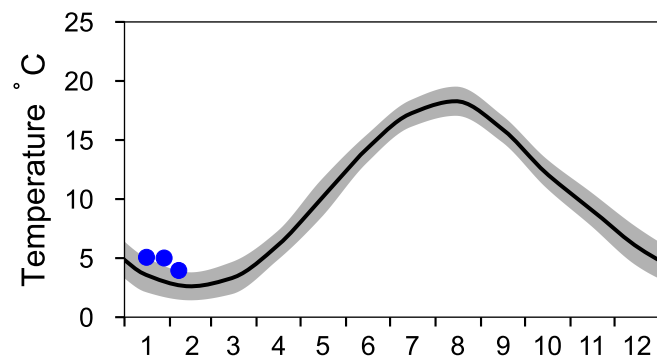
STATION FLADEN SURFACE WATER (0-10 m)

Annual Cycles

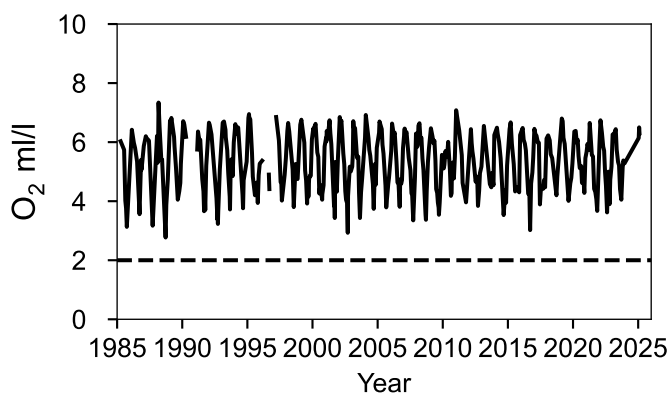
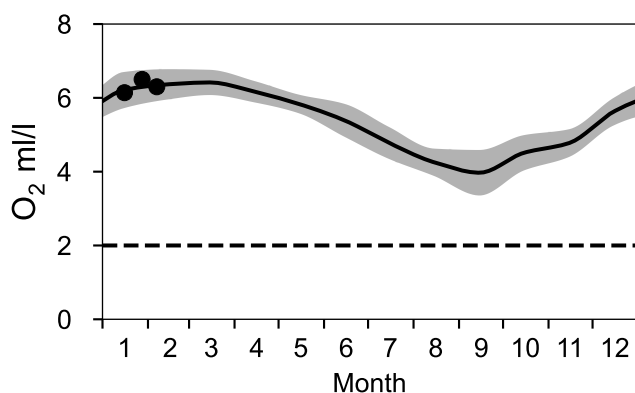
— Mean 1991-2020

■ St.Dev.

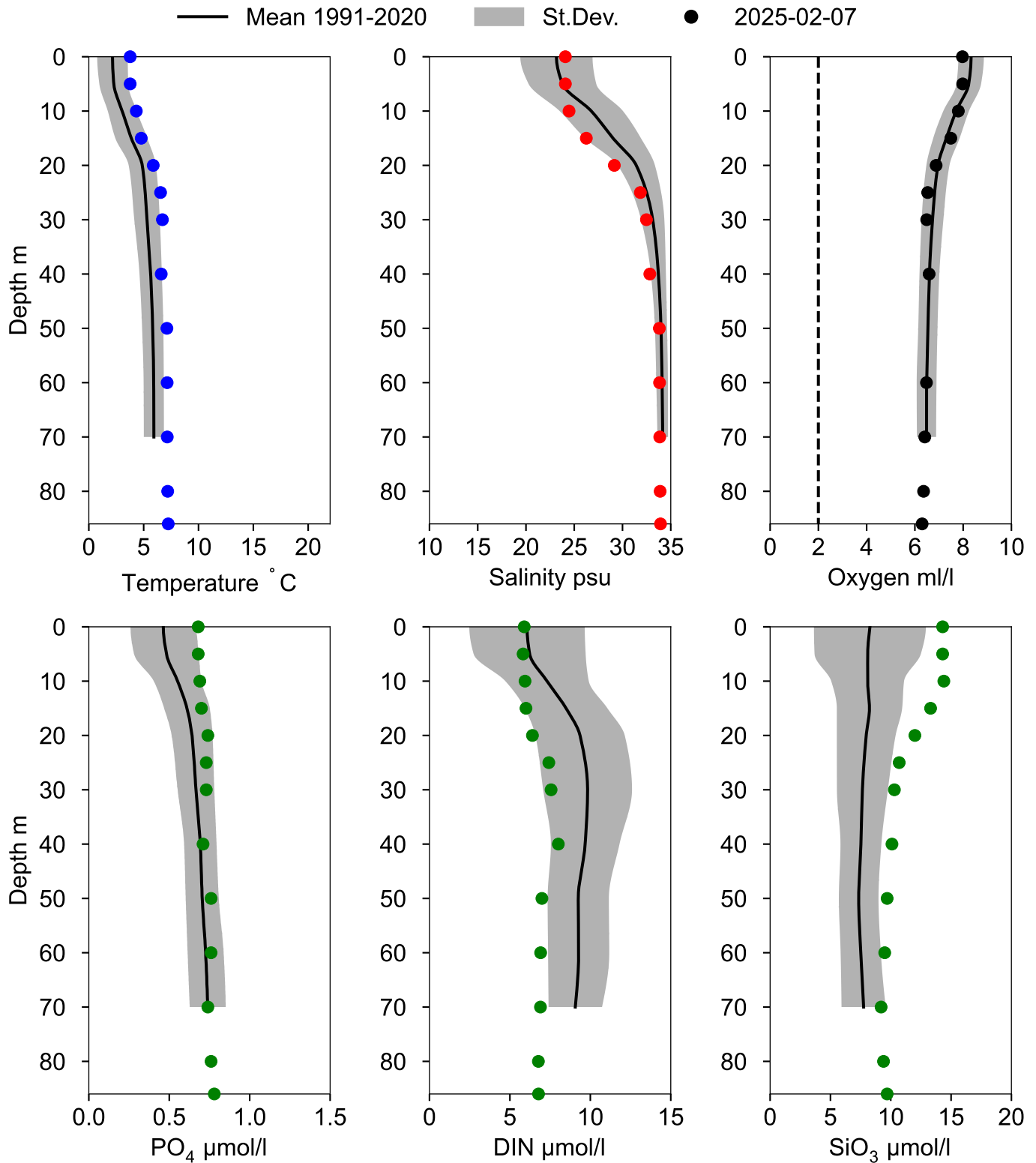
● 2025



OXYGEN IN BOTTOM WATER (depth >= 74 m)



Vertical profiles FLADEN February



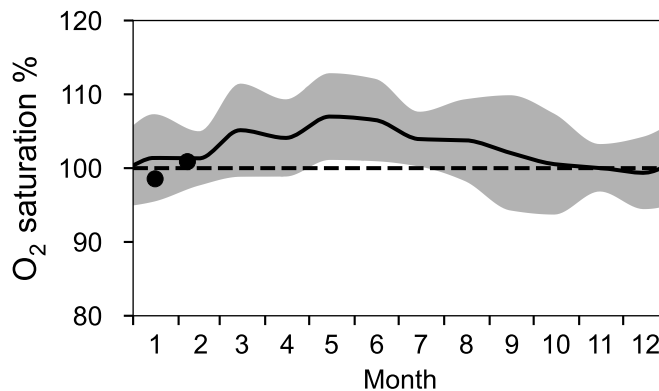
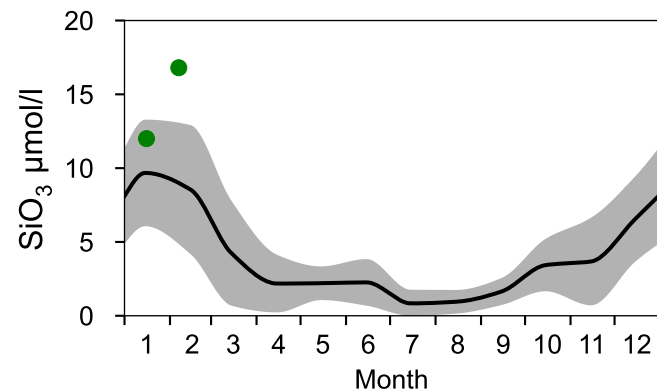
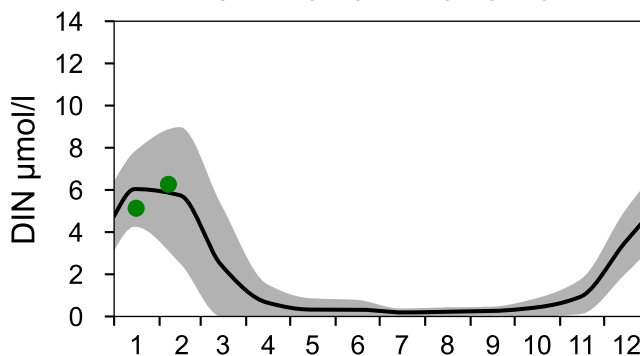
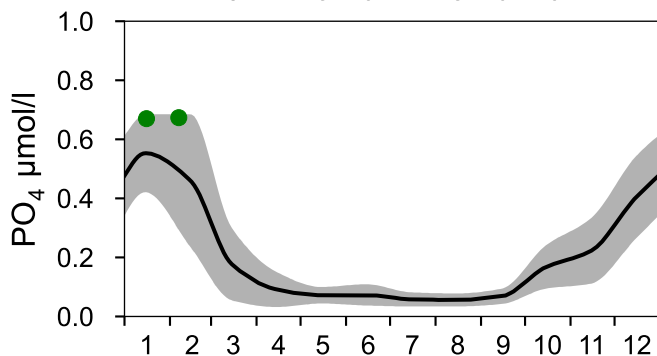
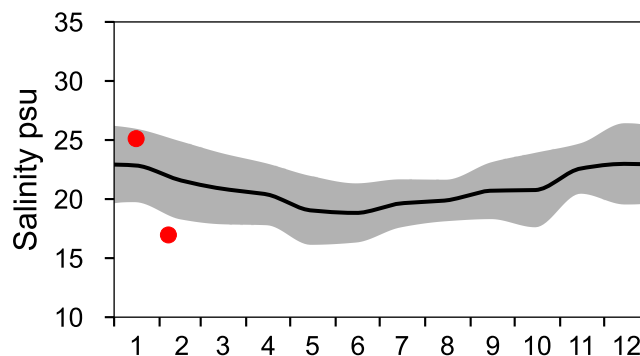
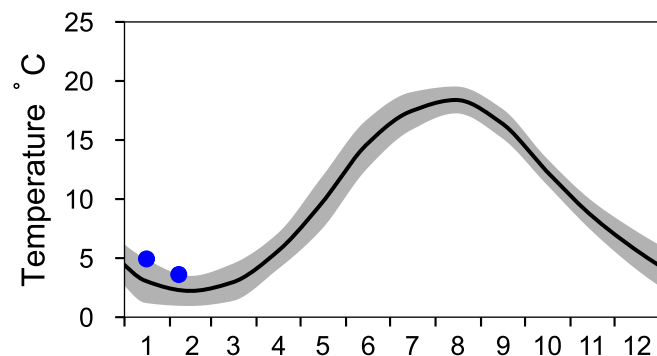
STATION N14 FALKENBERG SURFACE WATER (0-10 m)

Annual Cycles

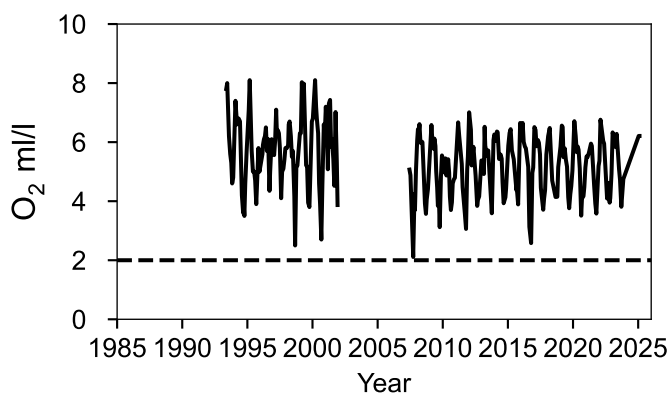
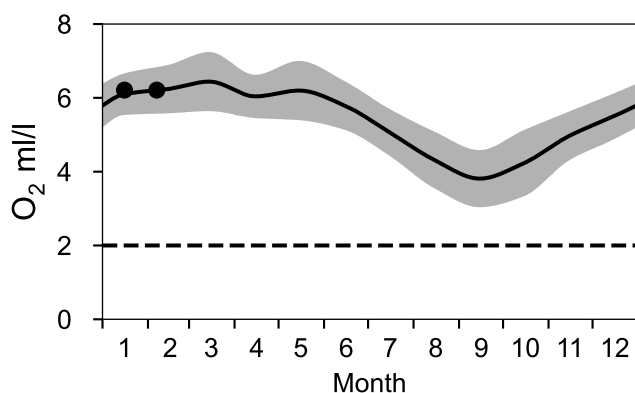
— Mean 1991-2020

■ St.Dev.

● 2025



OXYGEN IN BOTTOM WATER (depth >= 25 m)

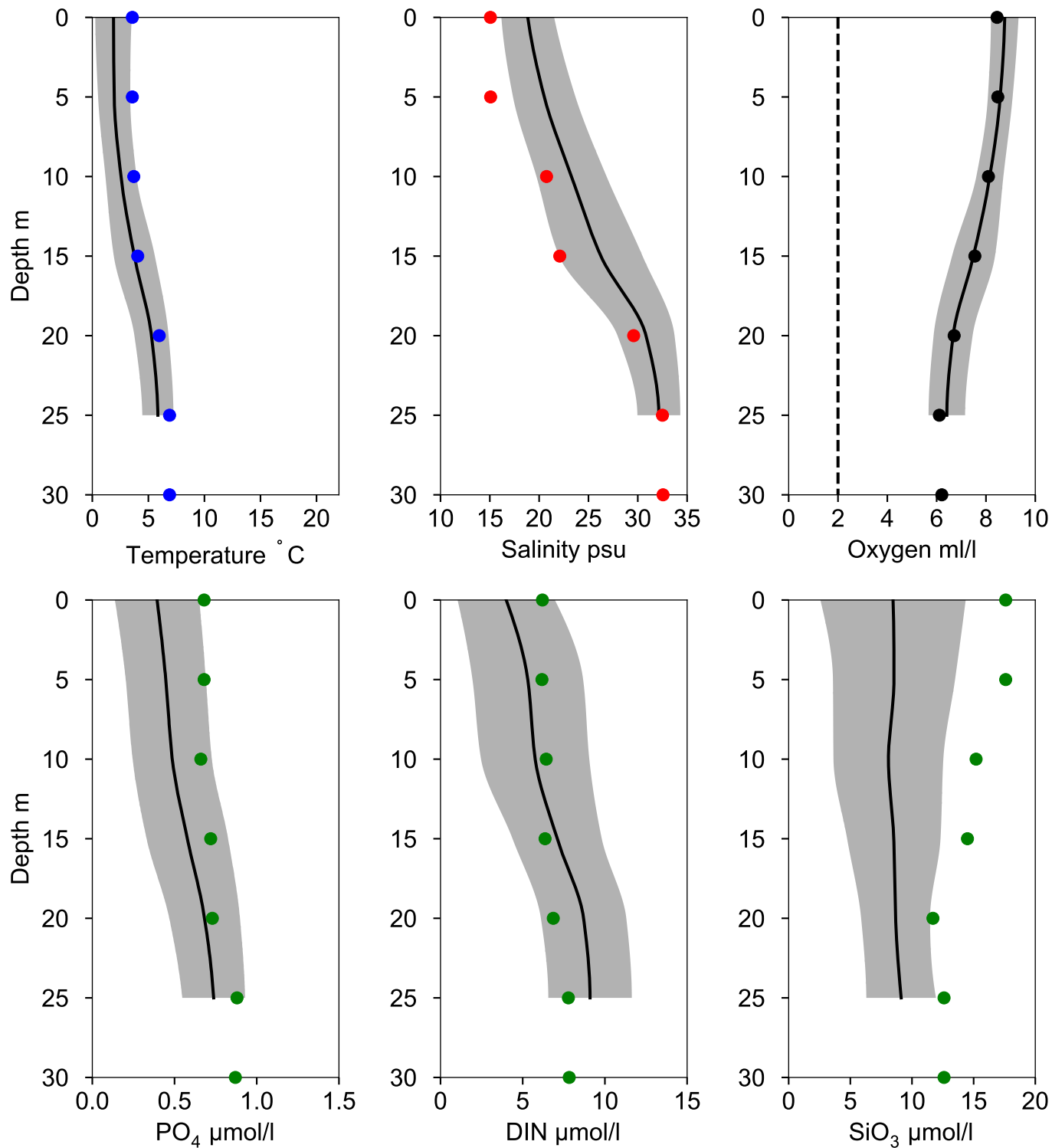


Vertical profiles N14 FALKENBERG February

— Mean 1991-2020

■ St.Dev.

● 2025-02-07



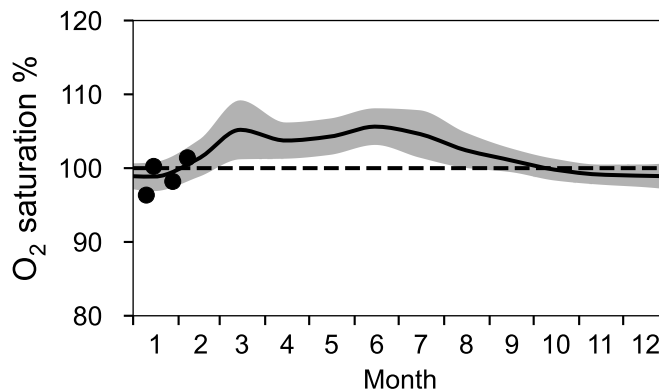
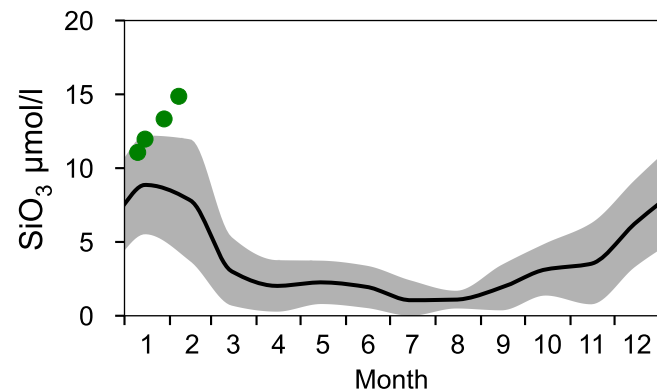
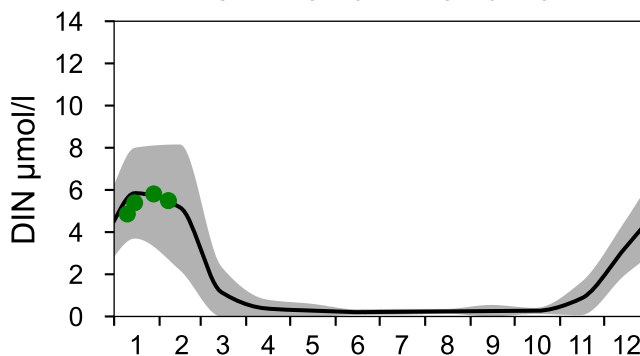
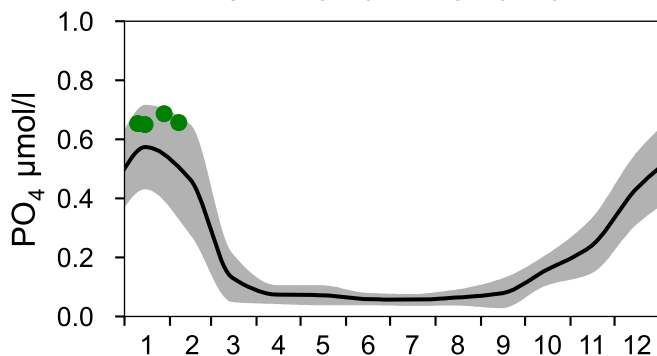
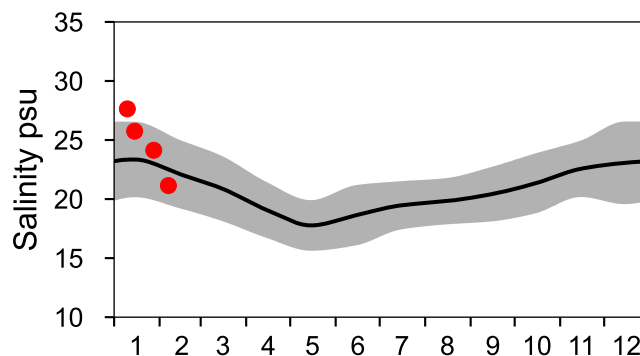
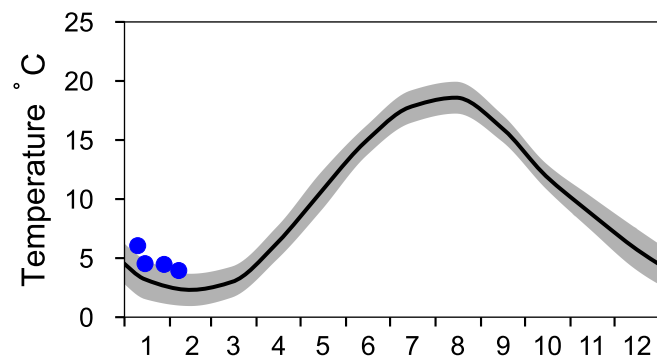
STATION ANHOLT E SURFACE WATER (0-10 m)

Annual Cycles

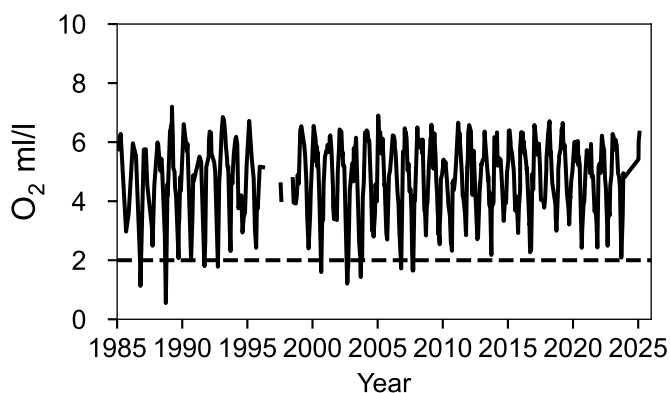
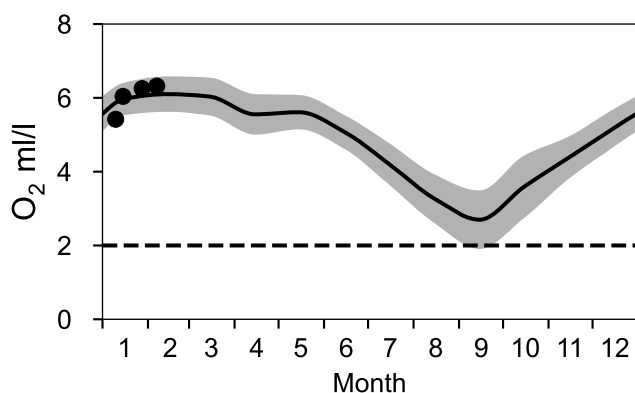
— Mean 1991-2020

■ St.Dev.

● 2025



OXYGEN IN BOTTOM WATER (depth >= 52 m)

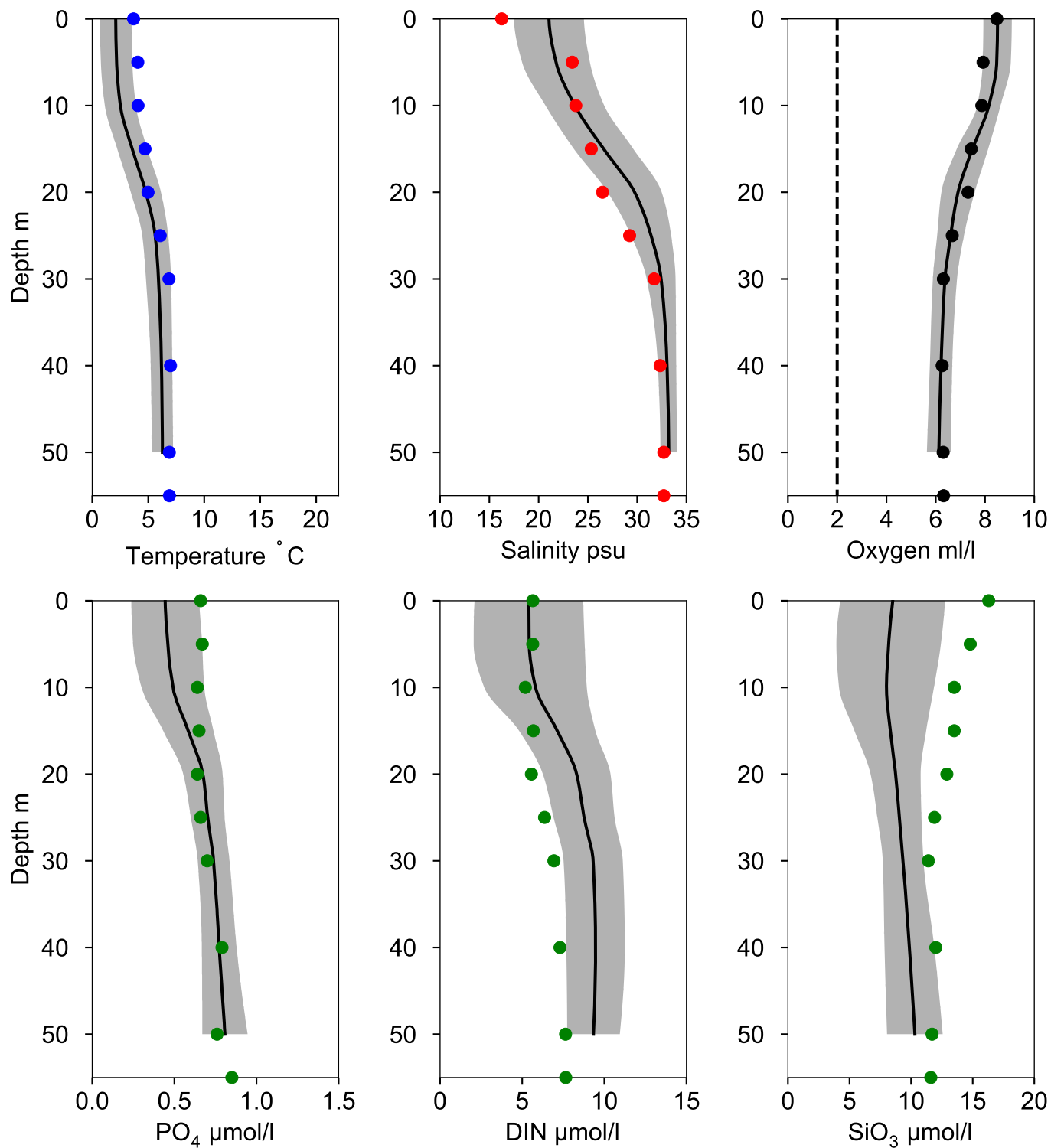


Vertical profiles ANHOLT E February

— Mean 1991-2020

■ St.Dev.

● 2025-02-07



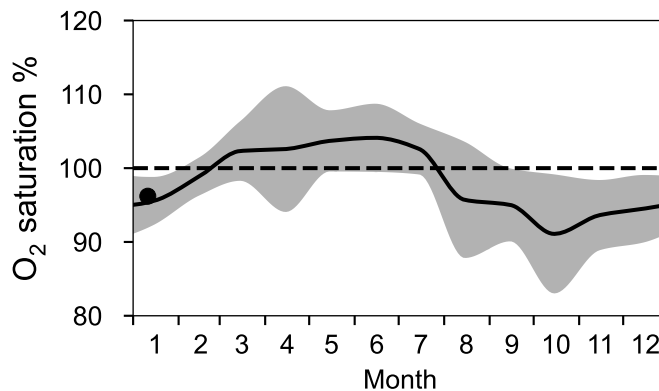
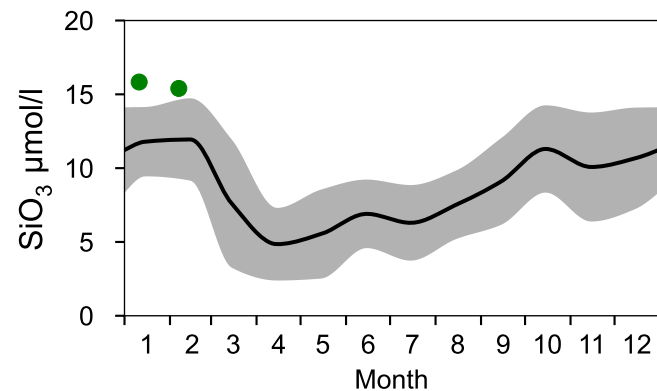
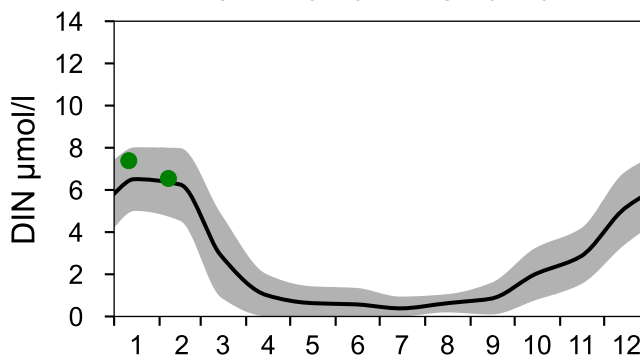
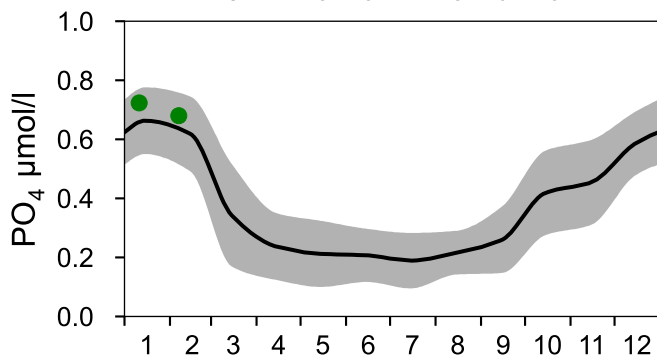
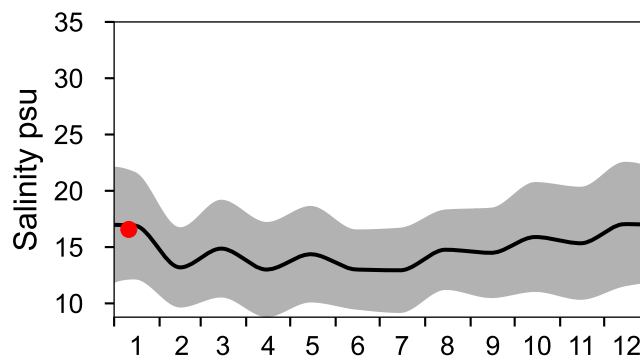
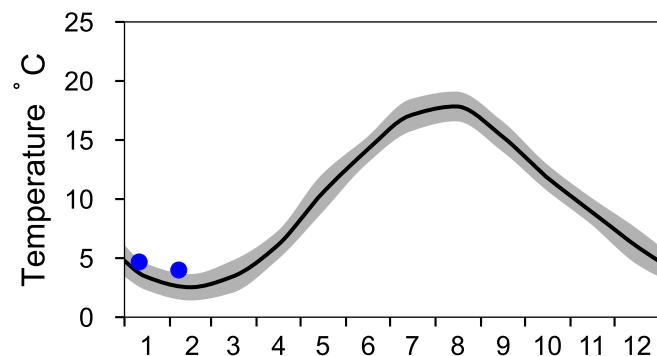
STATION W LANDSKRONA SURFACE WATER (0-10 m)

Annual Cycles

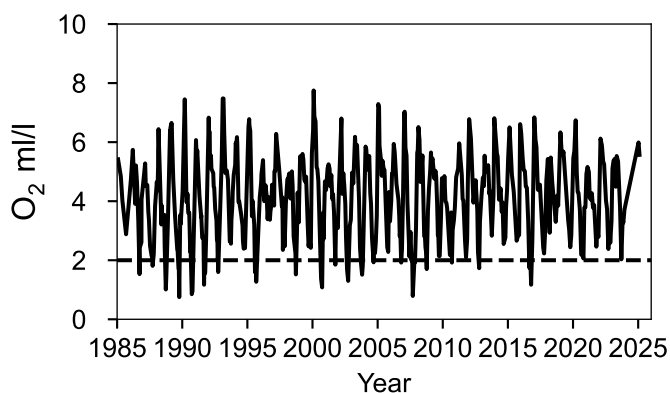
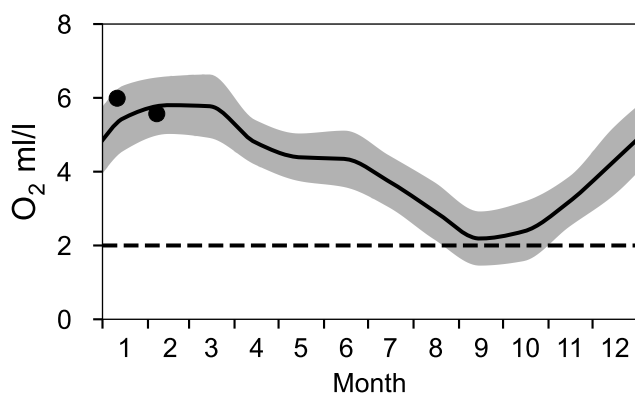
— Mean 1991-2020

■ St.Dev.

● 2025



OXYGEN IN BOTTOM WATER (depth >= 40 m)

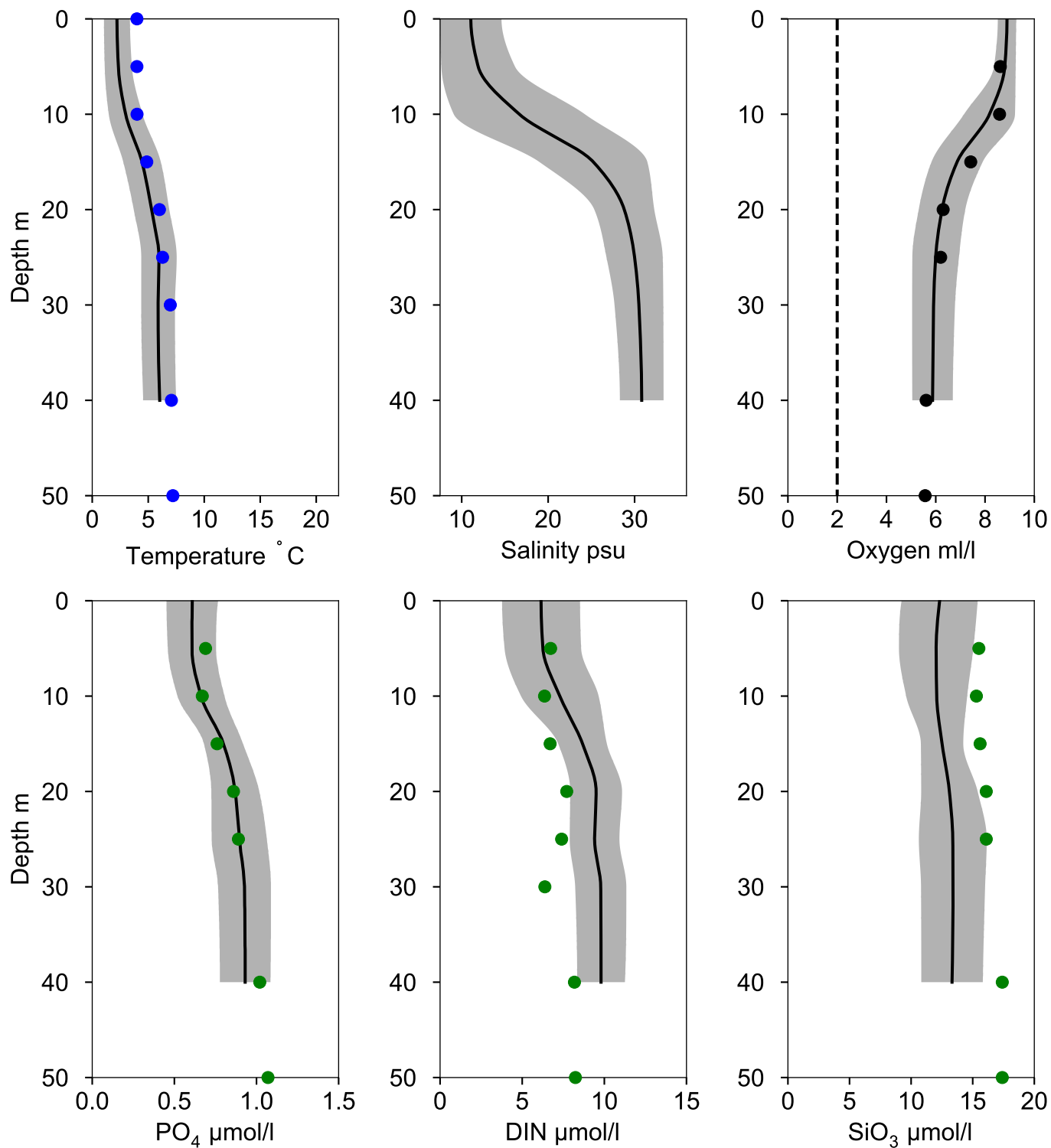


Vertical profiles W LANDSKRONA February

— Mean 1991-2020

■ St.Dev.

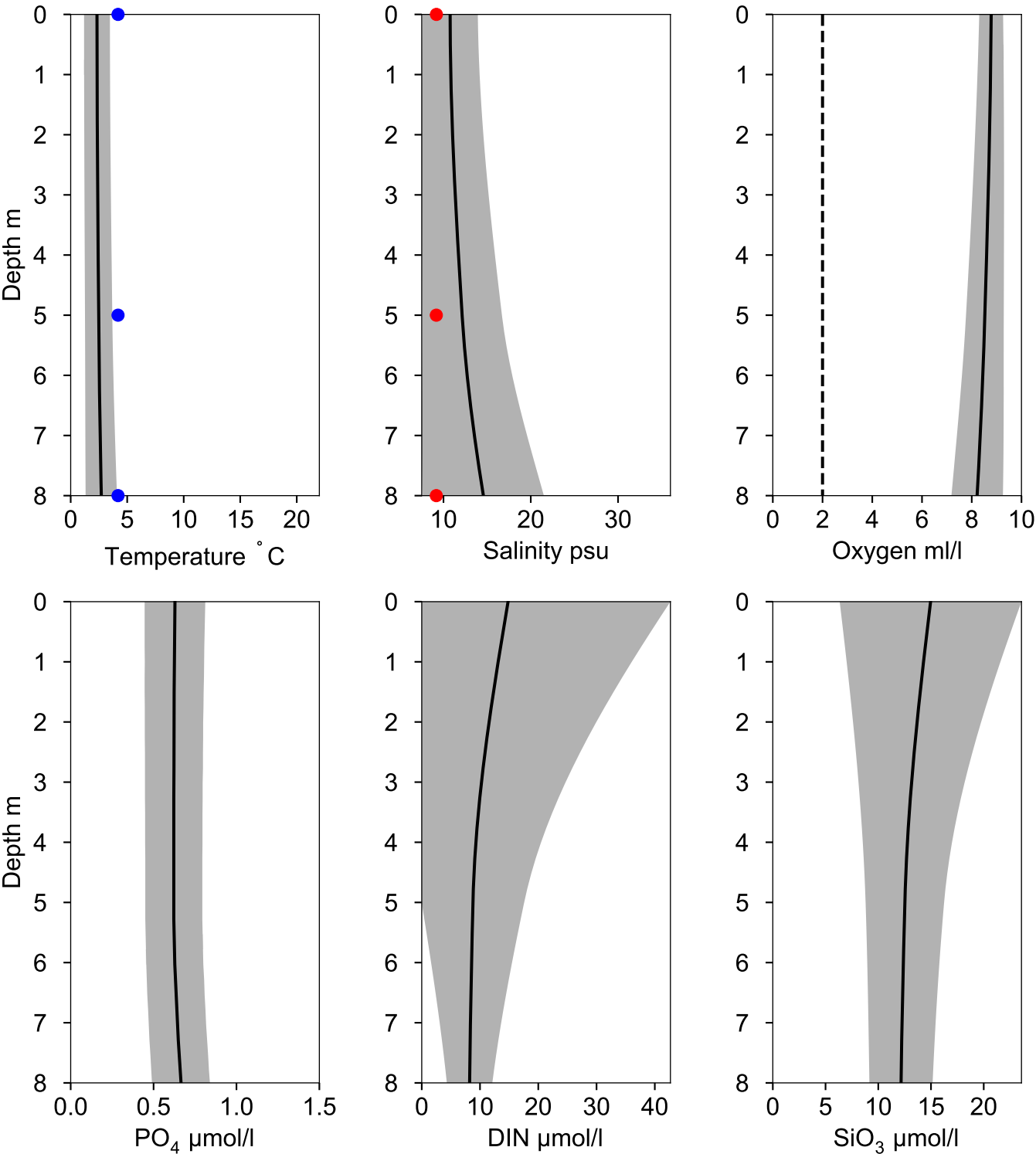
● 2025-02-07



Vertical profiles FLINTEN-7 February

Statistics based on data from: Öresund

— Mean 1991-2020 St.Dev. ● 2025-02-08



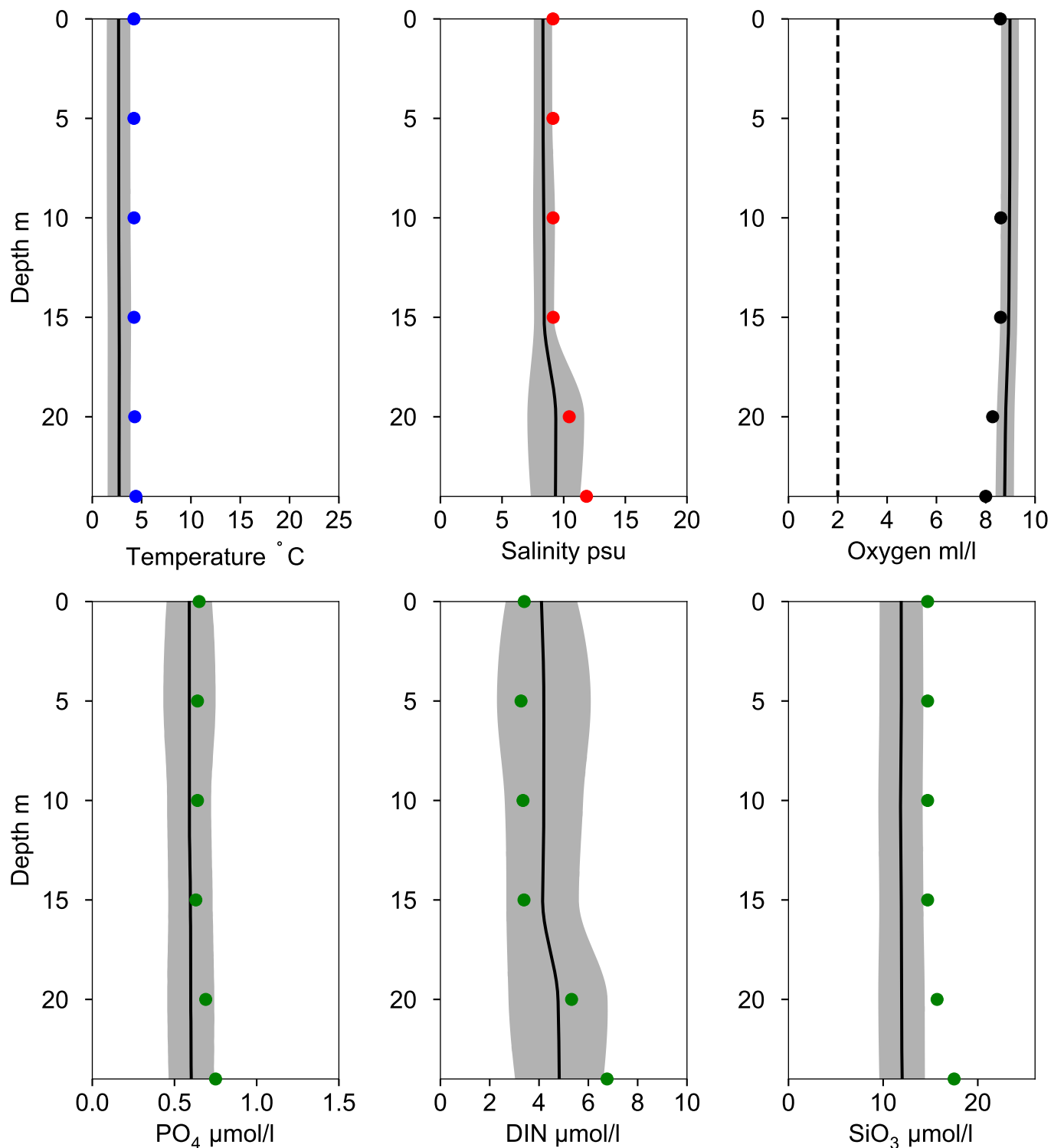
Vertical profiles 441 STEVNS KLINT February

Statistics based on data from: Arkonahavet

— Mean 1991-2020

■ St.Dev.

● 2025-02-08



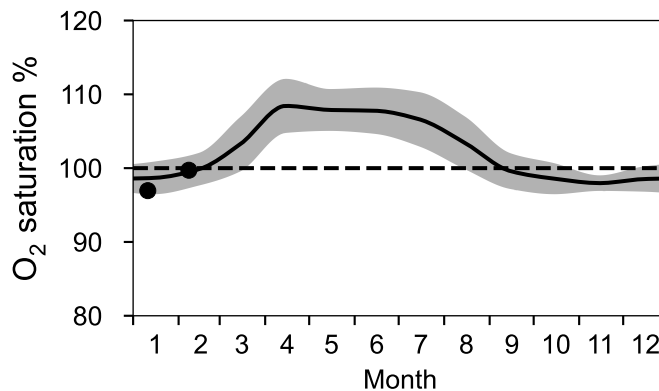
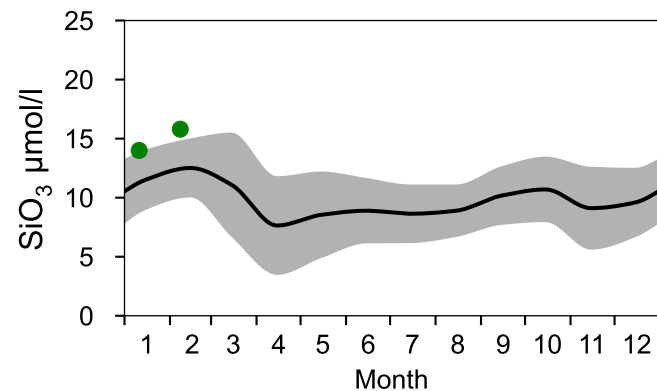
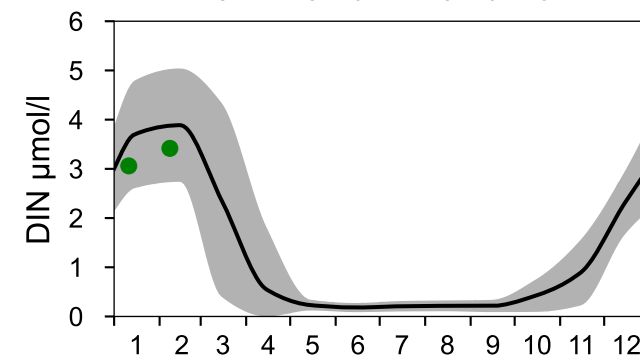
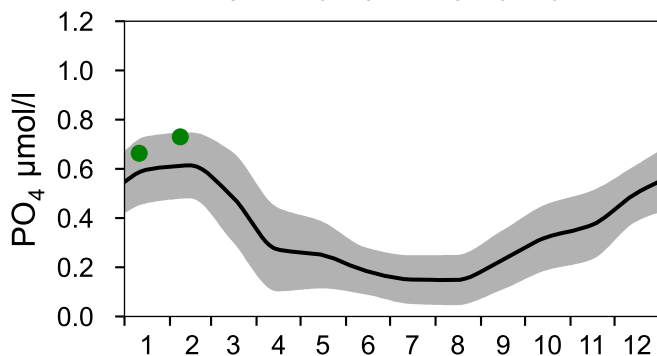
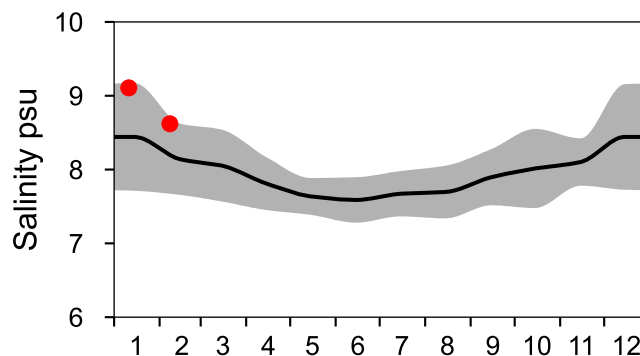
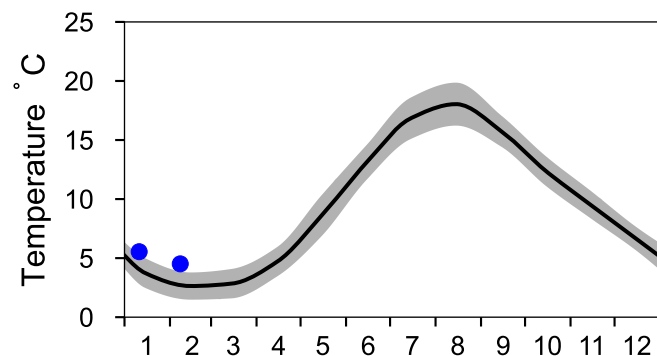
STATION BY1 SURFACE WATER (0-10 m)

Annual Cycles

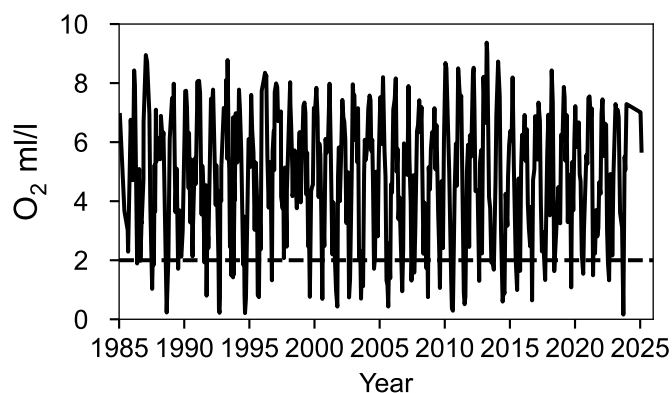
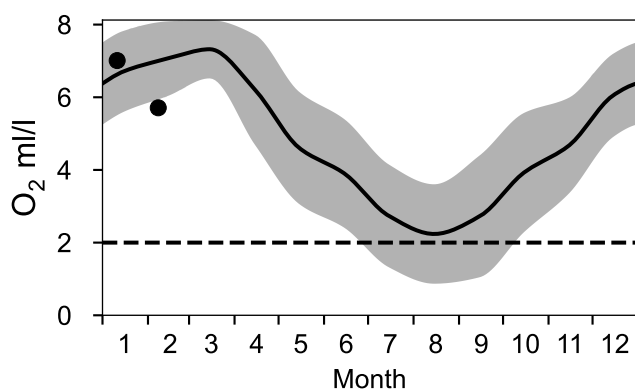
— Mean 1991-2020

■ St.Dev.

● 2025

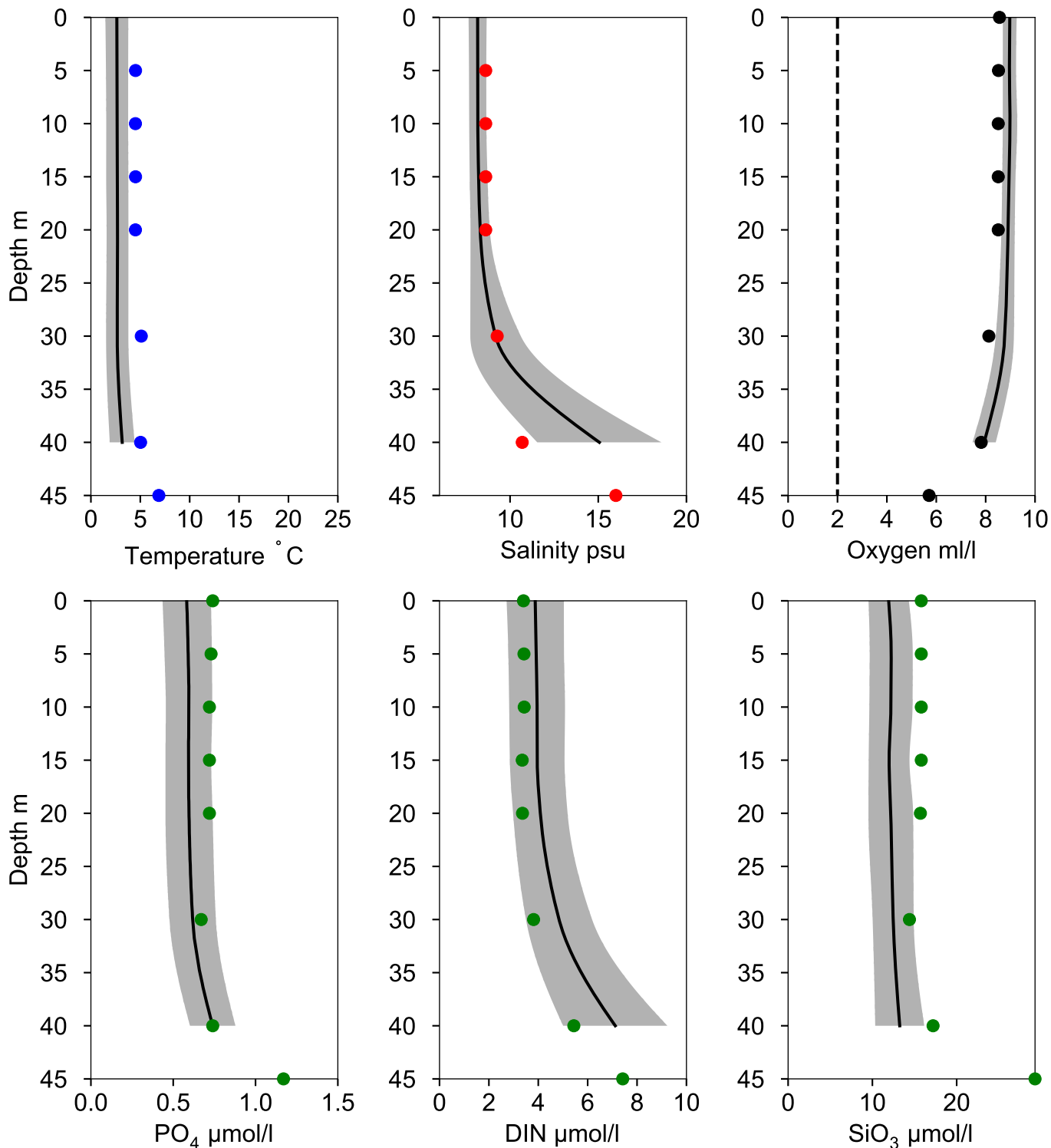


OXYGEN IN BOTTOM WATER (depth >= 39 m)



Vertical profiles BY1 February

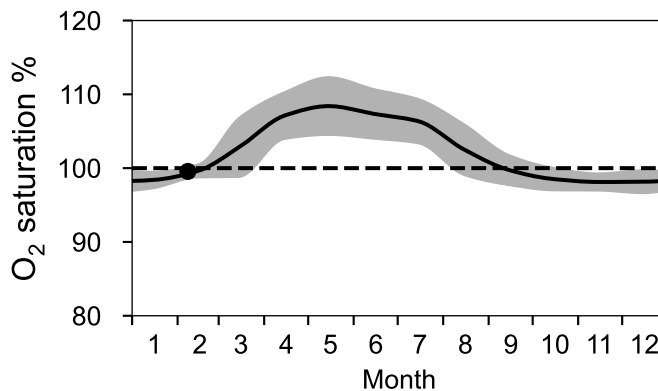
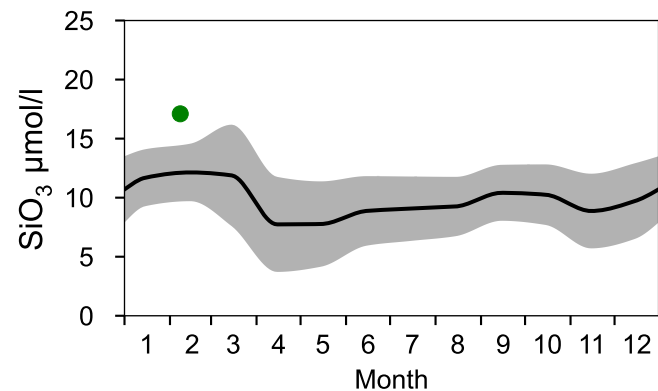
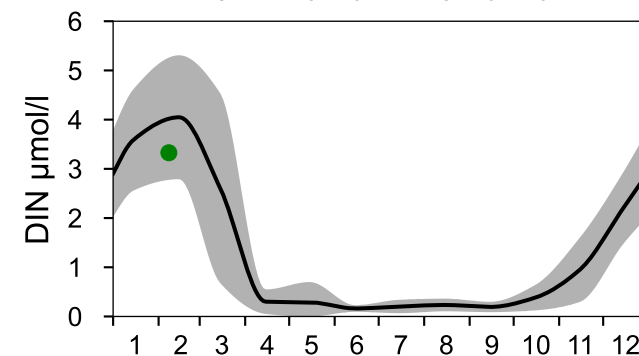
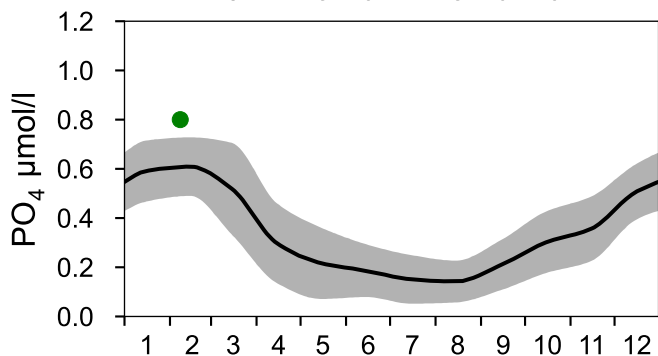
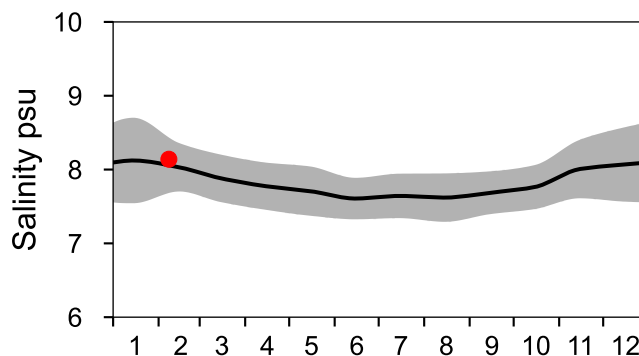
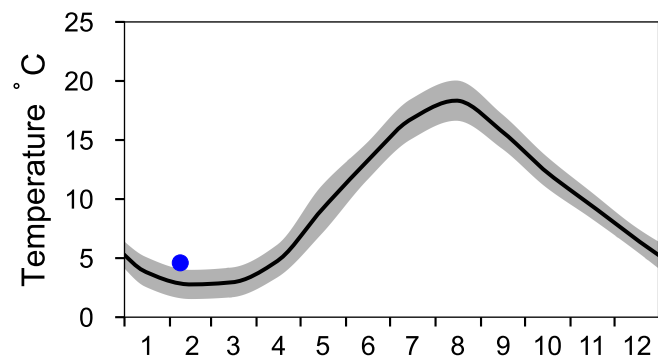
— Mean 1991-2020 St.Dev. ● 2025-02-08



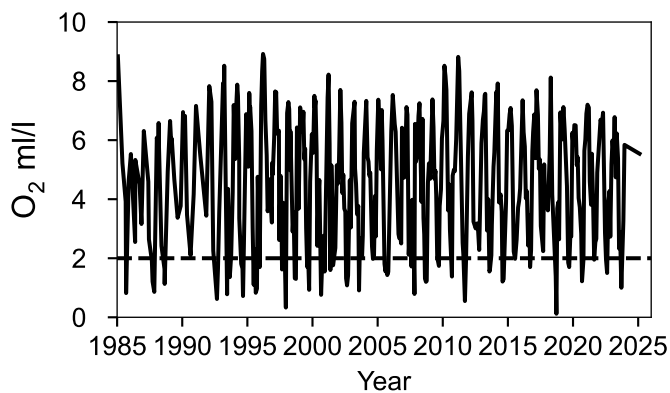
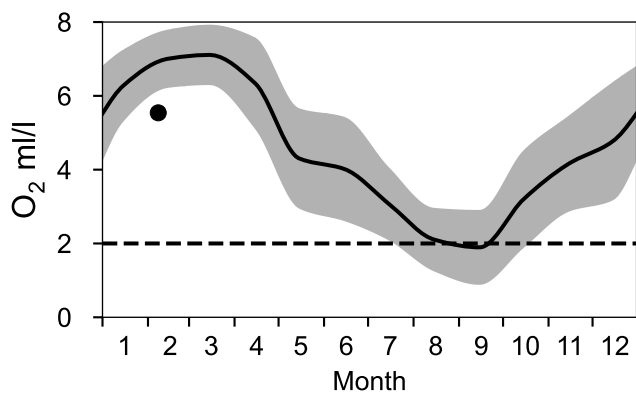
STATION BY2 ARKONA SURFACE WATER (0-10 m)

Annual Cycles

— Mean 1991-2020 St.Dev. ● 2025

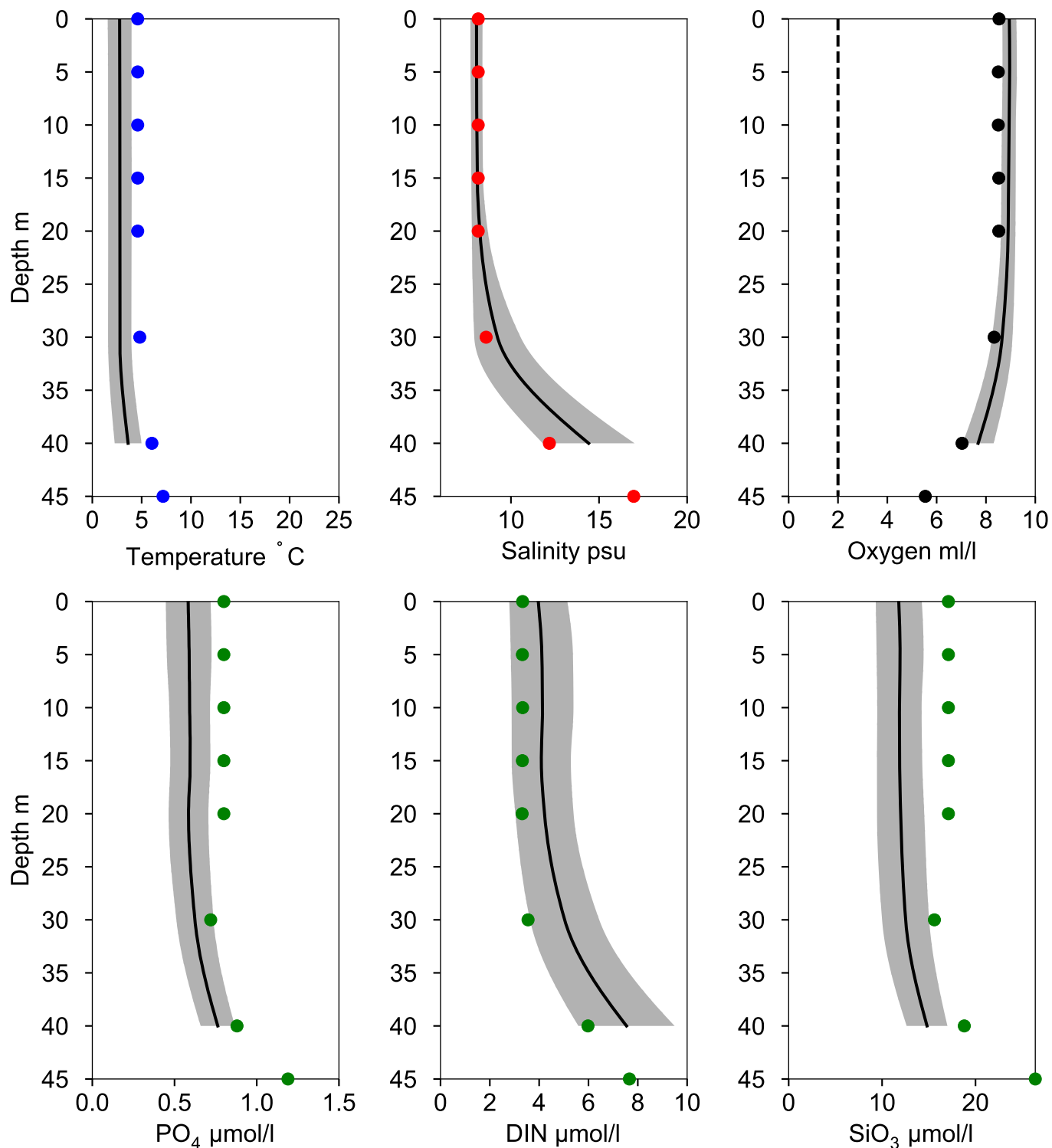


OXYGEN IN BOTTOM WATER (depth >= 40 m)



Vertical profiles BY2 ARKONA February

— Mean 1991-2020 St.Dev. ● 2025-02-08



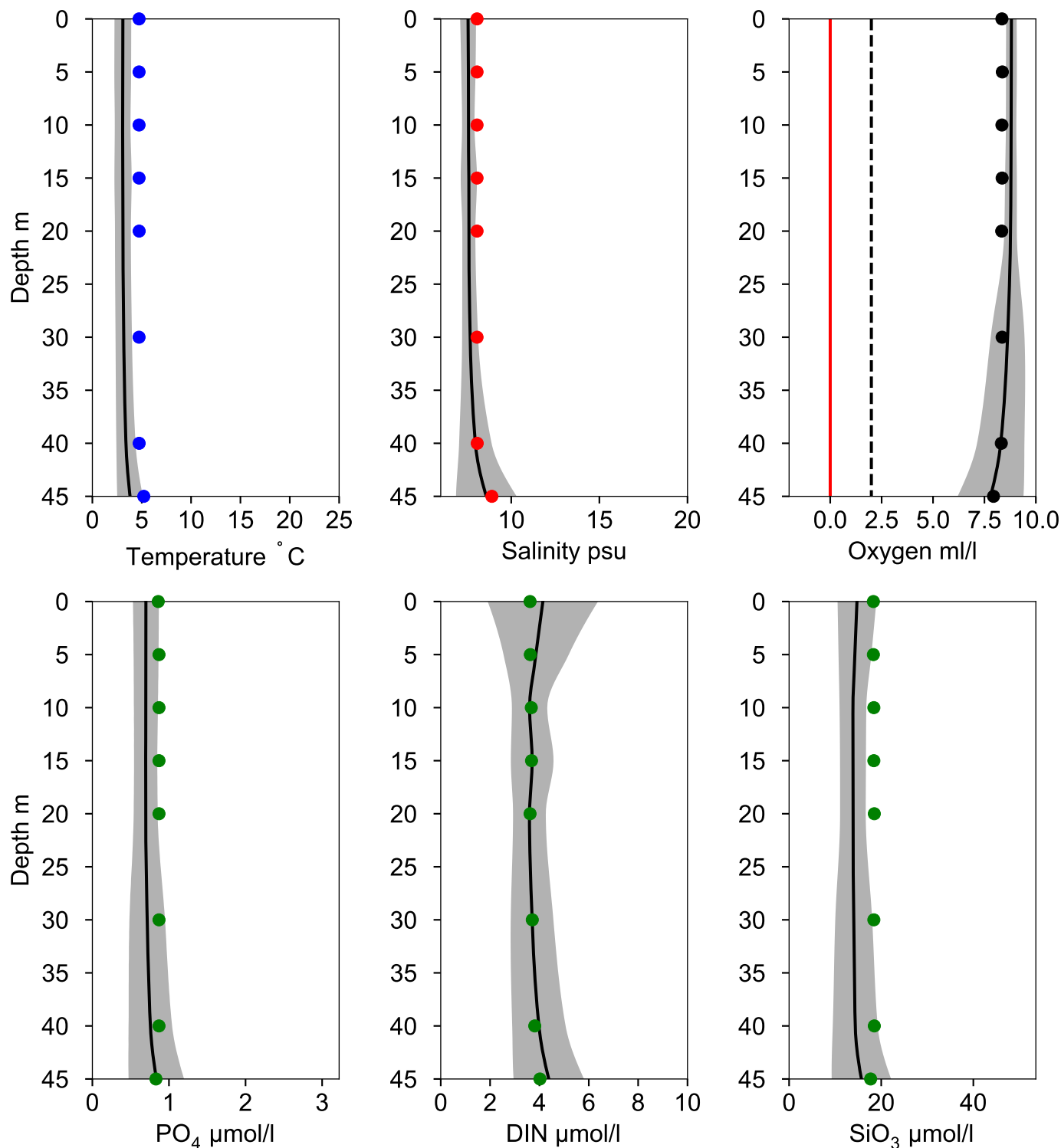
Vertical profiles BY3 HAMRARNE SUND February

Statistics based on data from: Bornholmshavet

— Mean 1991-2020

■ St.Dev.

● 2025-02-08



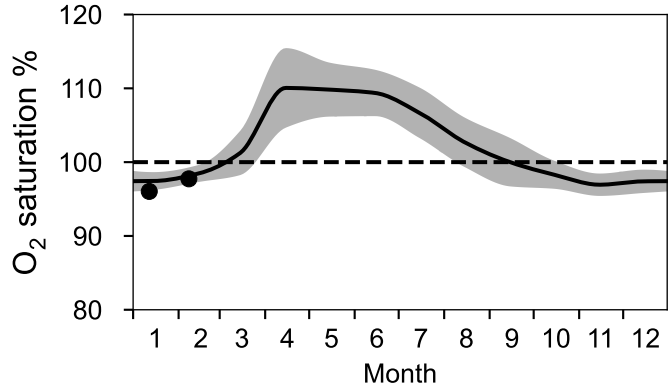
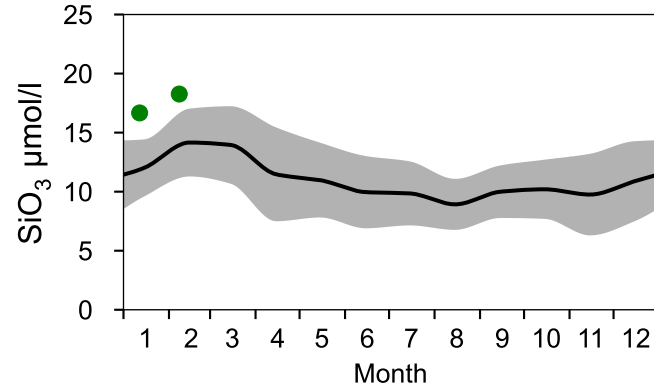
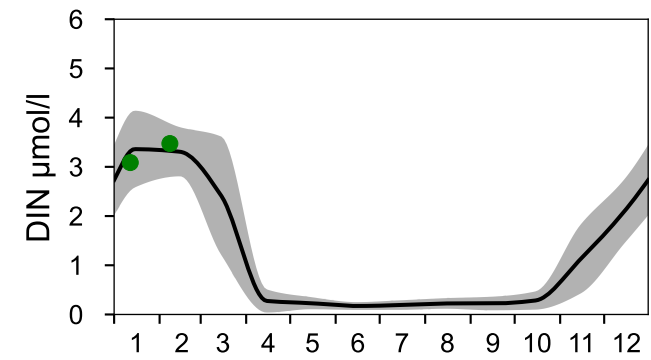
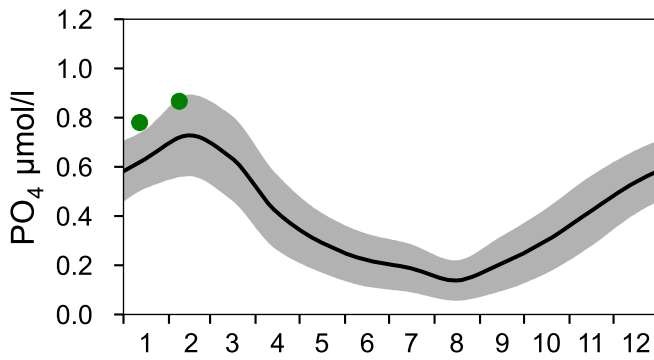
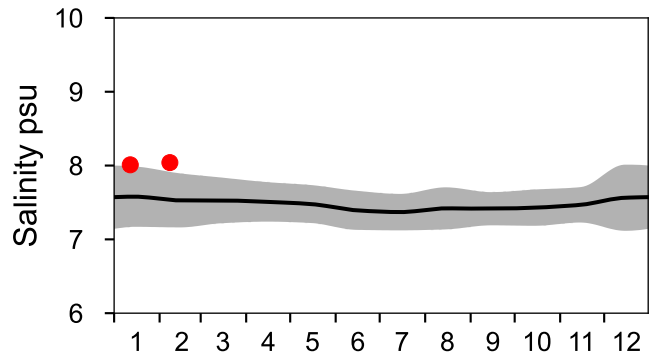
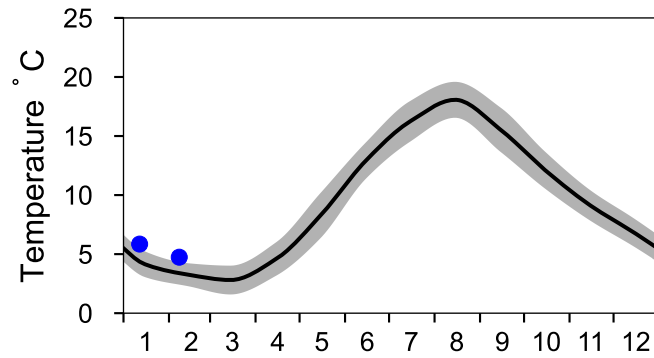
STATION HANÖBUKTEN SURFACE WATER (0-10 m)

Annual Cycles

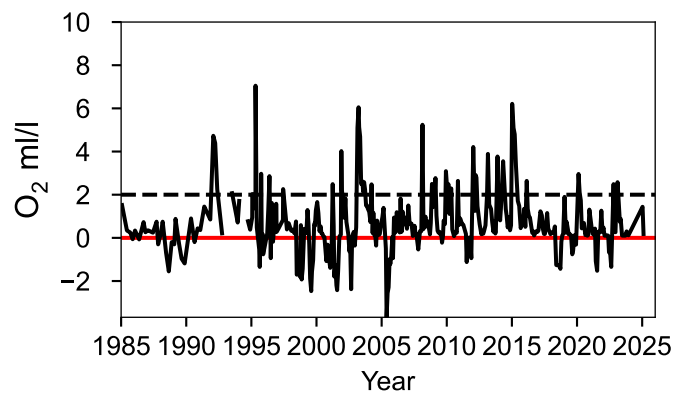
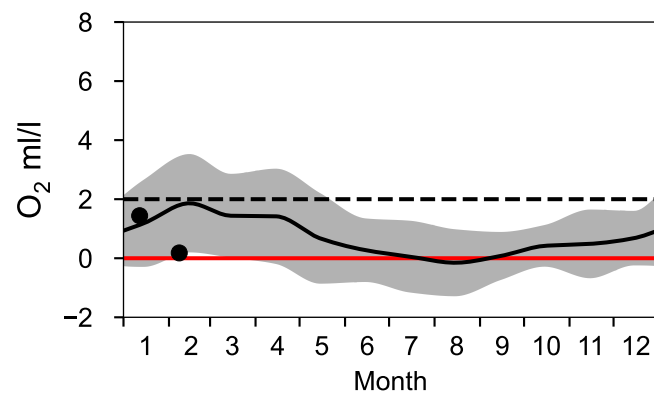
— Mean 1991-2020

■ St.Dev.

● 2025



OXYGEN IN BOTTOM WATER (depth >= 70 m)

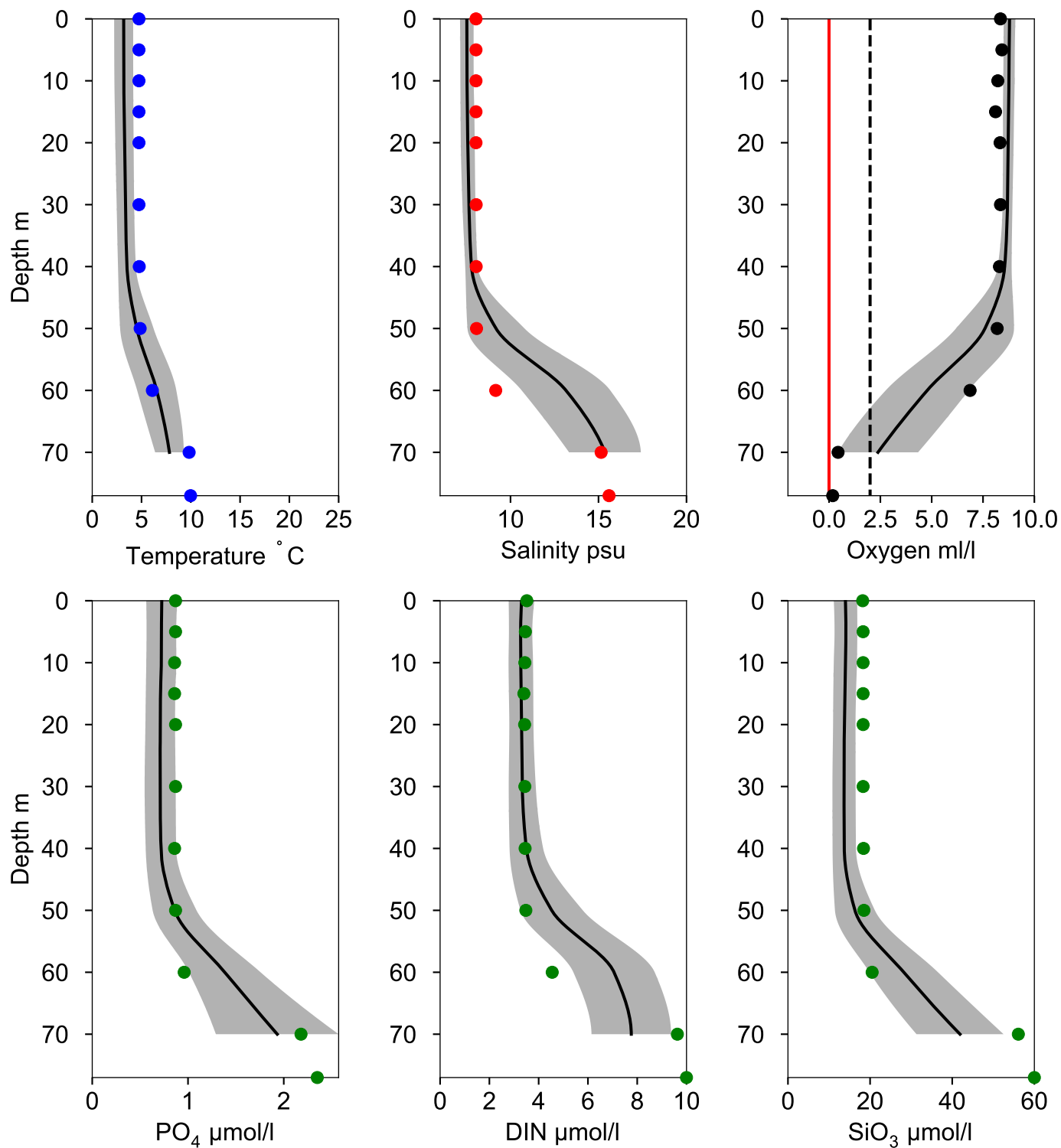


Vertical profiles HANÖBUKTEN February

— Mean 1991-2020

■ St.Dev.

● 2025-02-08



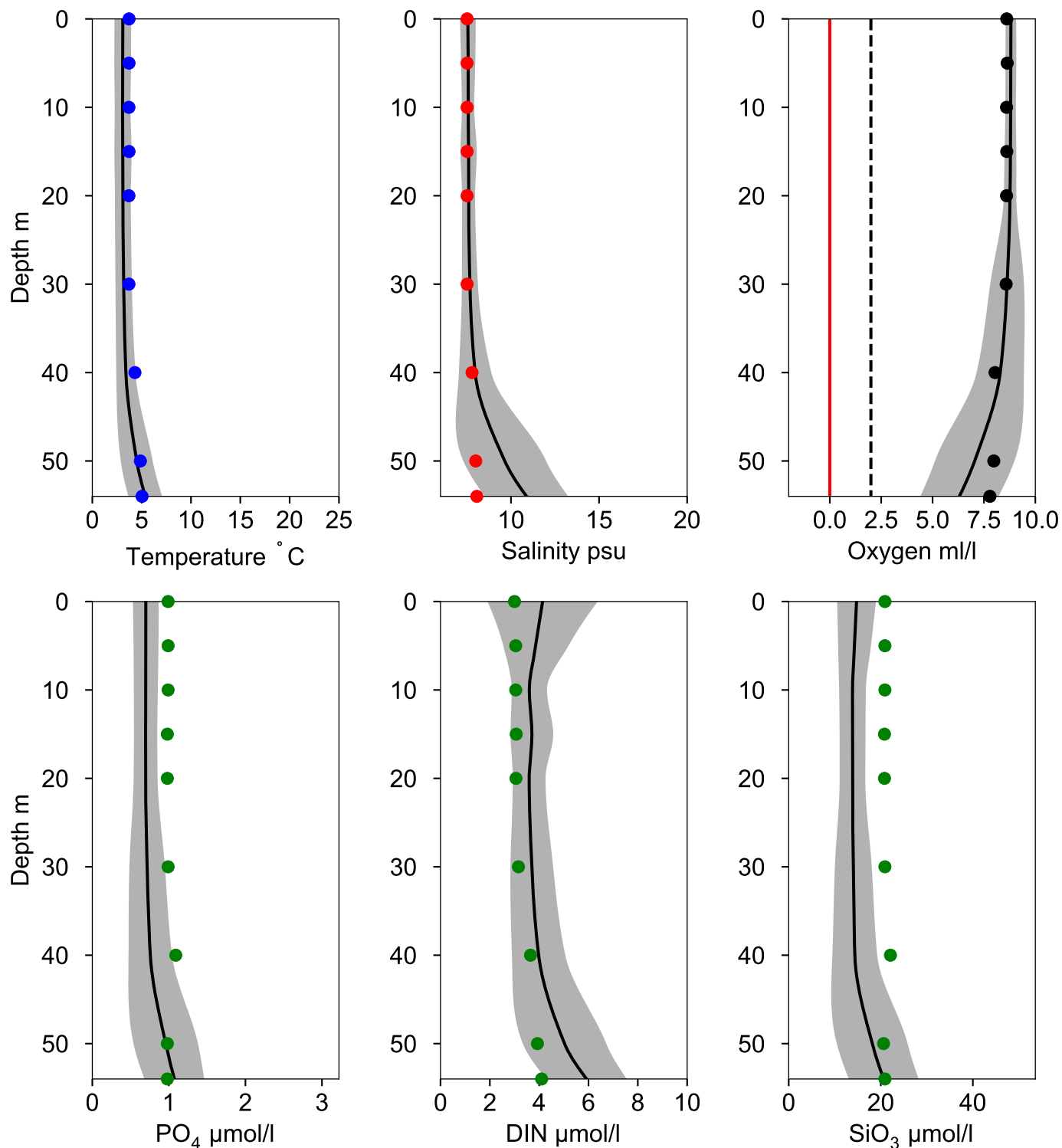
Vertical profiles HANÖBUKTEN-KBV February

Statistics based on data from: Bornholmshavet

— Mean 1991-2020

■ St.Dev.

● 2025-02-08



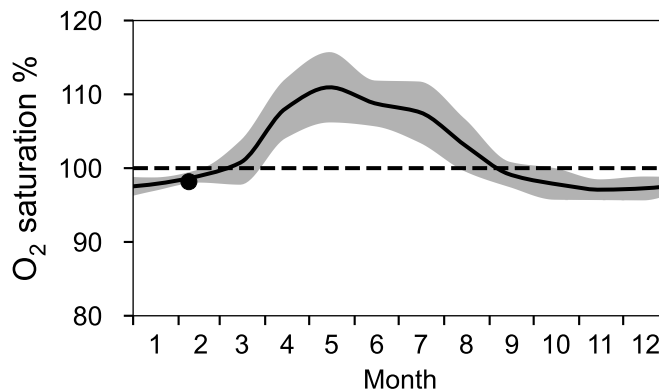
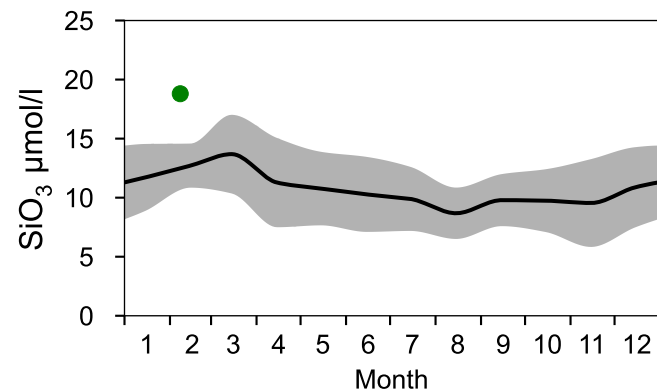
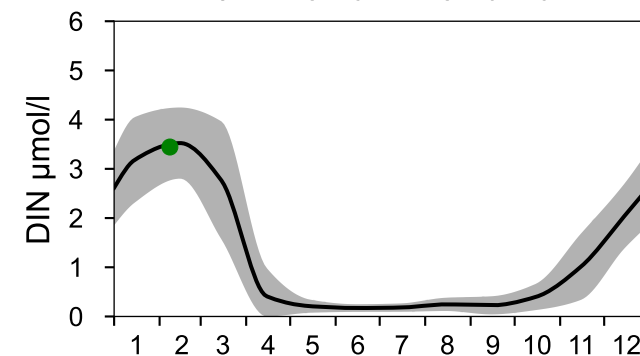
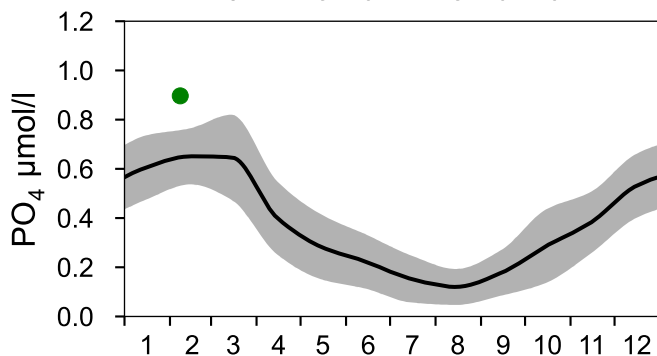
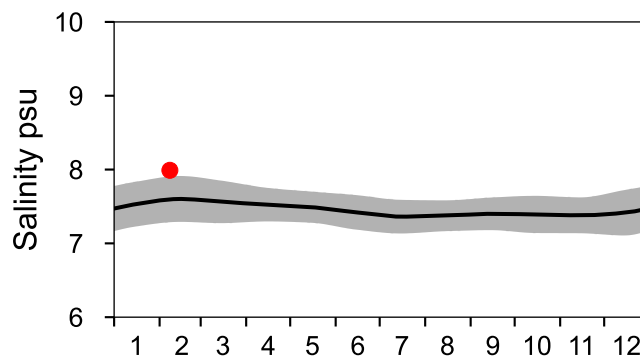
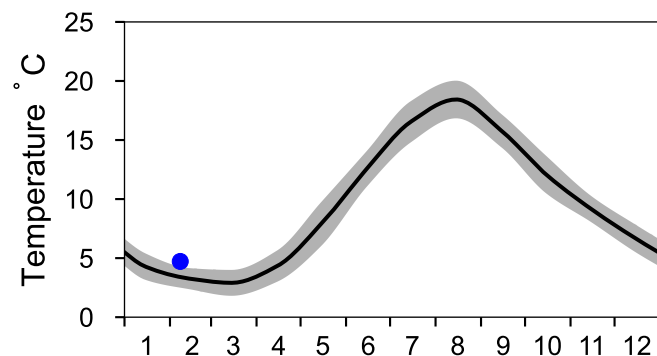
STATION BY4 CHRISTIANSÖ SURFACE WATER (0-10 m)

Annual Cycles

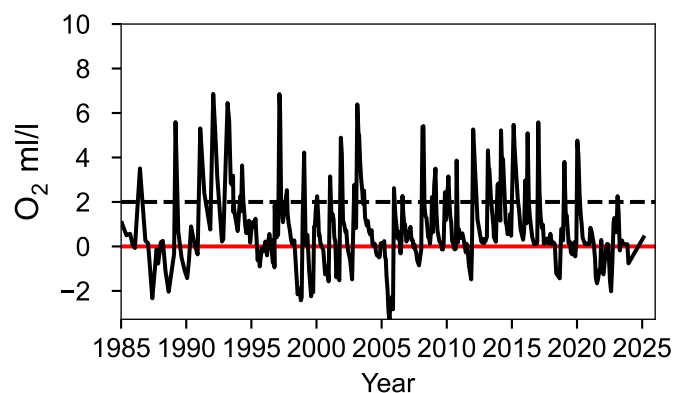
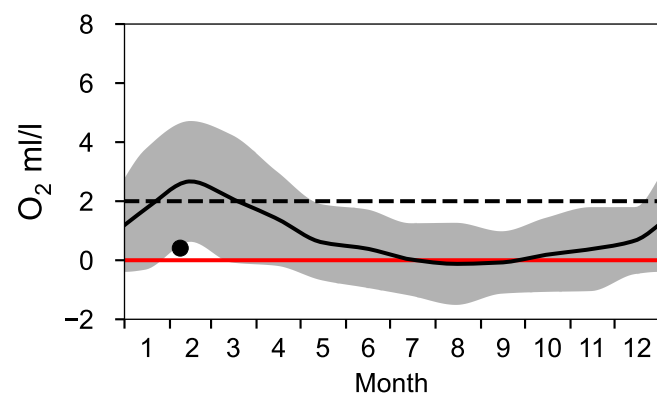
— Mean 1991-2020

■ St.Dev.

● 2025

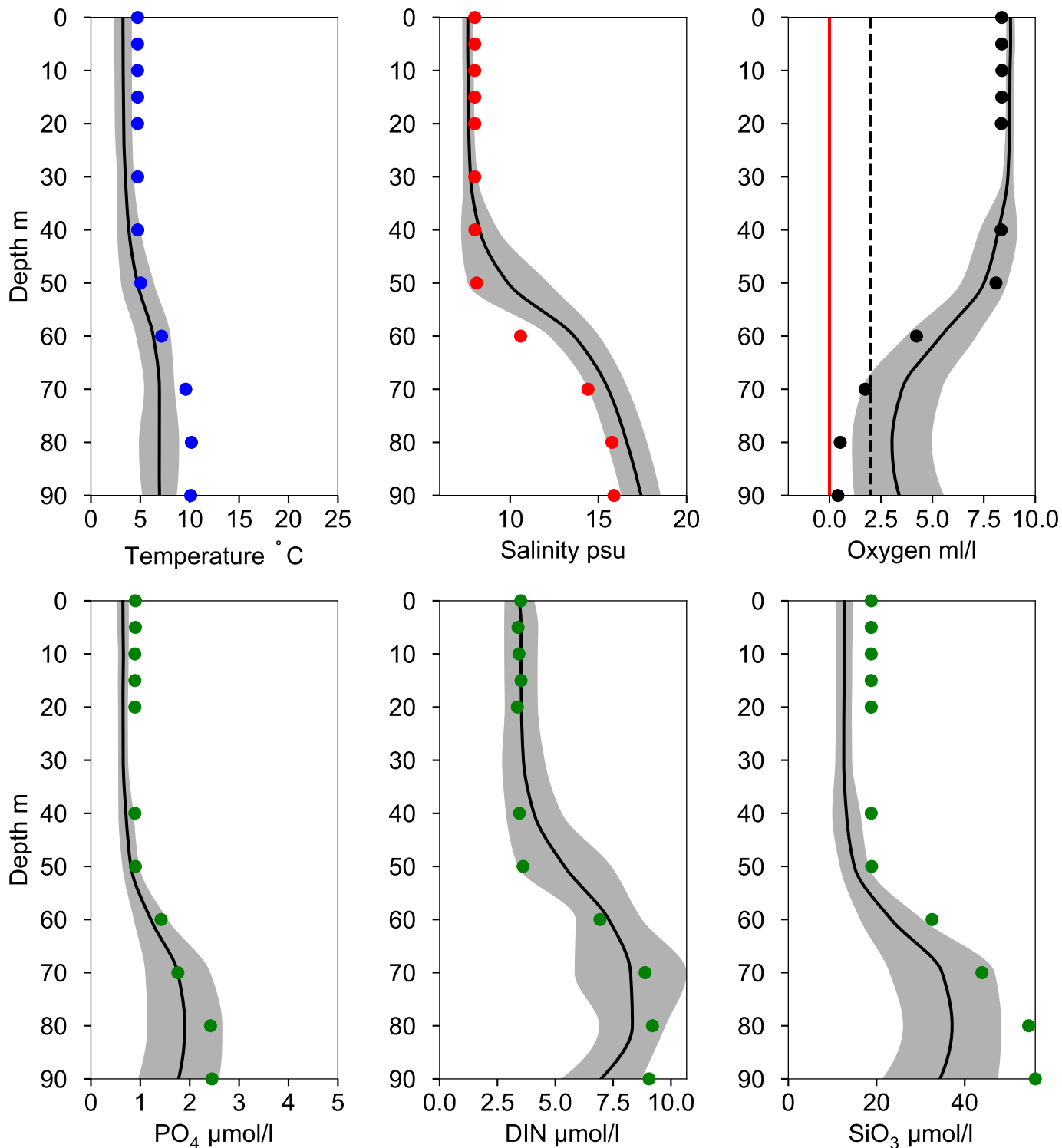


OXYGEN IN BOTTOM WATER (depth >= 80 m)



Vertical profiles BY4 CHRISTIANSÖ February

— Mean 1911-2020 St.Dev. ● 2025-02-08



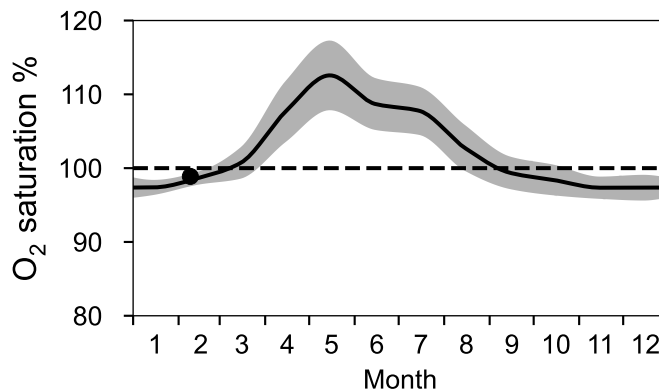
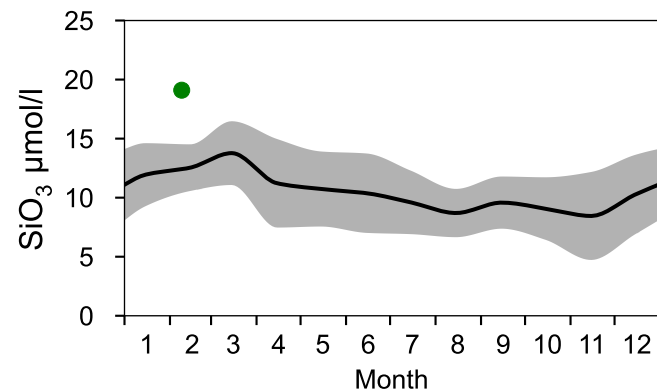
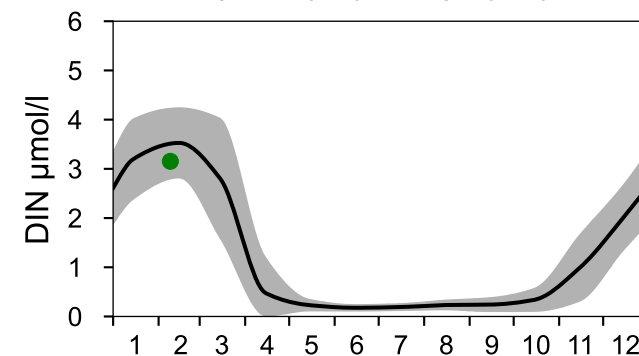
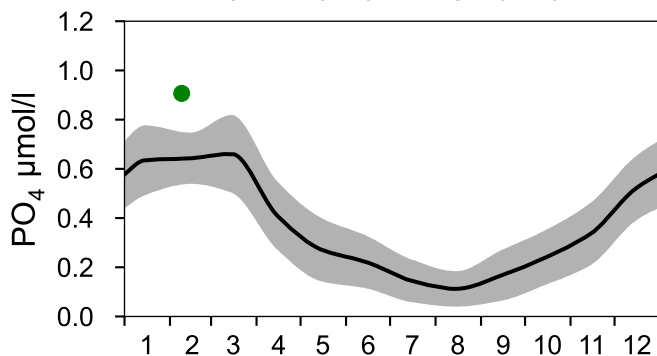
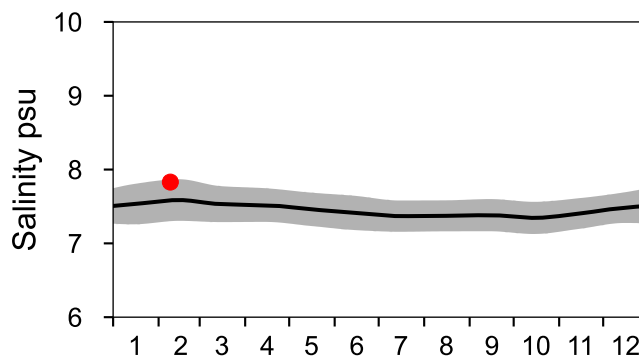
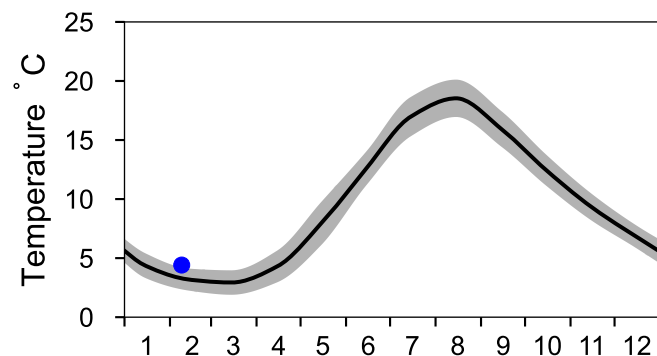
STATION BY5 BORNHOLMSDJ SURFACE WATER (0-10 m)

Annual Cycles

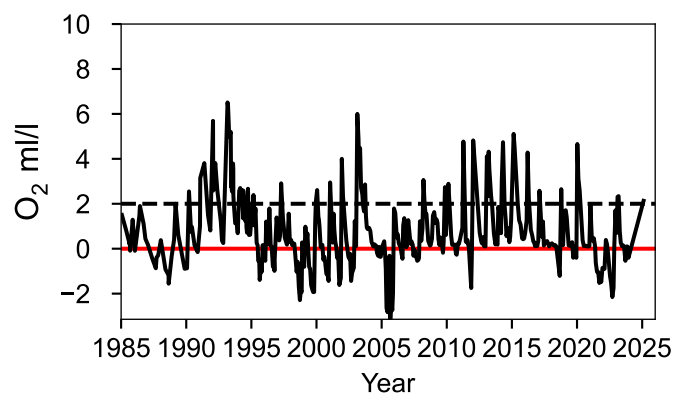
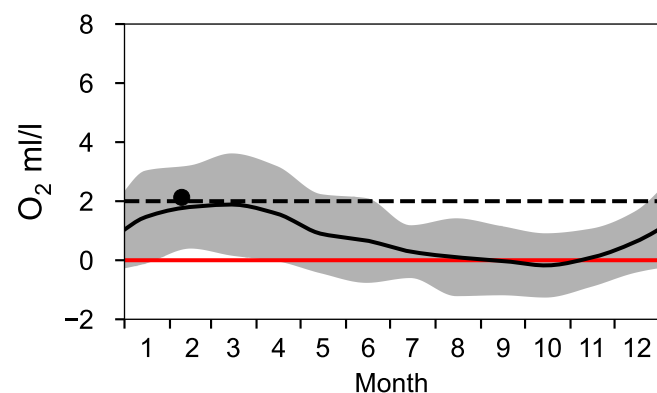
— Mean 1991-2020

■ St.Dev.

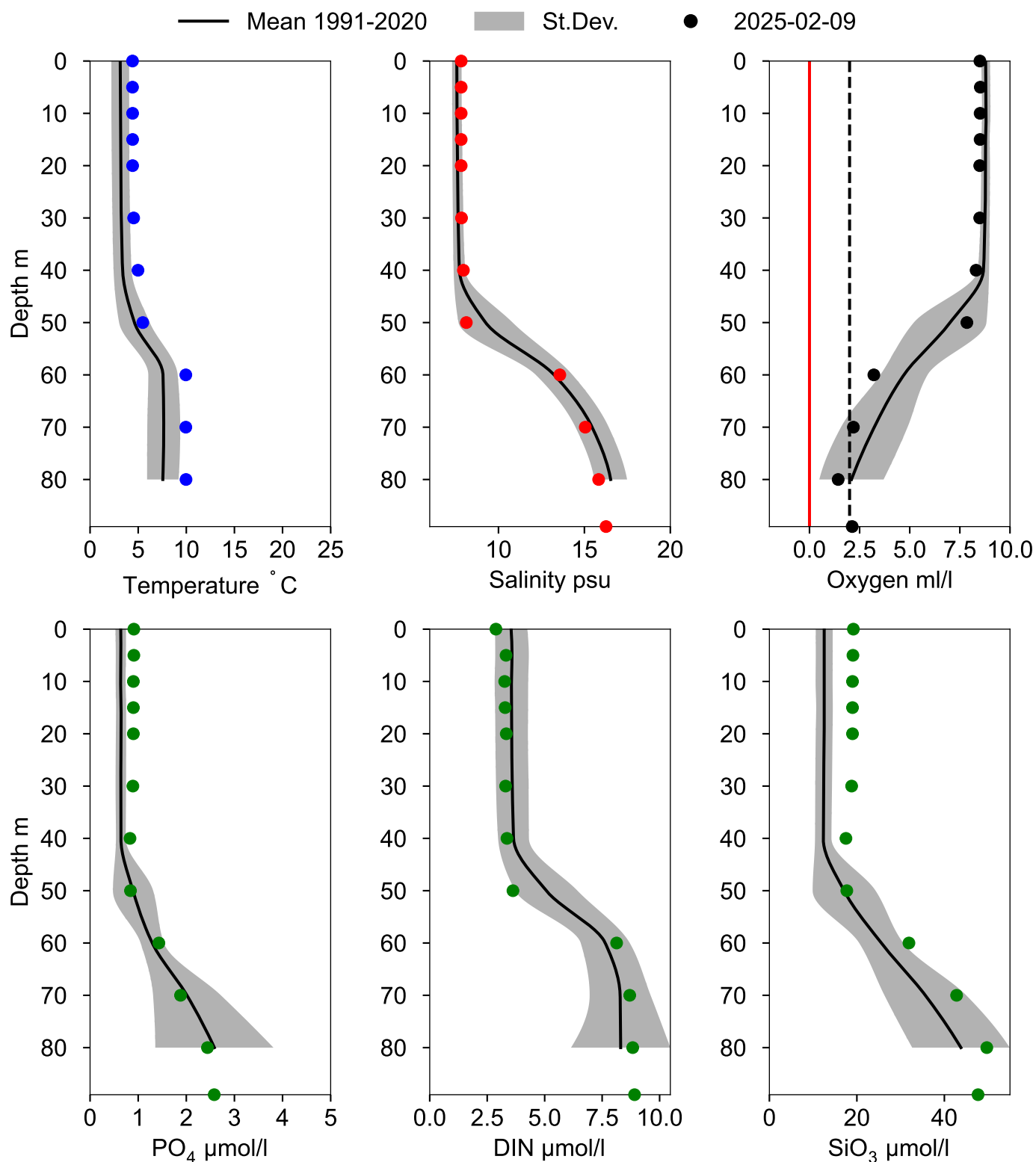
● 2025



OXYGEN IN BOTTOM WATER (depth >= 80 m)



Vertical profiles BY5 BORNHOLMSDJ February



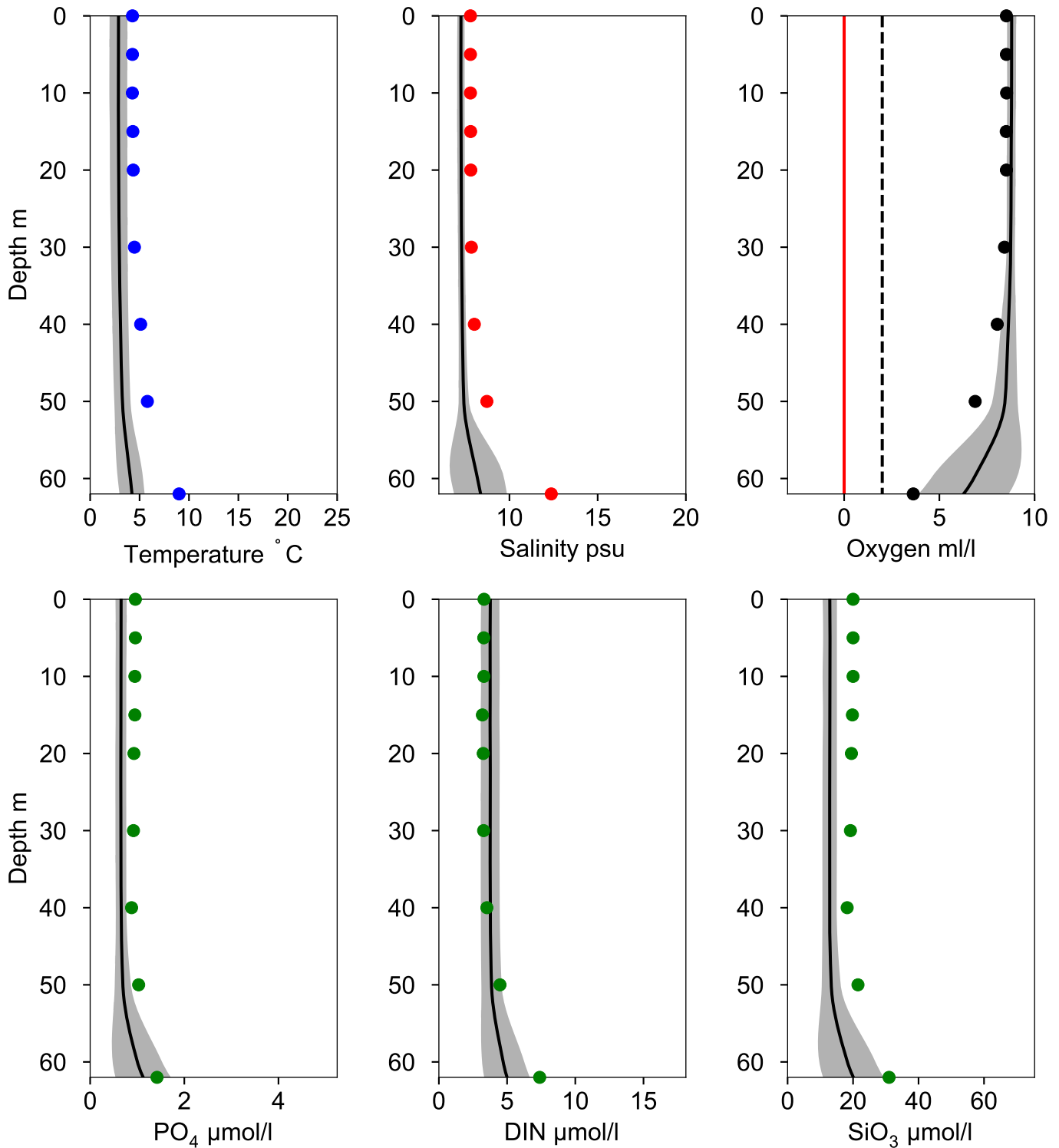
Vertical profiles STOLPE TRÖSKEL February

Statistics based on data from: Östra Gotlandshavet

— Mean 1991-2020

■ St.Dev.

● 2025-02-09



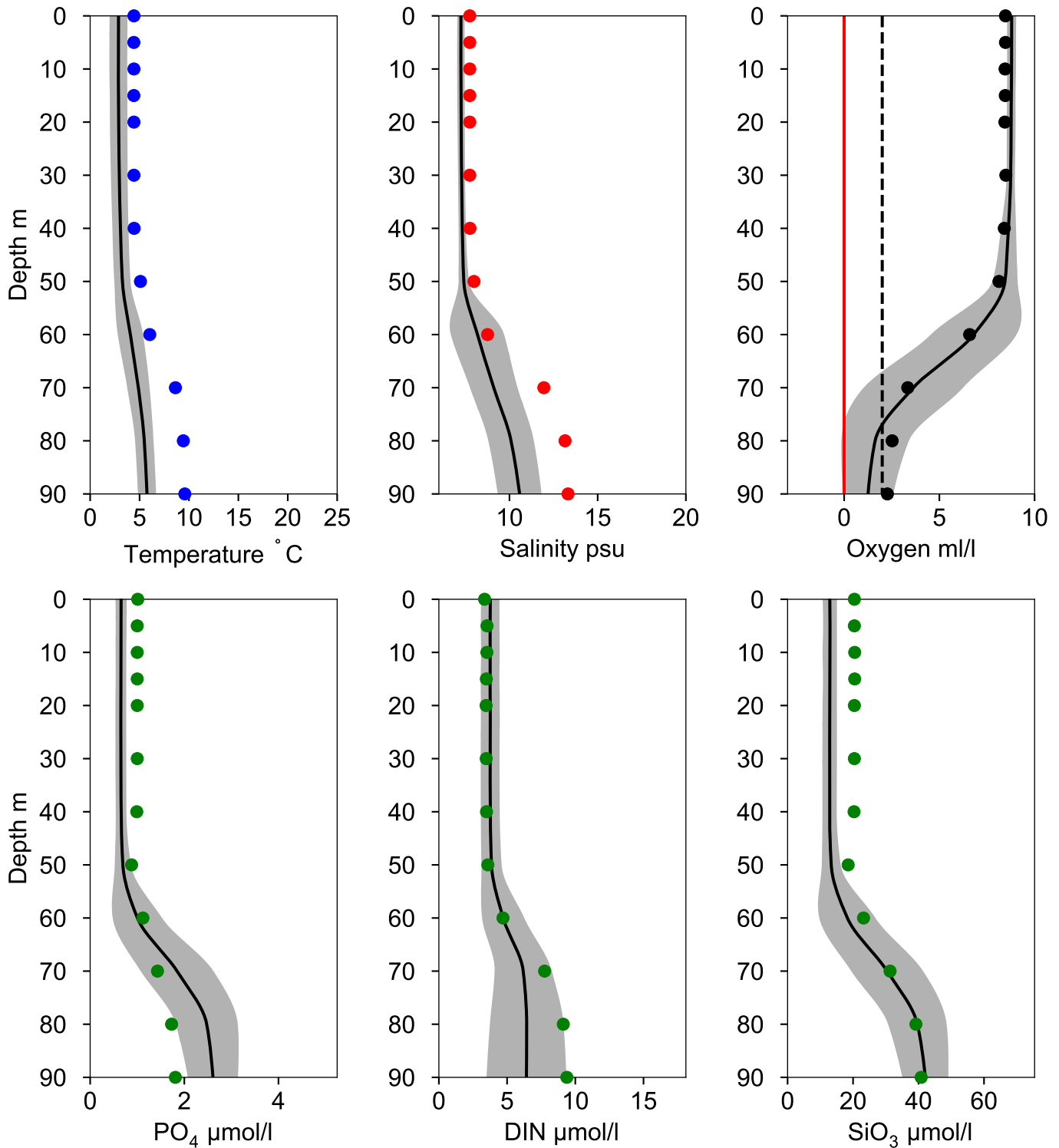
Vertical profiles BY7 STOLPE RÄNNA February

Statistics based on data from: Östra Gotlandshavet

— Mean 1991-2020

■ St.Dev.

● 2025-02-09



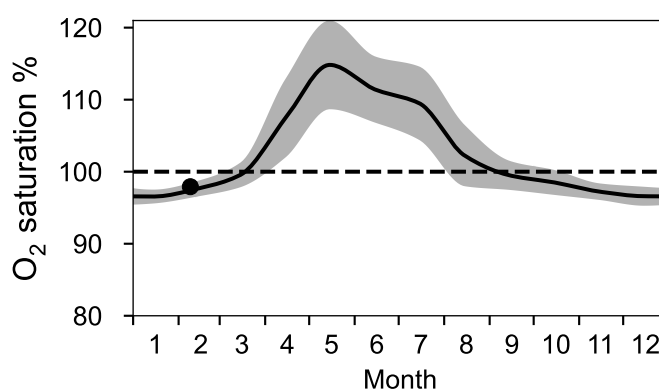
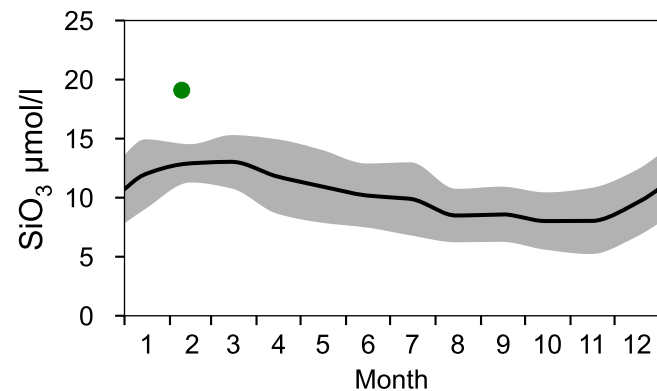
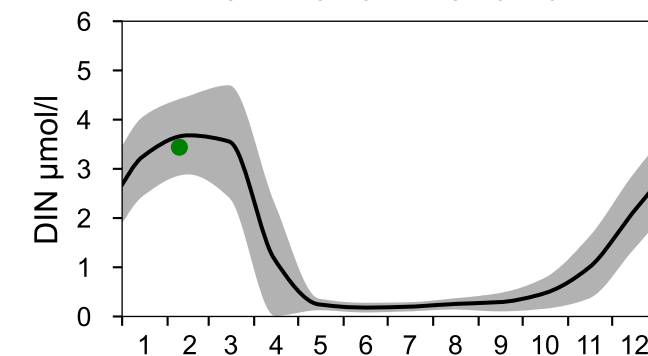
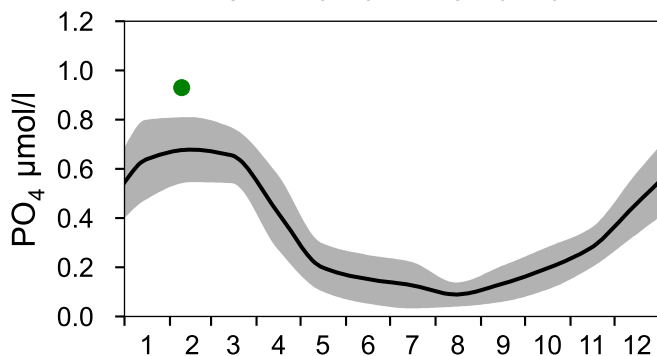
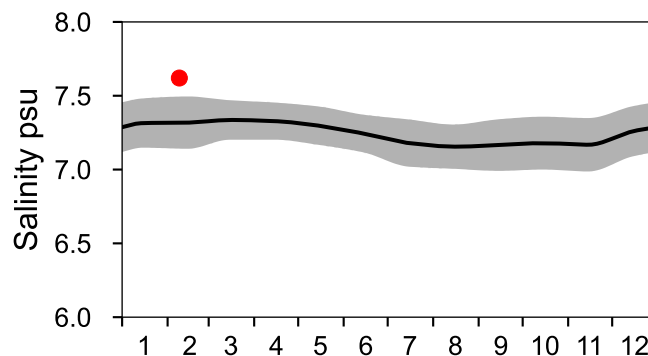
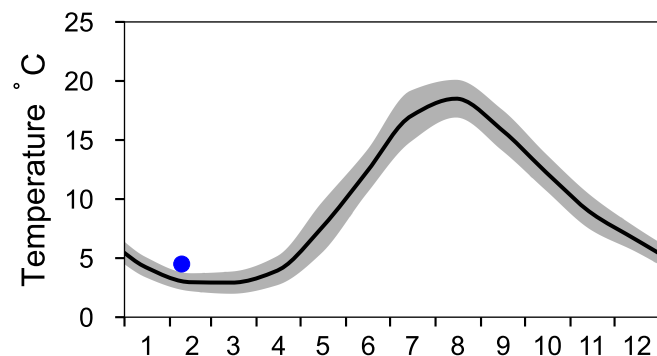
STATION BCS III-10 SURFACE WATER (0-10 m)

Annual Cycles

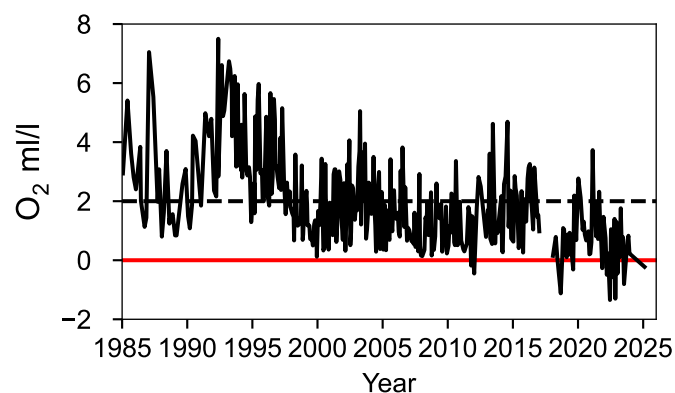
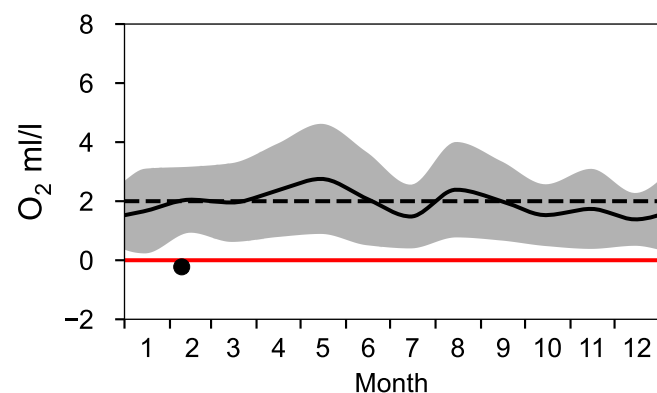
— Mean 1991-2020

■ St.Dev.

● 2025



OXYGEN IN BOTTOM WATER (depth >= 80 m)

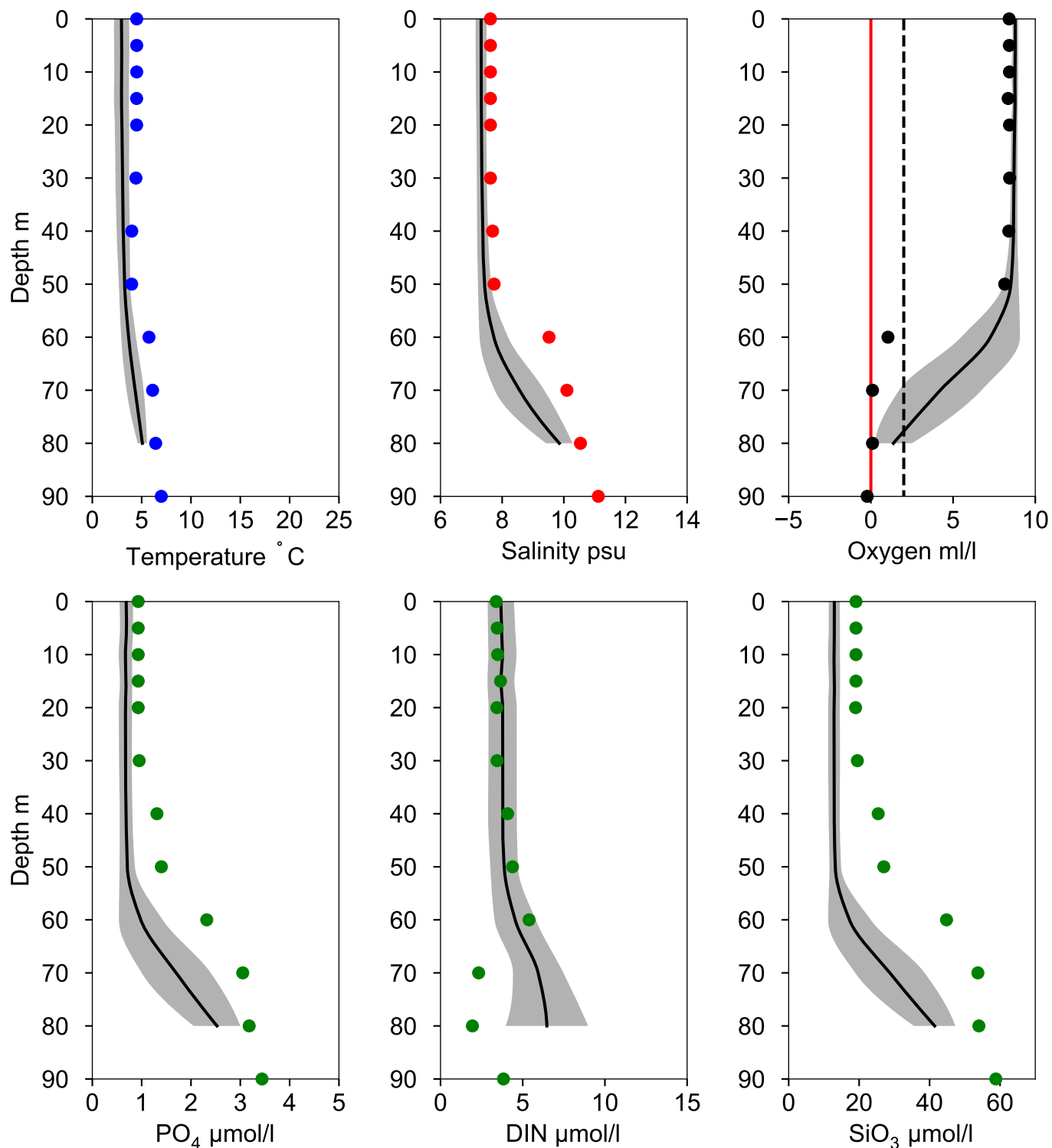


Vertical profiles BCS III-10 February

— Mean 1991-2020

■ St.Dev.

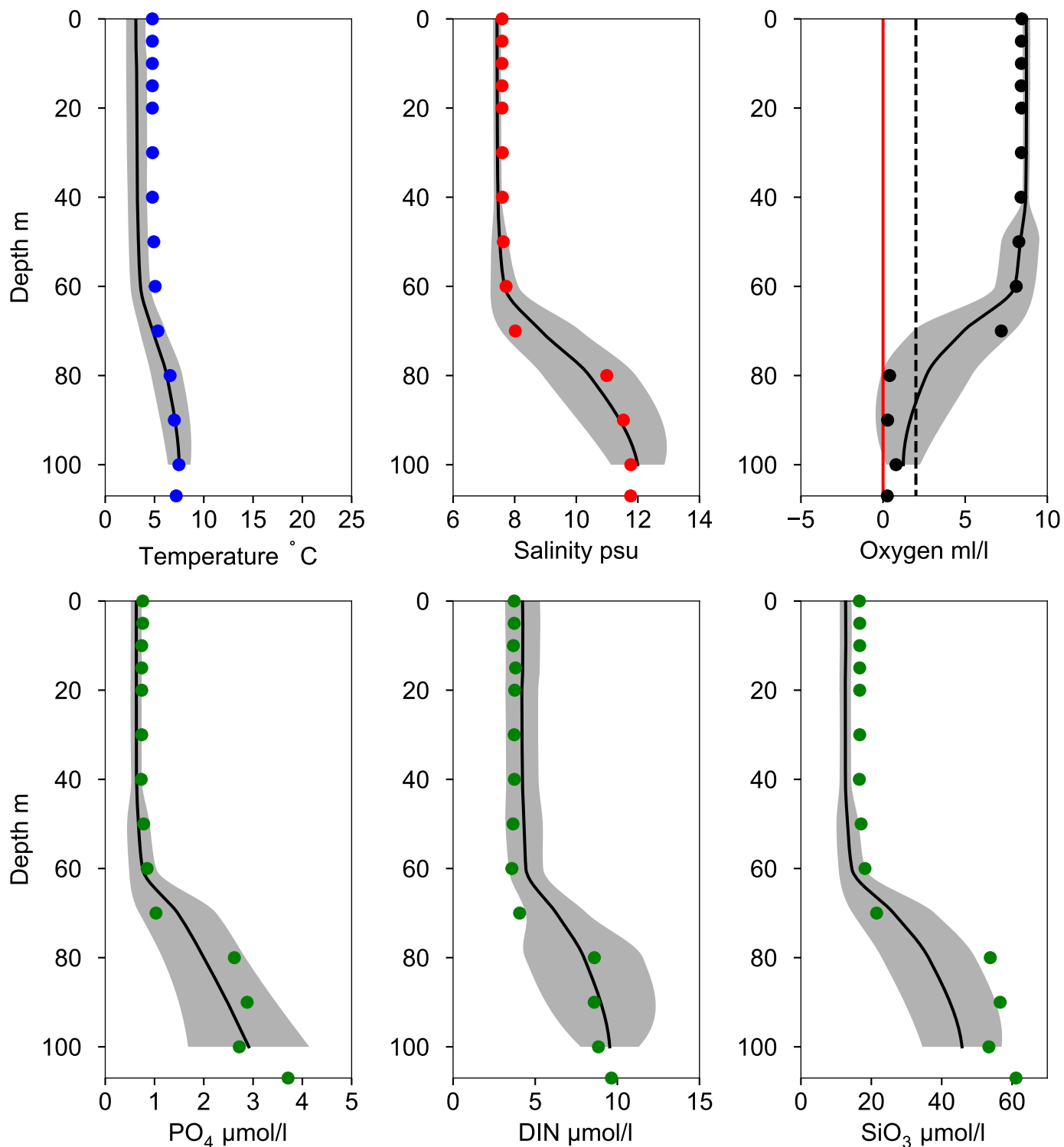
● 2025-02-09



Vertical profiles PL-P1 February

Statistics based on data from: Gdanskbukten

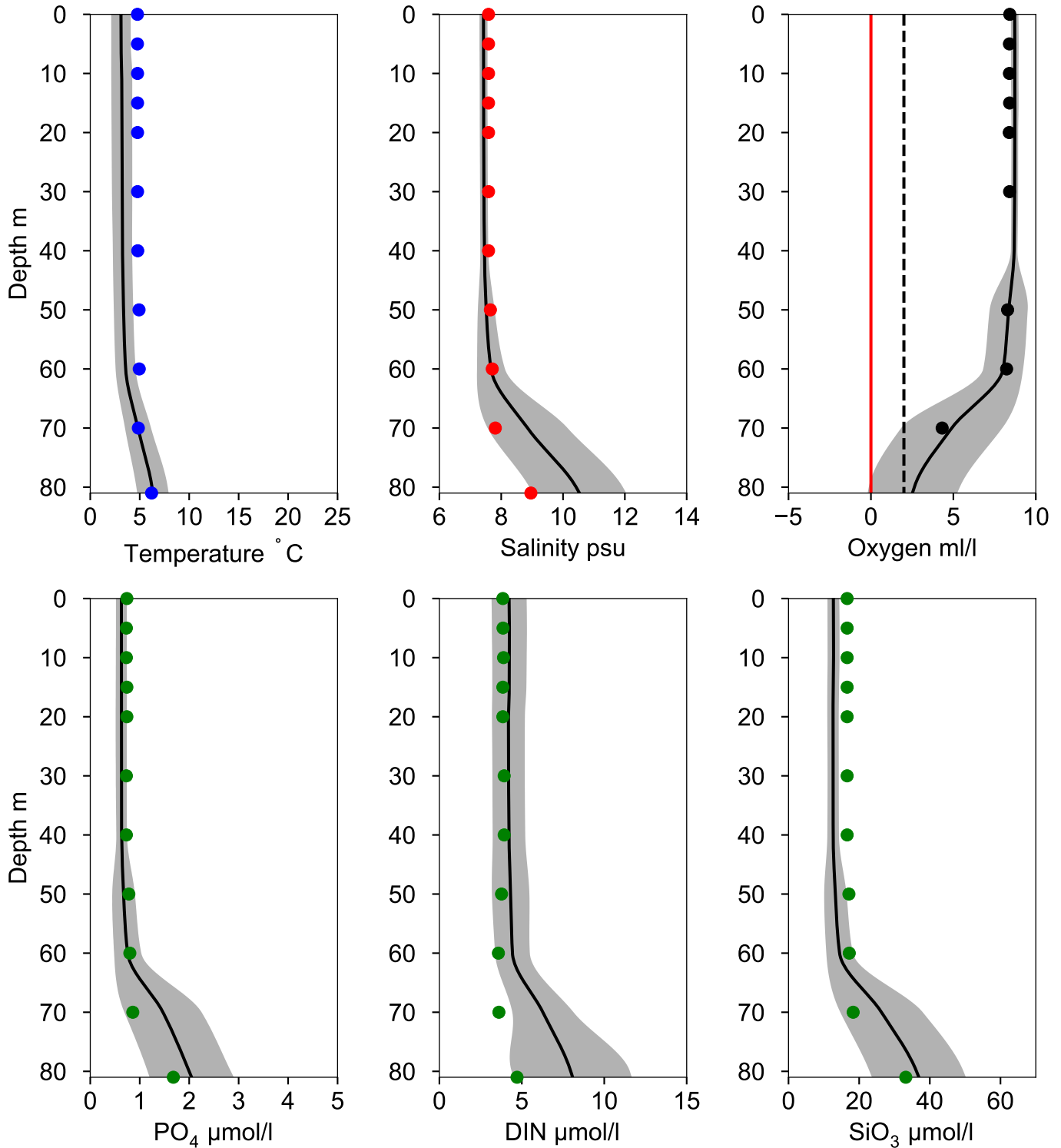
— Mean 1991-2020 St.Dev. ● 2025-02-09



Vertical profiles PL-P63 February

Statistics based on data from: Gdanskbukten

— Mean 1991-2020 St.Dev. ● 2025-02-10



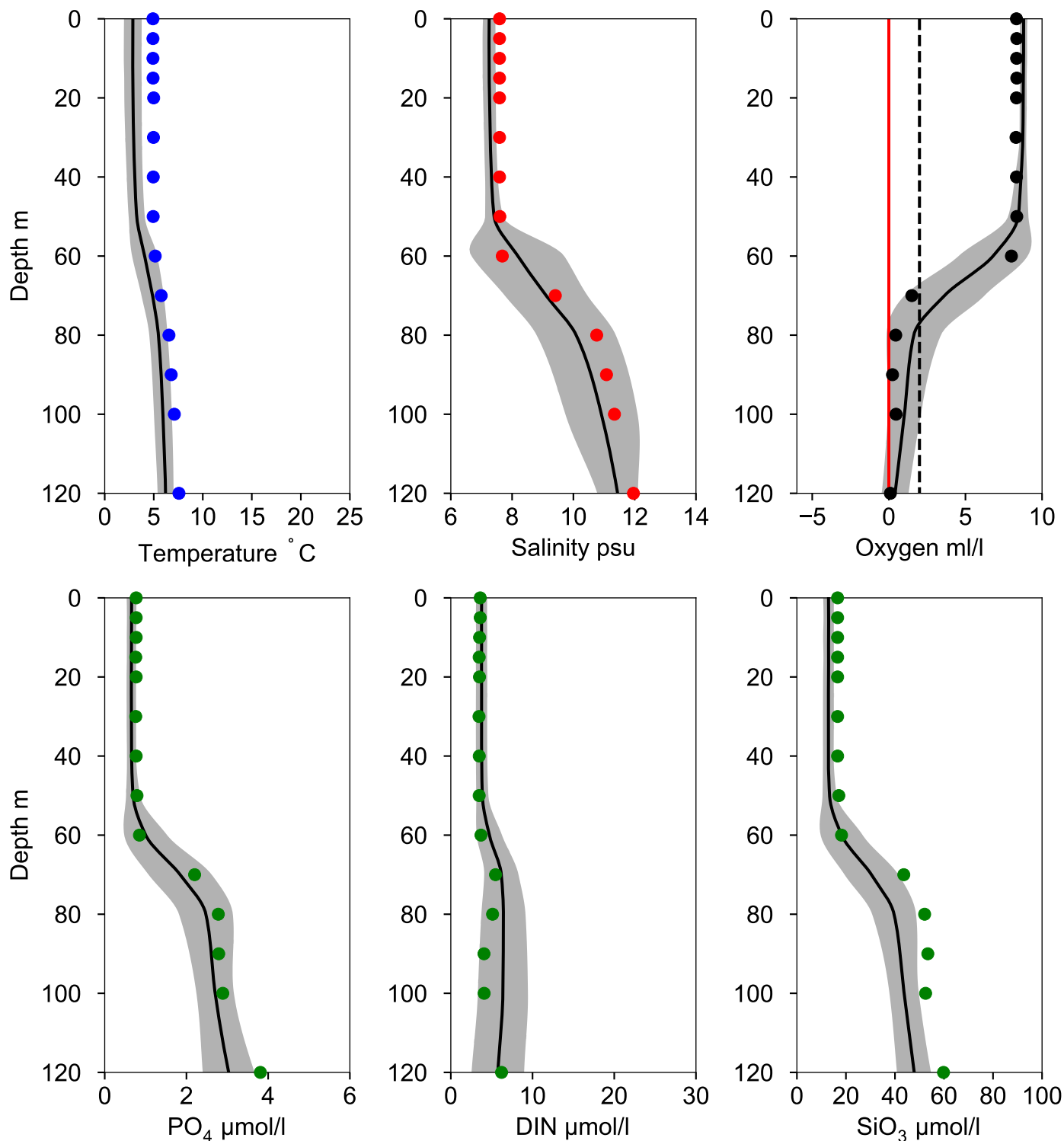
Vertical profiles BY9 KLAIPEDA February

Statistics based on data from: Östra Gotlandshavet

— Mean 1991-2020

■ St.Dev.

● 2025-02-10



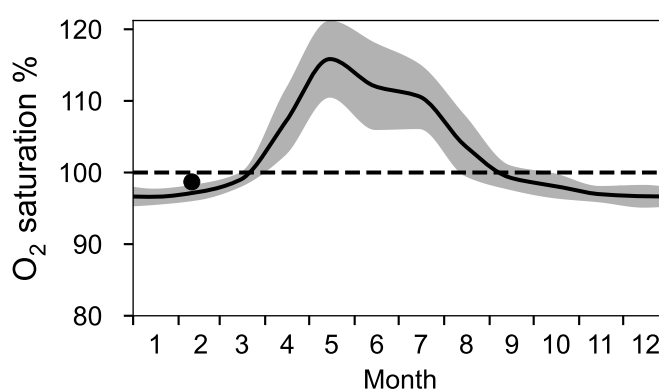
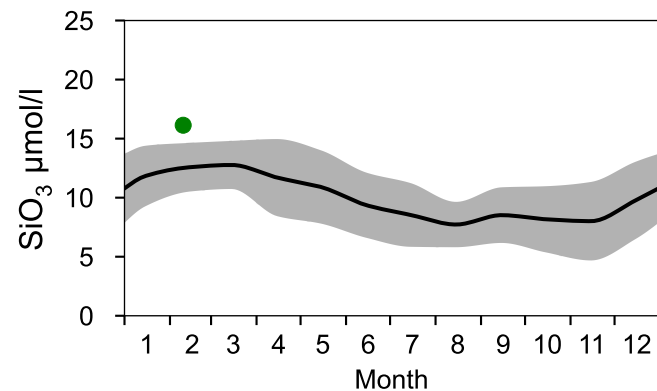
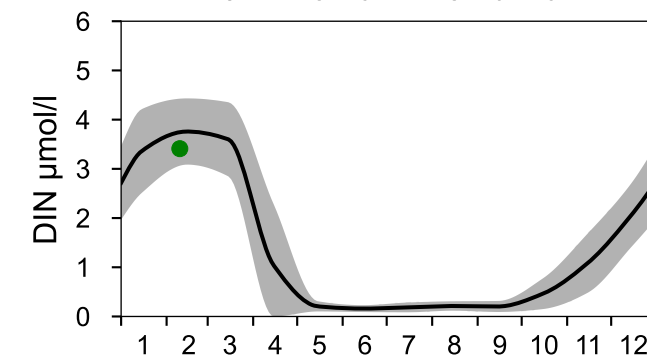
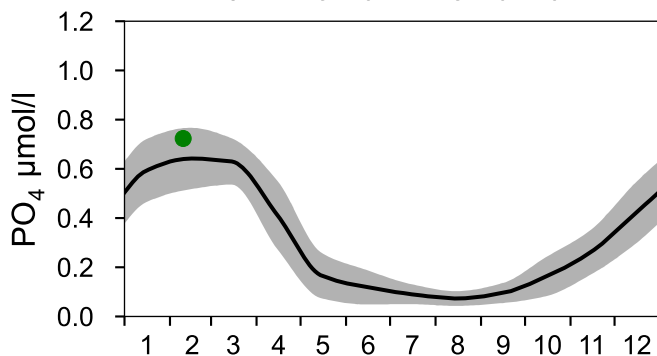
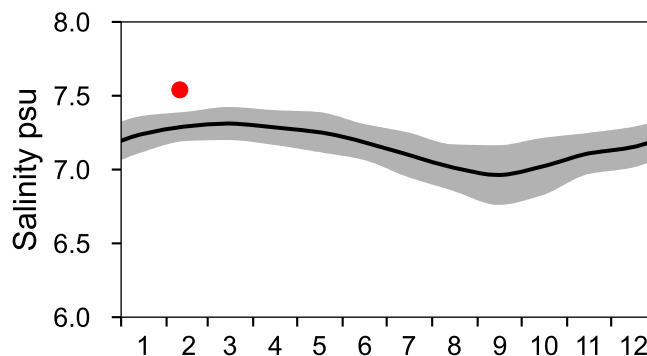
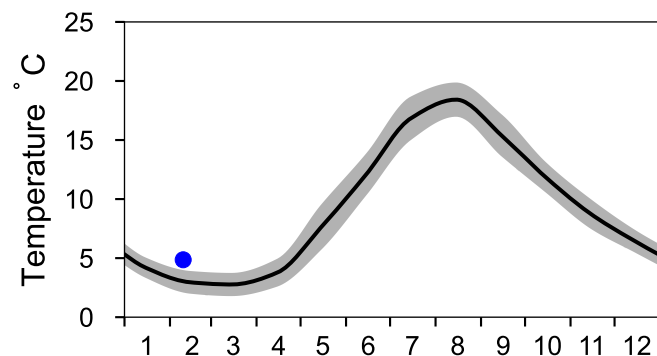
STATION BY10 SURFACE WATER (0-10 m)

Annual Cycles

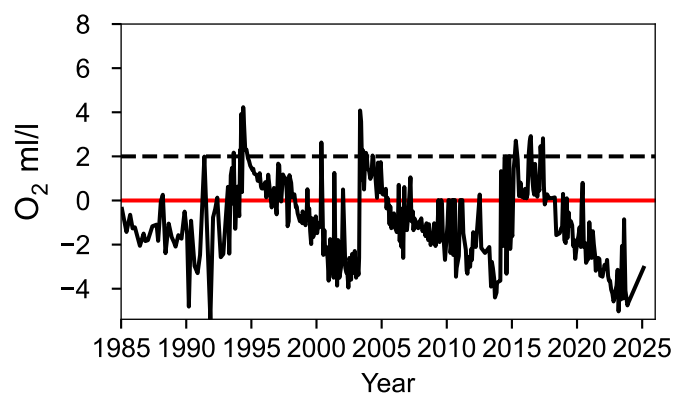
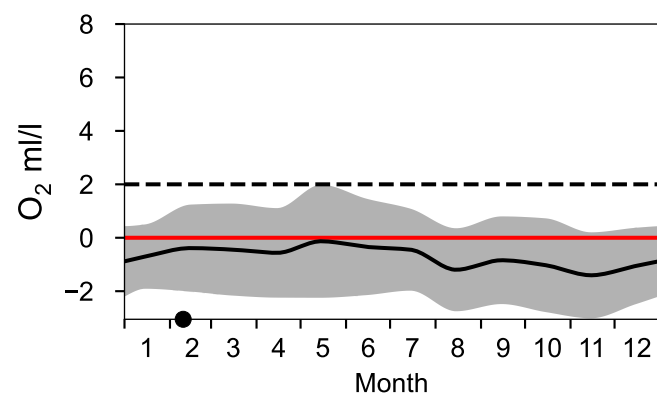
— Mean 1991-2020

■ St.Dev.

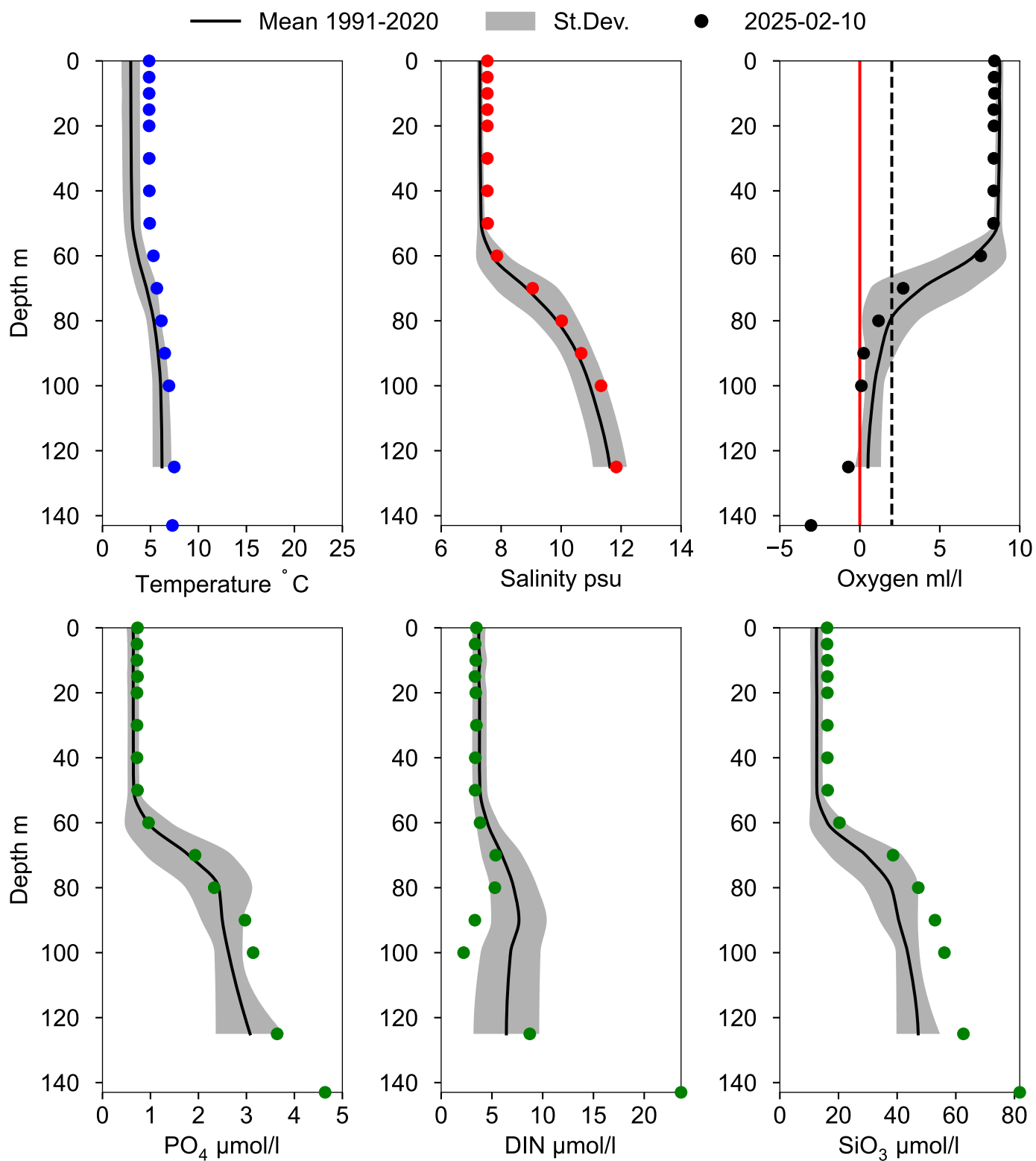
● 2025



OXYGEN IN BOTTOM WATER (depth >= 125 m)



Vertical profiles BY10 February



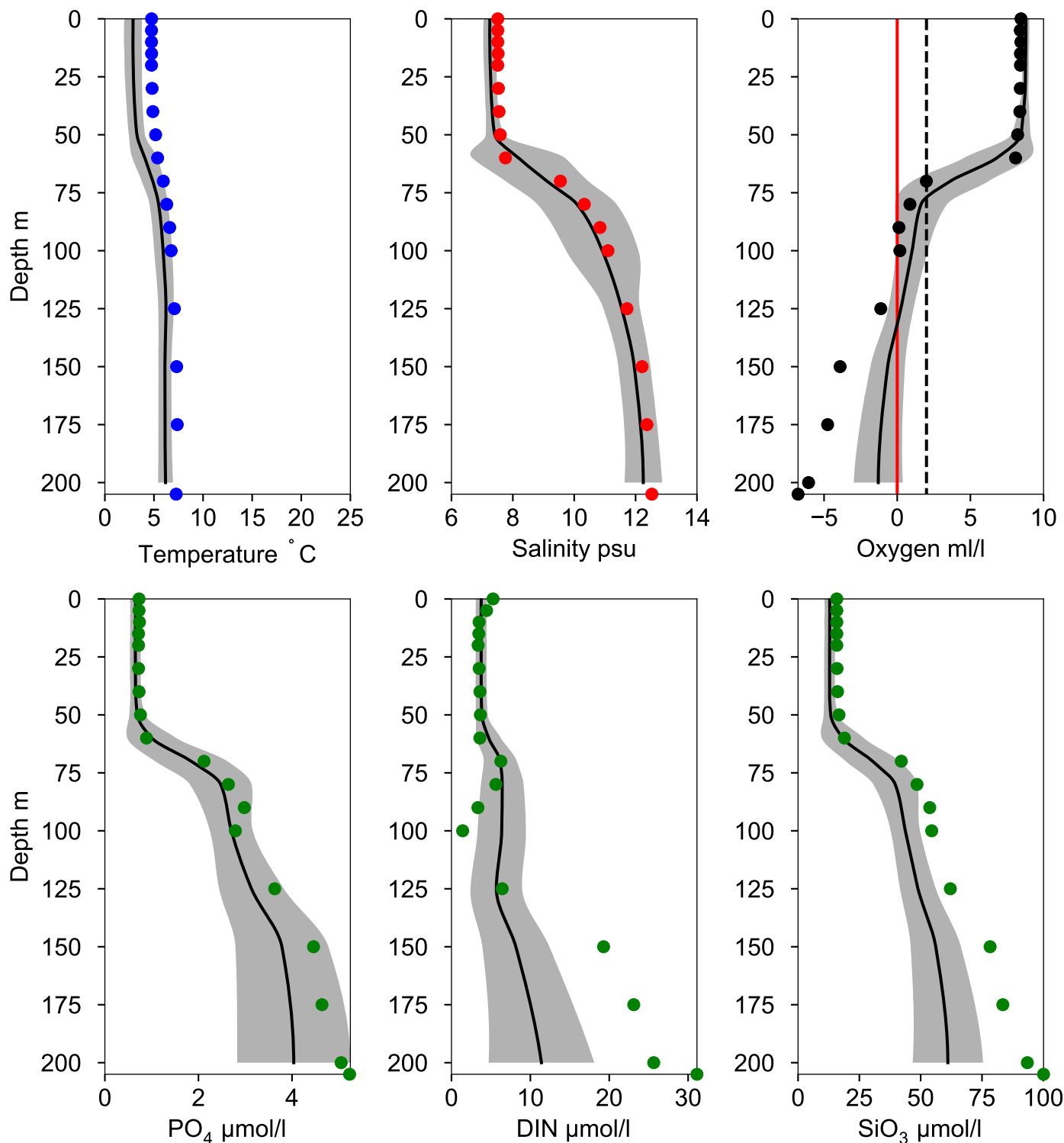
Vertical profiles BY11 February

Statistics based on data from: Östra Gotlandshavet

— Mean 1991-2020

■ St.Dev.

● 2025-02-10



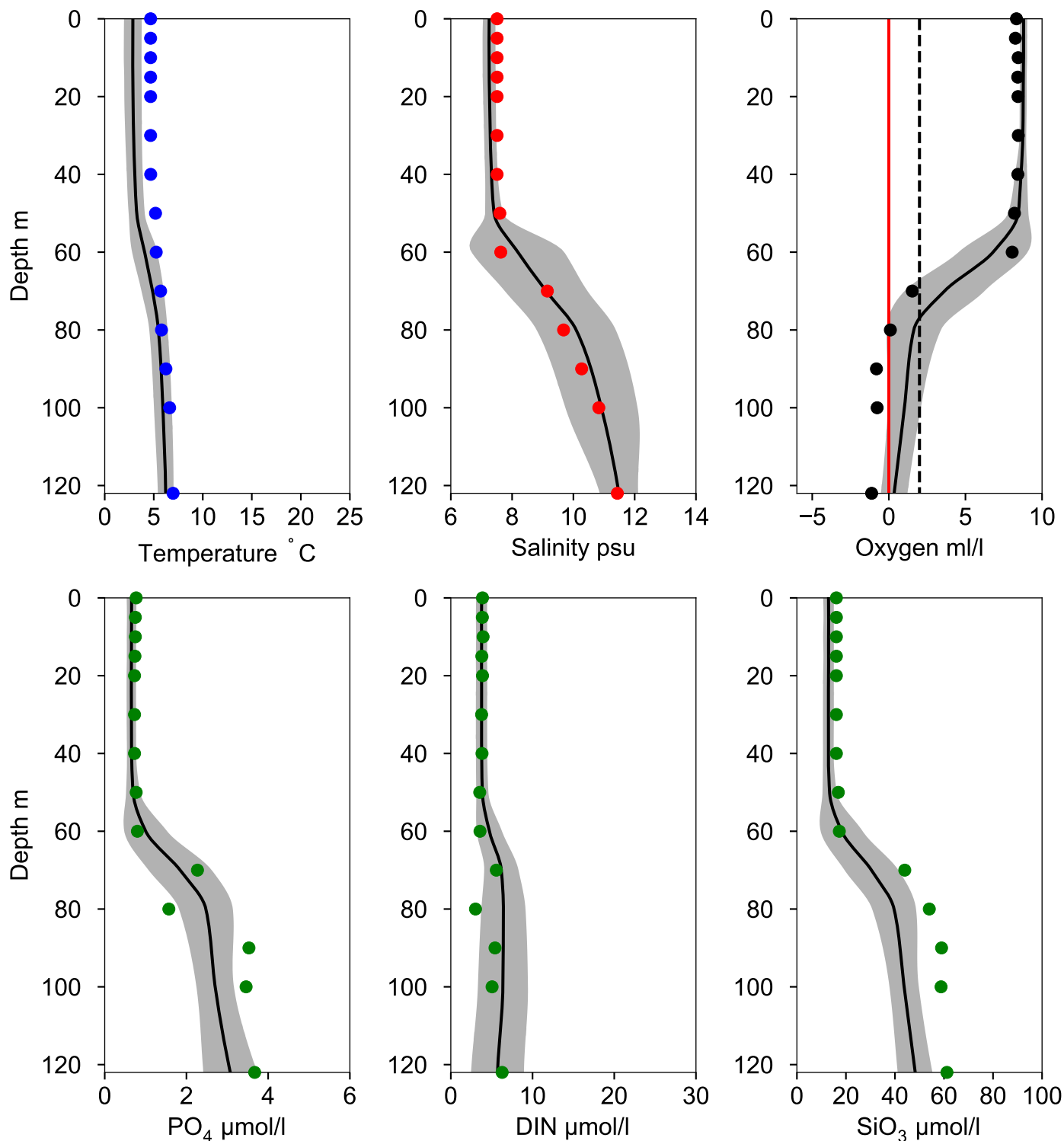
Vertical profiles BY13 February

Statistics based on data from: Östra Gotlandshavet

— Mean 1991-2020

■ St.Dev.

● 2025-02-10



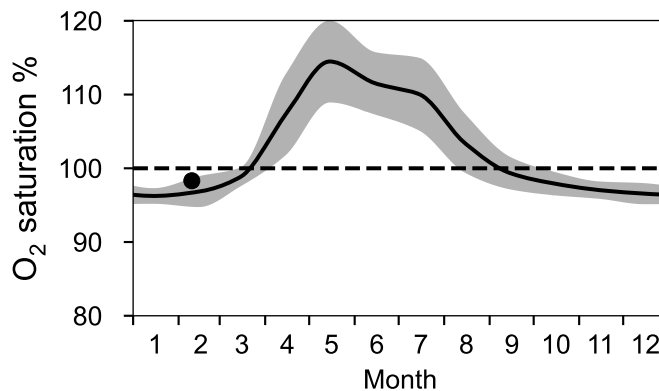
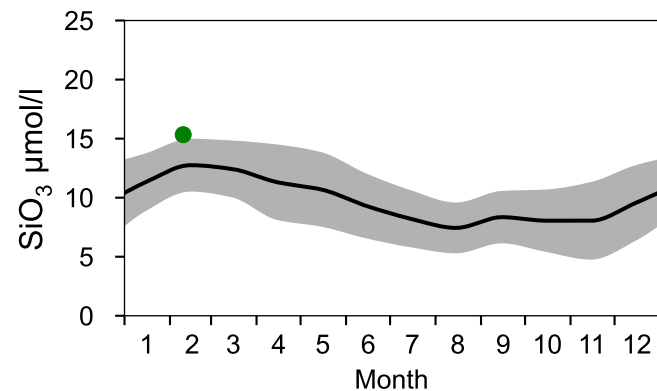
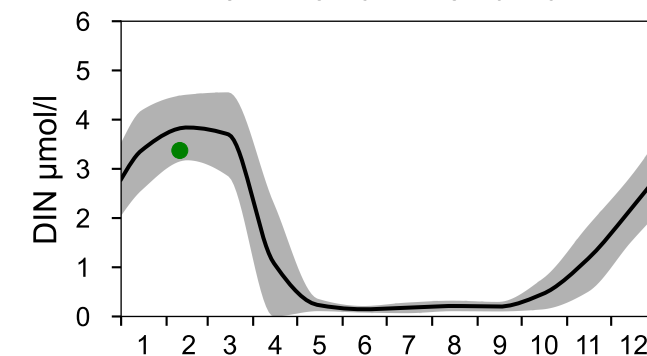
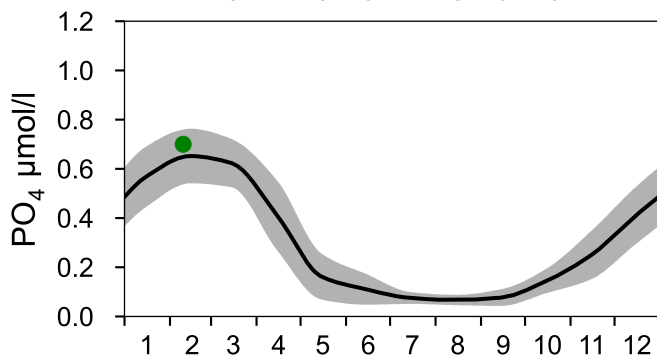
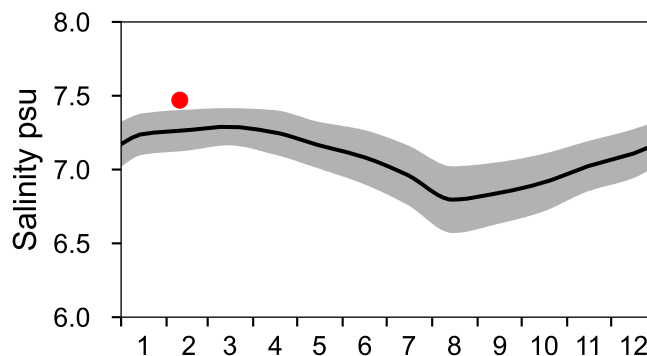
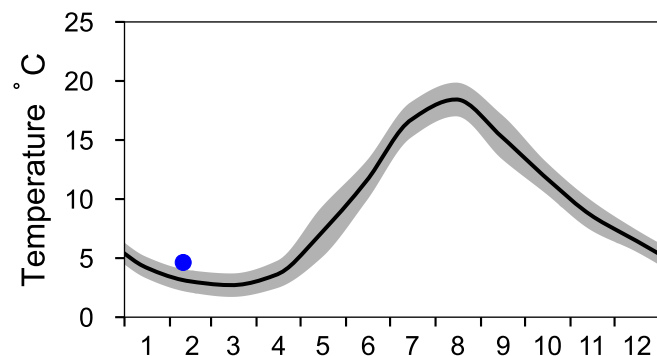
STATION BY15 GOTLANDSDJ SURFACE WATER (0-10 m)

Annual Cycles

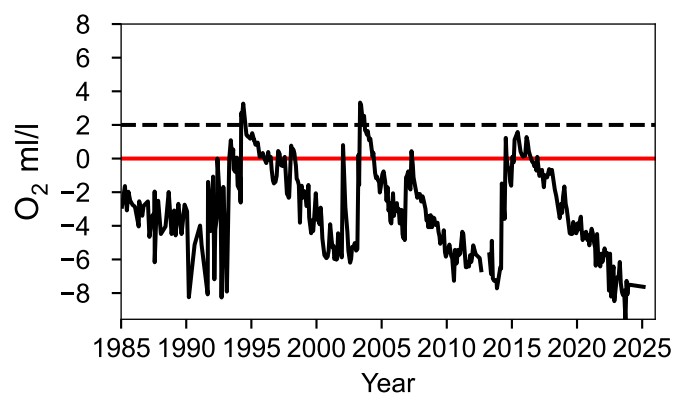
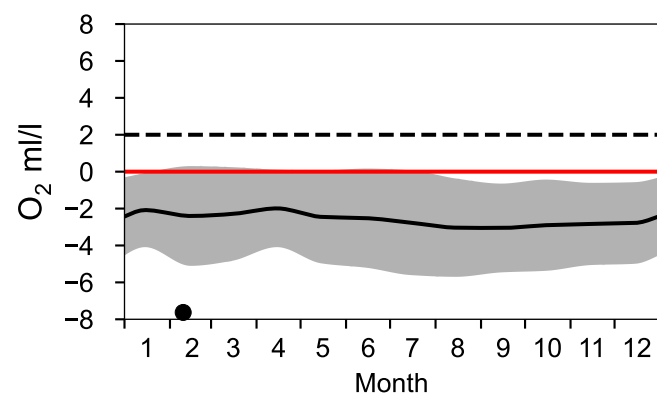
— Mean 1991-2020

■ St.Dev.

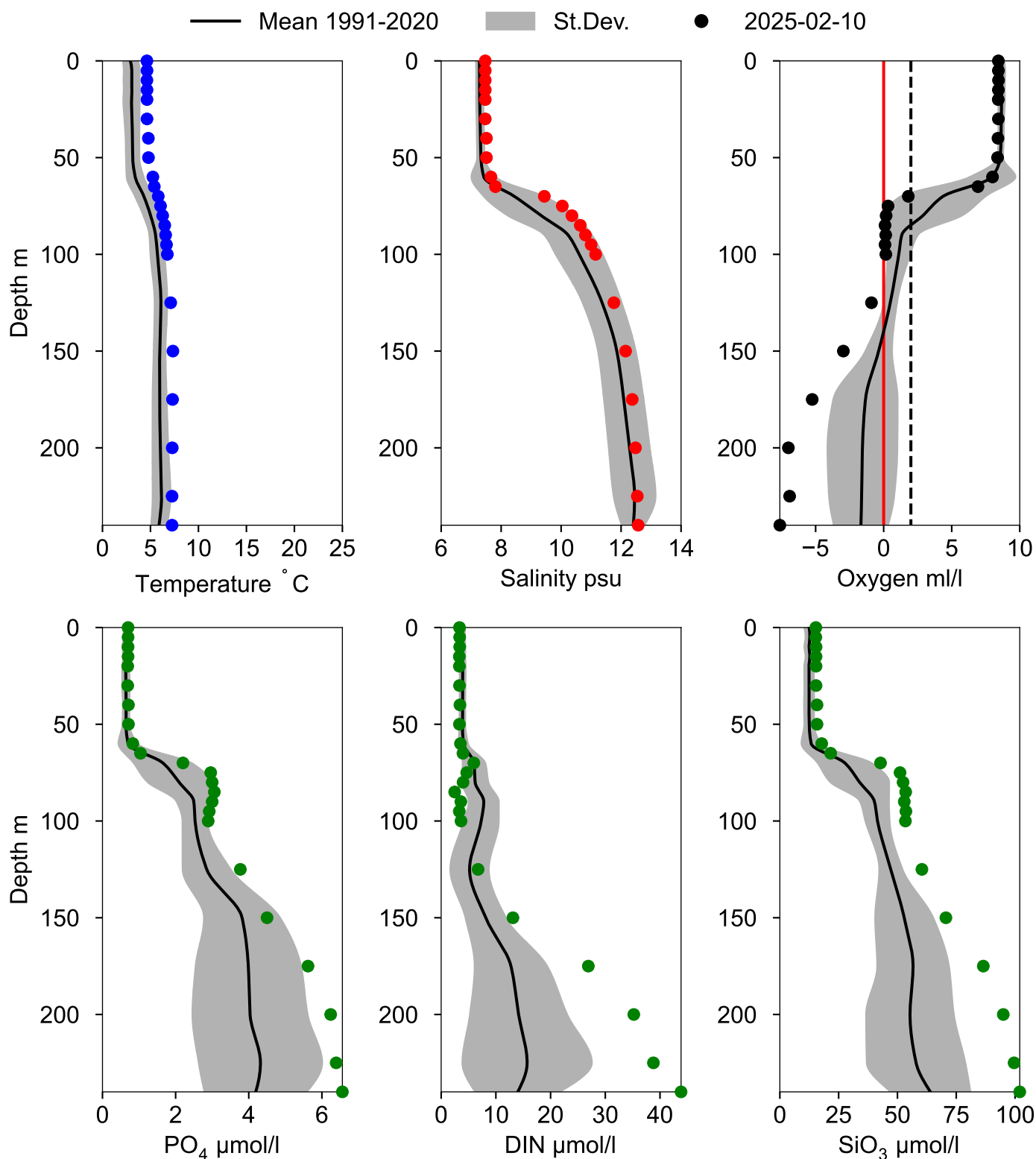
● 2025



OXYGEN IN BOTTOM WATER (depth >= 225 m)



Vertical profiles BY15 GOTLANDSDJ February



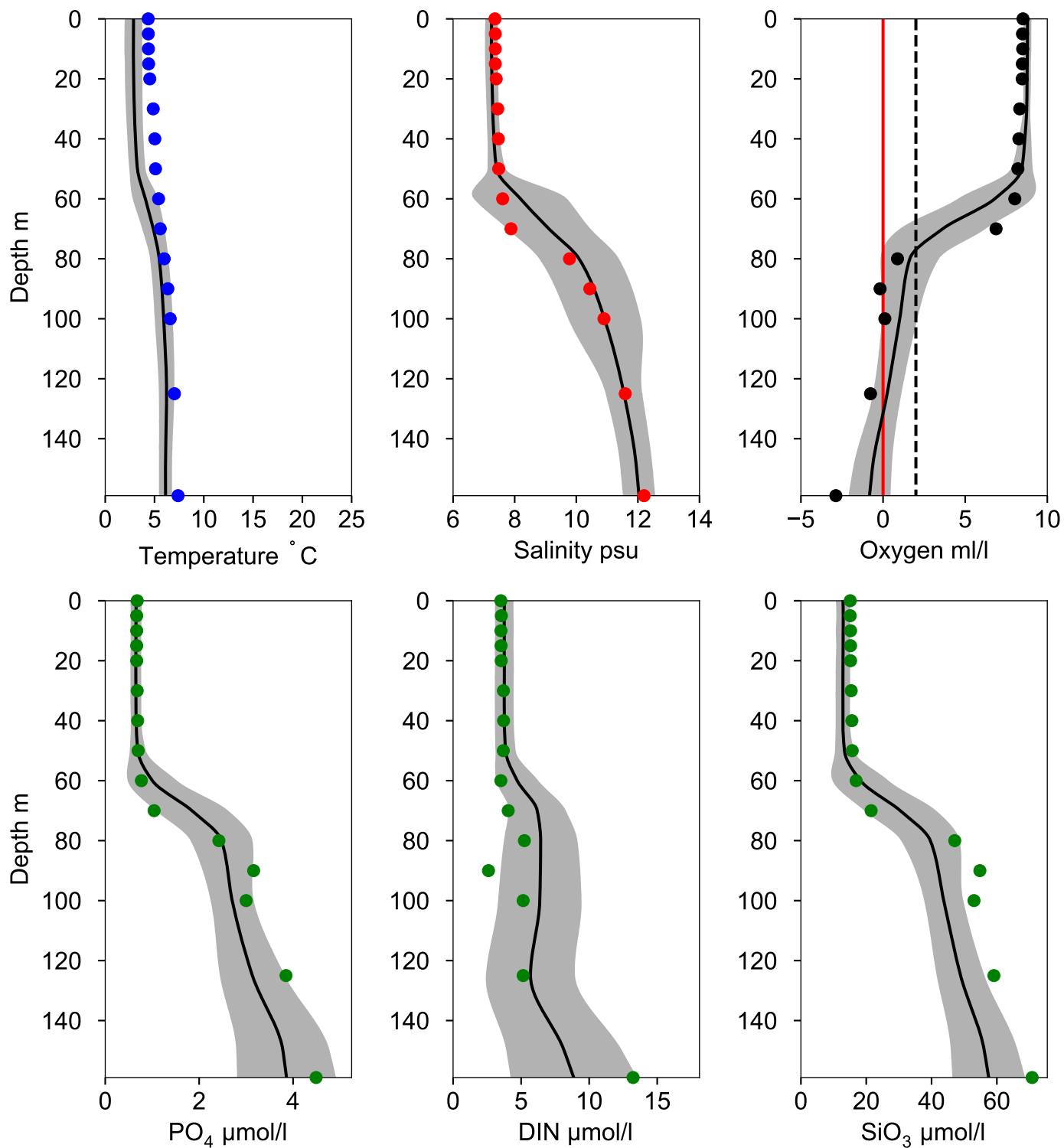
Vertical profiles BY19 February

Statistics based on data from: Östra Gotlandshavet

— Mean 1991-2020

■ St.Dev.

● 2025-02-10



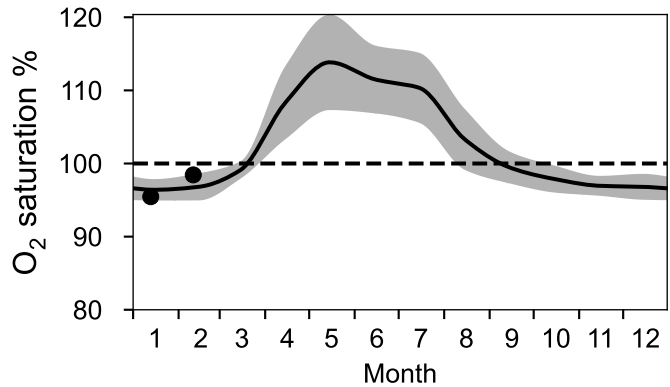
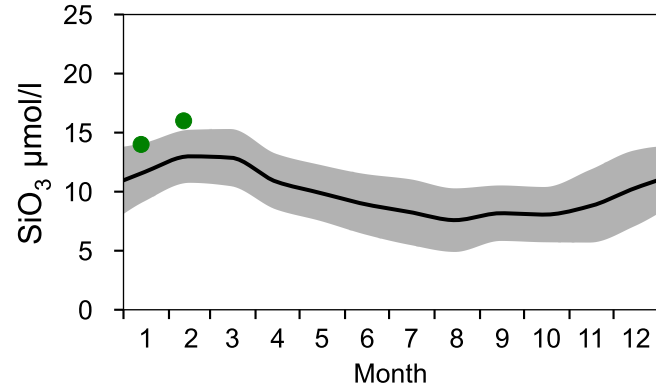
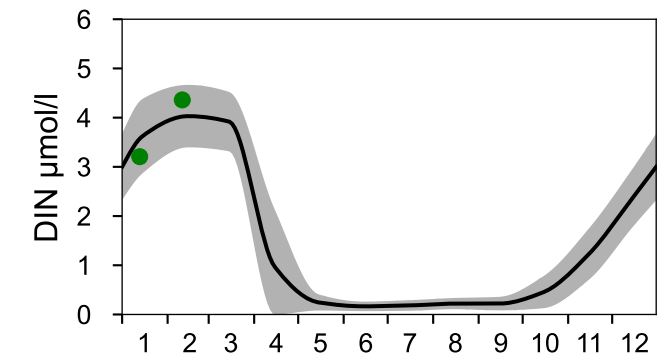
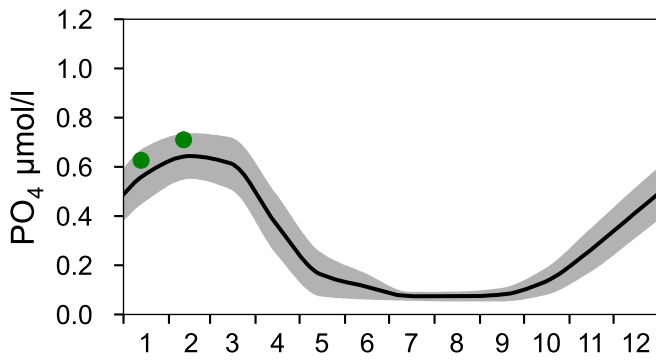
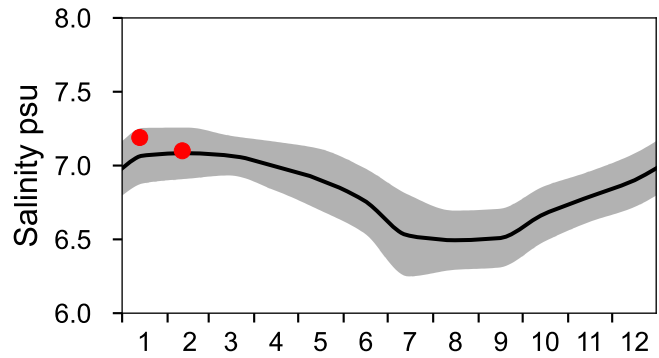
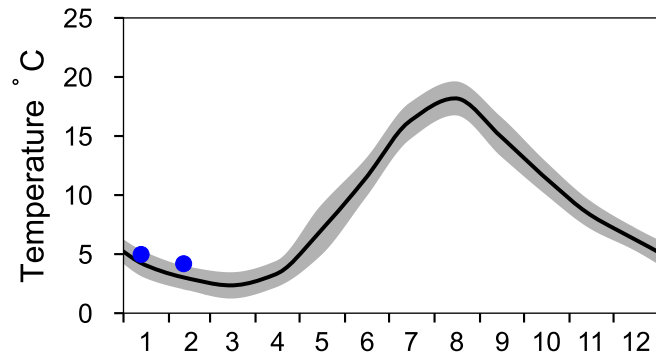
STATION BY20 FÄRÖDJ SURFACE WATER (0-10 m)

Annual Cycles

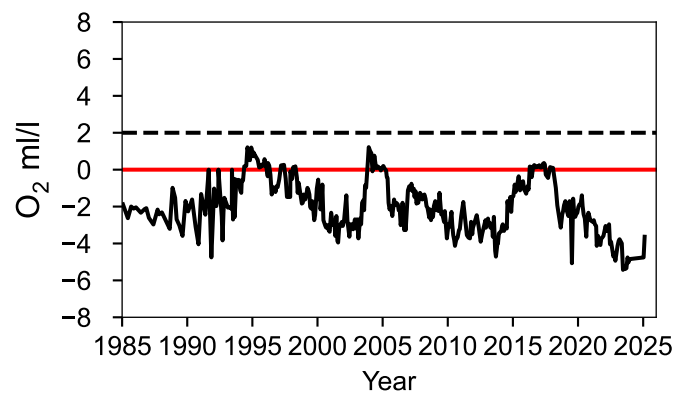
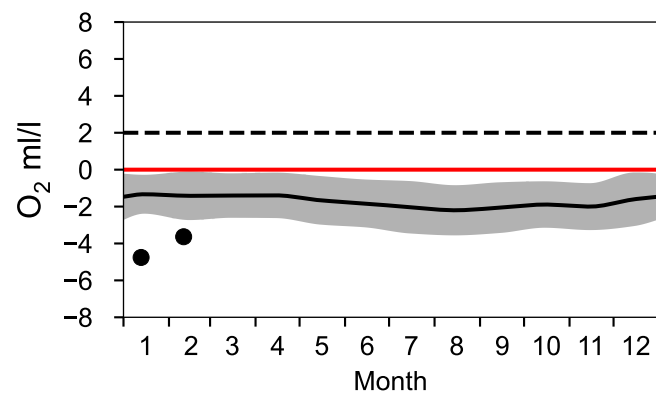
— Mean 1991-2020

■ St.Dev.

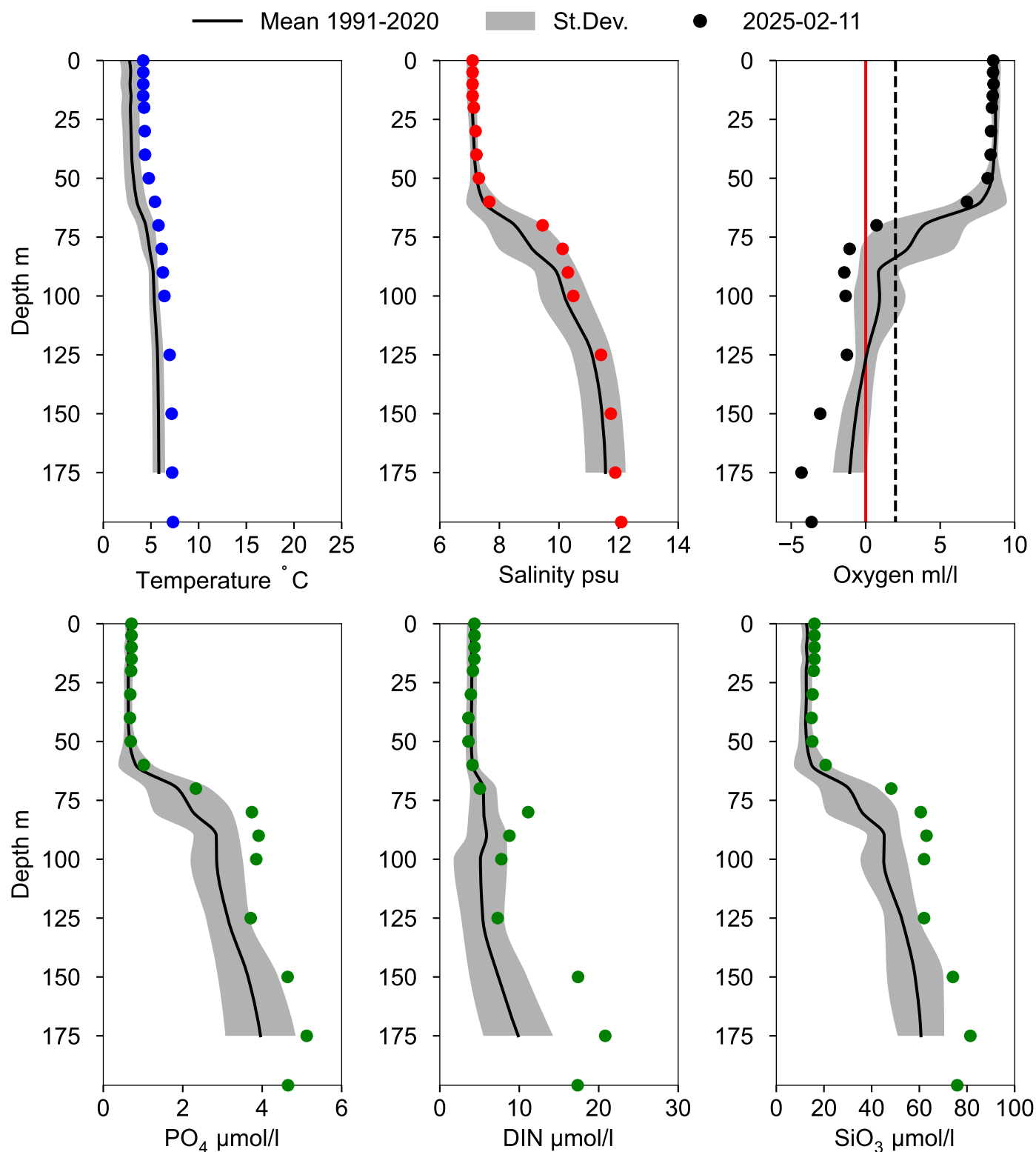
● 2025



OXYGEN IN BOTTOM WATER (depth >= 175 m)



Vertical profiles BY20 FÅRÖDJ February



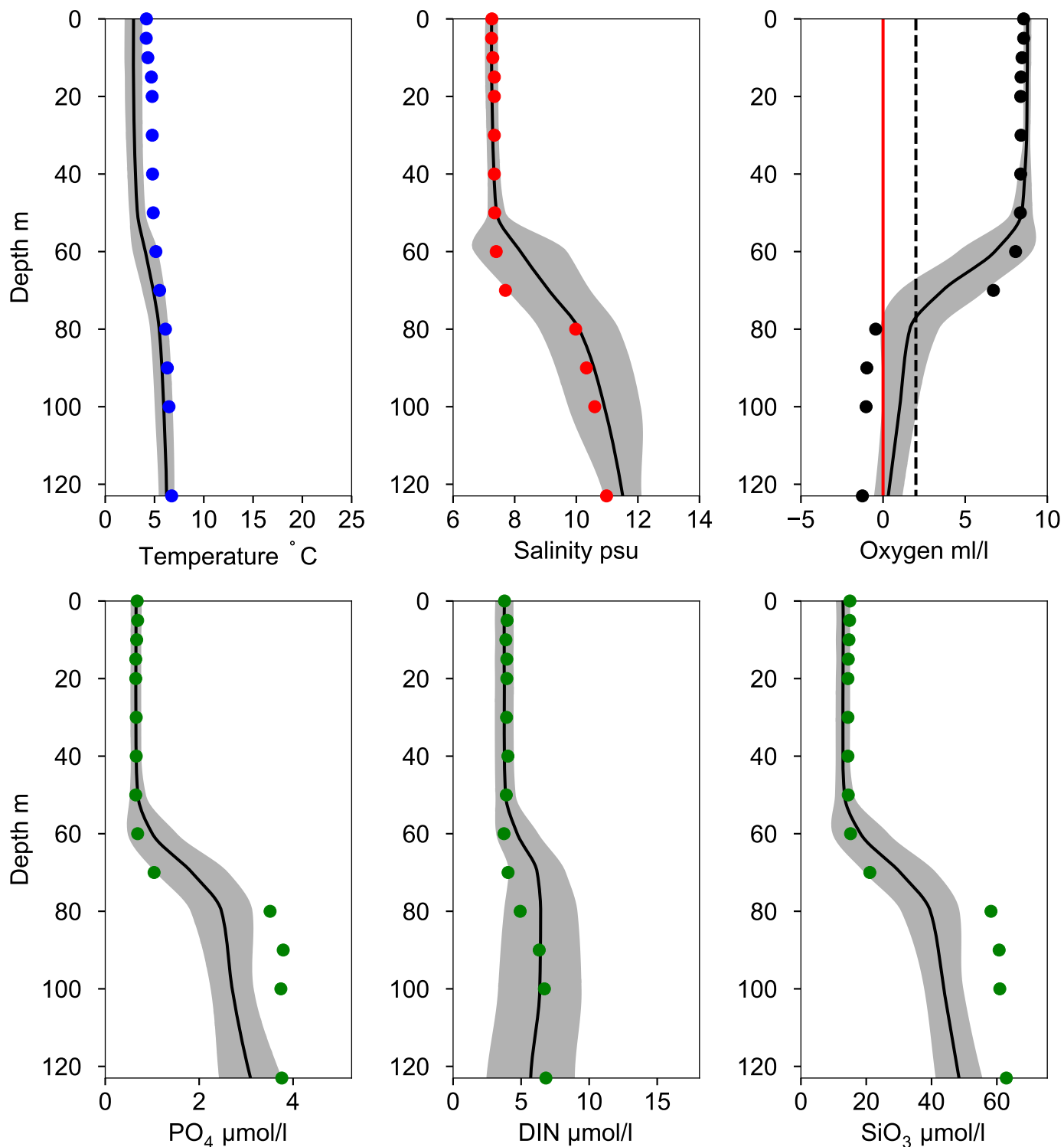
Vertical profiles BY21 February

Statistics based on data from: Östra Gotlandshavet

— Mean 1991-2020

■ St.Dev.

● 2025-02-11



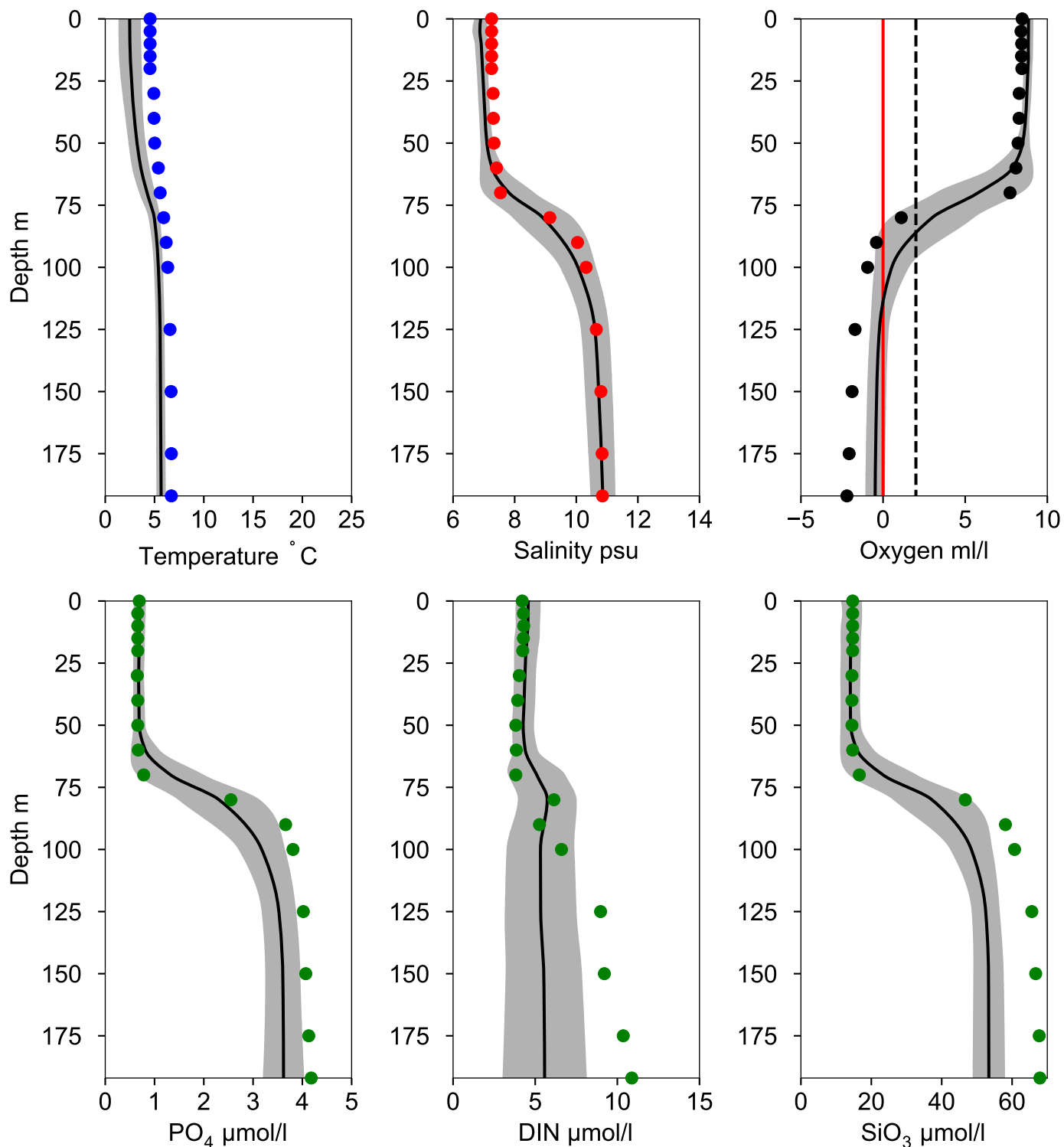
Vertical profiles BY28 February

Statistics based on data from: Norra Egentliga Östersjön

— Mean 1991-2020

■ St.Dev.

● 2025-02-11



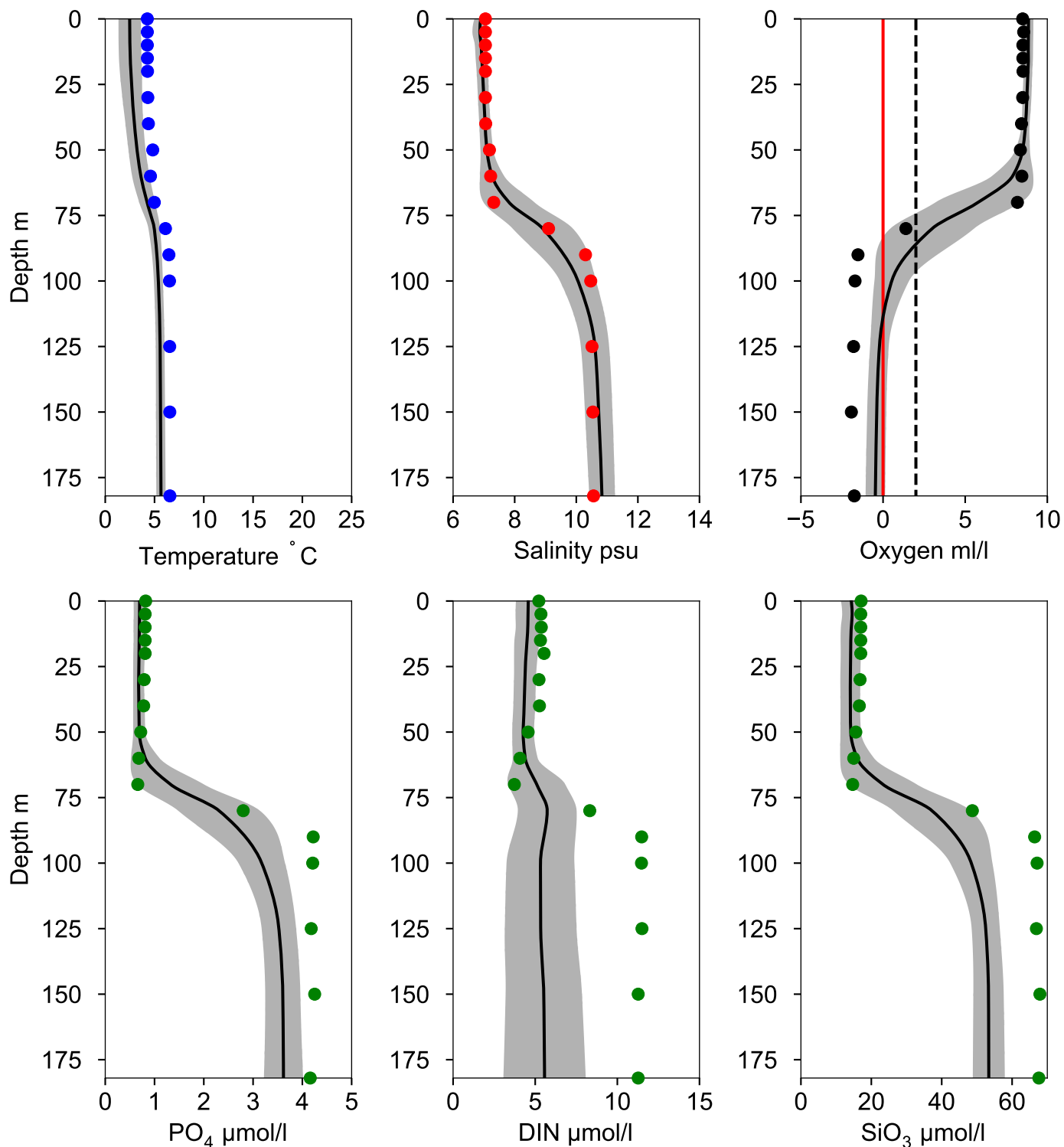
Vertical profiles BY27 February

Statistics based on data from: Norra Egentliga Östersjön

— Mean 1991-2020

■ St.Dev.

● 2025-02-11



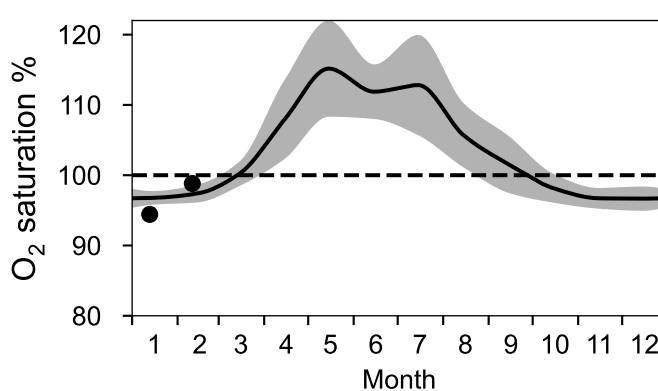
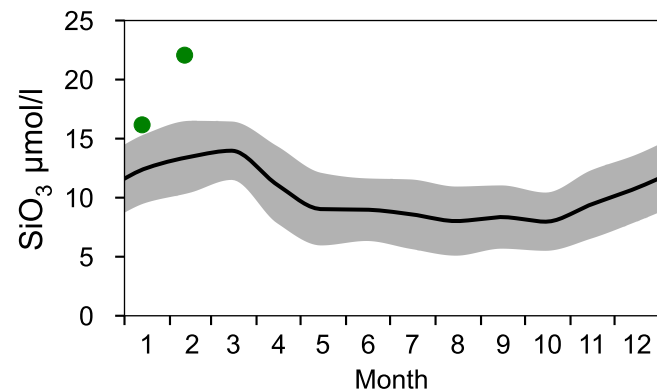
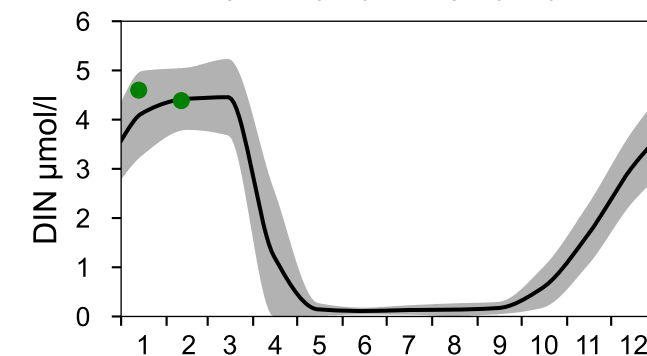
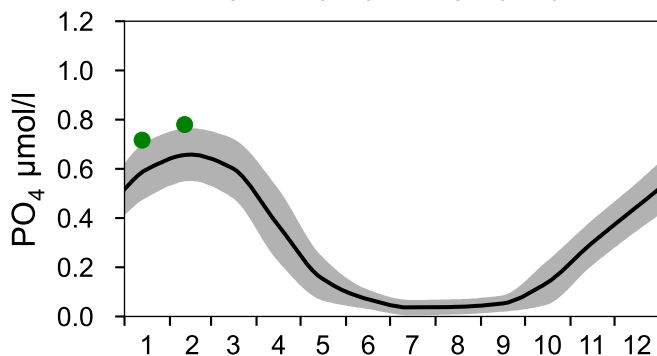
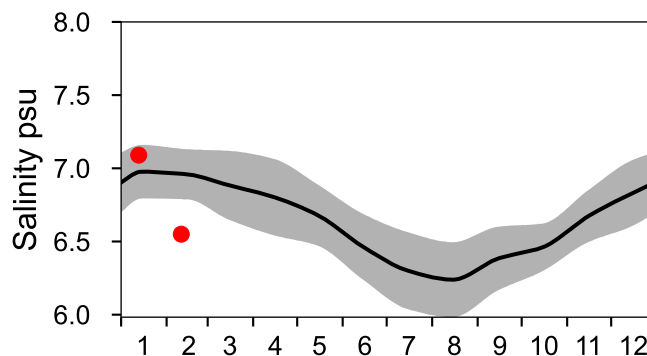
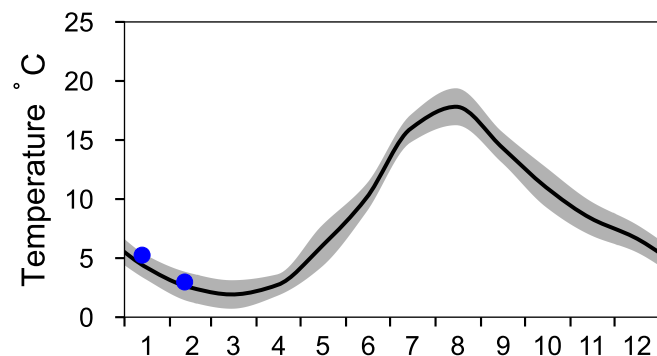
STATION BY29 / LL19 SURFACE WATER (0-10 m)

Annual Cycles

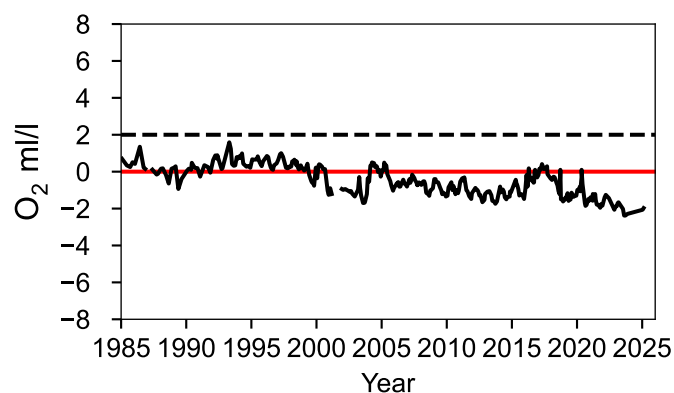
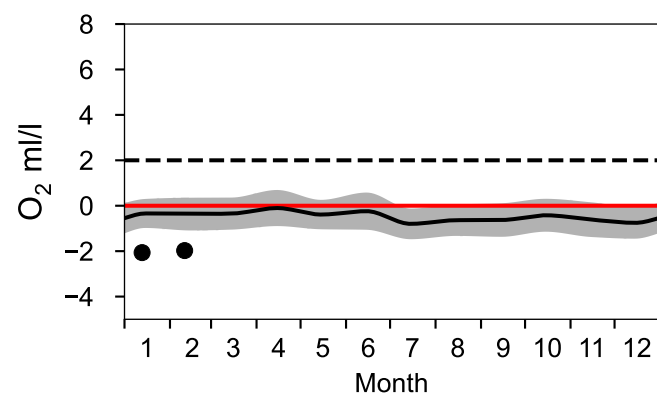
— Mean 1991-2020

■ St.Dev.

● 2025

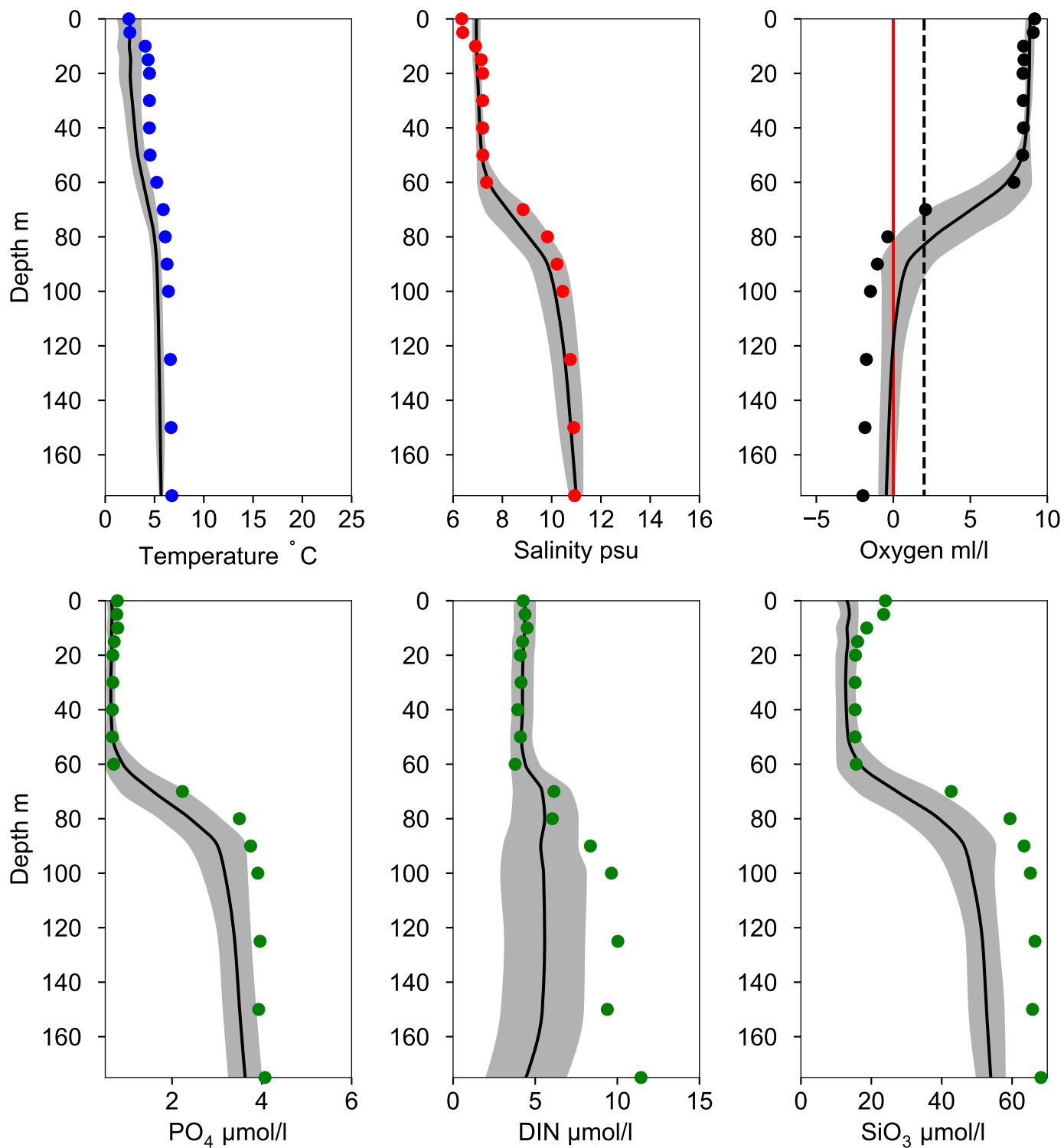


OXYGEN IN BOTTOM WATER (depth >= 150 m)



Vertical profiles BY29 / LL19 February

— Mean 1991-2020 St.Dev. ● 2025-02-11



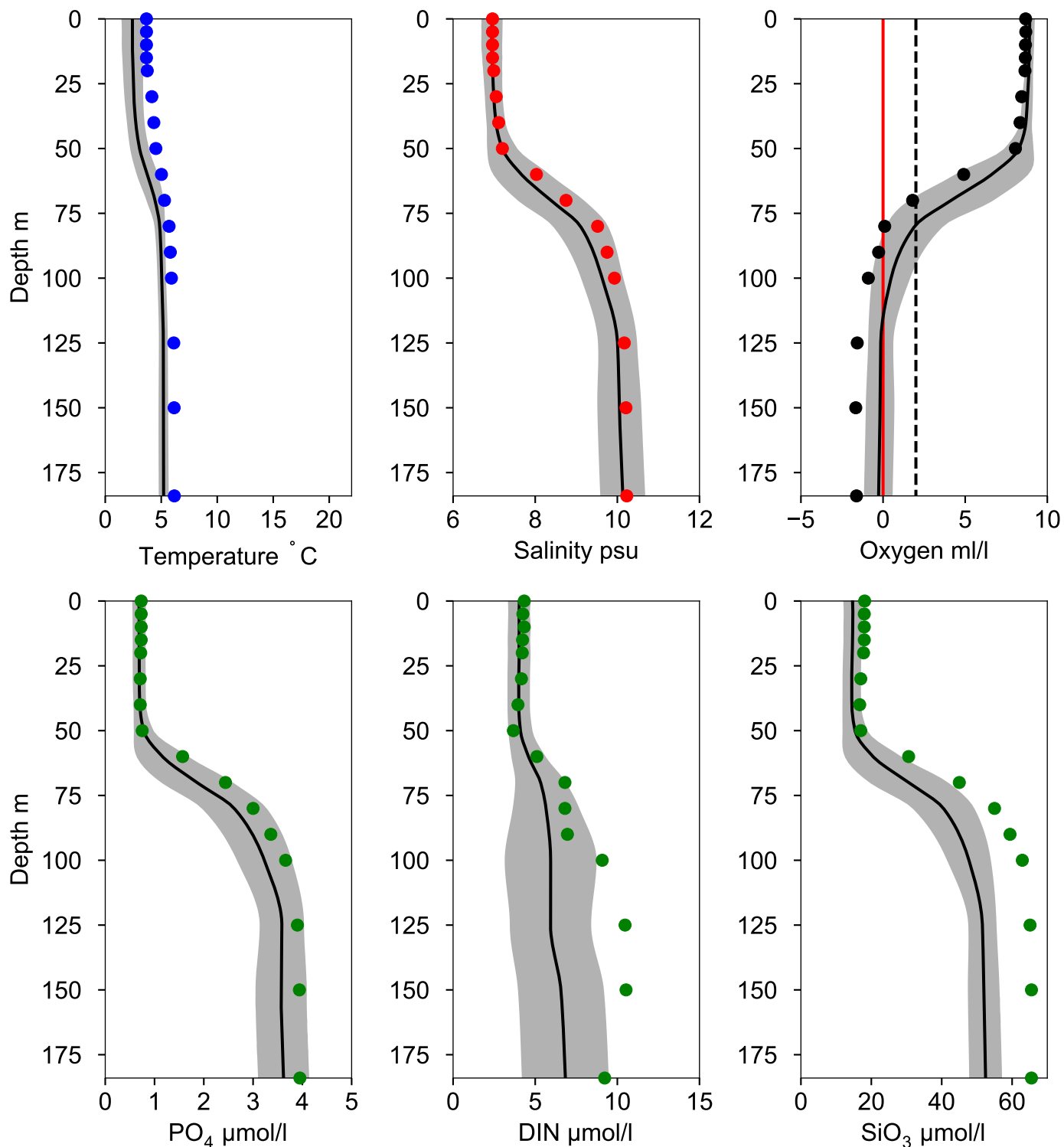
Vertical profiles BY30 February

Statistics based on data from: Västra Gotlandshavet

— Mean 1991-2020

■ St.Dev.

● 2025-02-11



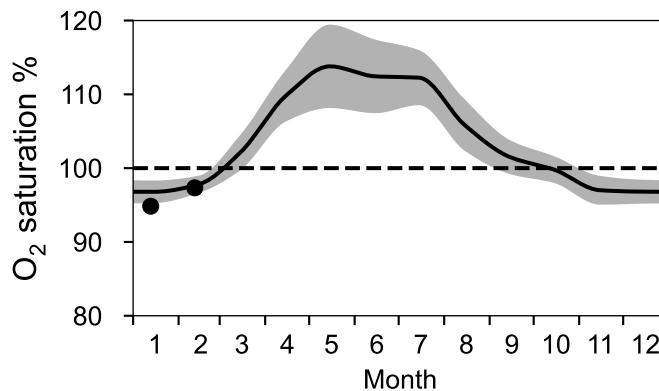
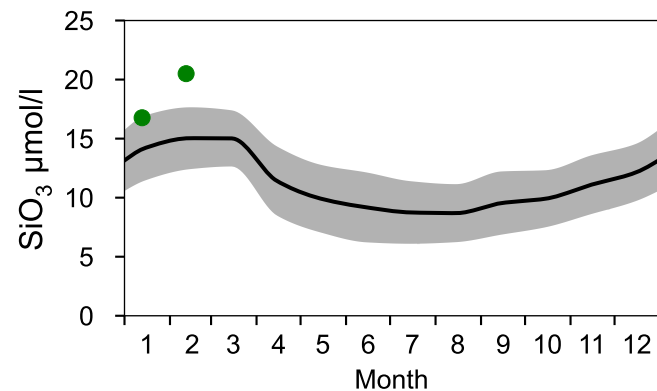
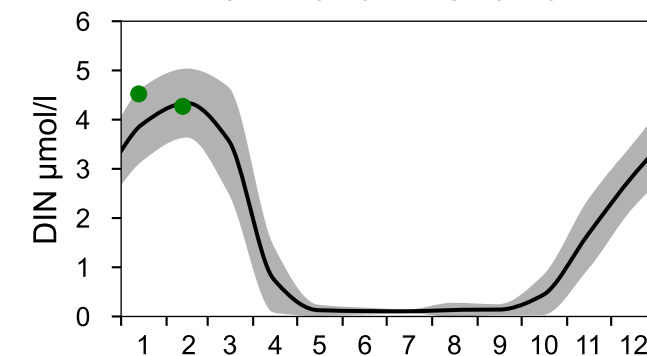
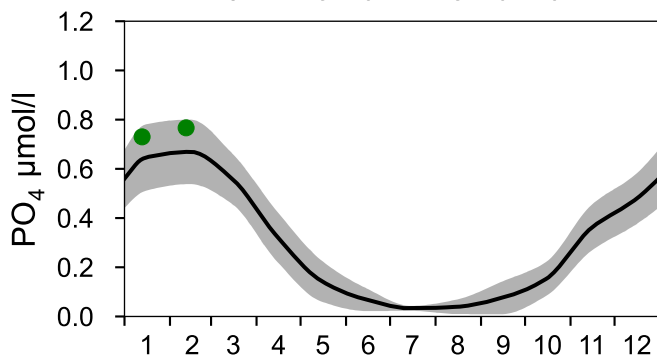
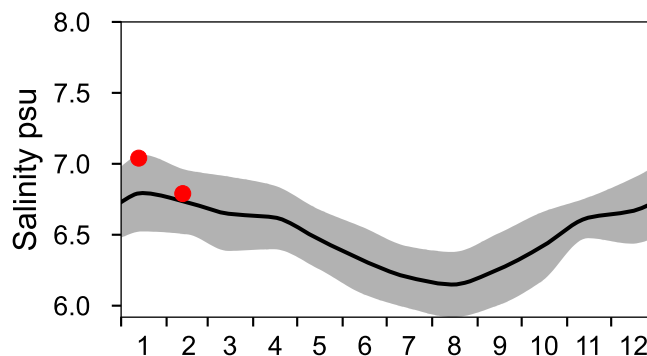
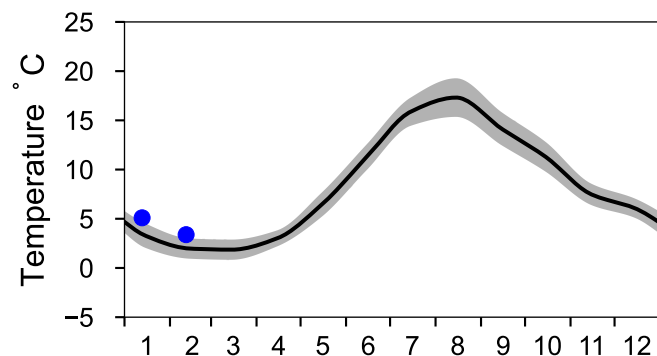
STATION BY31 LANDSORTSDJ SURFACE WATER (0-10 m)

Annual Cycles

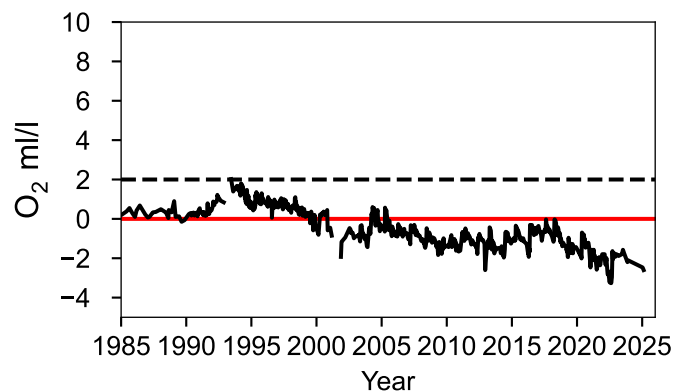
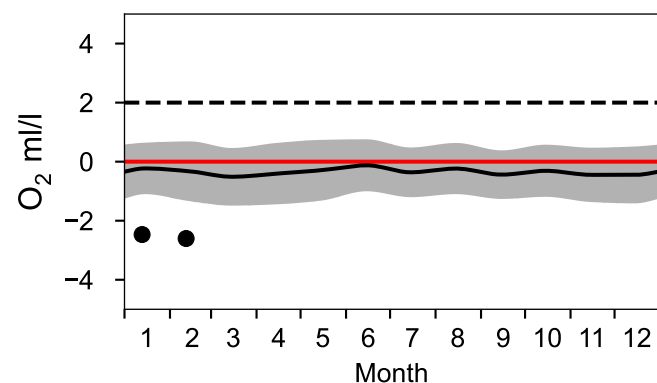
— Mean 1991-2020

■ St.Dev.

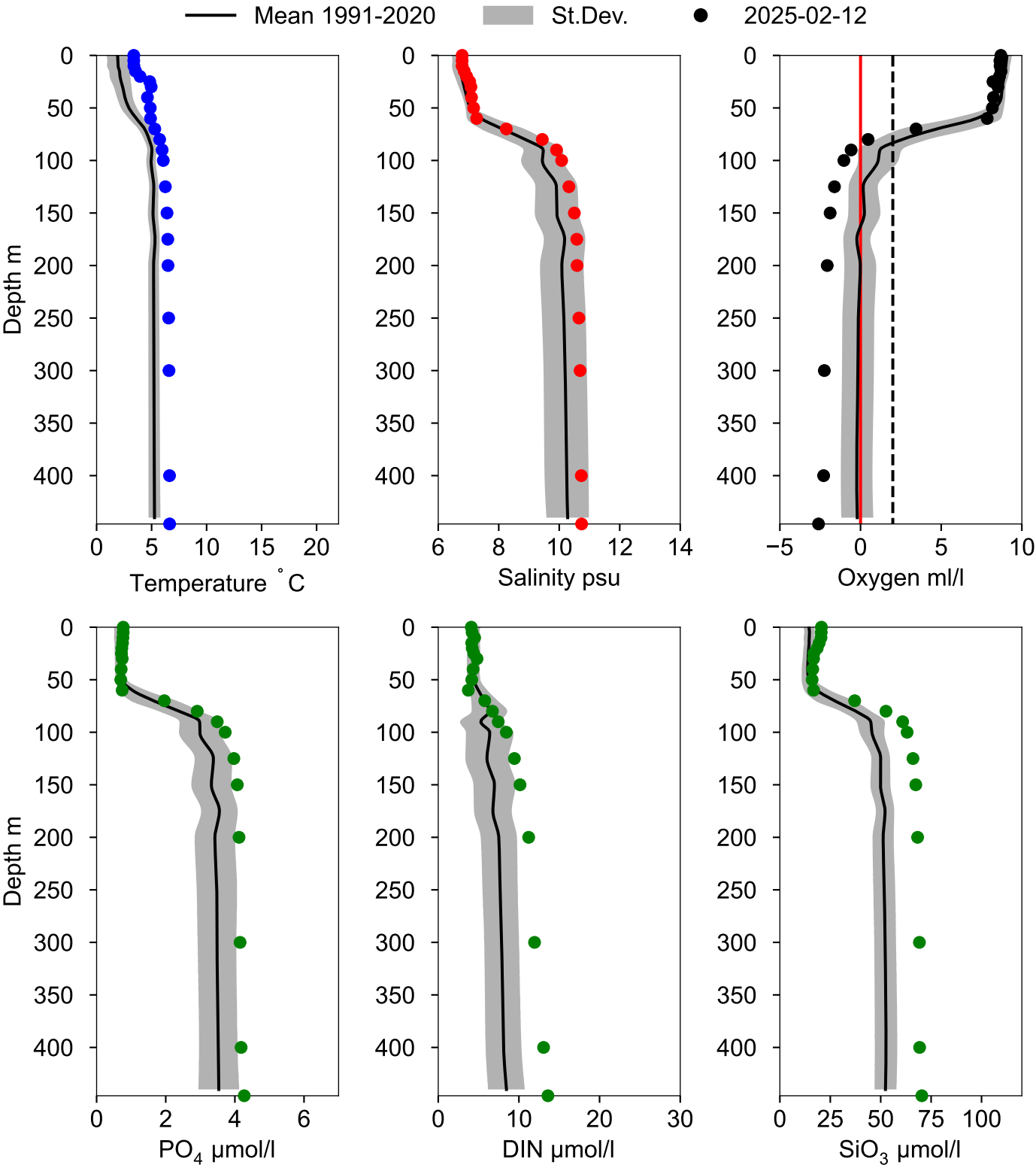
● 2025



OXYGEN IN BOTTOM WATER (depth >= 419 m)



Vertical profiles BY31 LANDSORTSDJ
February



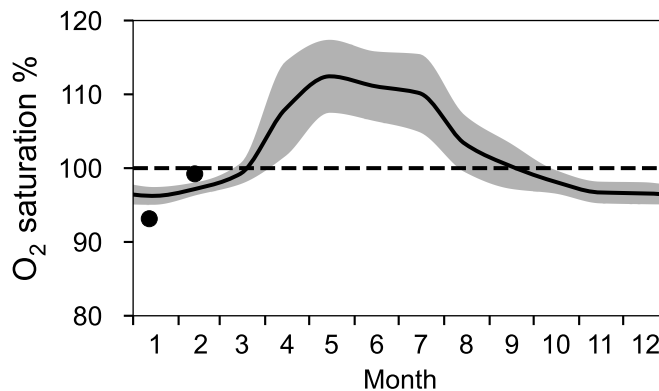
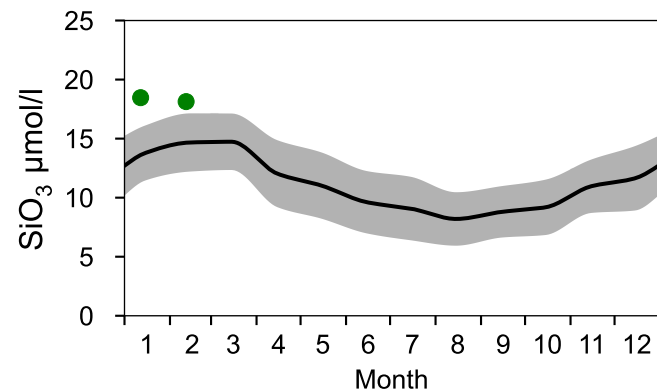
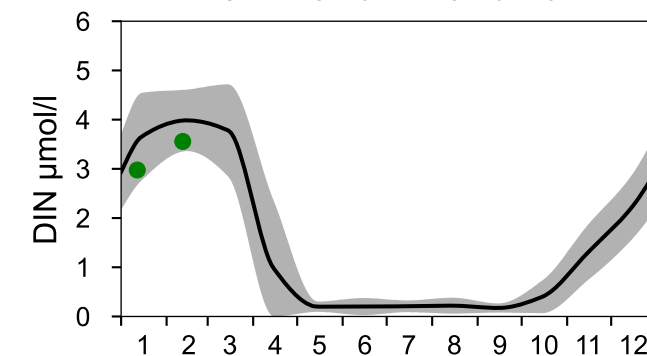
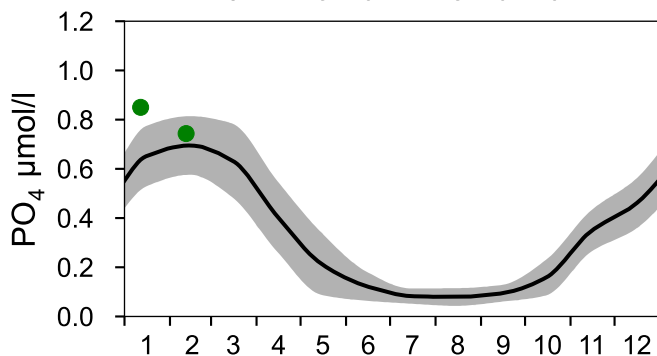
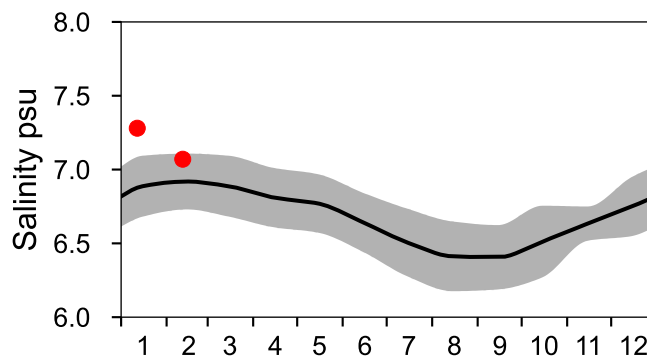
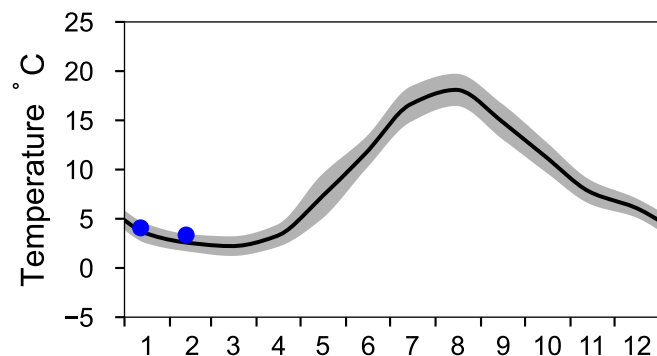
STATION BY32 NORRKÖPINGSDJ SURFACE WATER (0-10 m)

Annual Cycles

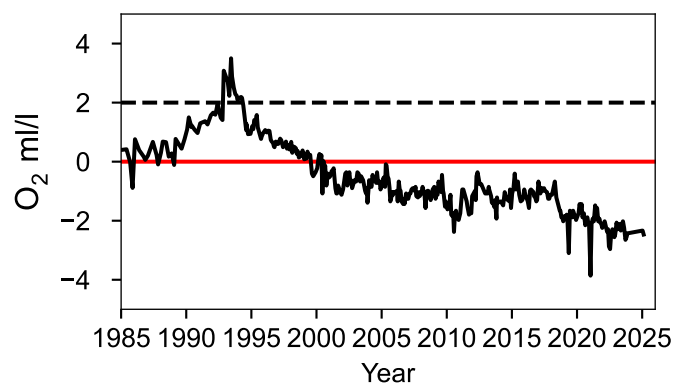
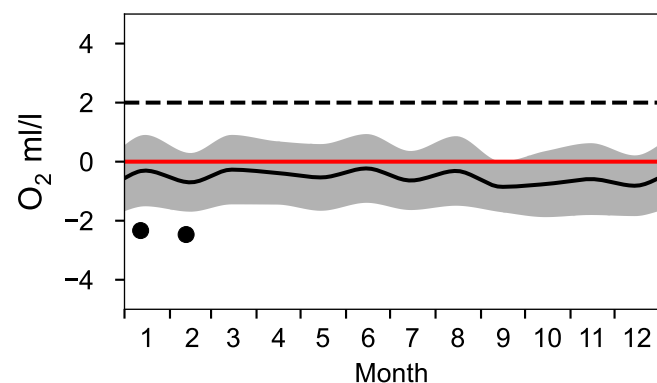
— Mean 1991-2020

■ St.Dev.

● 2025

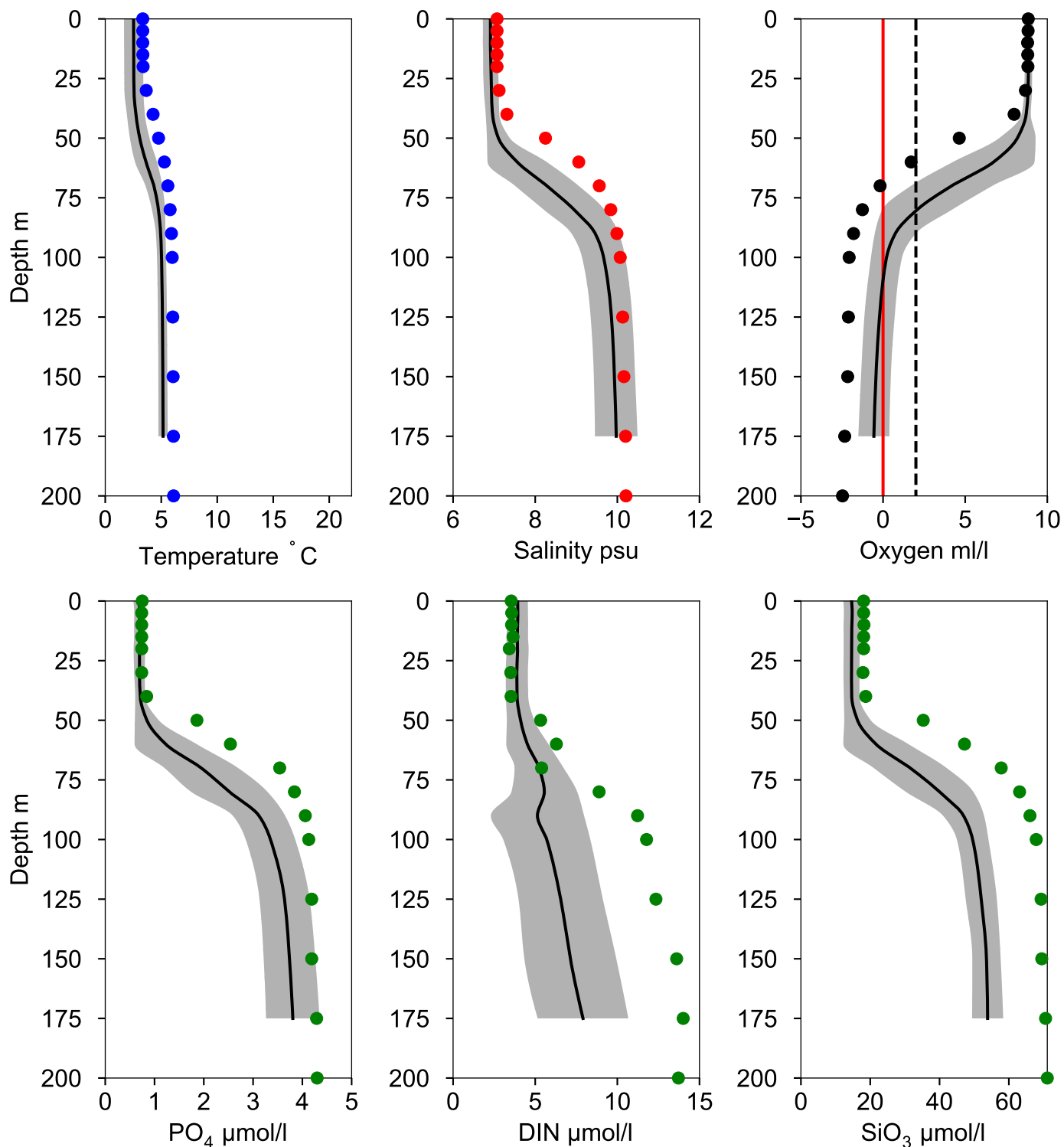


OXYGEN IN BOTTOM WATER (depth >= 175 m)



Vertical profiles BY32 NORRKÖPINGSDJ February

— Mean 1991-2020 St.Dev. ● 2025-02-12



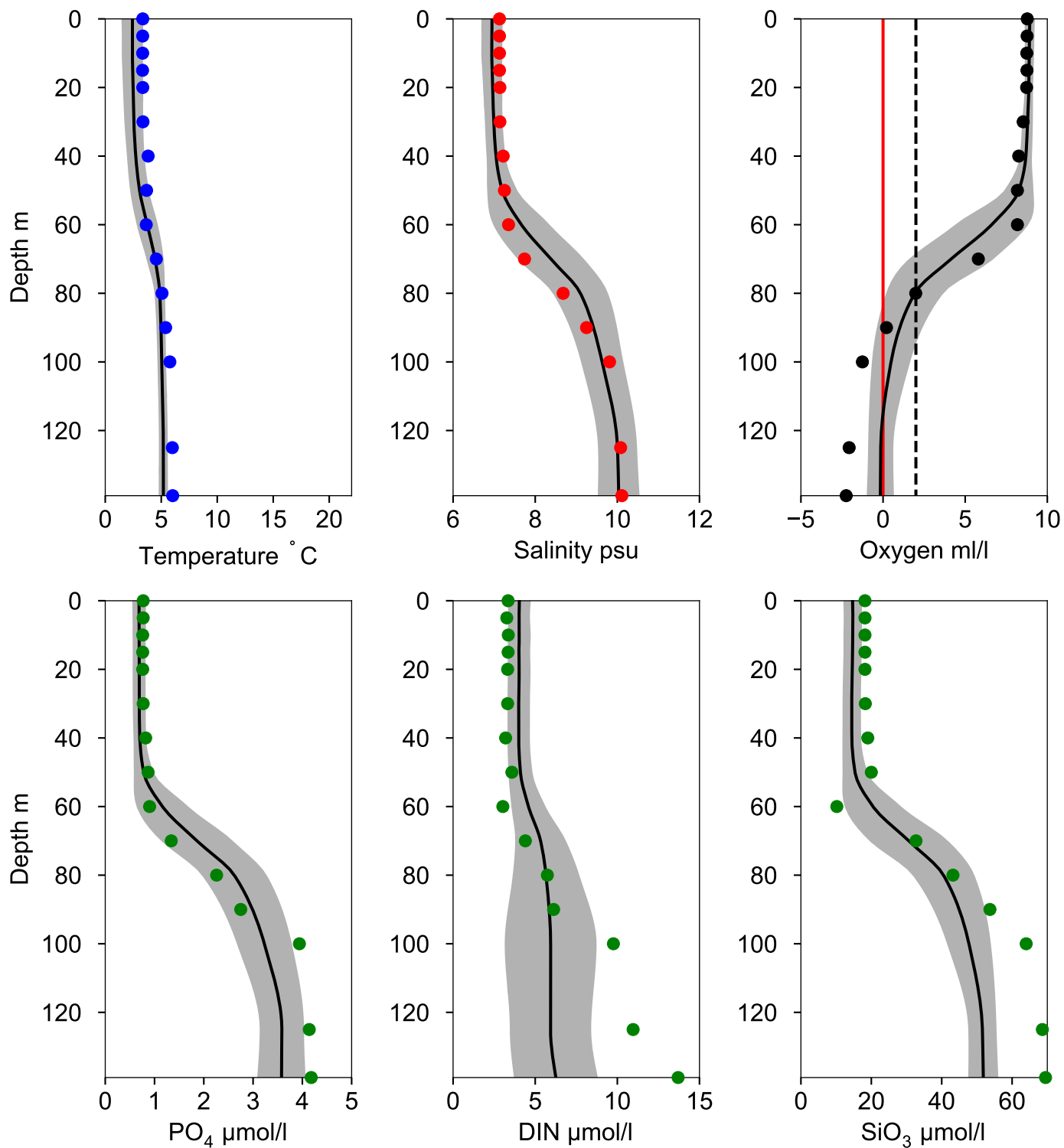
Vertical profiles BY36 February

Statistics based on data from: Västra Gotlandshavet

— Mean 1991-2020

■ St.Dev.

● 2025-02-12



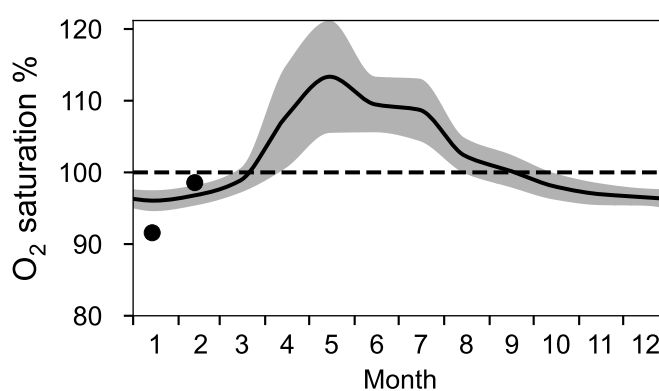
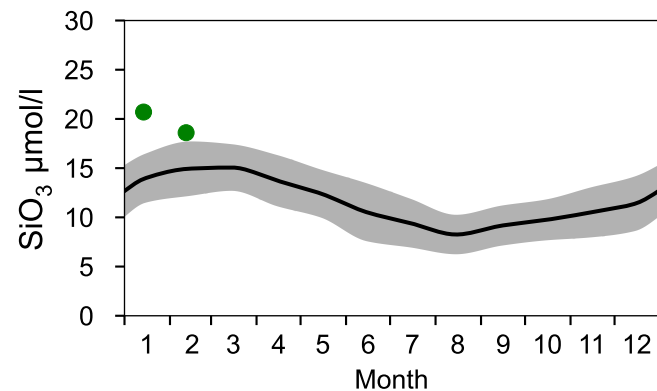
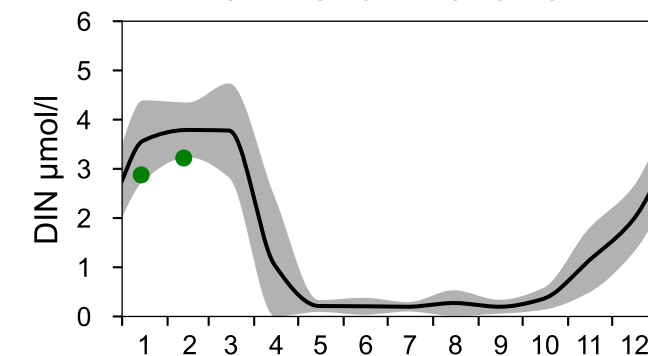
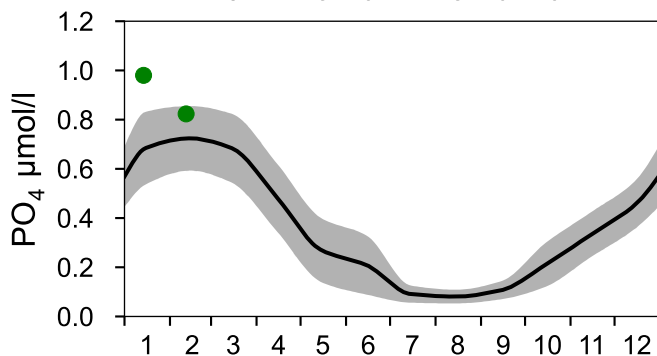
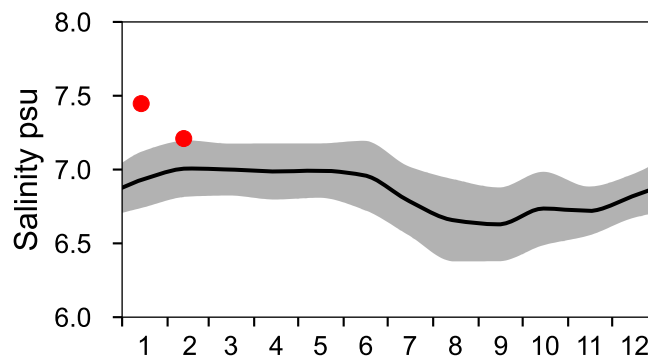
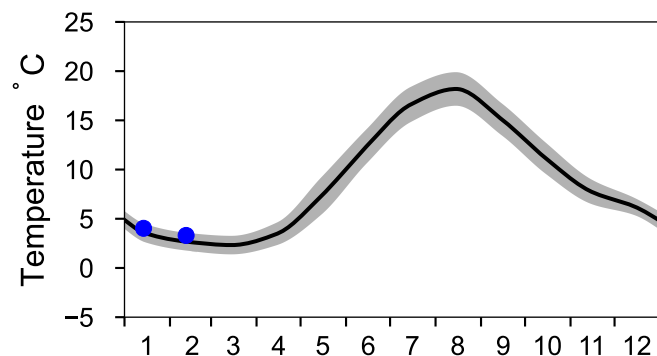
STATION BY38 KARLSÖDJ SURFACE WATER (0-10 m)

Annual Cycles

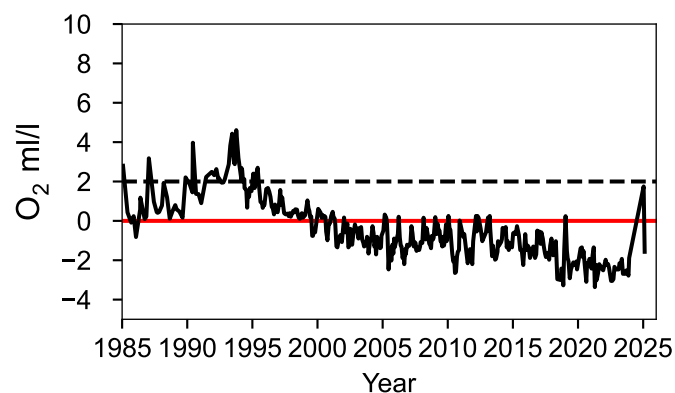
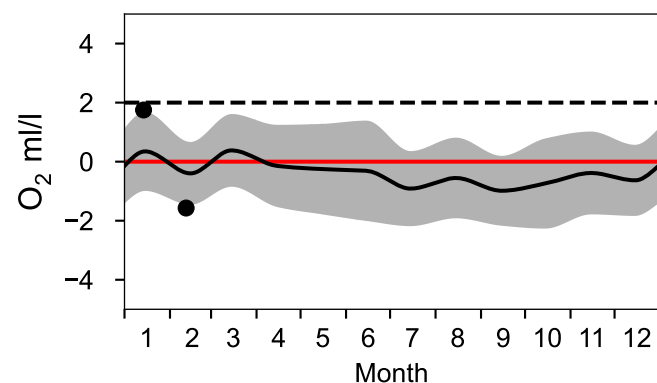
— Mean 1991-2020

■ St.Dev.

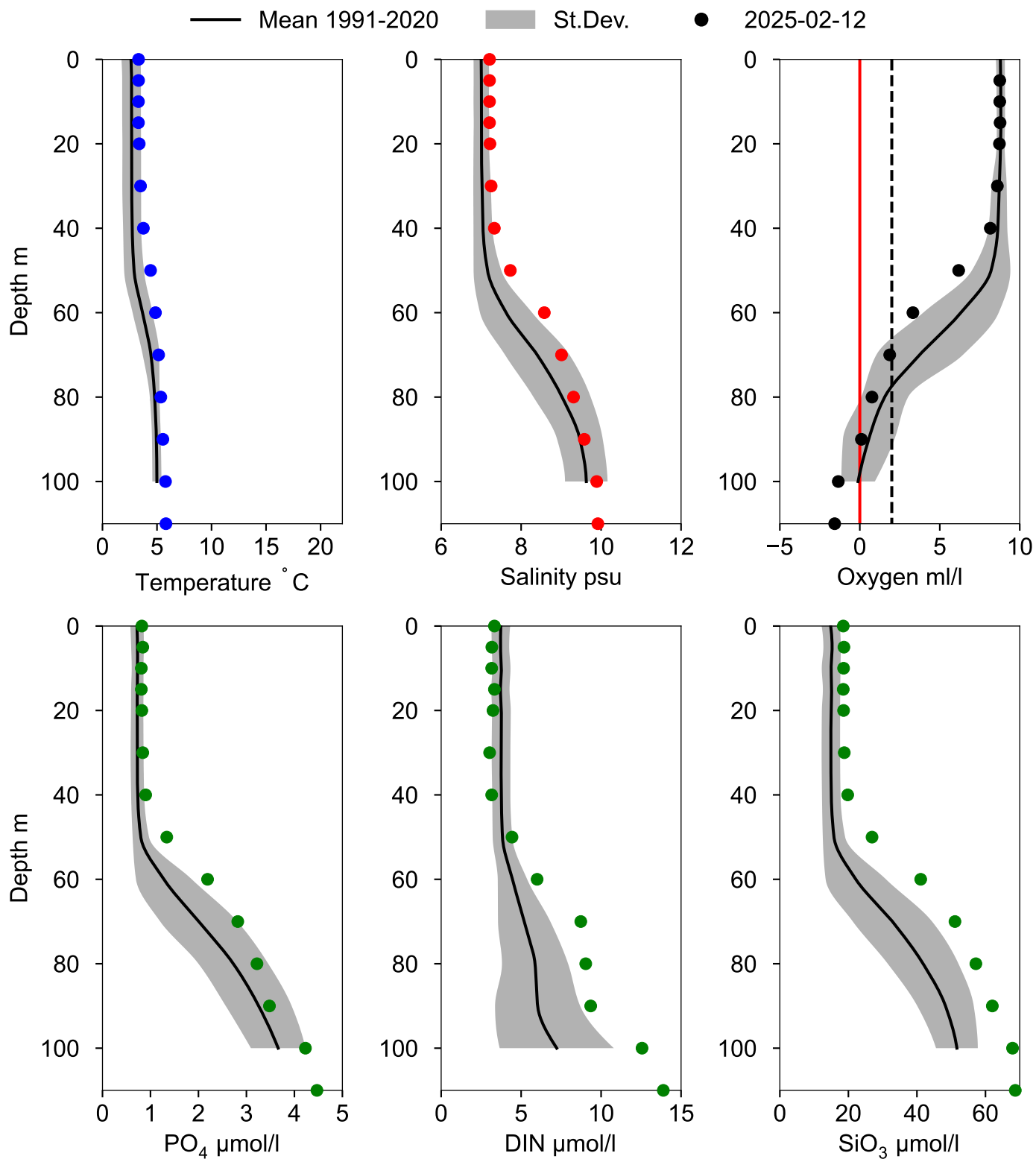
● 2025



OXYGEN IN BOTTOM WATER (depth >= 100 m)



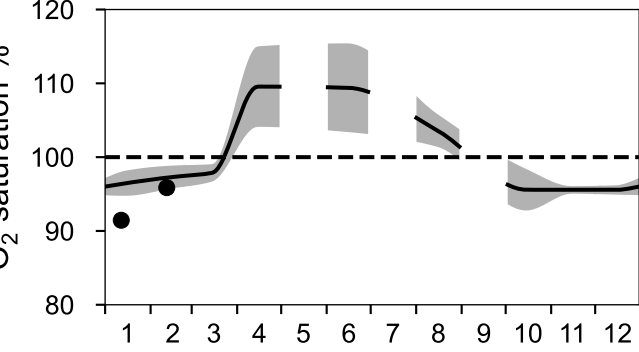
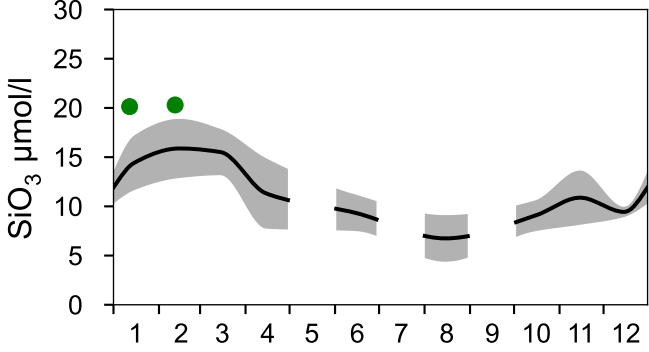
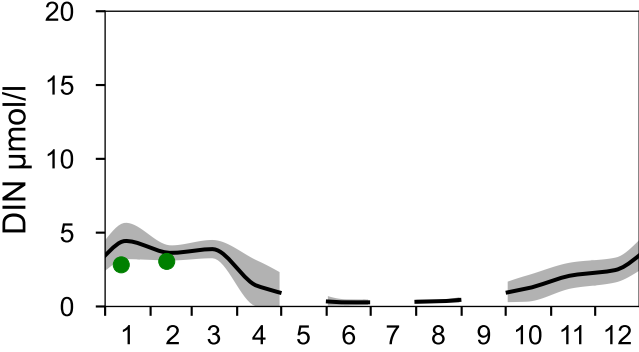
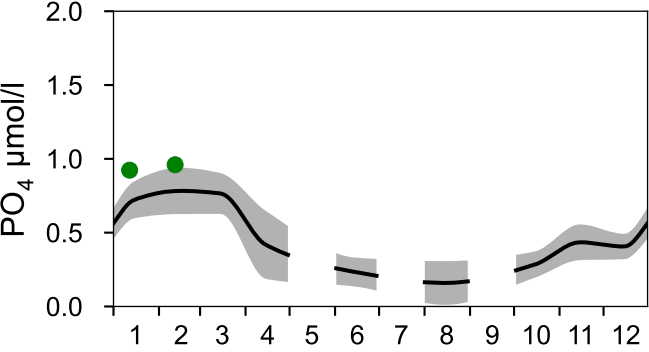
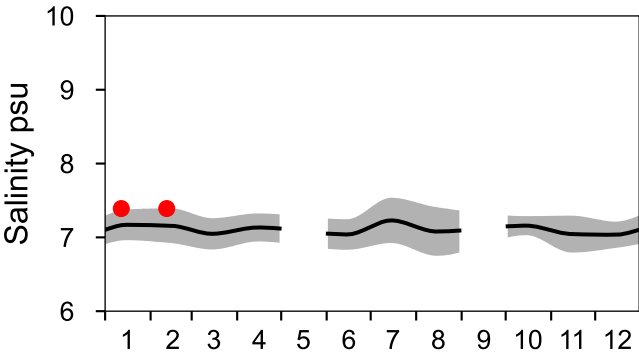
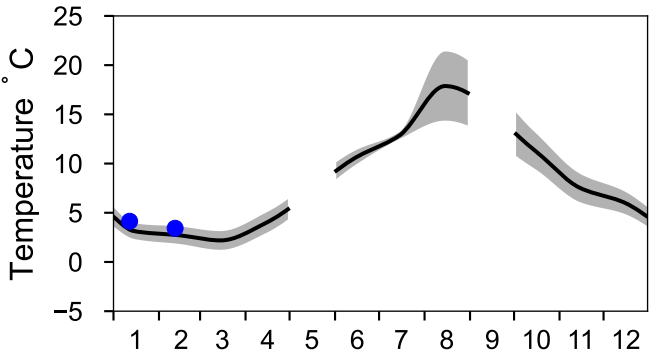
Vertical profiles BY38 KARLSÖDJ February



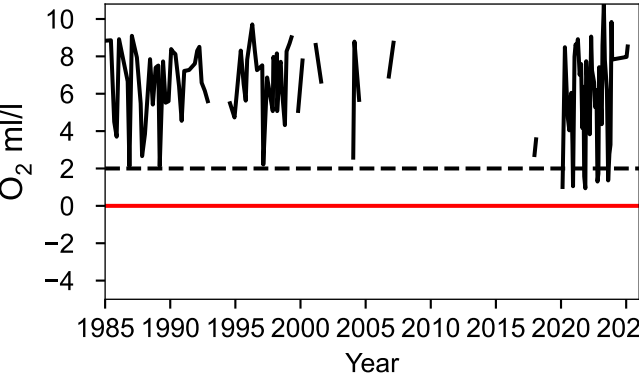
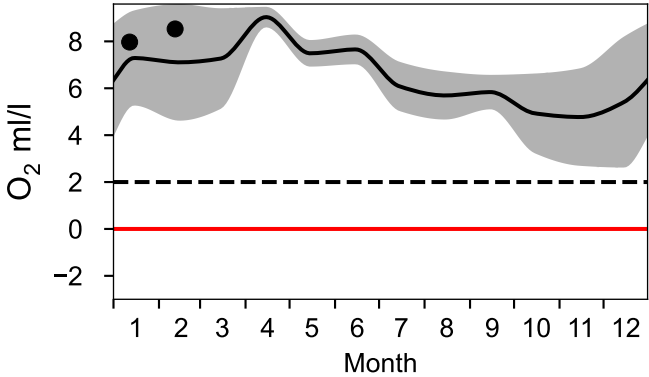
STATION BY39 ÖLANDS S UDDE SURFACE WATER (0-10 m)

Annual Cycles

— Mean 1991-2020 St.Dev. ● 2025



OXYGEN IN BOTTOM WATER (depth >= 40 m)



Vertical profiles BY39 ÖLANDS S UDDE February

