

## Rapport från SMHIs utsjöexpedition med R/V Svea – augusti 2026



Cyanobakterier i Arkonabassängen. Foto: Lena Viktorsson

|                                   |                                                                                                                                |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| <b>Expeditionens varaktighet:</b> | 2026-08-06 till 2026-08-13                                                                                                     |
| <b>Uppdragsgivare:</b>            | Sveriges Meteorologiska och Hydrologiska Institut (SMHI),<br>Stockholms Universitet (SU),<br>Havs- och Vattenmyndigheten (HaV) |
| <b>Samarbetspartners:</b>         | Sveriges Lantbruksuniversitet (SLU), Sjöfartsverket (SjöV)                                                                     |

## SAMMANFATTNING

Under expeditionen, som ingår i det svenska pelagiala övervakningsprogrammet, besöktes Skagerrak, Kattegatt, Öresund och Egentliga Östersjön.

Temperaturen i ytvattnet var i stort normal i alla havsområden och hade ökat något sedan juliexpeditionen. Salthalten i ytvattnet var generellt inom det normal i samtliga områden.

Fosfatkoncentration i ytvattnet var normal för månaden vid det flesta stationer och hade minskat sedan juli, i både Västerhavet och i Egentliga Östersjön. Löst oorganiskt kväve var lågt (på rapporteringsgränsen) i alla havsområden. Koncentrationen av silikat var normal för månaden utom i Egentliga Östersjön där den var högre än normalt med undantag av Arkonabassängen.

Syresituationen i Skagerrak var god, ingen syrebrist uppmättes. I Kattegatt och Öresund var syrekoncentrationen lägre men ingen syrebrist uppmättes ( $< 4$  ml/l). I Arkona, Bornholmsbassängen och Hanöbukten var det syrebrist i bottenvattnet vid samtliga stationer, under 4 ml/l. I Egentliga Östersjön uppmättes svavelväte i bottenvattnet vid samtliga stationer utom BSC-III 10 och Ölands södra udde. I Östra Gotlandsbassängens djuphåla finns ett intermediärt lager där vattnet är syrefritt men inget svavelväte kan uppmätas. Tjockleken på detta lager har ökat och sträcker sig nu mellan 90-140 m. Vid övriga stationer norr och väster om östra Gotlandsbassängens djuphåla återfinns svavelväte från ca 70-80 m ned till botten och syrebrist från 60-70 m djup.

Klorofyllfluorescensen var relativt hög i ytvattnet och det fanns skarpa och höga toppar vid flera stationer i samband med skiktningen. I Arkona bassängen pågick en kraftig blomning av cyanobakterier.

SMHI:s nästa ordinarie expedition med R/V Svea är planerad till 8–13:e september, med start i Lysekil och avslut i Kalmar. Däremellan deltar SMHI på SLU aqua:s expedition IBTS Q1 15-28 augusti.

## EXPEDITIONSÖVERSIKT

Expeditionen genomfördes ombord på R/V Svea och startade i Lysekil den 6:e augusti och avslutades i Lysekil den 13:e augusti.

Expeditionen inleddes med starka sydvästliga vindar (12-18 m/s) och provtagning med de stora håvarna för djurplankton (WP2) och geleplankton (WP3) fick strykas. Vinden avtog under expeditionens andra dygn, och resten av expeditionen fortgick med måttliga vindar och soligt väder. Under expeditionens sista dygn var vädret klart och nästan vindstilla. En kraftig blomning av cyanobakterier passerades då i Arkona bassängen på vägen tillbaka till Lysekil.

Vid Östergarnsholm byttes en sensor för Uppsala Universitet, syftet med sensorn är att mäta partiellt koldioxidtryck inom ICOS (Integrated Carbon Observation System), en europeisk forskningsinfrastruktur för att kvantifiera och förstå växthusgasbalansen på den europeiska kontinenten och i angränsande regioner (<https://www.icos-sweden.se/>). Här togs också en referensprofil med CTD. Även i södra Kattegatt vid ett bottenmätsystem (P22), vid Flinten 7 i Öresund samt vid Huvudskärsbojen togs referenskast med CTD.

Sveas instrument för att mäta profiler under gång (MVP) bärgades i Bornholmsbassängen med hjälp av Sveas ROV (Remote Operated Vehicle) och beräknas vara åter i drift i september. Bärgningen utfördes med hjälp av personal från Göteborgs universitet, Tjärnö marinbiologiska forskningsstation. Personalen plockades upp i Karlskrona och lämnades av i Malmö nästa dag. Instrumentet kunde snabbt lokaliseras på botten då dess position var känd. Bärgningen gick som planerat, men var lite komplicerad då botten där den låg var mycket mjuk och sediment lätt rörde upp av ROV:s propellrar. Bärgningen som utfördes på danskt vatten tog ca tre timmar.

Mätning av eDNA/barcoding är sedan februari i år en del av mätprogrammet och vattenprover från ytlagret filtreras vid fyra stationer; BY31, BY5, Anholt E och Å17.

Ferryboxsystemet, som kontinuerligt mäter en mängd olika oceanografiska parametrar i ytvattnet, kördes under hela expeditionen. Från ferryboxen tas daglingen ett referensprov för koncentration av klorofyll-a och i Skagerrak tas referensprover för pH och alkalinitet vid tre tillfällen i en gradient från Släggö och västerut. ADCPn kördes också 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/publikationer/algrapporter>

## RESULTAT

### Skagerrak

Temperaturen i ytvattnet var normal till under normal och låg omkring 17 grader i öppet hav (Å-snittet och stationen P2) och ca. en grad varmare vid Släggö vid Gullmarsfjordens mynning.

Ett språngskikt skiljde ett välblandat ytlager från djupvattnet och återfanns på 15 meters djup utom vid stationerna Å13 och Släggö ytlagret endast sträckte sig till fem meters djup. Under det välblandade ytlagret ökade salthalten medan temperaturen minskade med ökat djup. I djupvattnet var salthalten ca 35 psu och temperaturen ca 8,5 grader.

Halterna av näringsämnen i ytvattnet var generellt normala, löst oorganiskt kväve var under rapporteringsgränsen vid samtliga stationer medans det fanns mätbara halter av fosfat (0,02-0,17  $\mu\text{mol/l}$ ). Stationen P2 utanför Marstrand avvek från övriga stationer med koncentrationer över det normala av både fosfat (0,17  $\mu\text{mol/l}$ ) och silikat (2,2  $\mu\text{mol/l}$ ) i ytvattnet. Vid stationerna i Å-snittet förekom koncentrationer av ammonium och/eller nitrat som var över normala strax under språngskiktet där toppar av klorofyllfluorescens också noterades. Vid stationen P2 var koncentrationen av ammonium över normal i djupvattnet.

Syresituationen i bottenvattnet var god vid samtliga stationer i Skagerrak, normala värden för årstiden uppmättes med koncentrationer mellan 5,7-6,2 ml/l. Vid den kustnära stationen Släggö där halten i juli var ca 3,2 ml/l närmast botten hade halten nu ökat lite till 3,9 ml/l, det motsvarade en syremättnad på endast 60%.

Klorofyllfluorescens är ett mått på planktonaktivitet som mäts med en sensor monterad på CTDn<sup>1</sup>. Under salthaltsskiktningen fanns en eller flera toppar i klorofyllfluorescens och där ökade också syrekoncentrationen och vattnet var övermättat med syre vilket tydligt visar mycket planktonaktivitet. Planktonaktiviteten var lägst närmast kusten och högre längre västerut.

### Kattegatt och Öresund

Temperaturen var normal för månaden, 18,1-18,6°C i ytvattnet. Salthalten varierade kring 18-26 psu i Kattegatt och 9-13 psu i Öresund. Ytvattnet i Kattegatt var välblandat ned till 5-10 m där salthalten ökade och temperaturen minskade. I Öresund, vid stationen W Landskrona och Flinten 7, strömmade vattnet ut ur Östersjön i ytan, därav den låga salthalten. Vid fem meter fanns ett skarpt språngskikt där salthalten ökade till 25 psu vid botten.

Löst oorganiskt kväve i ytvattnet låg under rapporteringsgränsen. Fosfat, som också används av växter som näring, var ca 0,2  $\mu\text{mol/l}$  i ytvattnet vid Fladen vilket är över normalt, vid övriga stationer och i Öresund var koncentrationen runt 0,1  $\mu\text{mol/l}$  vilket är normalt för Kattegatt men under normalt för Öresund. Koncentrationen av silikat varierade

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<sup>1</sup> CTD är ett profilerande mätinstrument och står för Conductivity, Temperature, Depth. SMHI:s CTD är även bestyckad med sensorer som mäter syre och fluorescens bland annat.

mellan 1,0-2,2 i Kattegatt och var 8,4 i Öresund. Precis som fosfat var silikat över normal vid Fladen och normal vid övriga stationer.

Syrehalterna i Kattegatts bottenvatten var normala för månaden, mellan 4,1 till 5,8 ml/l. De lägre halterna noterades i södra Kattegatt och Öresund och dessa halter är nära gränsen för syrebrist vilket brukar sättas till <4 ml/l.

Klorofyllfluorescensen var relativt hög i samband med skiktningen, men med mindre tydliga toppar än i Skagerrak.

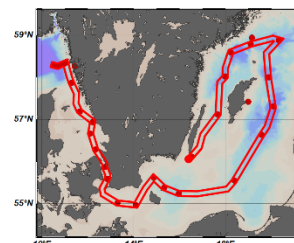
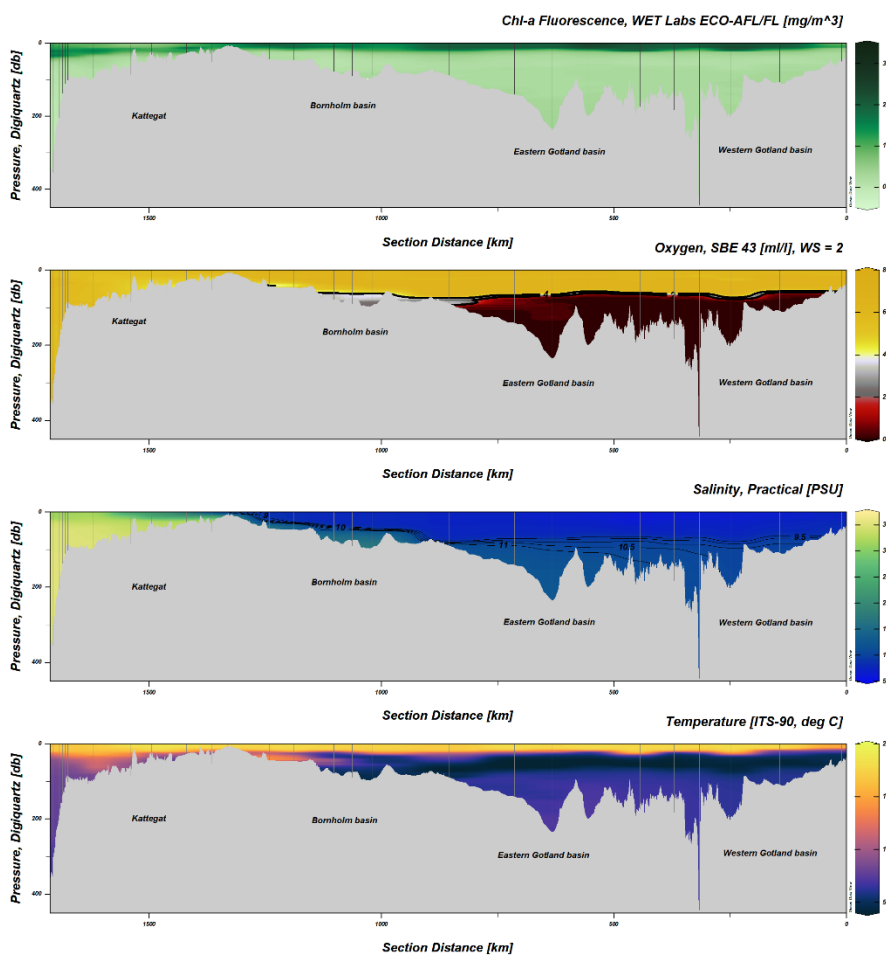
### **Egentliga Östersjön**

Temperaturen i ytlagret varierade mellan 17-18 grader, utom vid Ölands södra udde (BY39) där det var kallare, 15 grader. Salthalten i ytvattnet varierade mellan 6-8 och var normal till något över normal för månaden. Det sommarvarma ytvattnet sträckte sig ned till 15-20 m där temperaturen snabbt minskade till ca 4 grader, för att sedan öka något under haloklinen där temperaturen var högre än normalt vid de flesta stationer i djuphålorna runt Gotland. Salthaltssprångskiktet, haloklinen ligger mellan 70-80 m, något grundare i Bornholmsbassängen 50-60 m.

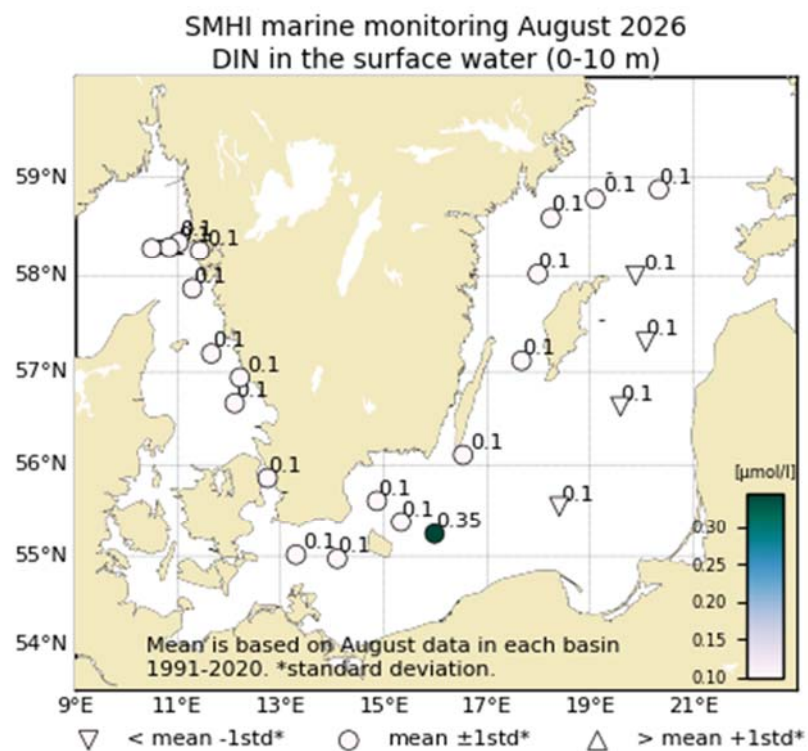
Koncentrationen av fosfat i ytvattnet hade minskat sedan juli och varierade nu mellan 0,03-0,11  $\mu\text{mol/l}$  och var inom det normala för månaden. Endast stationen BY39 vid Ölands södra udde avvek från detta med fosfat runt 0,27  $\mu\text{mol/l}$  i ytvattnet. Koncentrationen av löst oorganiskt kväve låg kvar på mycket låga nivåer på eller nära rapporteringsgränsen. Här avvek stationen BY5 i Bornholmsbassängen där ammonium uppmättes i hela vattenkolumnen med en koncentration på ca 0,3  $\mu\text{mol/l}$  i ytvattnet. Koncentrationen av silikat i ytvattnet var över normalt vid samtliga stationer och varierade mellan 13-15  $\mu\text{mol/l}$ . I det djupare liggande vattnet uppmättes högre halter av näringsämnen än normalt, framförallt närmast botten vid samtliga stationer i Östra och Västra Gotlandsbassängen.

I Arkonabassängen och Hanöbukten var det syrebrist i bottenvattnet, 3-4 ml/l, och i Bornholmsbassängen var det akut syrebrist i bottenvattnet, 2 ml/l. Vid den sydligaste stationen i östra Gotlandsbassängen minskade syrekonzentrationen till under 2 ml/l precis under haloklinen för att sedan öka till runt 4 ml/l vid botten. Även längre norrut i östra Gotlandsbassängen minskade syret precis under haloklinen vid 80 m för att sedan öka lite igen. Vid BY15 återfanns svavelväte på 80 m för att sedan ersättas av mycket låga syrekonzentrationer och svavelväte återkom sedan inte förrän på 140 m. Det har under hela året varit ett skikt ned till ca 125-130 m där det varit syrefritt med omätbara konzentrationer av svavelväte, detta lager har nu alltså blivit ca 10 m djupare. Konzentrationerna av svavelväte under 140 m ökade snabbt. Vid stationerna norr och väster om Gotland uppmättes svavelväte från 70-80 m djup och ökade sedan med djupet. Konzentrationerna av svavelväte är fortfarande högst i östra Gotlandsbassängen.

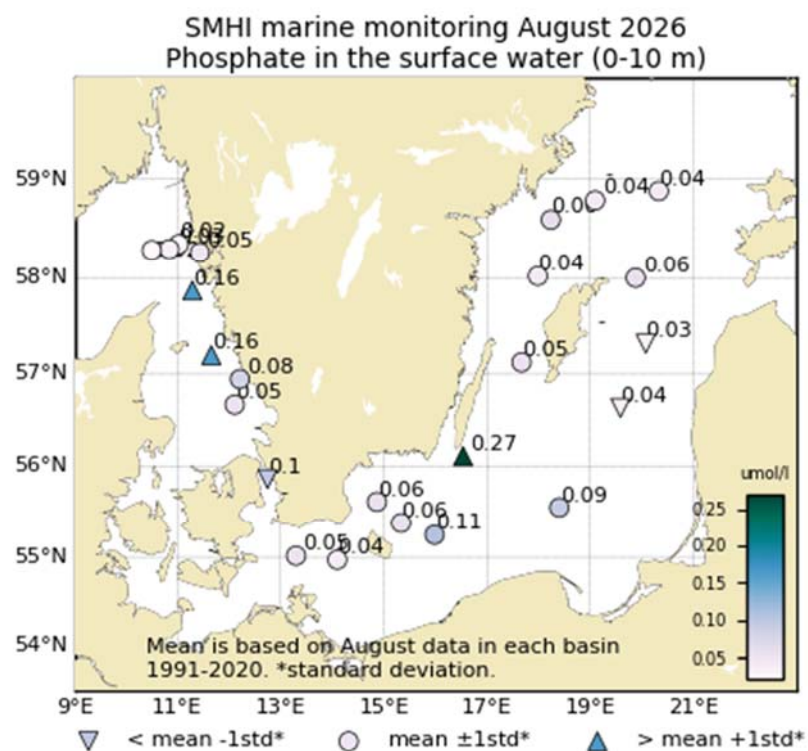
Fluorescensmätningar från CTDn visade på biologisk aktivitet i Egentliga Östersjön i ytlagret ner till termoklinen. Högst aktivitet noterades vid stationerna Hanöbukten, Fårödjupet och BY29. Vid passagen genom Arkona bassängen den 12 augusti pågick en intensiv blomning av cyanobakterier som syntes både på satellitbilder och från båten i stora stråk. Vid stationen BY2 förekom också stora mängde öronmaneter.



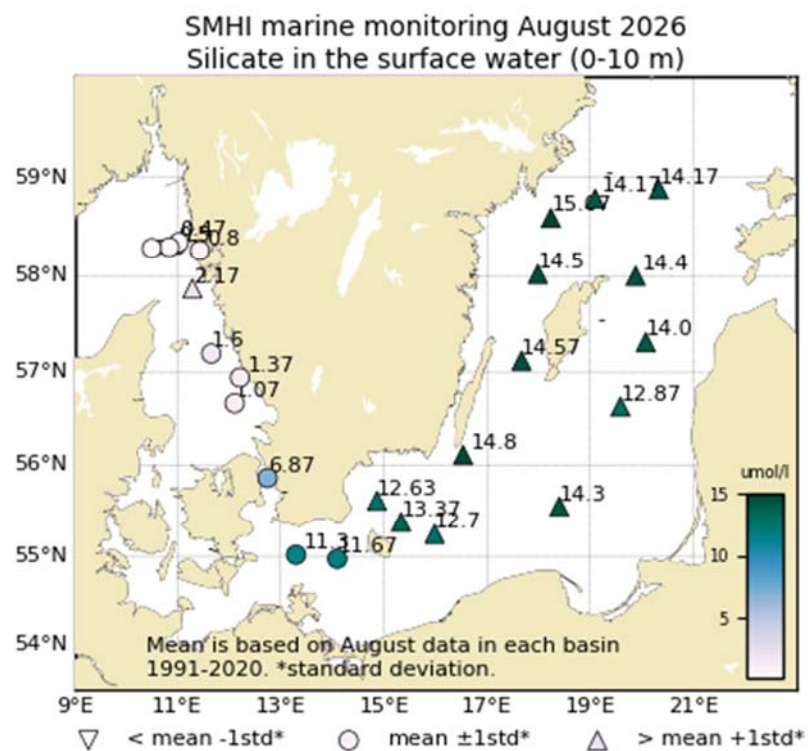
**Figur 1.** Transekt som visar klorofyllfluorescens, syrekoncentration, salthalt och temperatur från mätningar med CTD och MVP, från Skagerrak till Östra Gotlandsbassängen och vidare in i Västra Gotlandsbassängen.



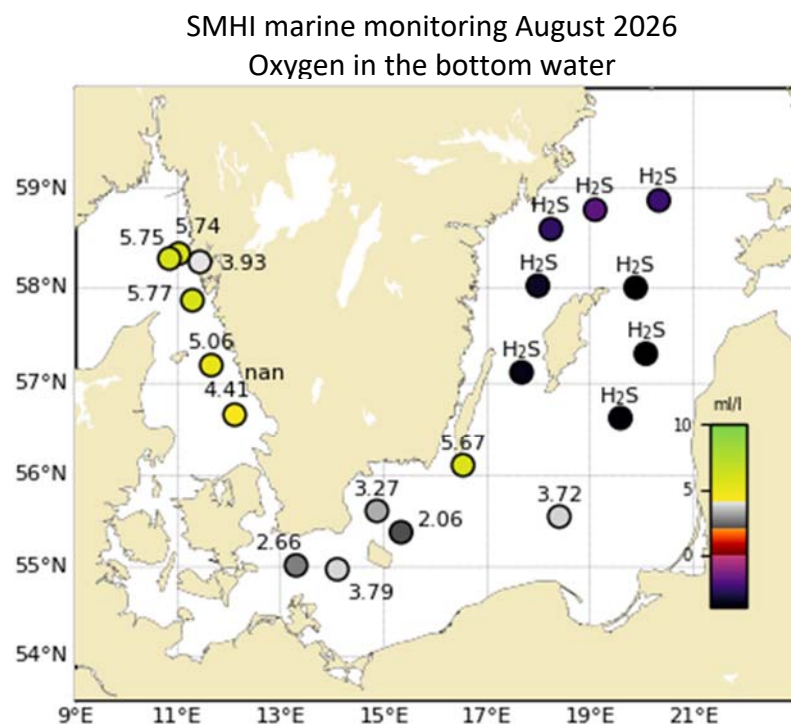
**Figur 2.** Koncentrationen ( $\mu\text{mol/l}$ ) av oorganiskt kväve i ytvattnet (0-10m). Medel är baserat på data från aktuell månad för varje station under åren 1991-2020.



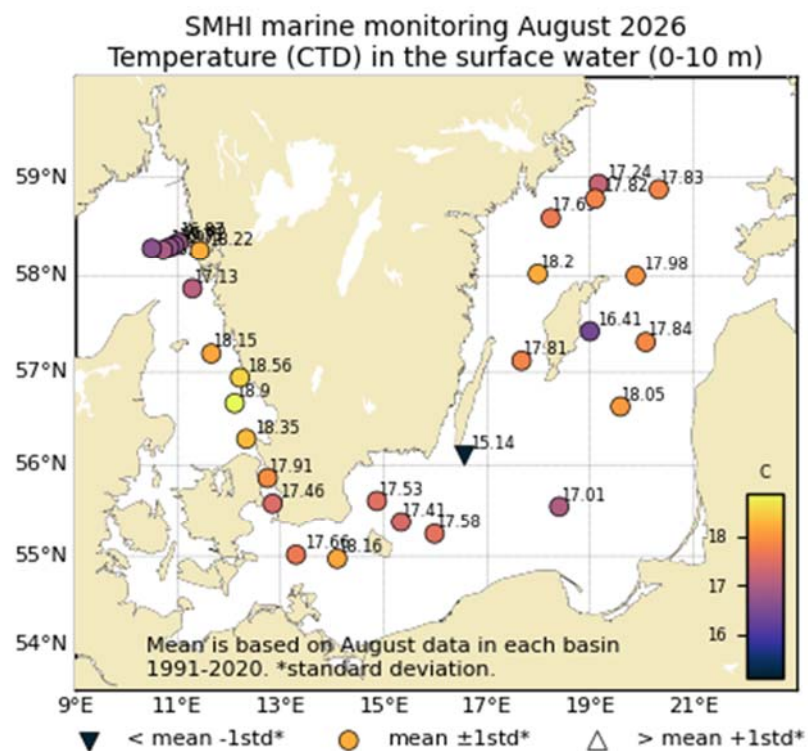
**Figur 3.** Koncentrationen ( $\mu\text{mol/l}$ ) av fosfat i ytvattnet (0-10m). Medel är baserat på data från aktuell månad för varje station under åren 1991-2020.



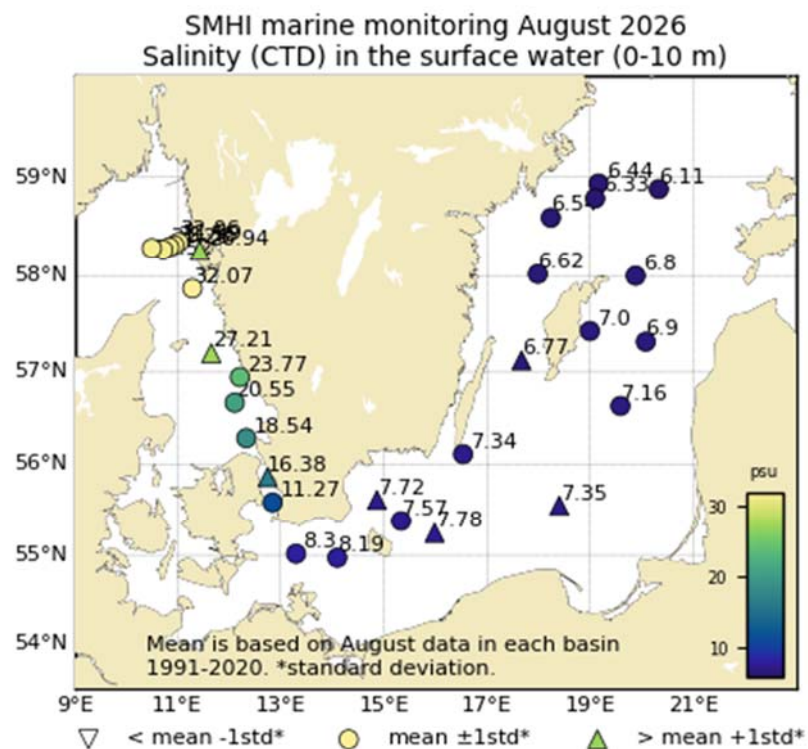
**Figur 4.** Koncentrationen ( $\mu\text{mol/l}$ ) av silikat i ytvattnet (0-10m). Medel är baserat på data från aktuell månad för varje station under åren 1991-2020.



**Figur 5.** Syrekoncentrationen (ml/l) i bottenvattnet, ungefär en meter från botten. Förekomst av svavelväte visas som  $\text{H}_2\text{S}$ . Notera att värden inte har jämförts med statistik som på liknande figurer som visar ytdata, enbart cirklar visas i denna figur. Vid de stationer som saknar värde saknas mätning tillräckligt nära botten.



**Figur 6.** Temperaturen i ytvattnet (0-10m). Medel är baserat på data från aktuell månad för varje station under åren 1991-2020.



**Figur 7.** Salthalten i ytvattnet (0-10m). Medel är baserat på data från aktuell månad för varje station under åren 1991-2020.

## DELTAGARE

| Namn            | Roll                              | Från |
|-----------------|-----------------------------------|------|
| Lena Viktorsson | Expeditionsledare, Oceanograf     | SMHI |
| Ola Kalén       | Oceanograf                        | SMHI |
| Johanna Linders | Oceanograf                        | SMHI |
| Alex Rockström  | Oceanograf                        | SMHI |
| Sari Sipilä     | kemist                            | SMHI |
| Monica Linders  | kemist                            | SMHI |
| Ebba Odhe       | Masterstudent, marina vetenskaper | GU   |
| Kajsa Hansson   | Gymnasiestudent                   | Lund |

## BILAGOR

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

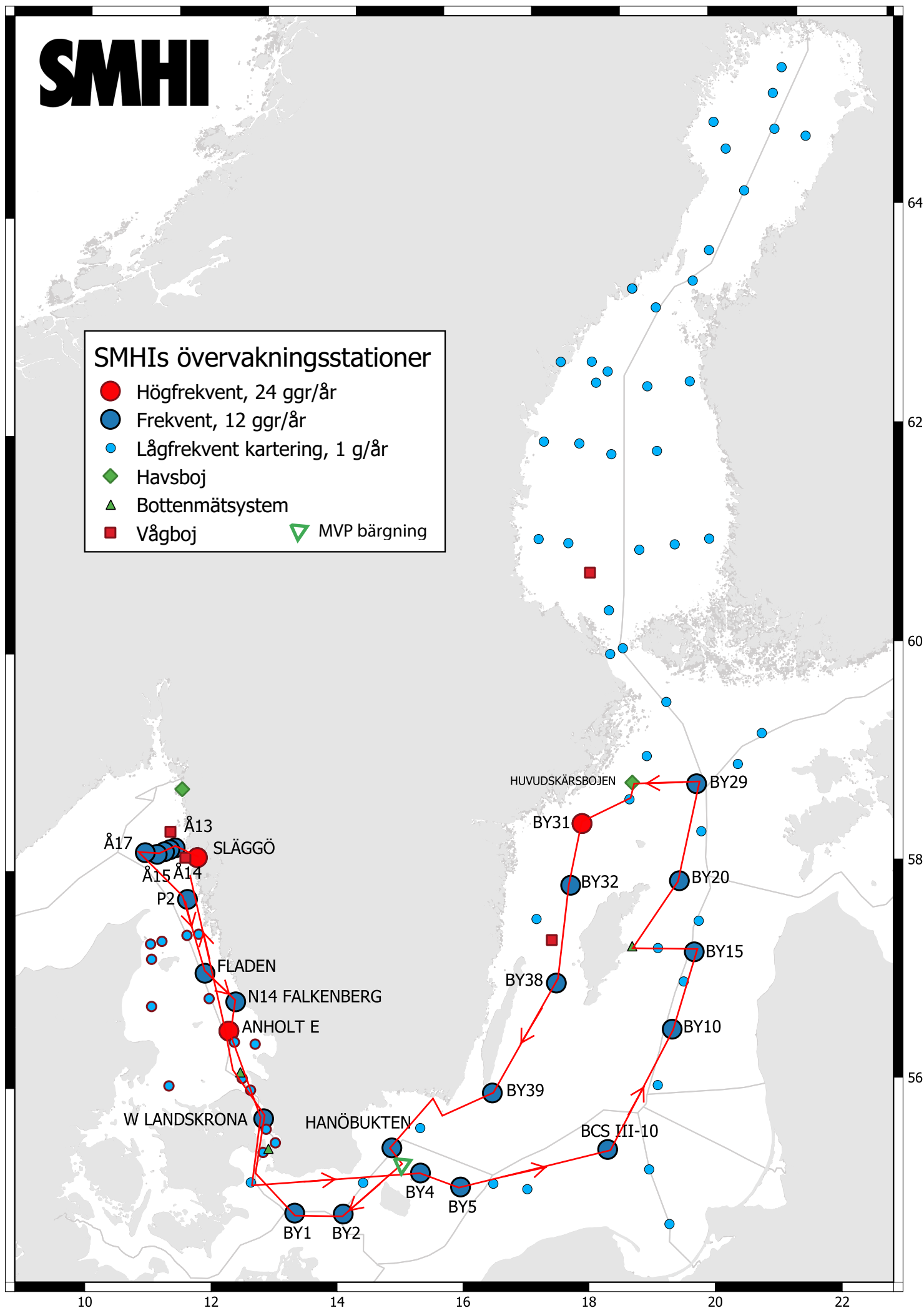


Havs  
och Vatten  
myndigheten



## SMHI:s övervakningsstationer

- Högfrekvent, 24 ggr/år
- Frekvent, 12 ggr/år
- Lågfrekvent kartering, 1 g/år
- ◆ Havsboj
- ▲ Bottenmätsystem
- Vågboj
- ▼ MVP bärgning



Time: 18:05

Year: 2026

| Ser no | Cru no | Stat code | Proj   | Stat name      | Lat     | Lon      | Start date<br>yyyymmdd | Start time<br>hhmm | Bottom depth<br>m | Secchi depth<br>m | Wind dir vel | Air temp<br>C | Air pres<br>hPa | WCWI elac aove hdsb | CZPP hohp loy apt o p | No de | No btl | T e m m l l | T e m m l l     | S a h o o             | P h o o               | D h o o               | H h o o               | P h o o               | N h o o               | N h o o               | N h o o               | A h o o               | N h o o               | A h o o               | S h o o               | H h o o               | C h o o               | C h o o               |                       |                   |
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|        |        |           |        |                |         |          |                        |                    |                   |                   |              |               |                 |                     |                       |       |        |             |                 |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                   |
| 0615   | 16     | FIBG27    | BAS... | SLÄGGÖ         | 5815.59 | 01126.14 | 20260806               | 1200               | 74                |                   | 22 12        | 16.8          | 1009            | 2820                | xxx-                  | 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 x x x x x x x x x | - x x x x x x x x x x | - x x x x x x x x x x | - x x x x x x x x x x | - x x x x x x x x x x | - x x x x x x x x x x | - x x x x x x x x x x | - x x x x x x x x x x | - x x x x x x x x x x | - x x x x x x x x x x | - x x x x x x x x x x | - x x x x x x x x x x |                   |
| 0616   | 16     | SKEX14    | BAS... | Å13            | 5820.66 | 01101.66 | 20260806               | 1520               | 90                |                   | 24 12        | 16.7          | 1008            | 2530                | x---                  | 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 x x x | - x x x x x x x x x x | - x x x x x x x x x x | - x x x x x x x x x x | - x x x x x x x x x x | - x x x x x x x x x x | - x x x x x x x x x x | - x x x x x x x x x x | - x x x x x x x x x x | - x x x x x x x x x x | - x x x x x x x x x x |                   |
| 0617   | 16     | SKEX15    | BAS... | Å14            | 5818.94 | 01056.54 | 20260806               | 1630               | 110               |                   | 23 12        | 16.6          | 1008            | 2530                | ----                  | 10 0  |        |             | - x - x - x - x | - - - - - - - - - -   | - - - - - - - - - -   | - - - - - - - - - -   | - - - - - - - - - -   | - - - - - - - - - -   | - - - - - - - - - -   | - - - - - - - - - -   | - - - - - - - - - -   | - - - - - - - - - -   | - - - - - - - - - -   | - - - - - - - - - -   | - - - - - - - - - -   | - - - - - - - - - -   | - - - - - - - - - -   | - - - - - - - - - -   | - - - - - - - - - -   |                   |
| 0618   | 16     | SKEX16    | BAS... | Å15            | 5817.66 | 01050.74 | 20260806               | 1730               | 135               |                   | 23 13        | 16.4          | 1008            | 2630                | x---                  | 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 x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     |                   |
| 0619   | 16     | SKEX17    | BAS... | Å16            | 5816.04 | 01043.48 | 20260806               | 1830               | 202               |                   | 23 11        | 16.8          | 1008            | 2430                | ----                  | 12 0  |        |             | - x - x - - x   | - - - - - - - - - -   | - - - - - - - - - -   | - - - - - - - - - -   | - - - - - - - - - -   | - - - - - - - - - -   | - - - - - - - - - -   | - - - - - - - - - -   | - - - - - - - - - -   | - - - - - - - - - -   | - - - - - - - - - -   | - - - - - - - - - -   | - - - - - - - - - -   | - - - - - - - - - -   | - - - - - - - - - -   | - - - - - - - - - -   | - - - - - - - - - -   |                   |
| 0620   | 16     | SKEX18    | BAS... | Å17            | 5817.05 | 01030.29 | 20260806               | 2010               | 340               |                   | 25 10        | 17.6          | 1008            | 9990                | x---                  | 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 x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x |
| 0621   | 16     | SKEX23    | BAS... | P2             | 5752    | 01117.52 | 20260807               | 0055               | 93                |                   | 26 13        | 15.9          | 1011            | 9990                | x---                  | 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 x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x |
| 0622   | 16     | KANX25    | BAS... | FLADEN         | 5711.53 | 01139.43 | 20260807               | 0540               | 84                |                   | 27 13.8      | 15.1          | 1014            | 1340                | x---                  | 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 x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x |
| 0623   | 16     | KANX50    | BAS... | N14 FALKENBERG | 5656.39 | 01212.72 | 20260807               | 0850               | 30                | 11                | 27 13.2      | 15.9          | 1016            | 2730                | xxx-                  | 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 x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x     | - x x x x x x x x |
| 0624   | 16     | KAEX29    | BAS... | ANHOLT E       | 5640.12 | 01206.6  |                        |                    |                   |                   |              |               |                 |                     |                       |       |        |             |                 |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                   |

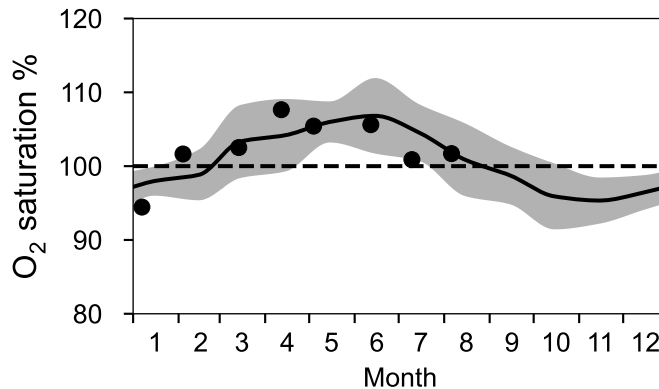
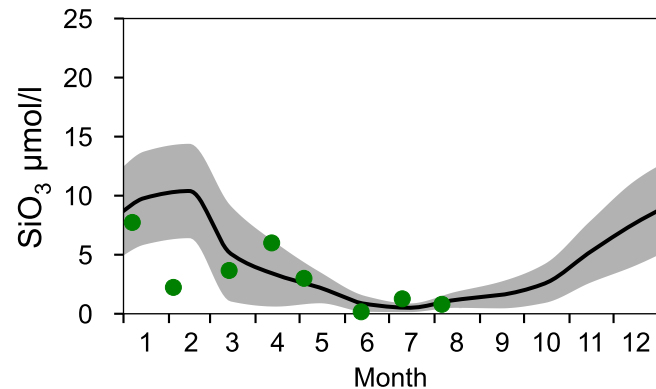
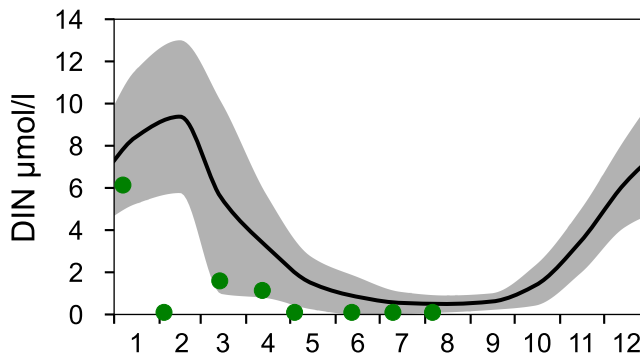
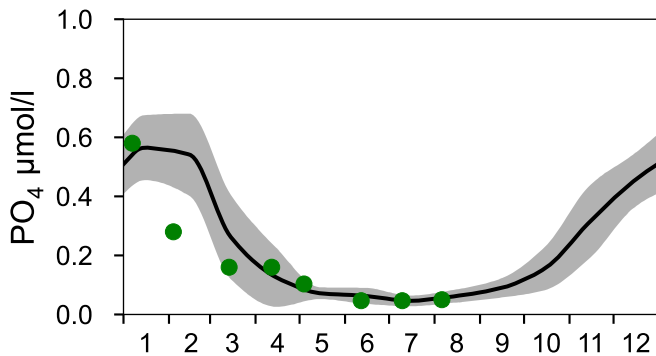
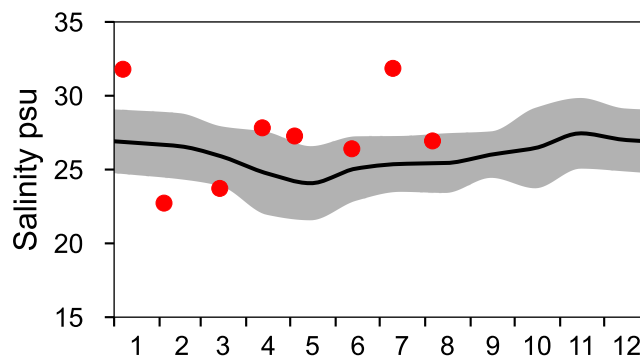
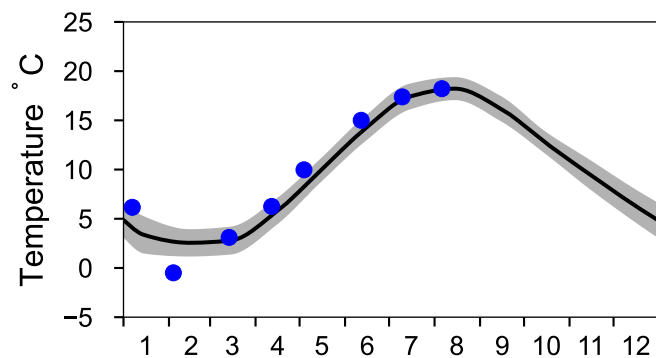
# STATION SLÄGGÖ SURFACE WATER (0-10 m)

Annual Cycles

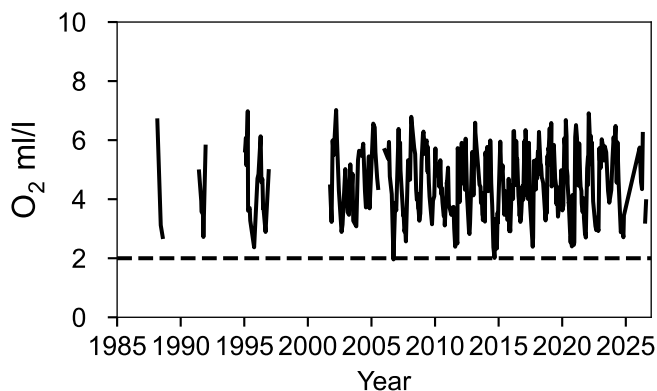
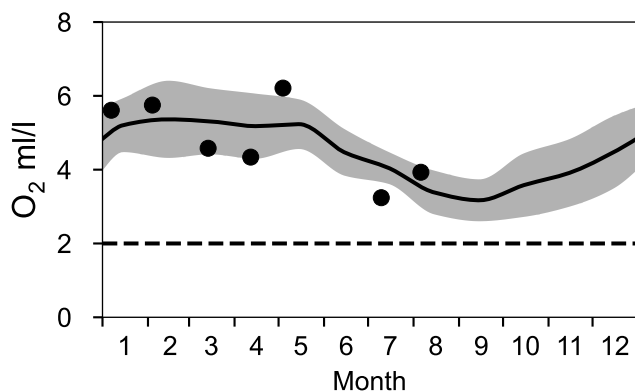
— Mean 1991-2020

■ St.Dev.

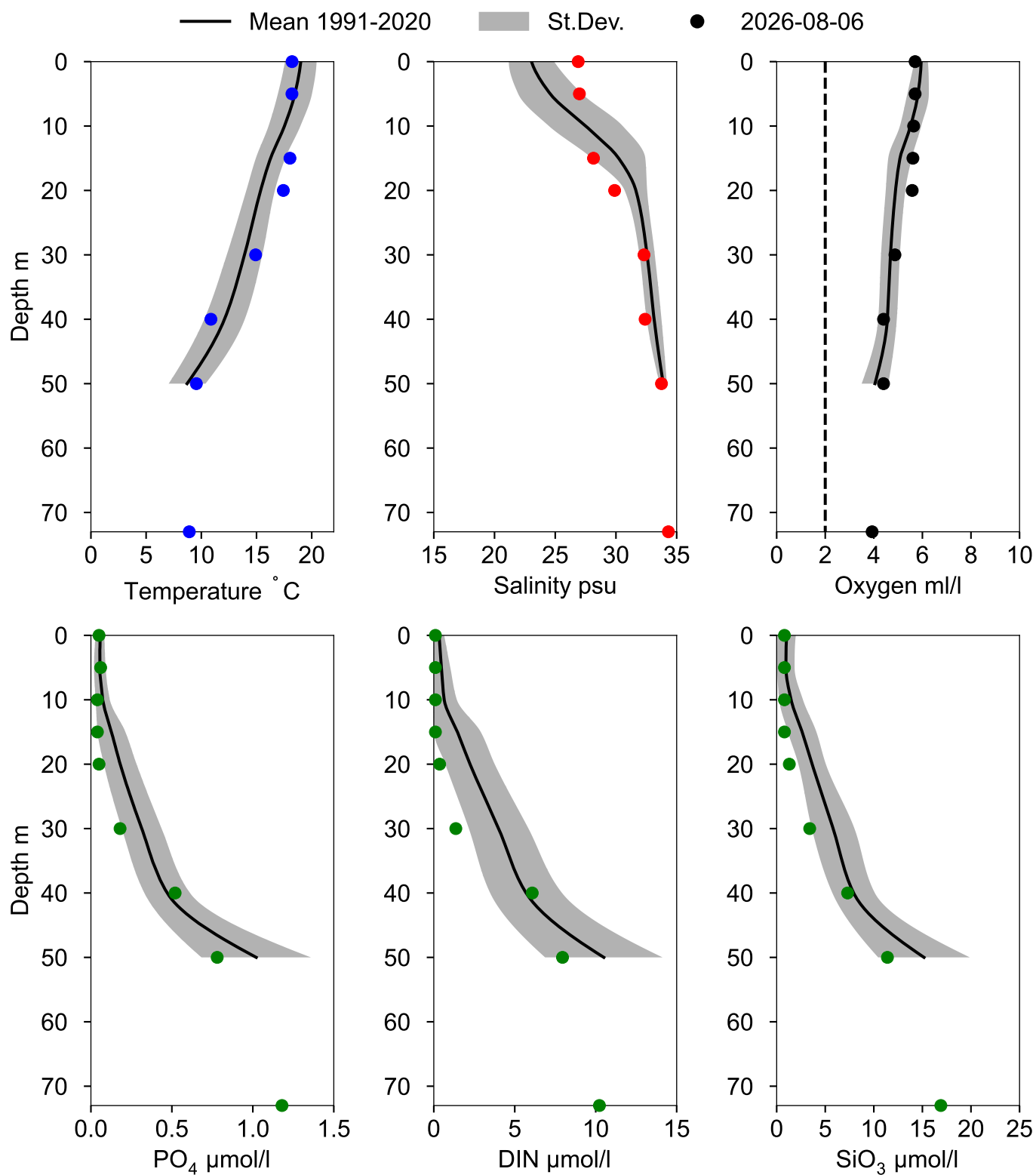
● 2026



## OXYGEN IN BOTTOM WATER (depth >= 64 m)



# Vertical profiles SLÄGGÖ August



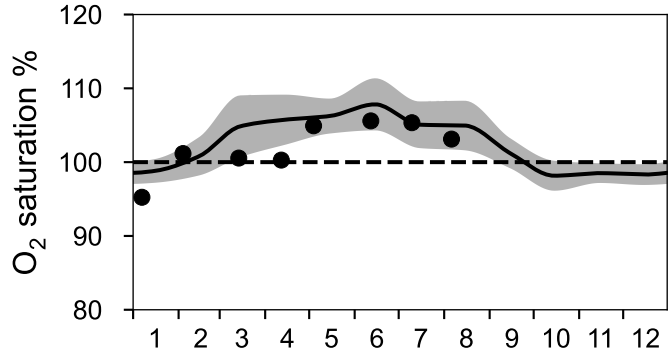
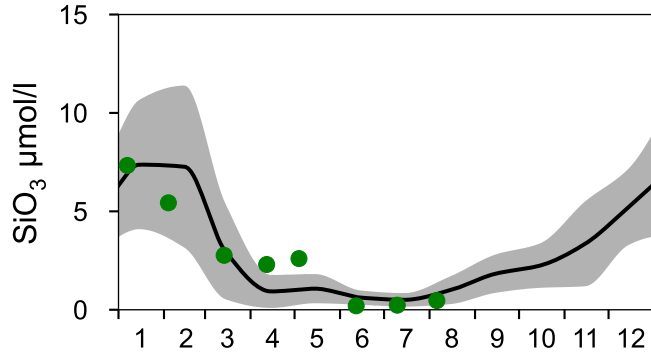
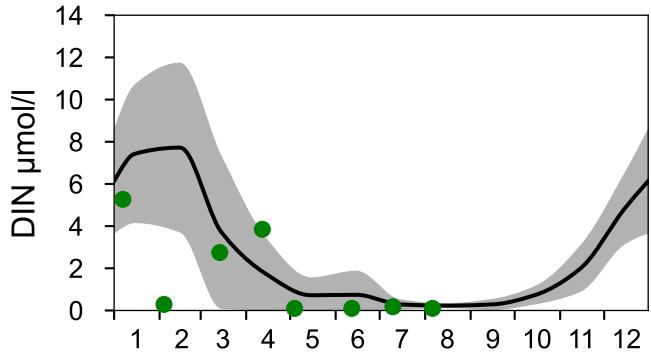
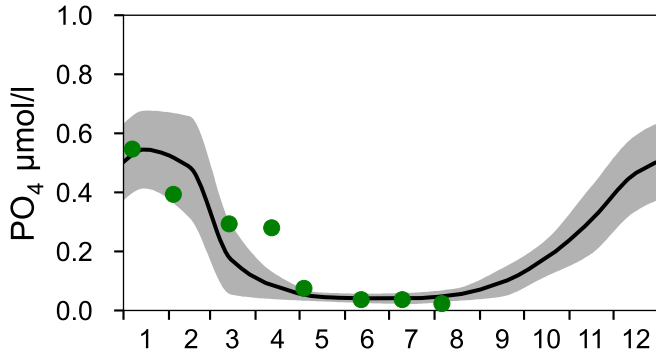
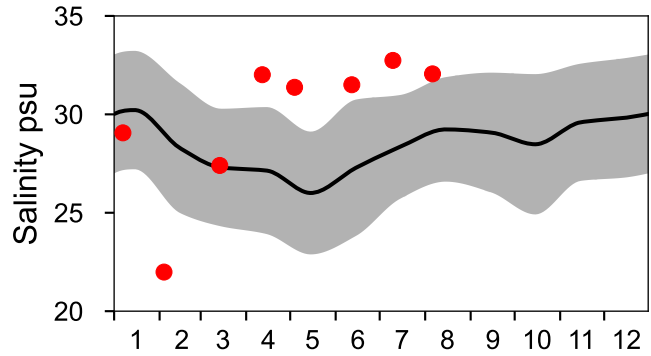
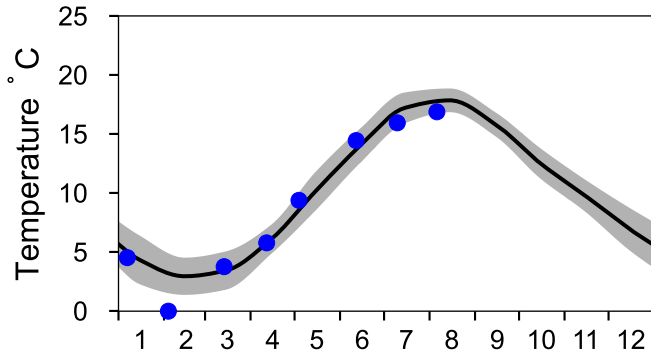
# STATION Å13 SURFACE WATER (0-10 m)

Annual Cycles

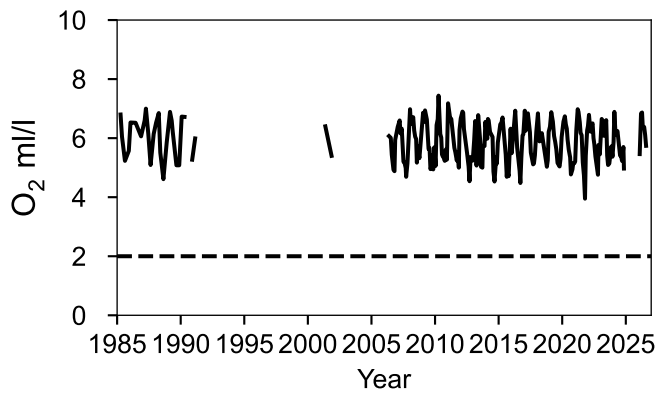
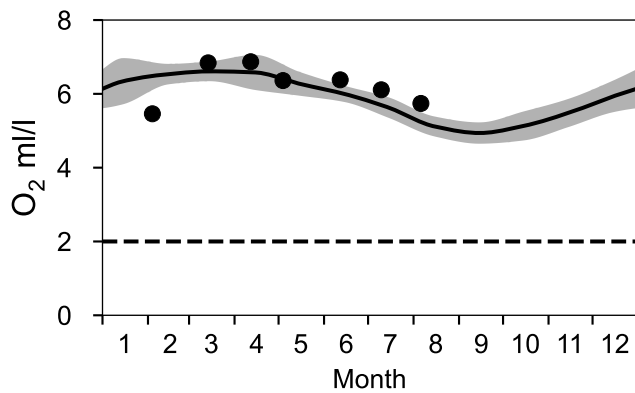
— Mean 1991-2020

■ St.Dev.

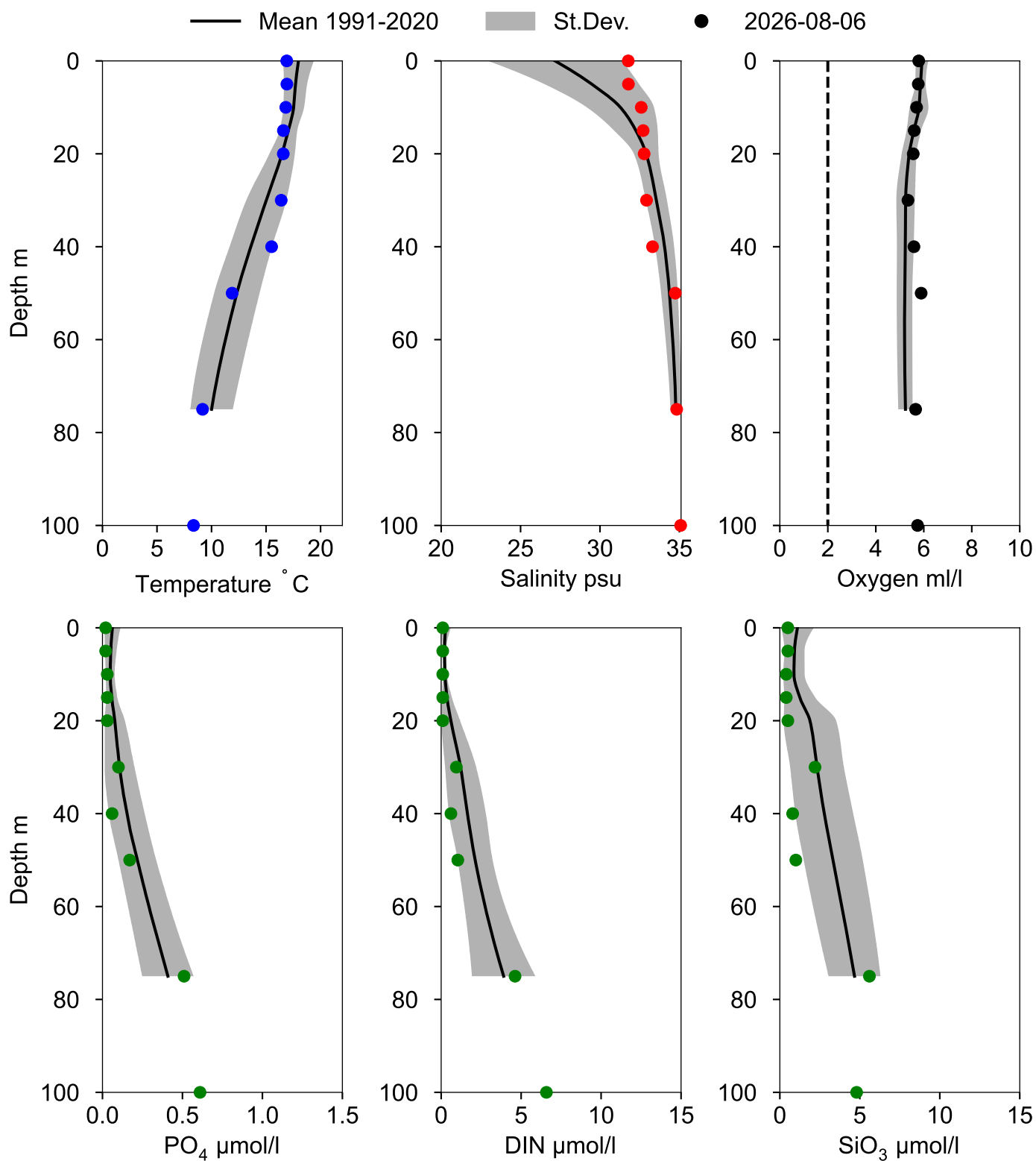
● 2026



## OXYGEN IN BOTTOM WATER (depth >= 82 m)



# Vertical profiles Å13 August



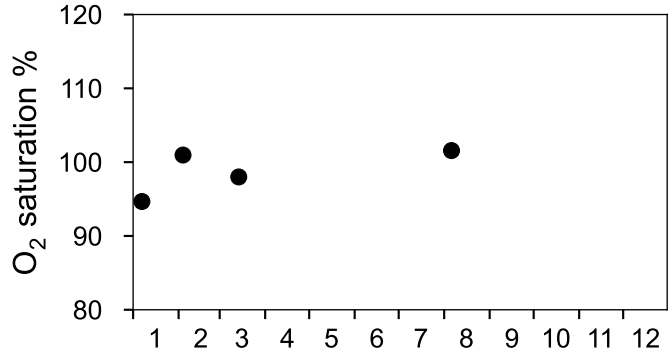
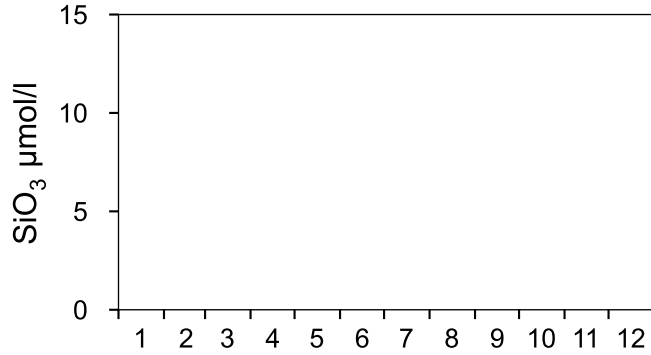
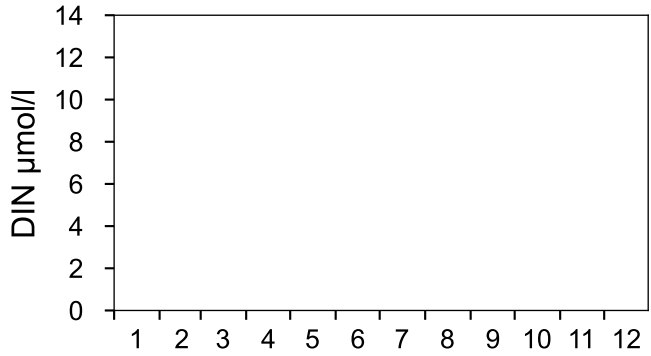
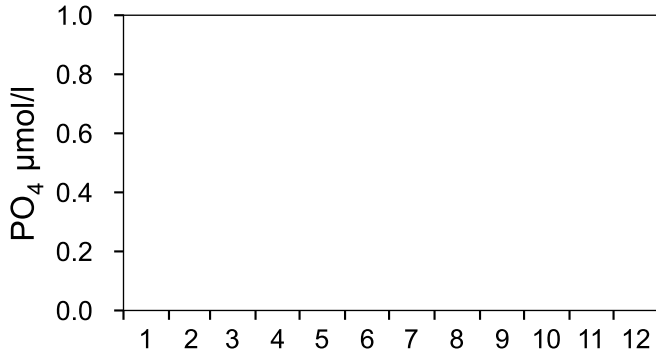
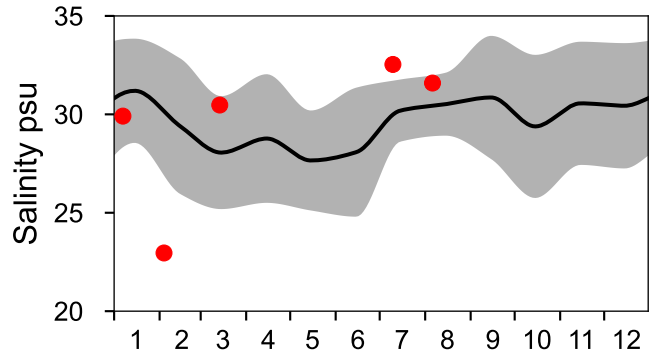
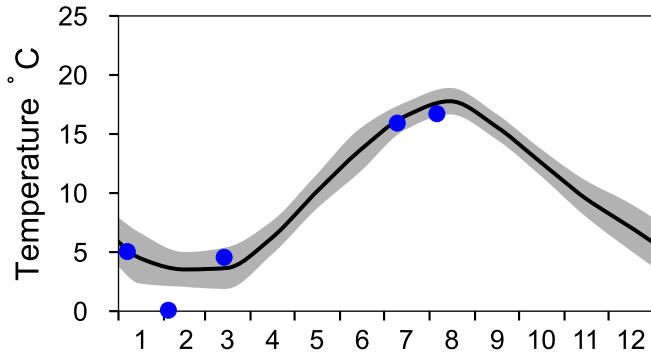
# STATION Å14 SURFACE WATER (0-10 m)

Annual Cycles

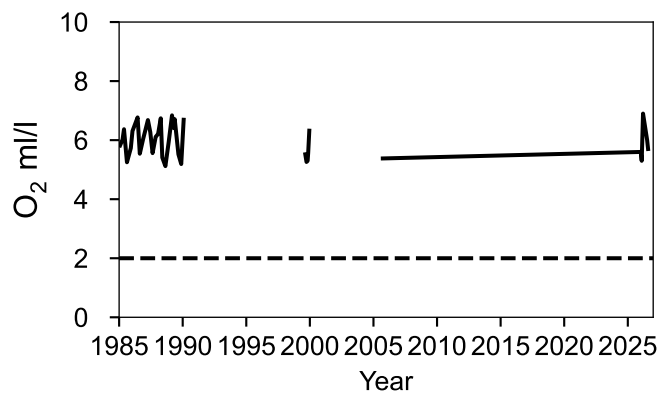
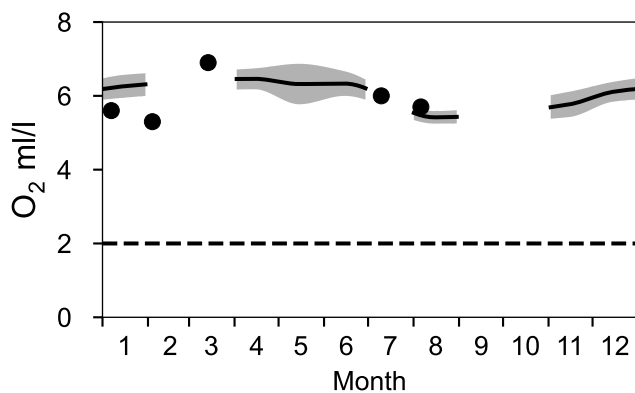
— Mean 1991-2020

■ St.Dev.

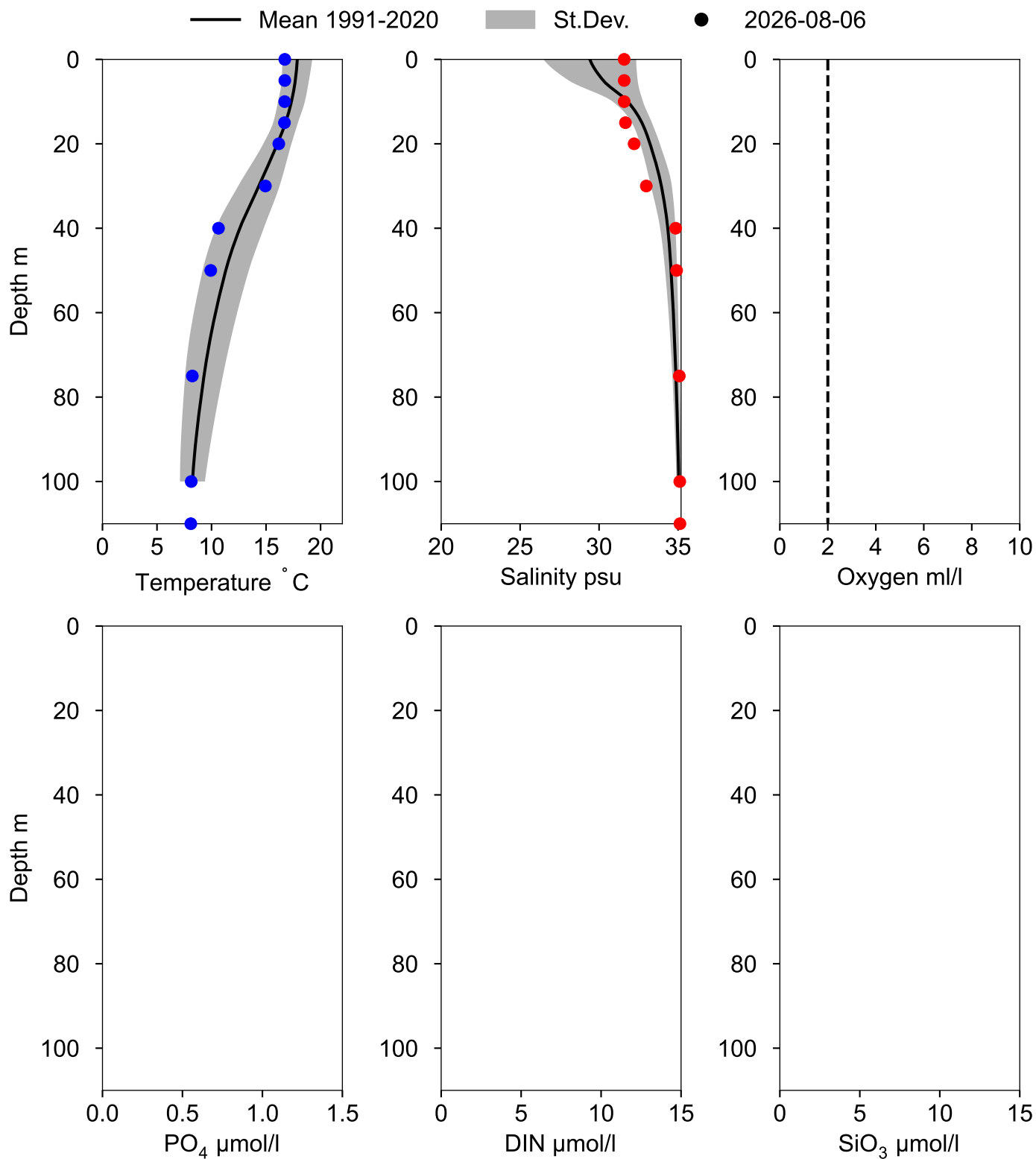
● 2026



## OXYGEN IN BOTTOM WATER (depth >= 100 m)



# Vertical profiles Å14 August



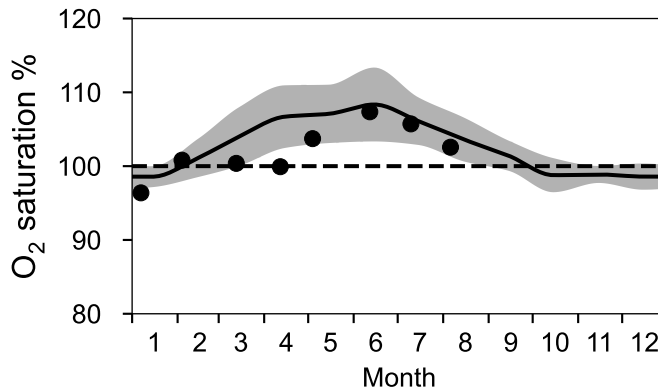
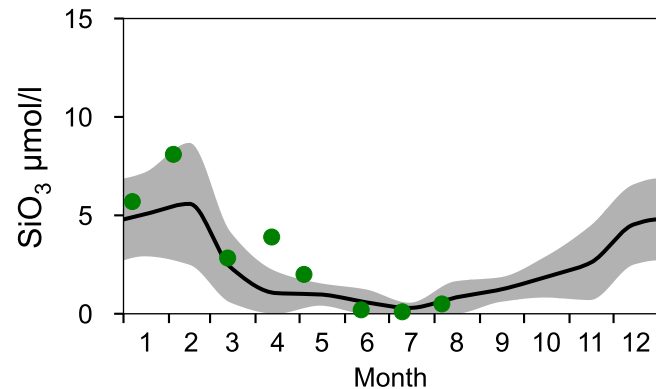
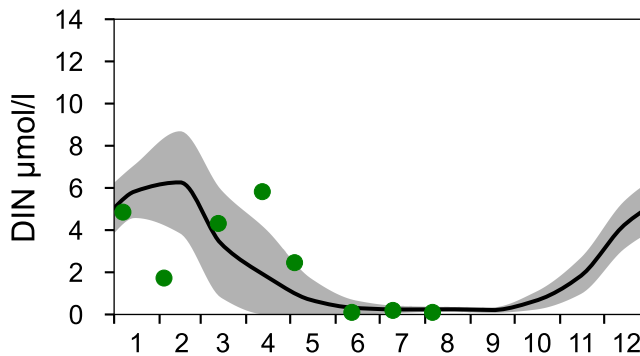
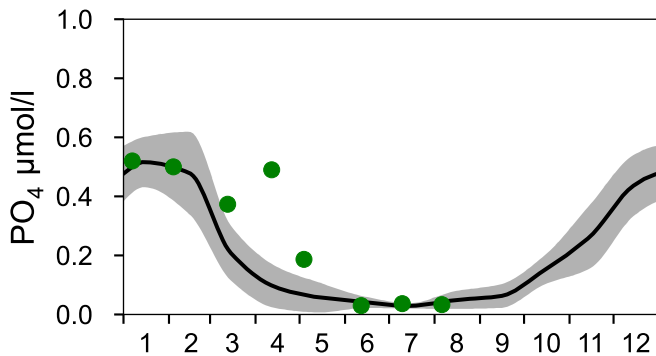
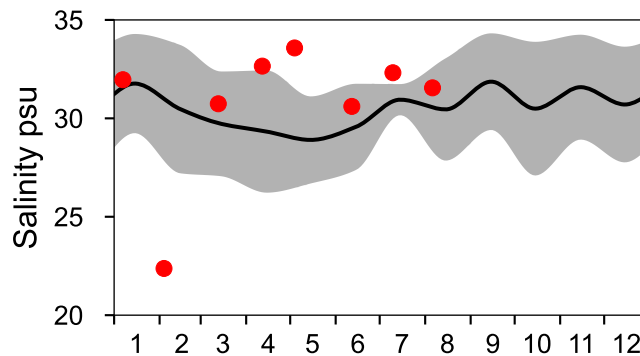
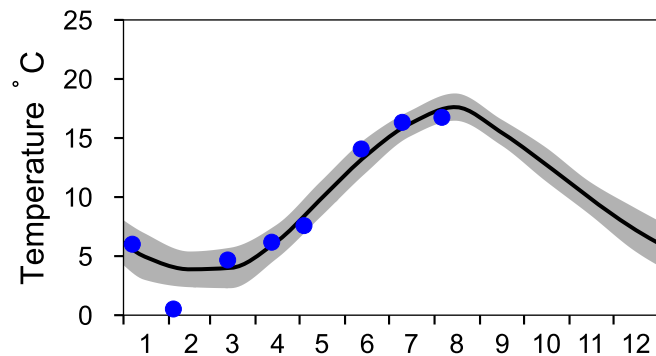
# STATION Å15 SURFACE WATER (0-10 m)

Annual Cycles

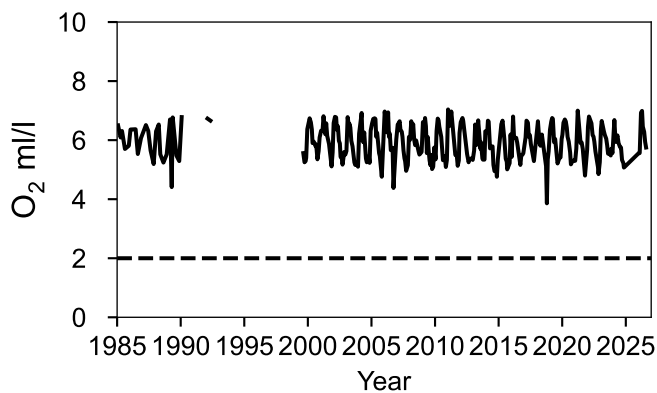
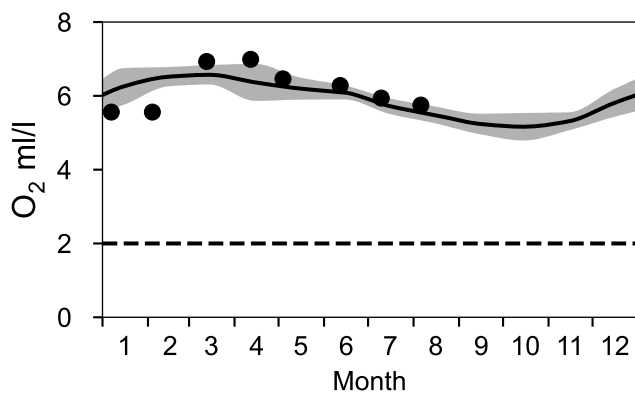
— Mean 1991-2020

■ St.Dev.

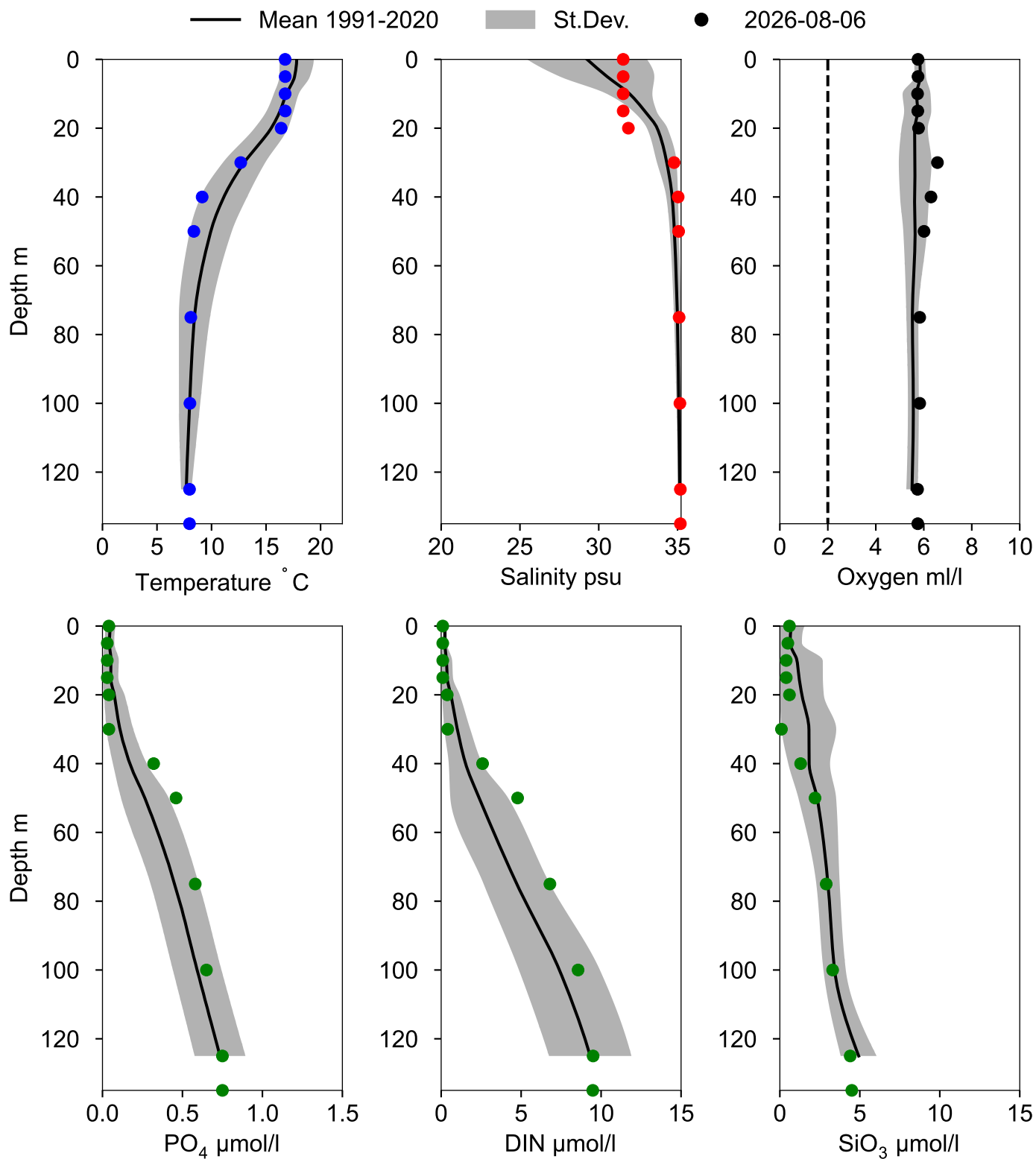
● 2026



## OXYGEN IN BOTTOM WATER (depth >= 125 m)



# Vertical profiles Å15 August



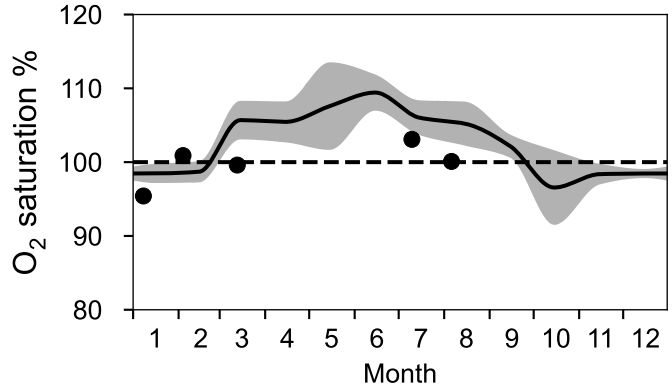
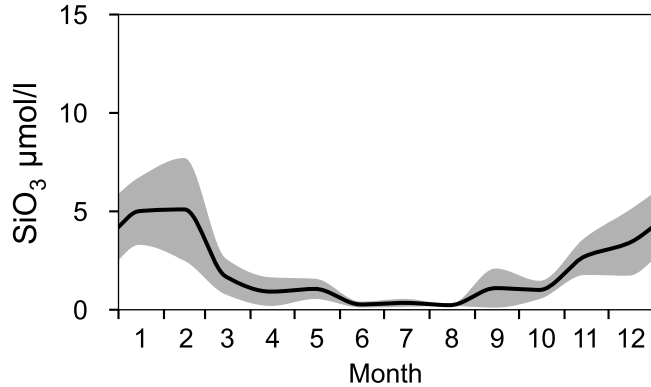
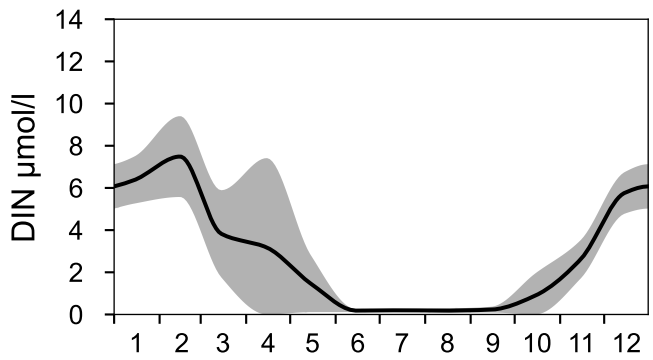
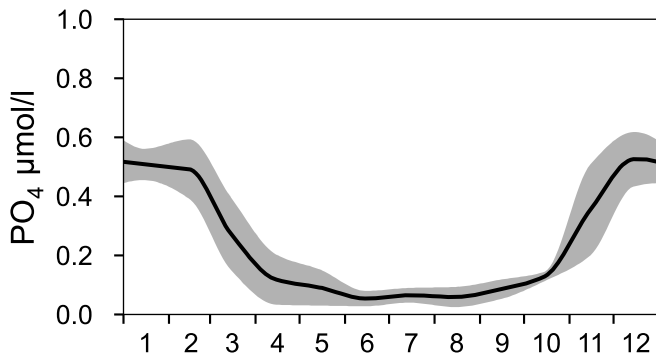
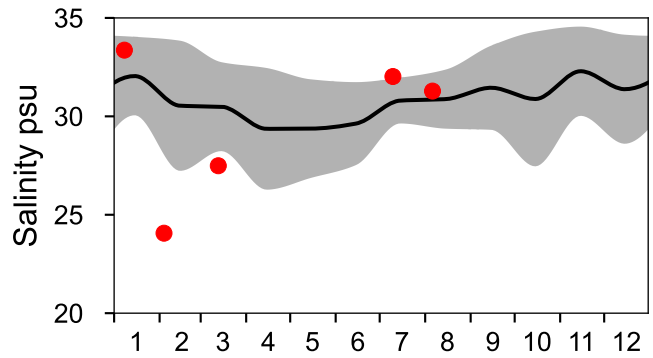
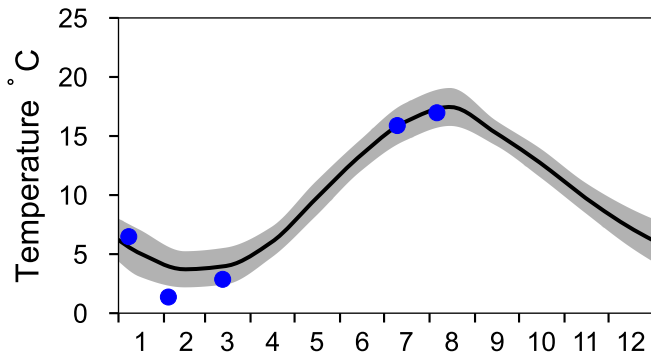
# STATION Å16 SURFACE WATER (0-10 m)

Annual Cycles

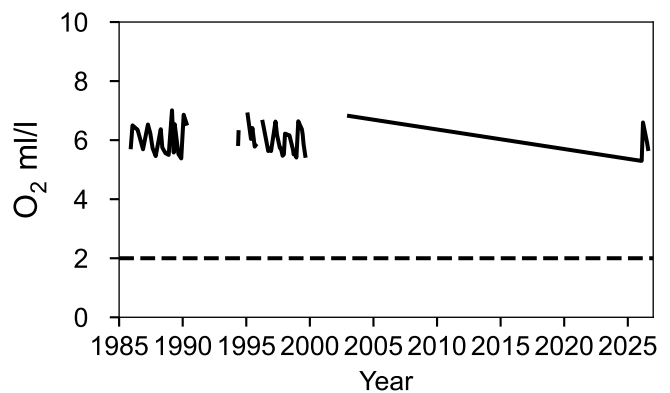
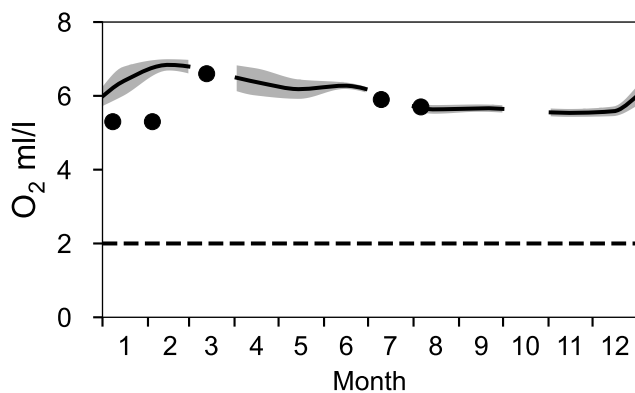
— Mean 1991-2020

■ St.Dev.

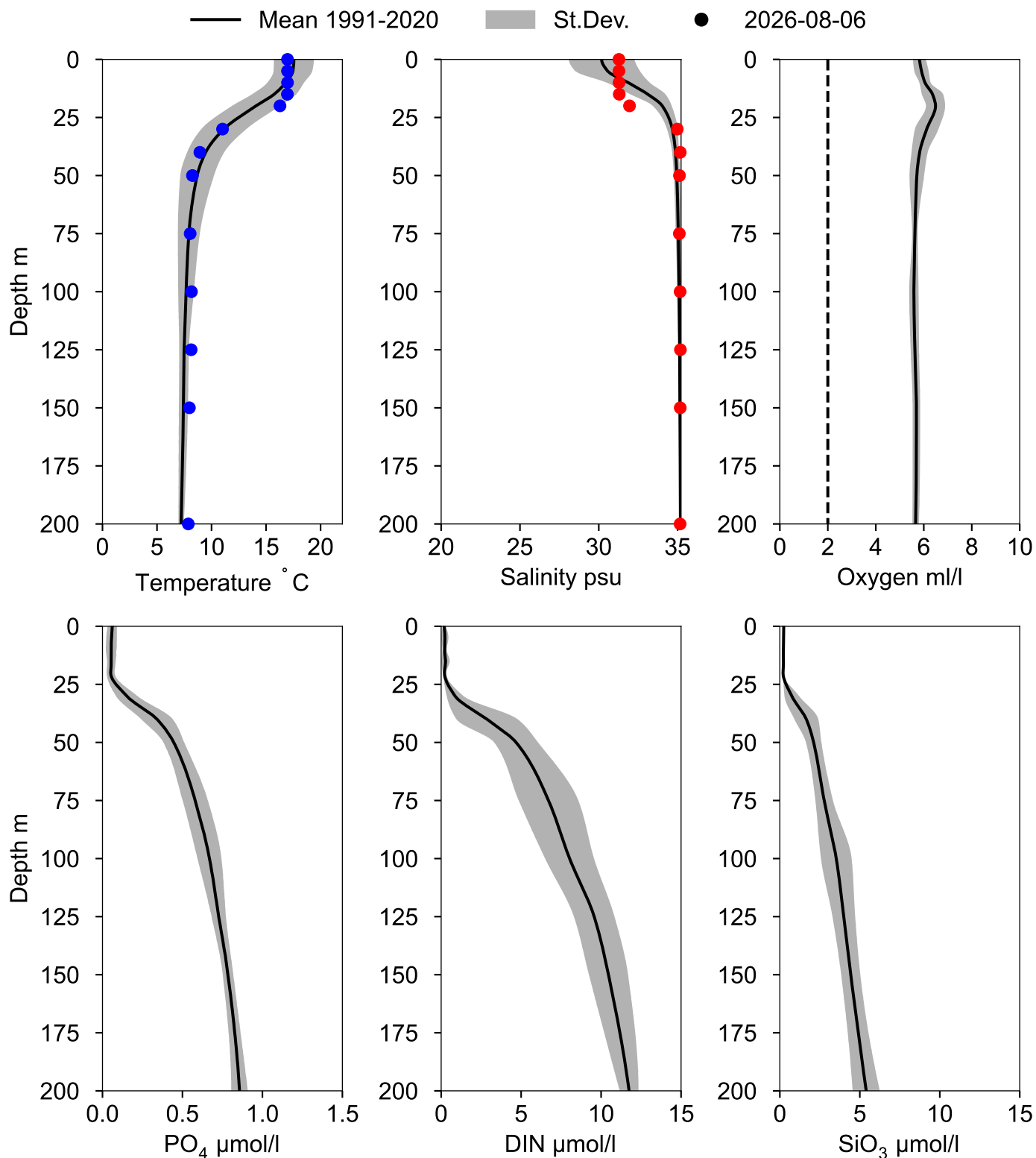
● 2026



## OXYGEN IN BOTTOM WATER (depth >= 193 m)



# Vertical profiles A16 August



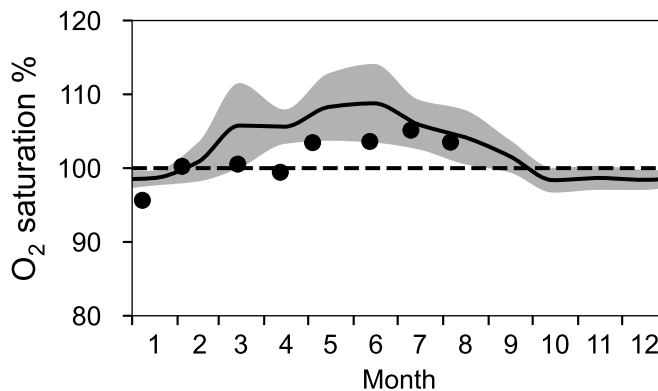
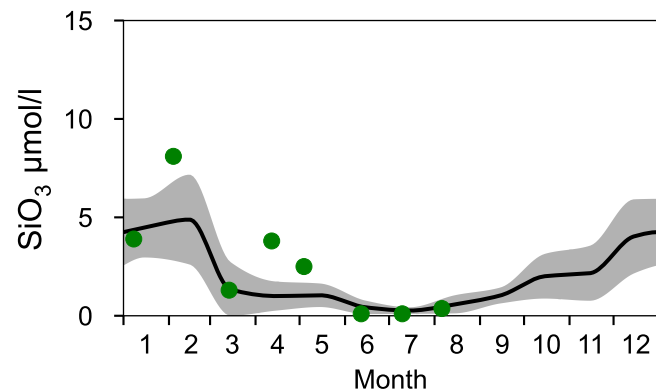
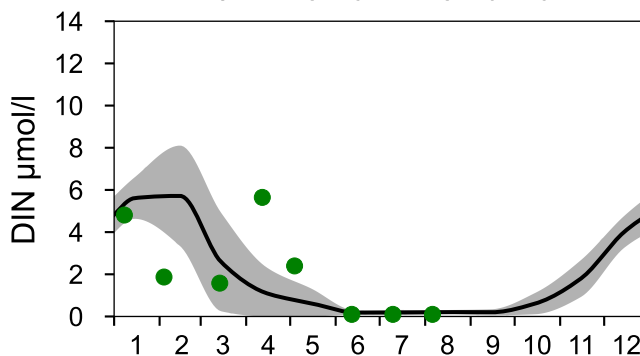
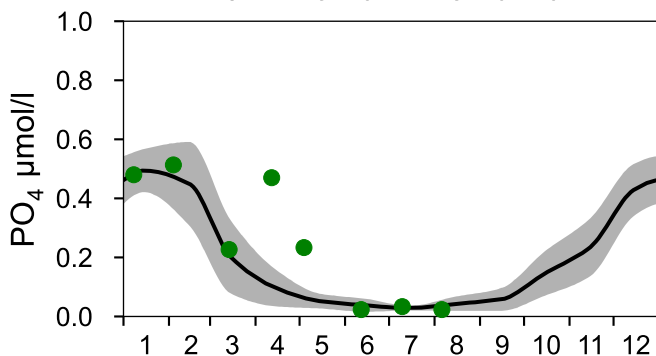
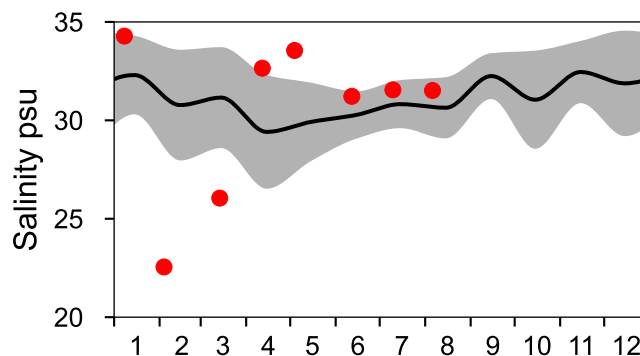
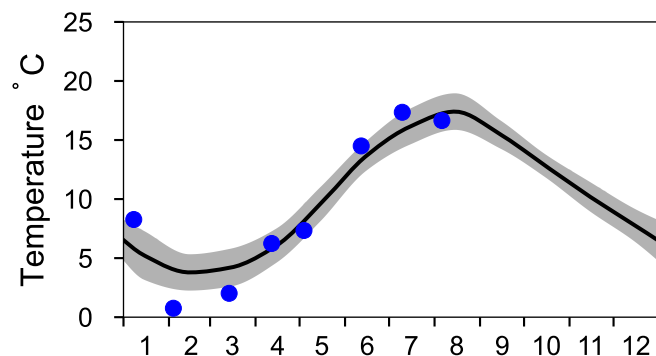
# STATION Å17 SURFACE WATER (0-10 m)

Annual Cycles

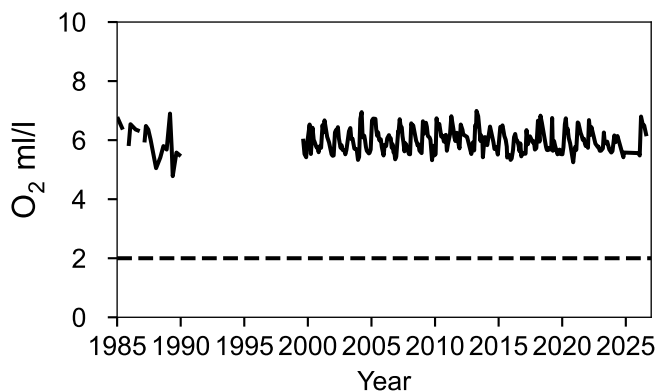
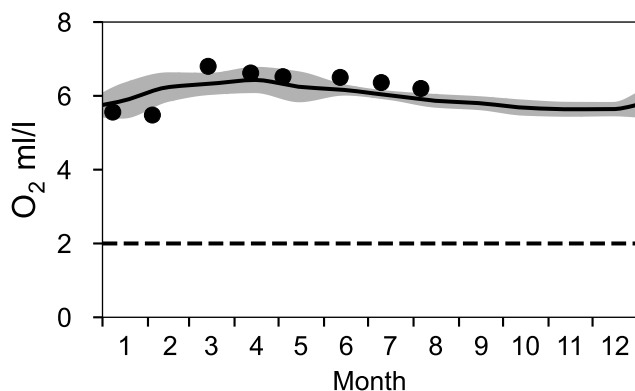
— Mean 1991-2020

■ St.Dev.

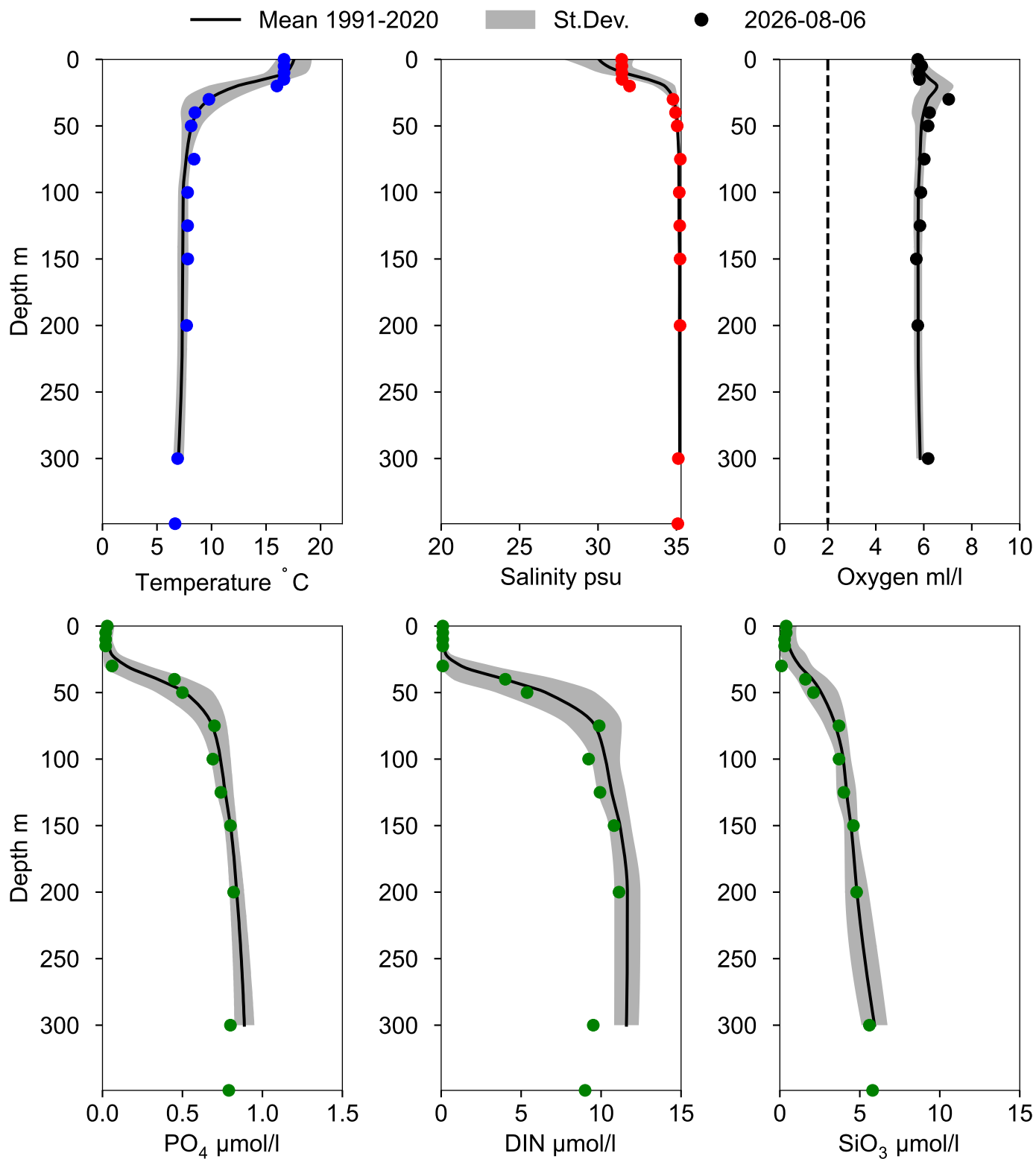
● 2026



## OXYGEN IN BOTTOM WATER (depth >= 300 m)



# Vertical profiles Å17 August



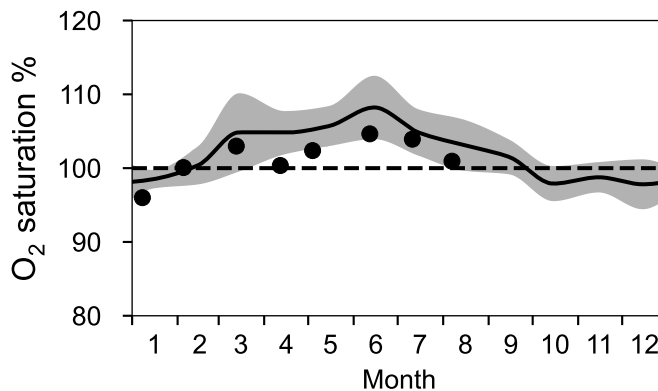
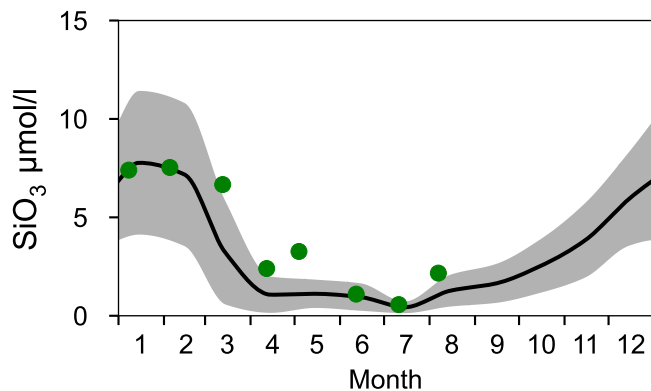
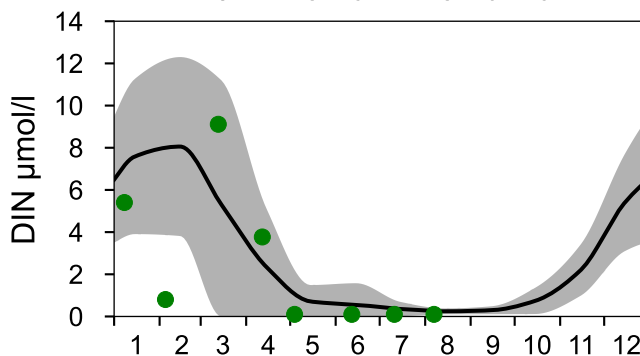
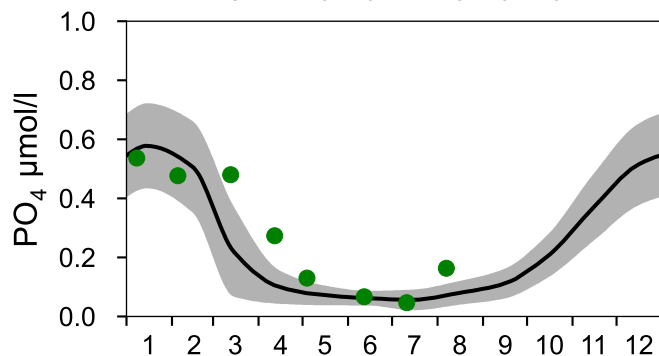
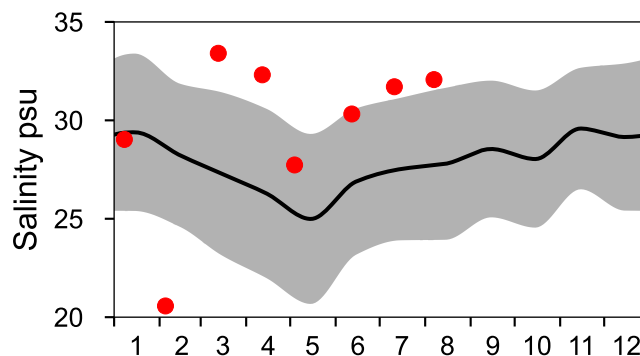
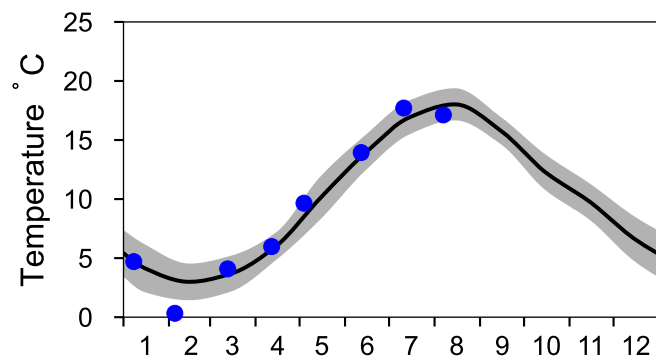
# STATION P2 SURFACE WATER (0-10 m)

Annual Cycles

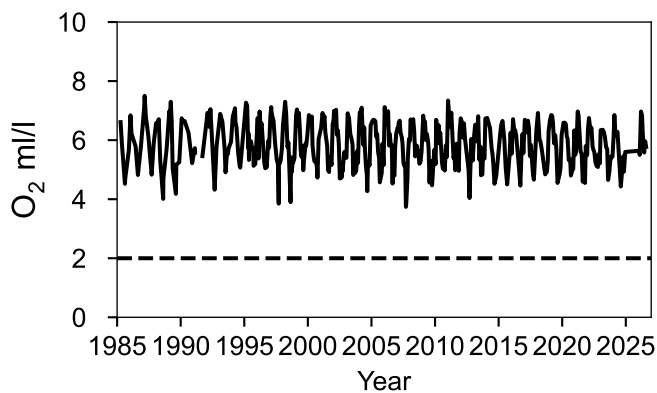
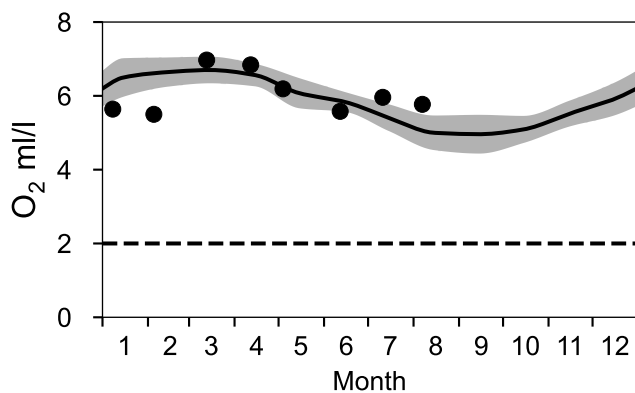
— Mean 1991-2020

■ St.Dev.

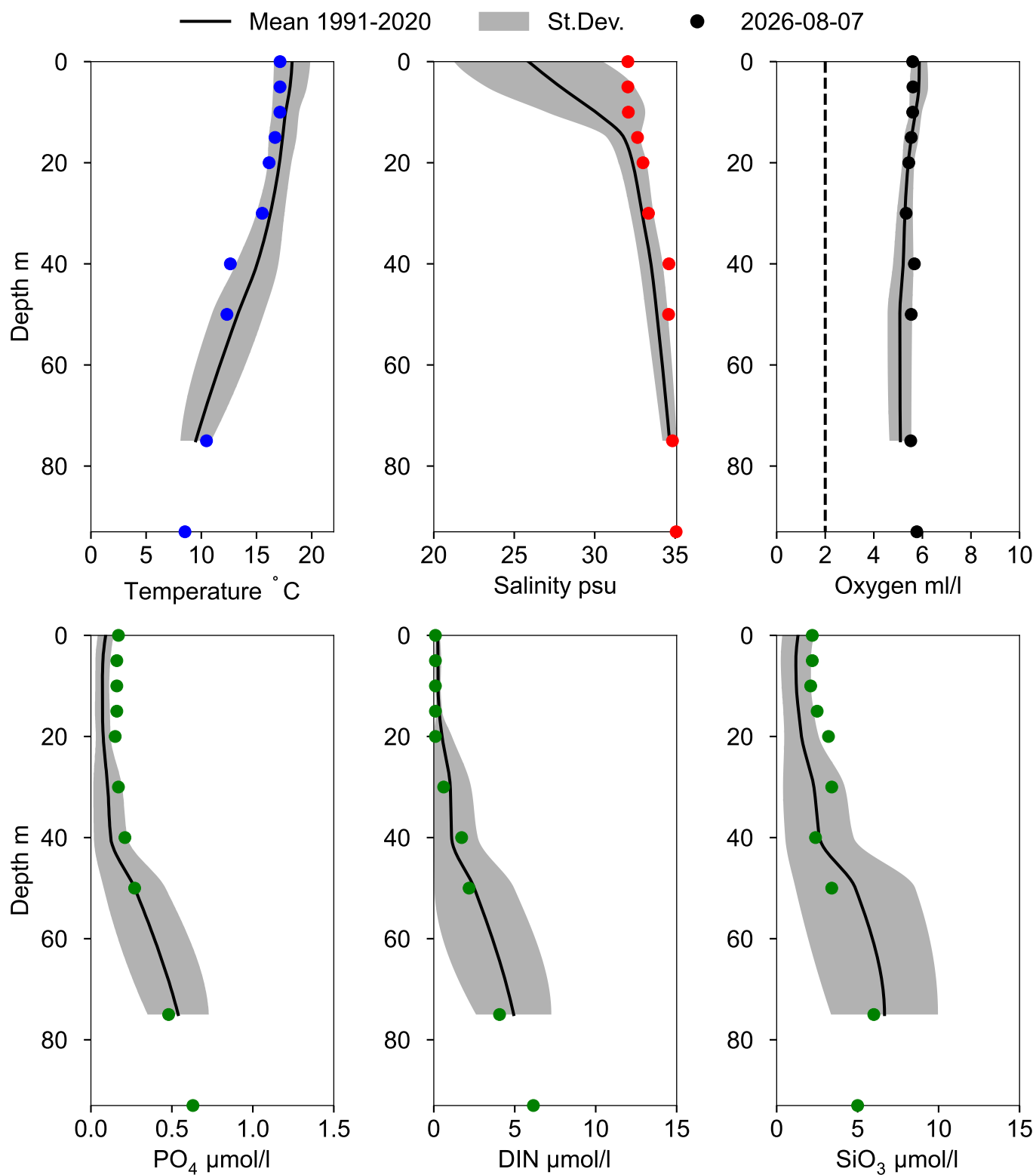
● 2026



## OXYGEN IN BOTTOM WATER (depth >= 75 m)



# Vertical profiles P2 August



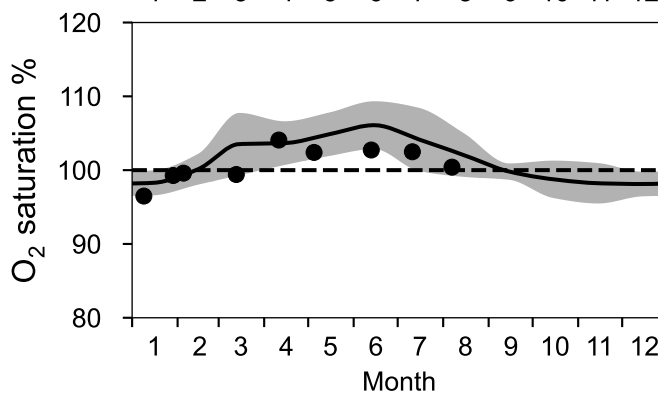
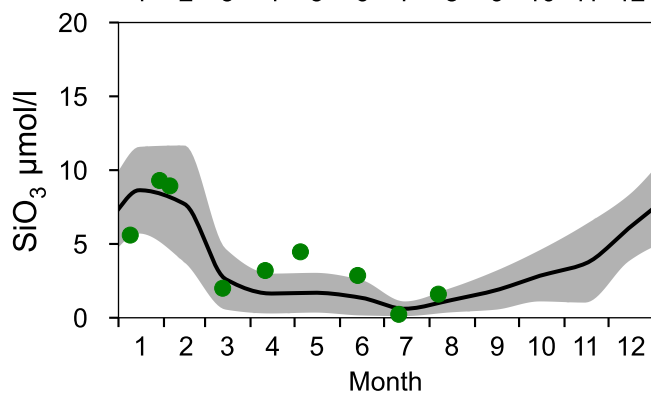
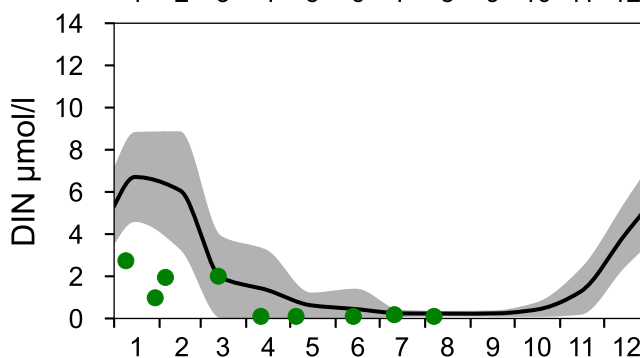
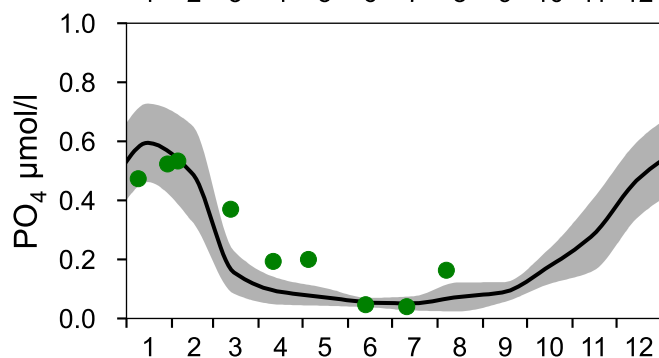
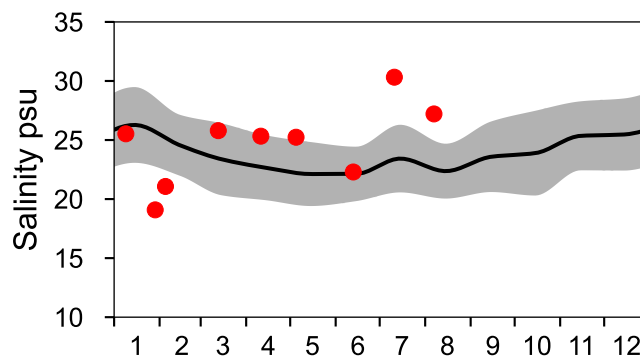
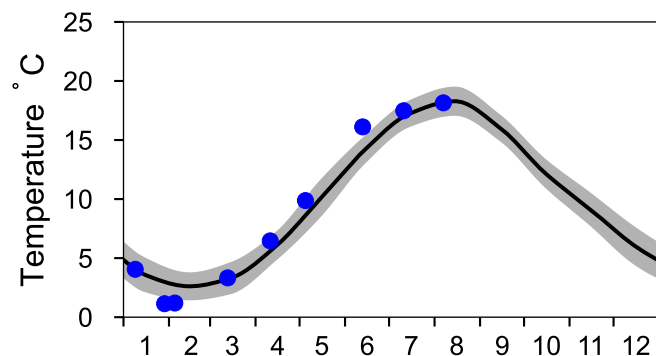
# STATION FLADEN SURFACE WATER (0-10 m)

Annual Cycles

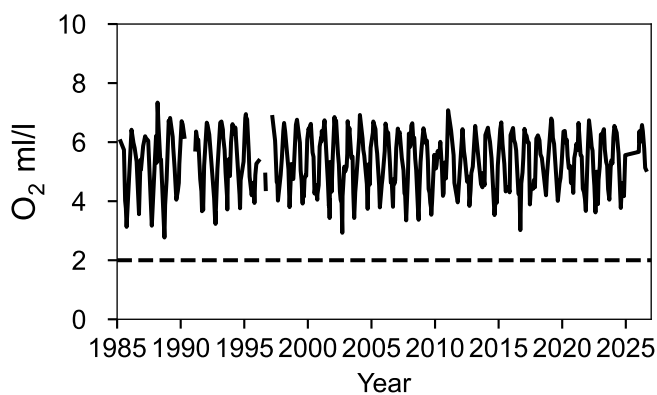
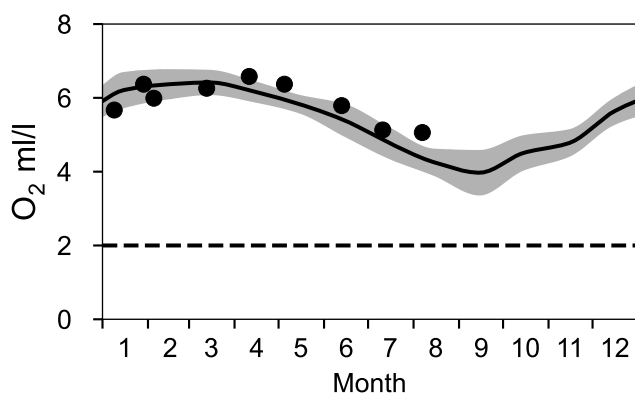
— Mean 1991-2020

■ St.Dev.

● 2026



## OXYGEN IN BOTTOM WATER (depth >= 74 m)

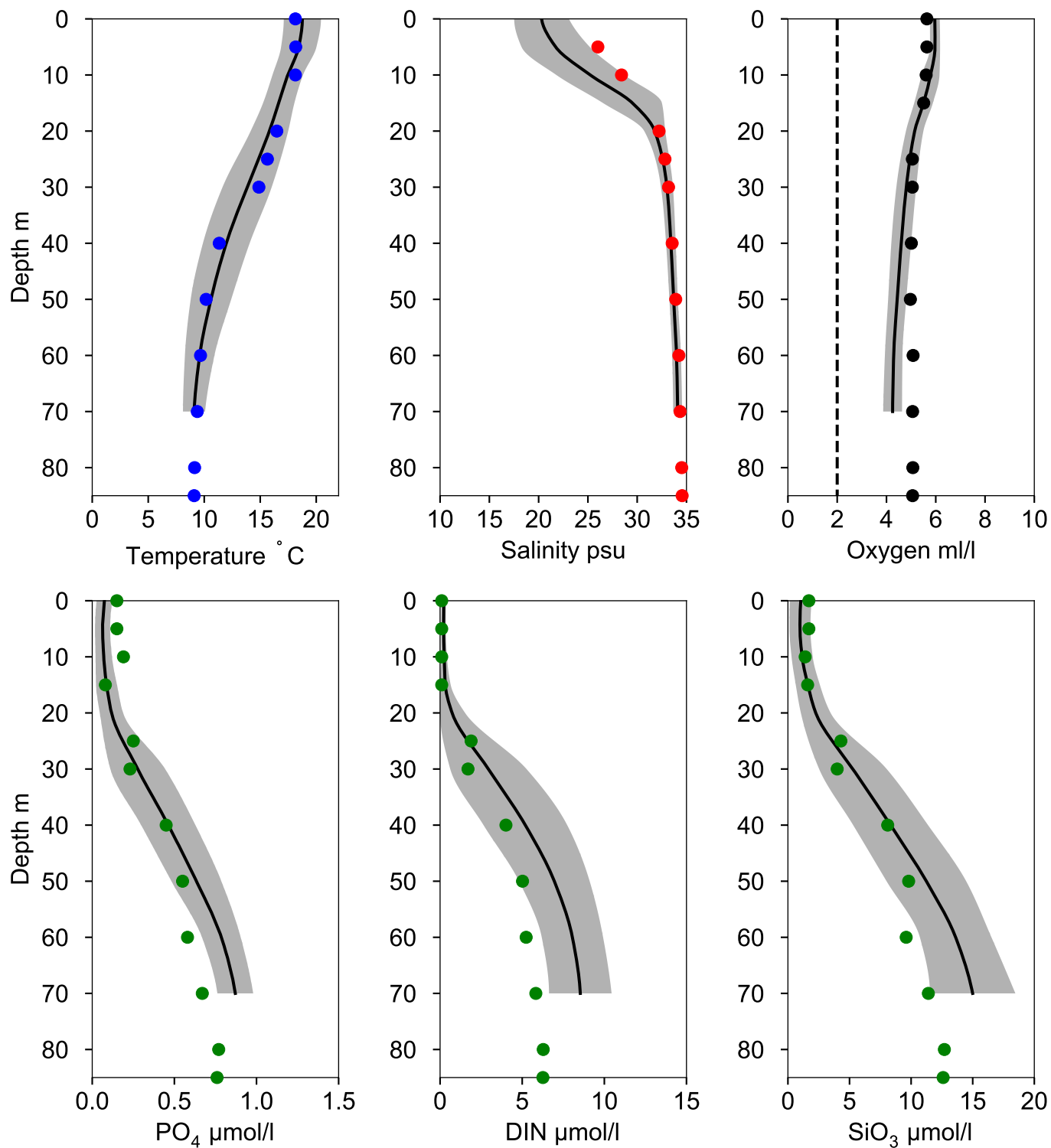


# Vertical profiles FLADEN August

— Mean 1991-2020

■ St.Dev.

● 2026-08-07



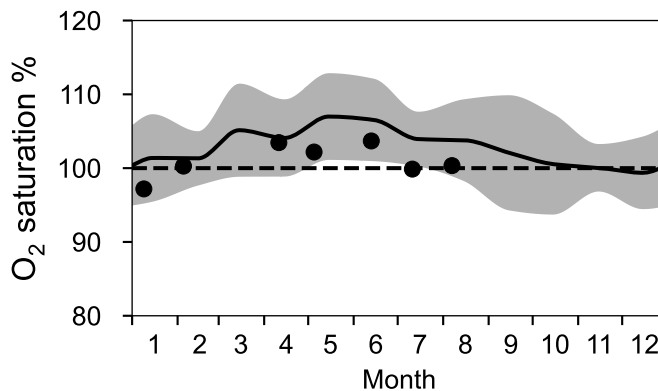
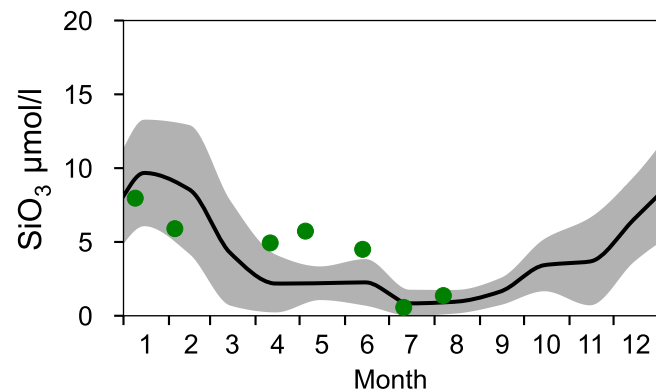
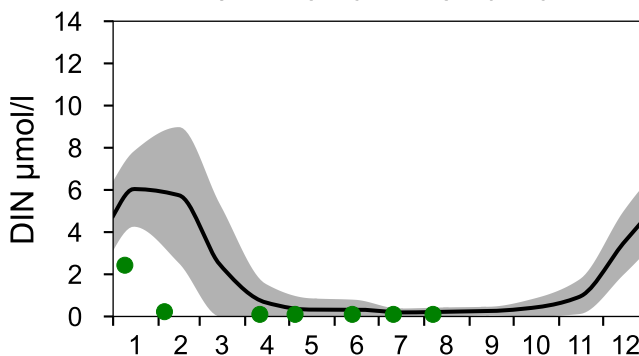
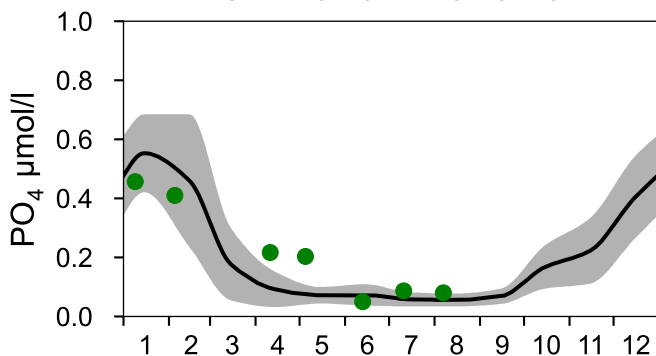
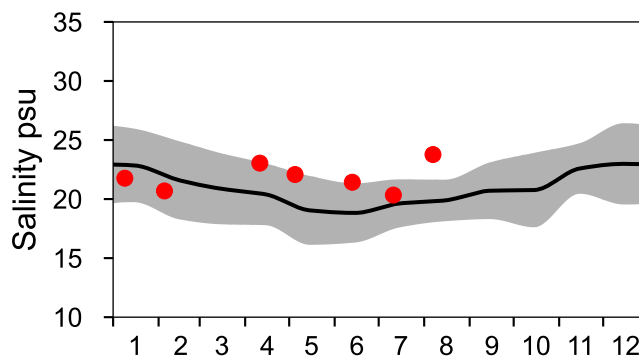
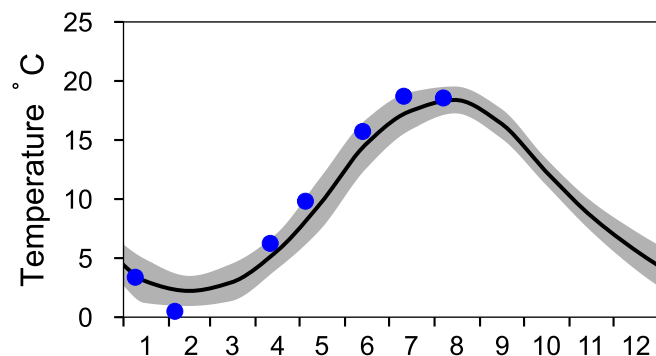
# STATION N14 FALKENBERG SURFACE WATER (0-10 m)

Annual Cycles

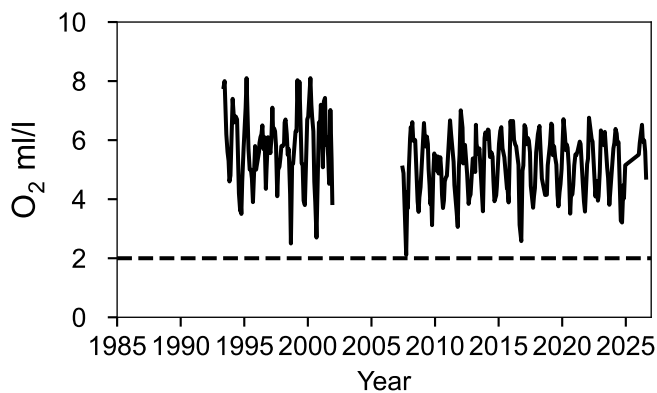
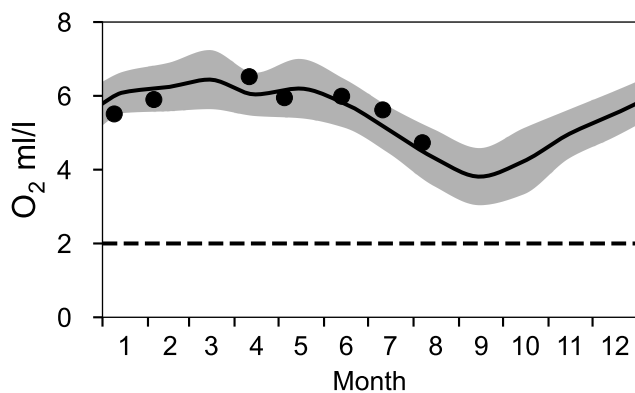
— Mean 1991-2020

■ St.Dev.

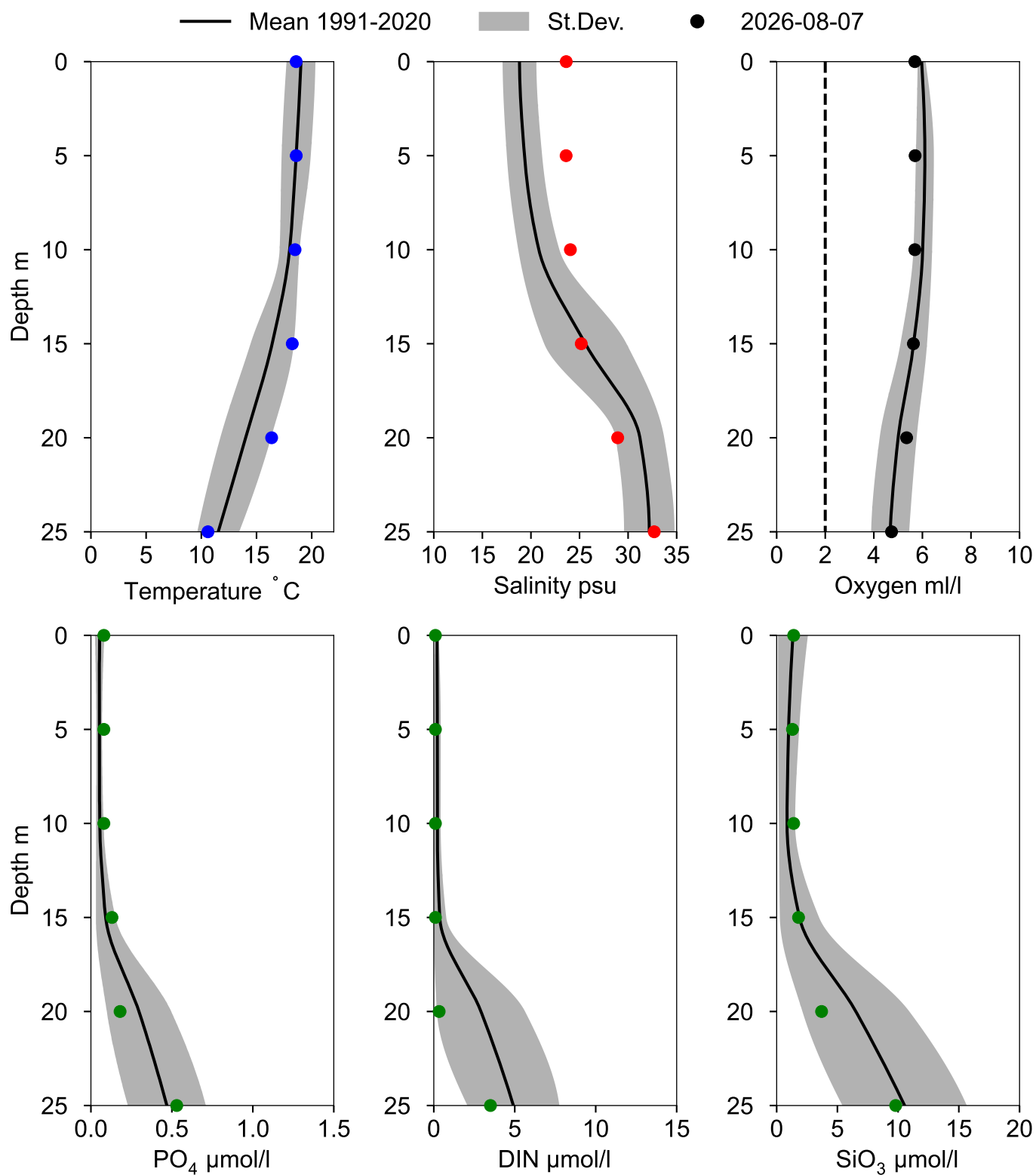
● 2026



## OXYGEN IN BOTTOM WATER (depth >= 25 m)



# Vertical profiles N14 FALKENBERG August



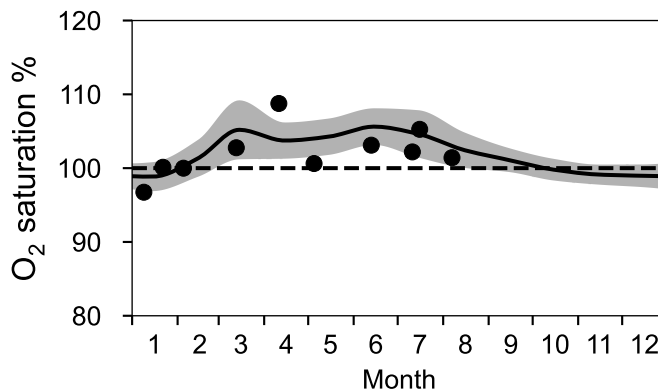
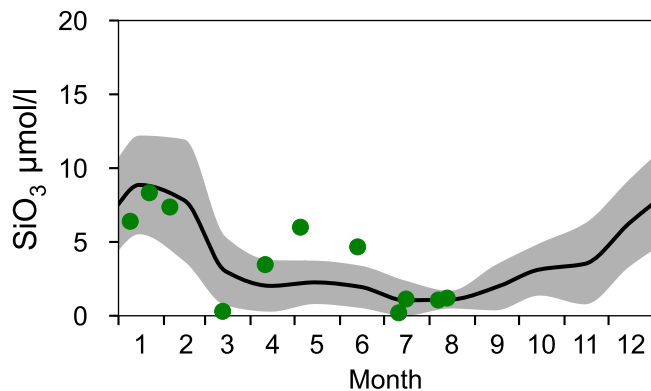
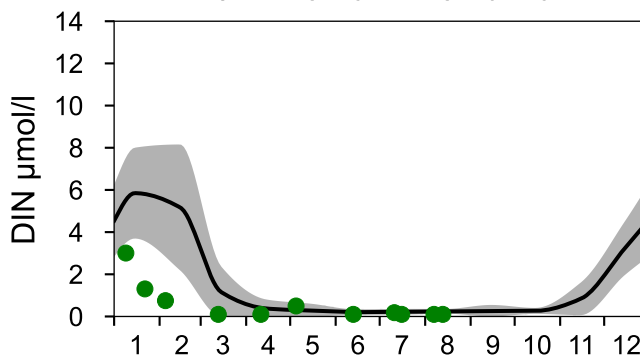
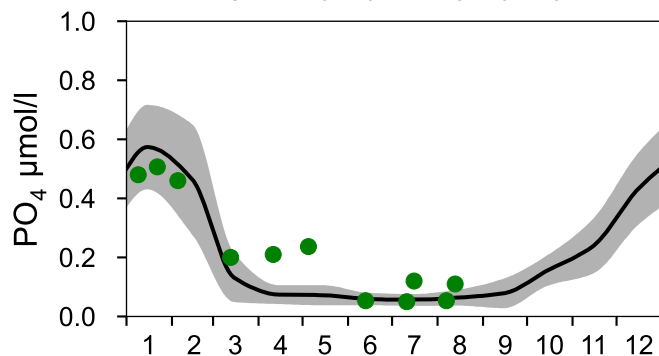
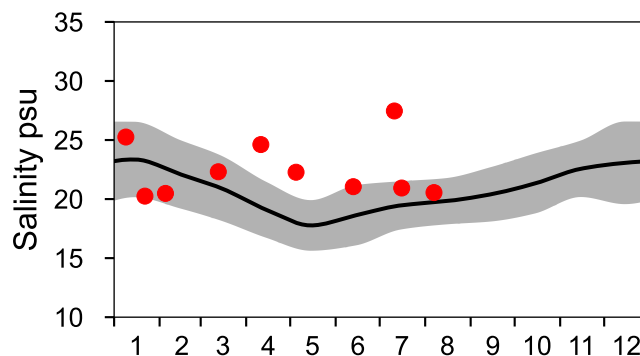
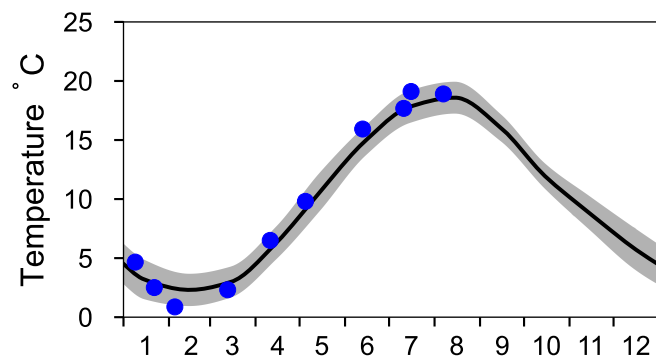
# STATION ANHOLT E SURFACE WATER (0-10 m)

Annual Cycles

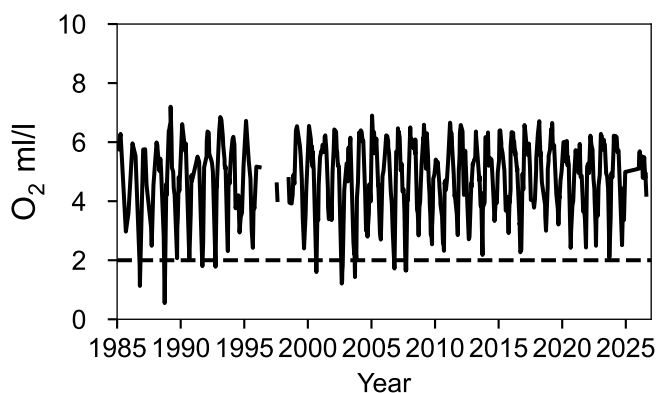
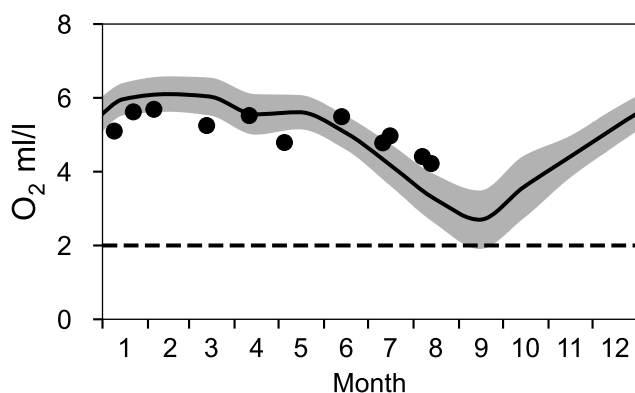
— Mean 1991-2020

■ St.Dev.

● 2026



## OXYGEN IN BOTTOM WATER (depth >= 52 m)

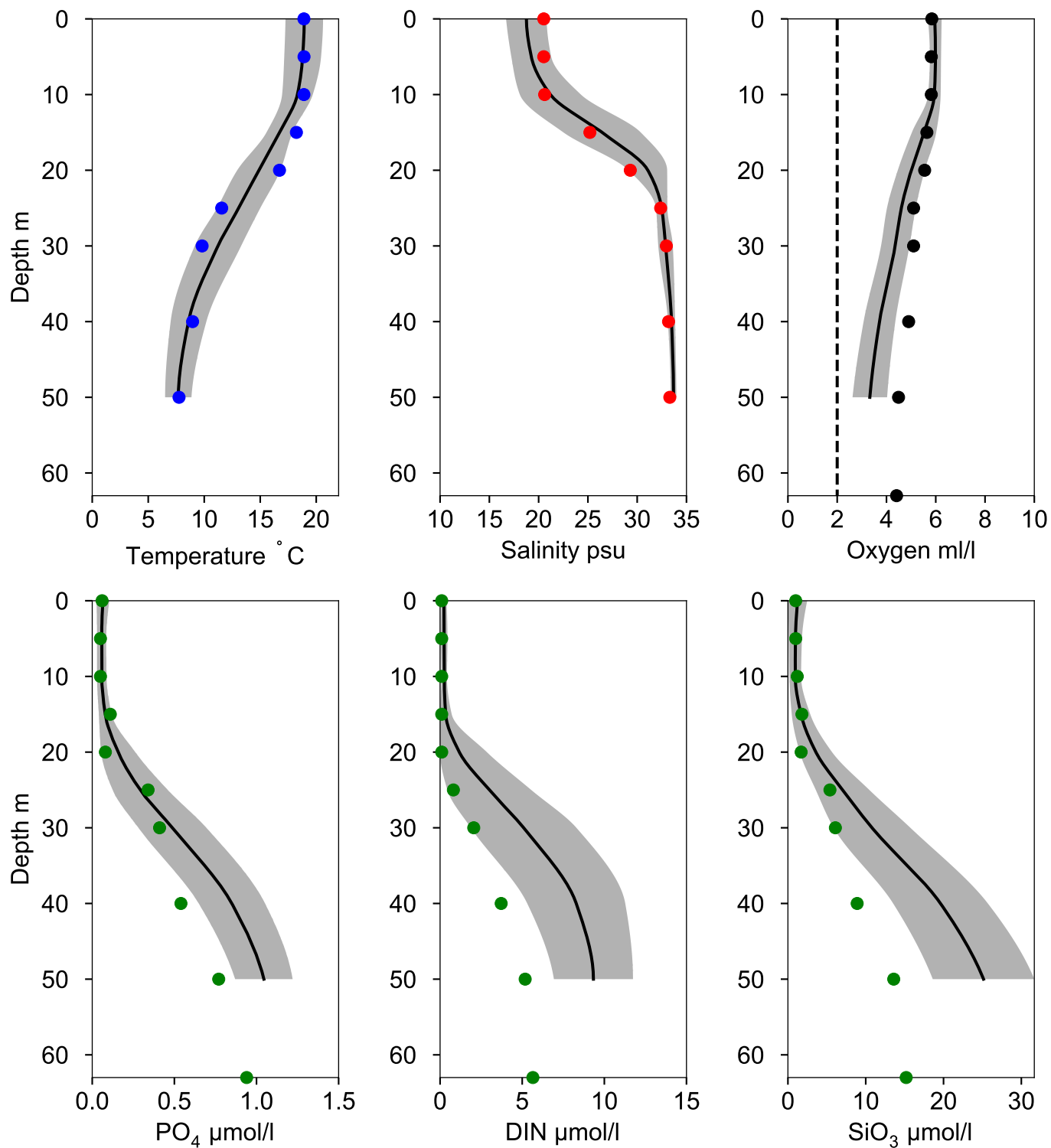


# Vertical profiles ANHOLT E August

— Mean 1991-2020

■ St.Dev.

● 2026-08-07



# STATION P22 SURFACE WATER (0-10 m)

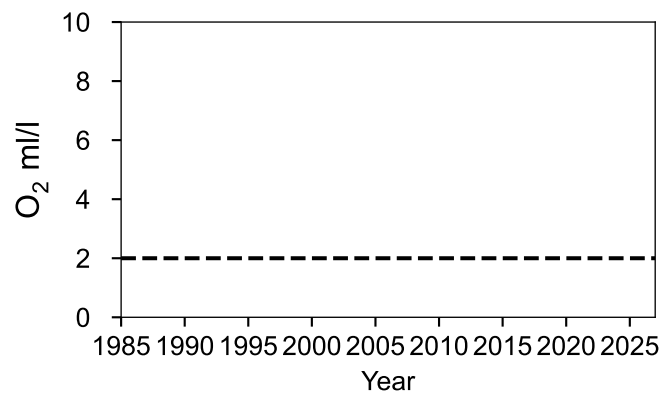
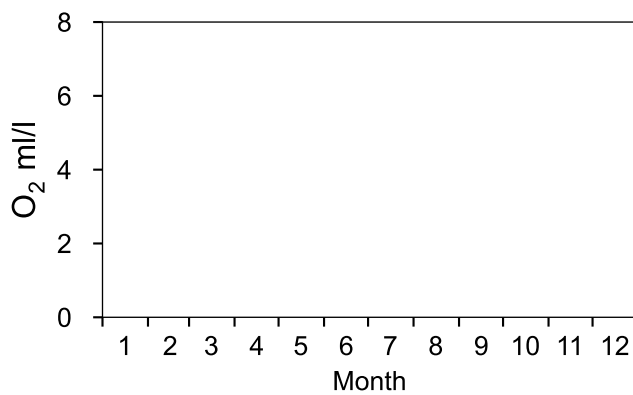
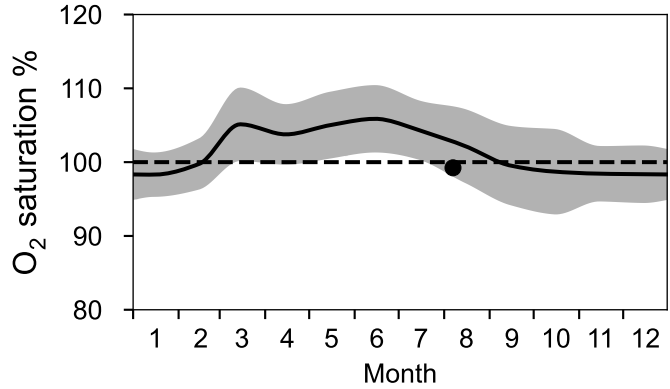
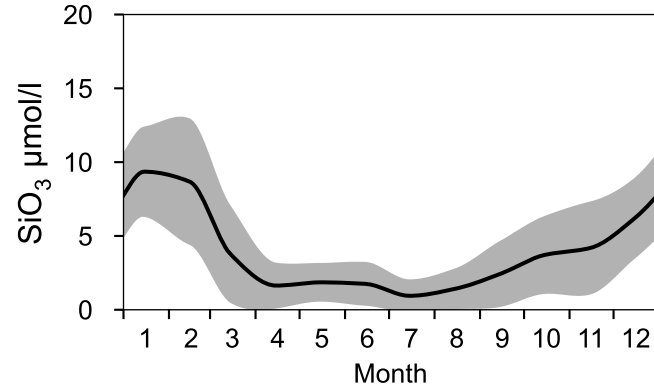
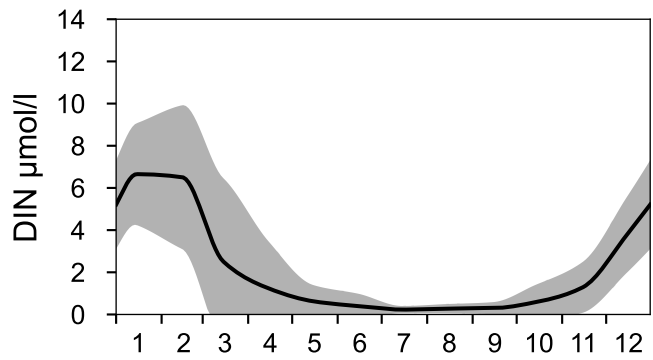
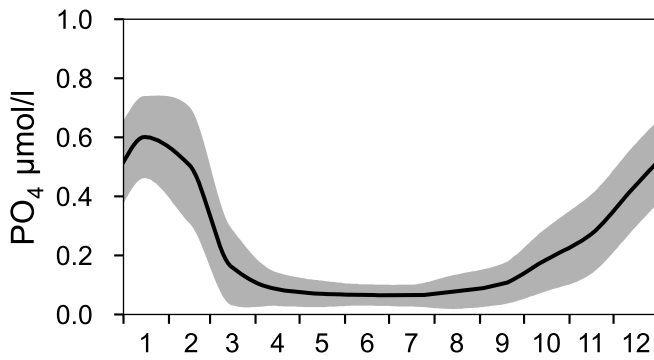
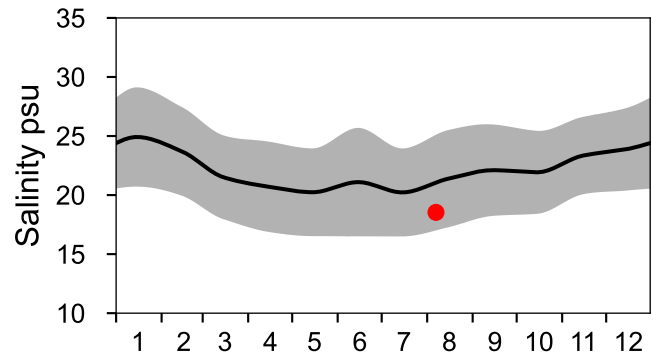
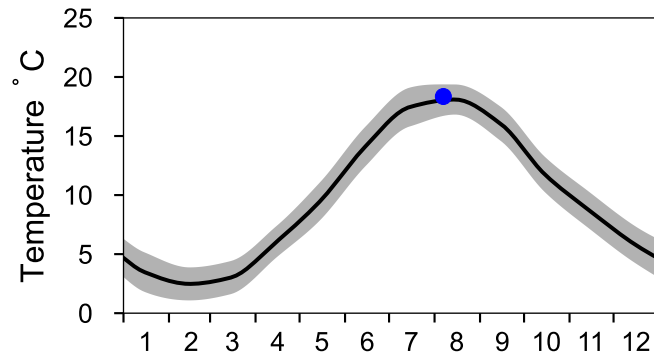
## Annual Cycles

Statistics based on data from: Kattegatt

— Mean 1991-2020

■ St.Dev.

● 2026



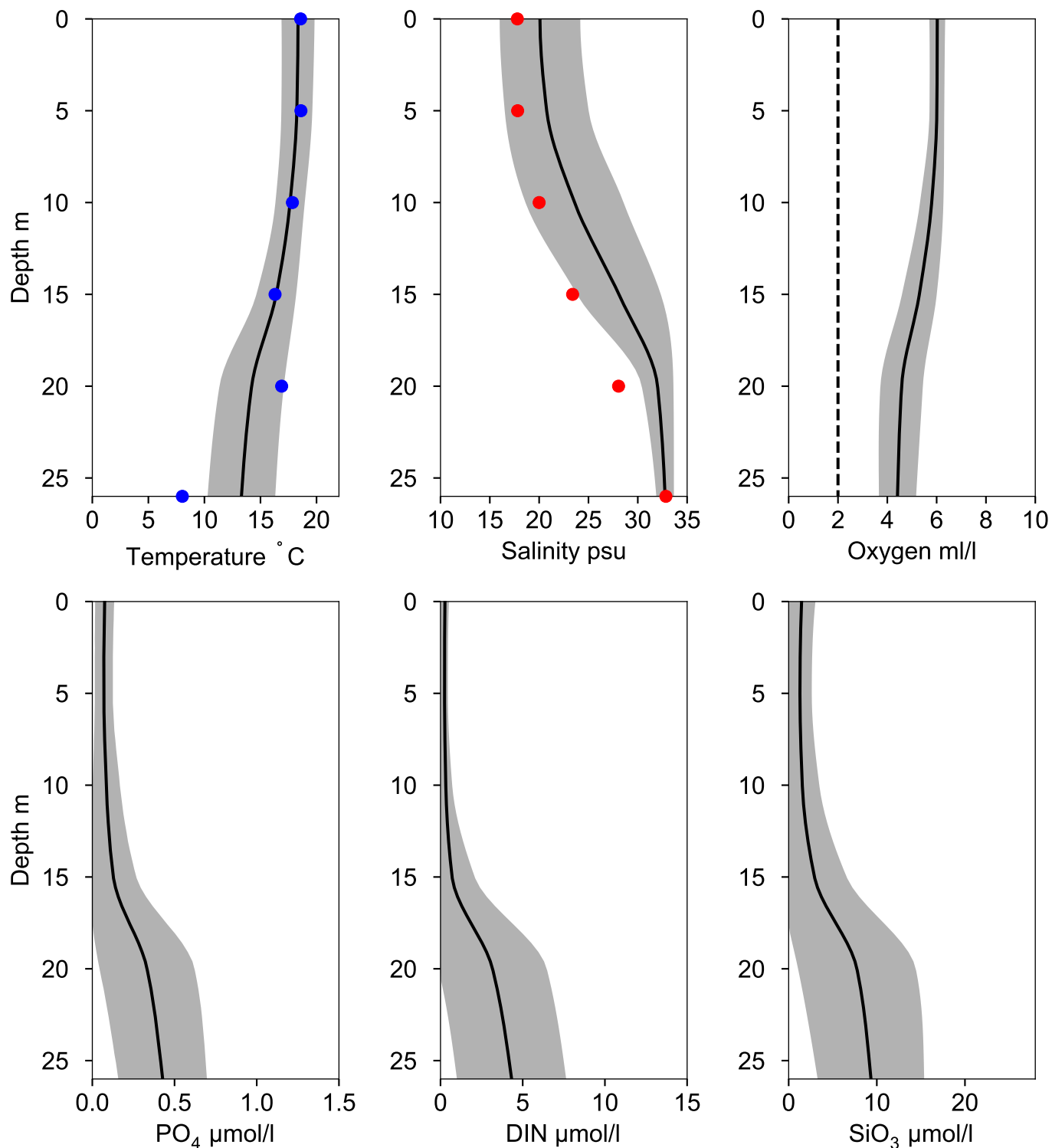
# Vertical profiles P22 August

Statistics based on data from: Kattegatt

— Mean 1991-2020

■ St.Dev.

● 2026-08-07



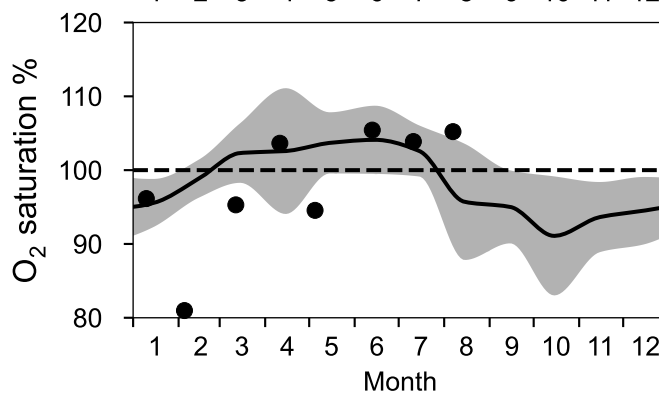
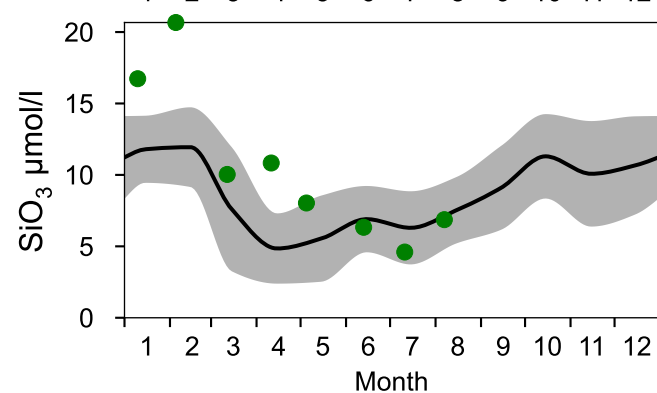
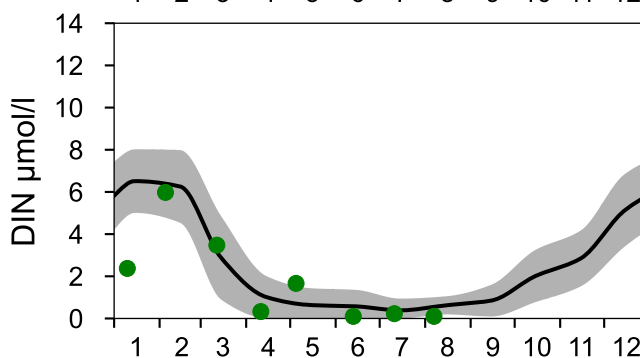
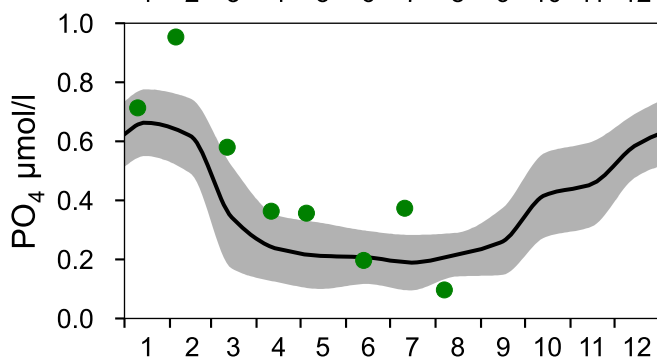
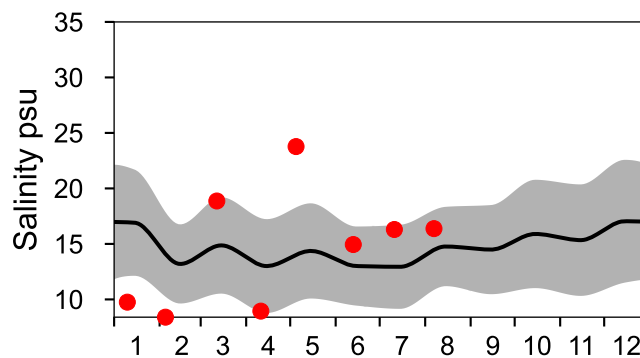
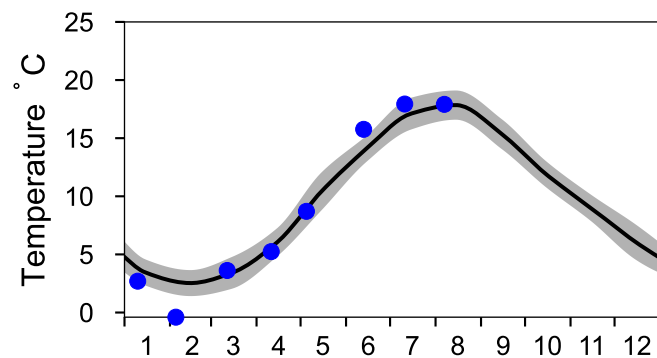
# STATION W LANDSKRONA SURFACE WATER (0-10 m)

Annual Cycles

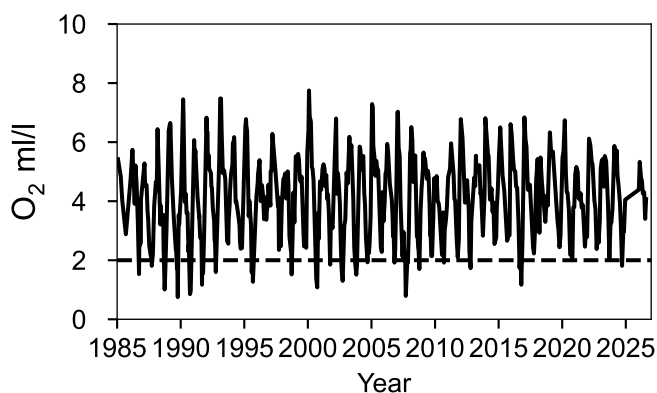
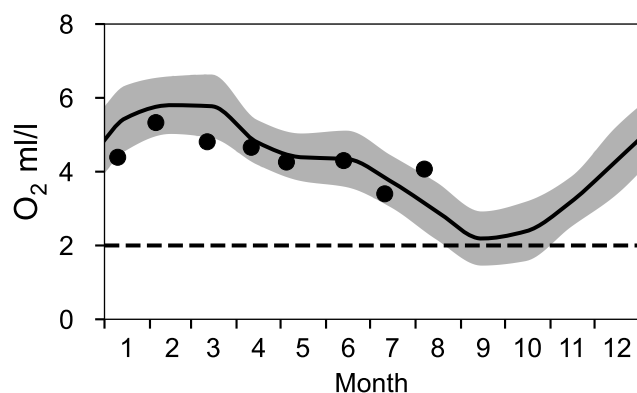
— Mean 1991-2020

■ St.Dev.

● 2026



## OXYGEN IN BOTTOM WATER (depth >= 40 m)

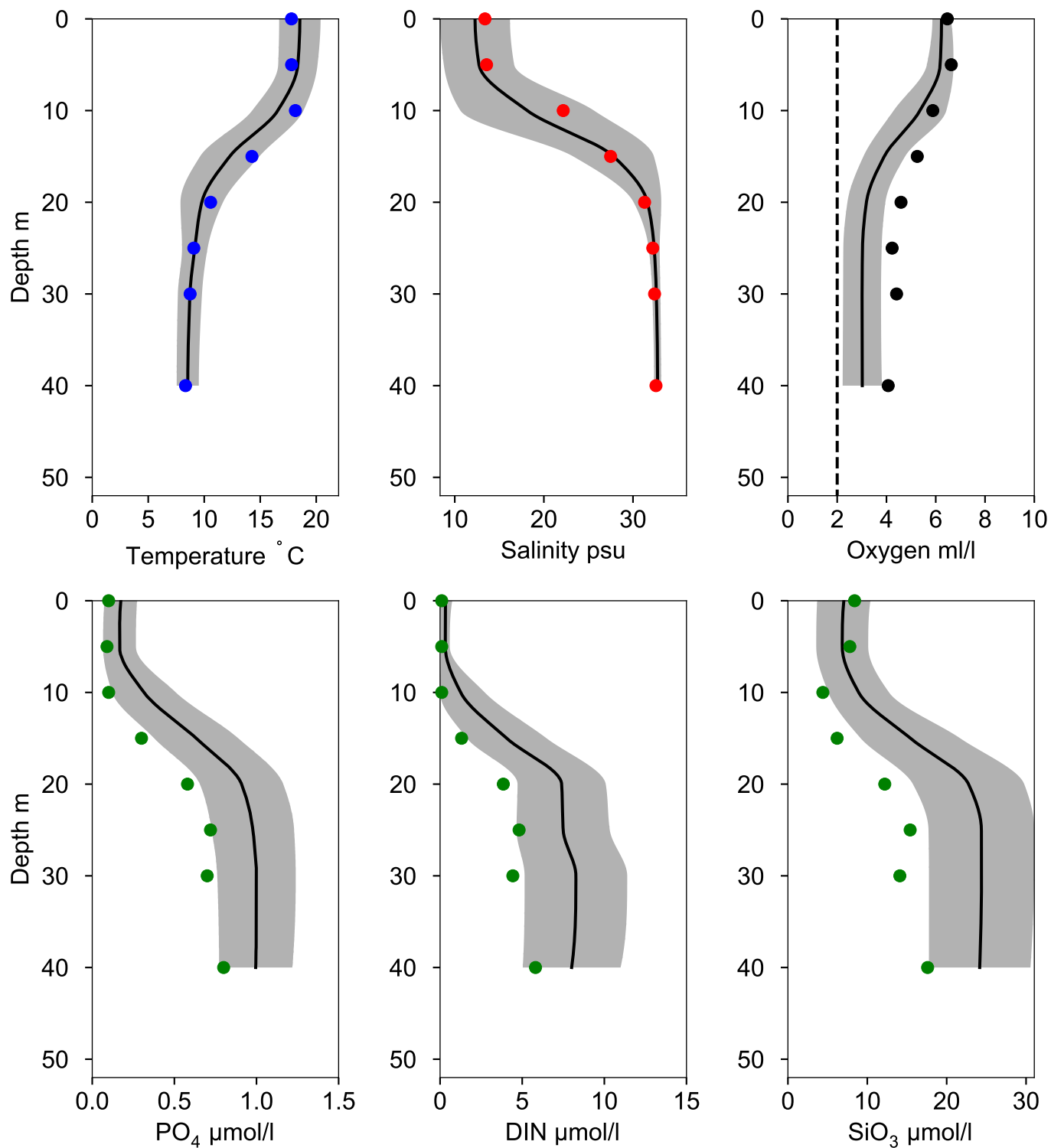


# Vertical profiles W LANDSKRONA August

— Mean 1991-2020

■ St.Dev.

● 2026-08-07



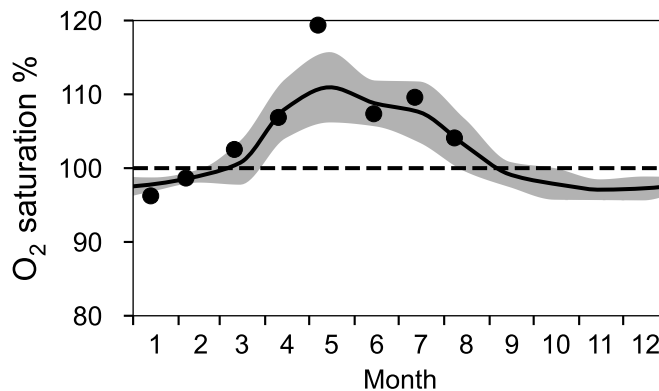
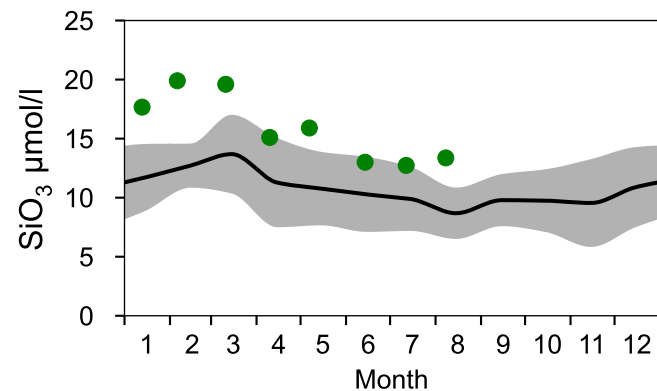
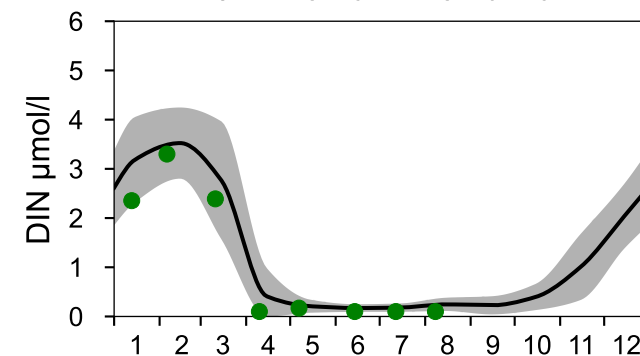
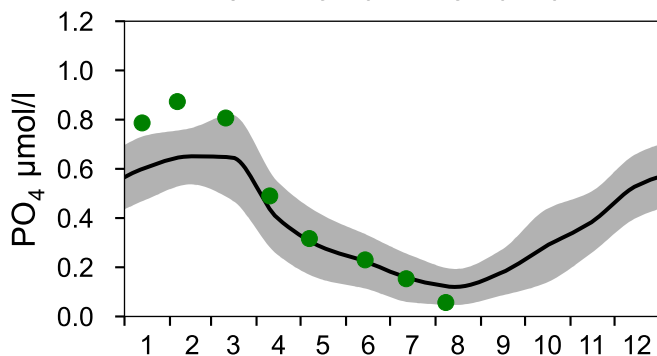
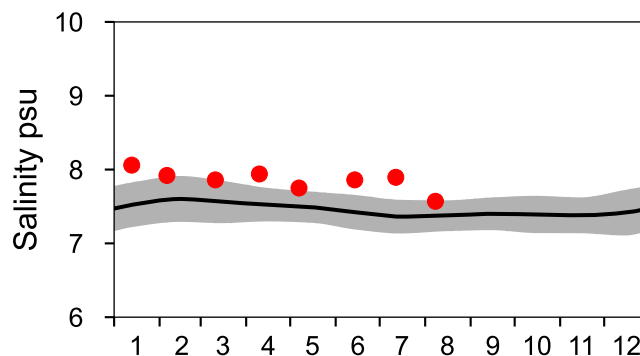
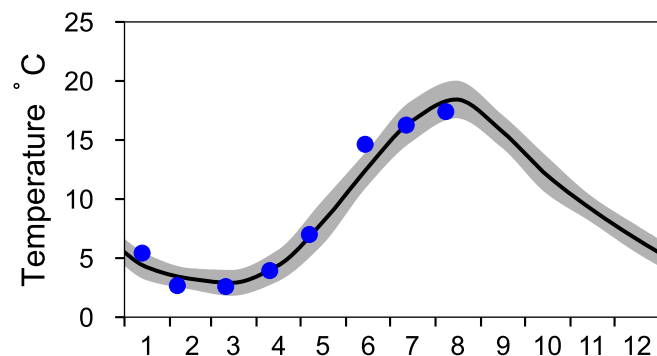
# STATION BY4 CHRISTIANSÖ SURFACE WATER (0-10 m)

Annual Cycles

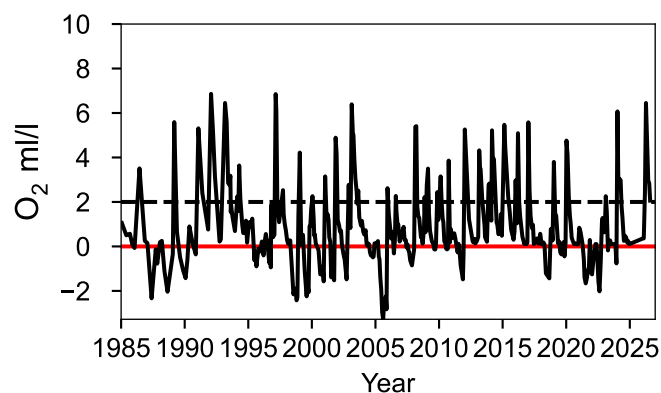
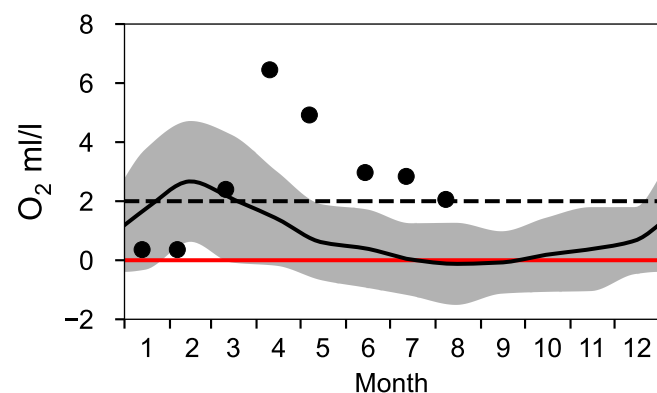
— Mean 1991-2020

■ St.Dev.

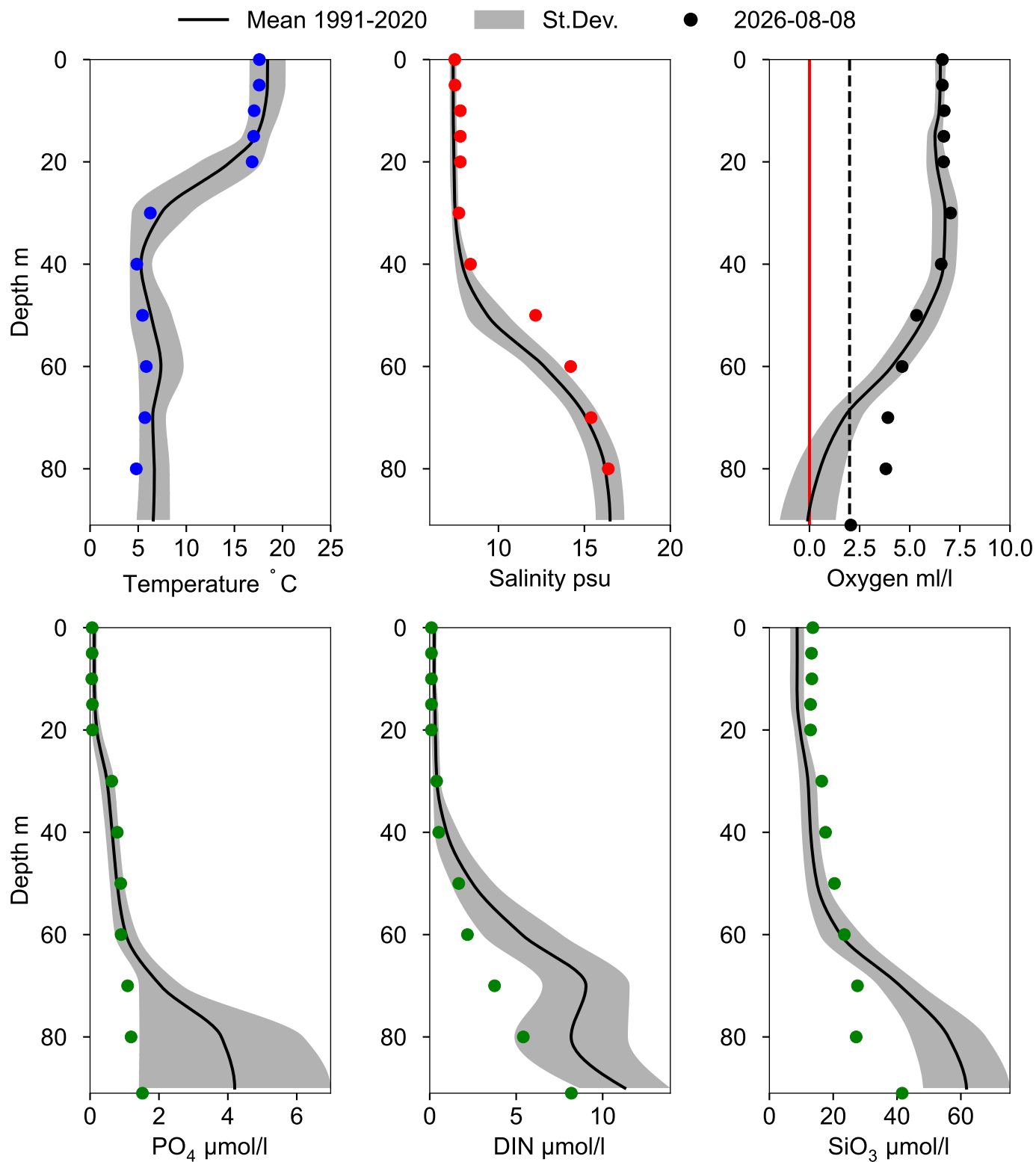
● 2026



## OXYGEN IN BOTTOM WATER (depth >= 80 m)



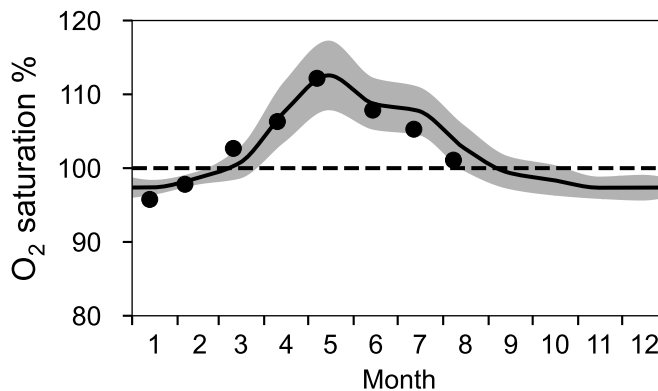
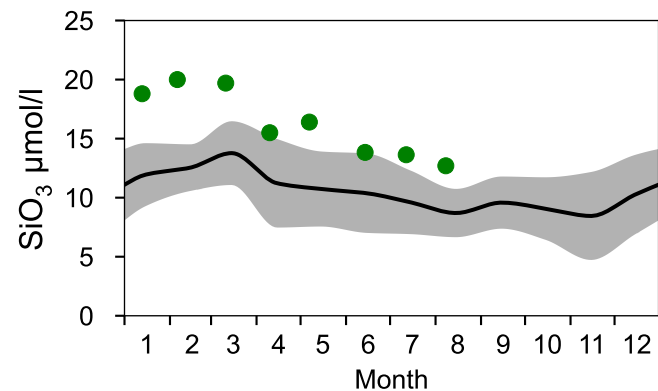
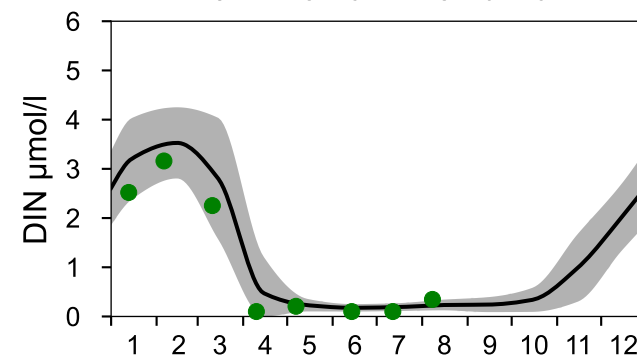
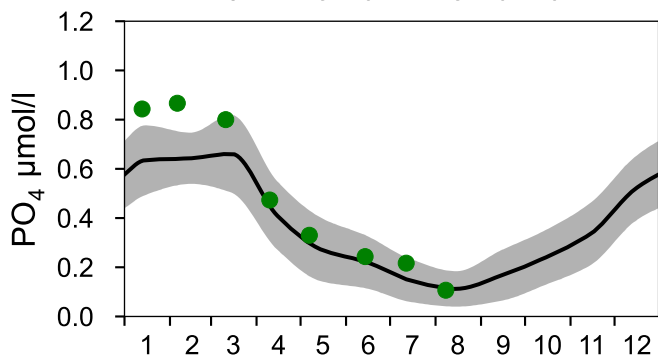
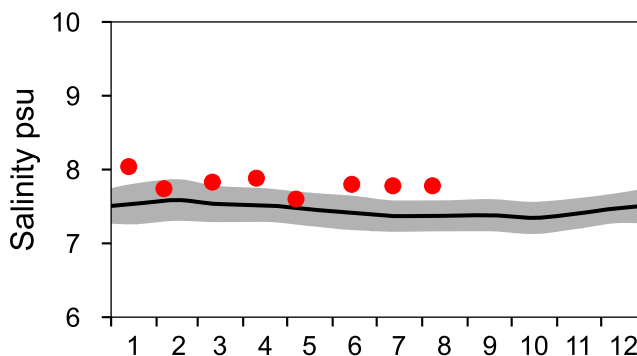
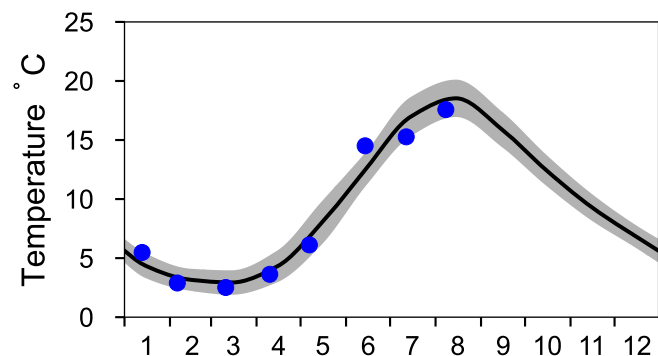
# Vertical profiles BY4 CHRISTIANSÖ August



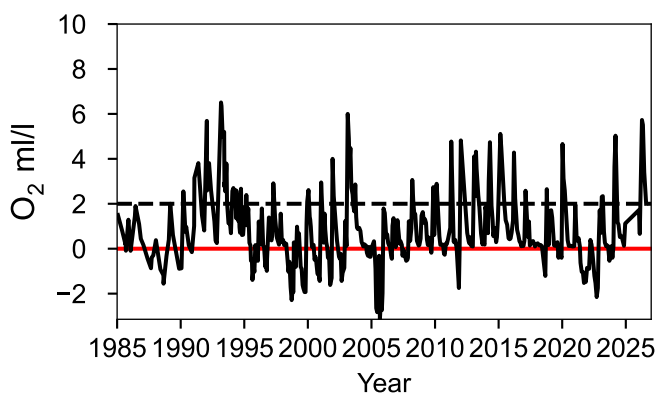
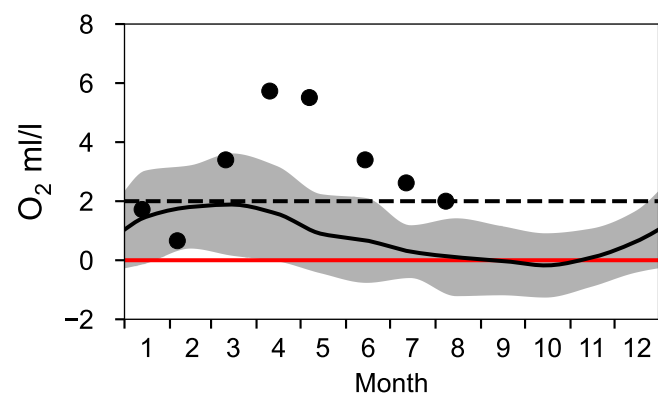
# STATION BY5 BORNHOLMSDJ SURFACE WATER (0-10 m)

Annual Cycles

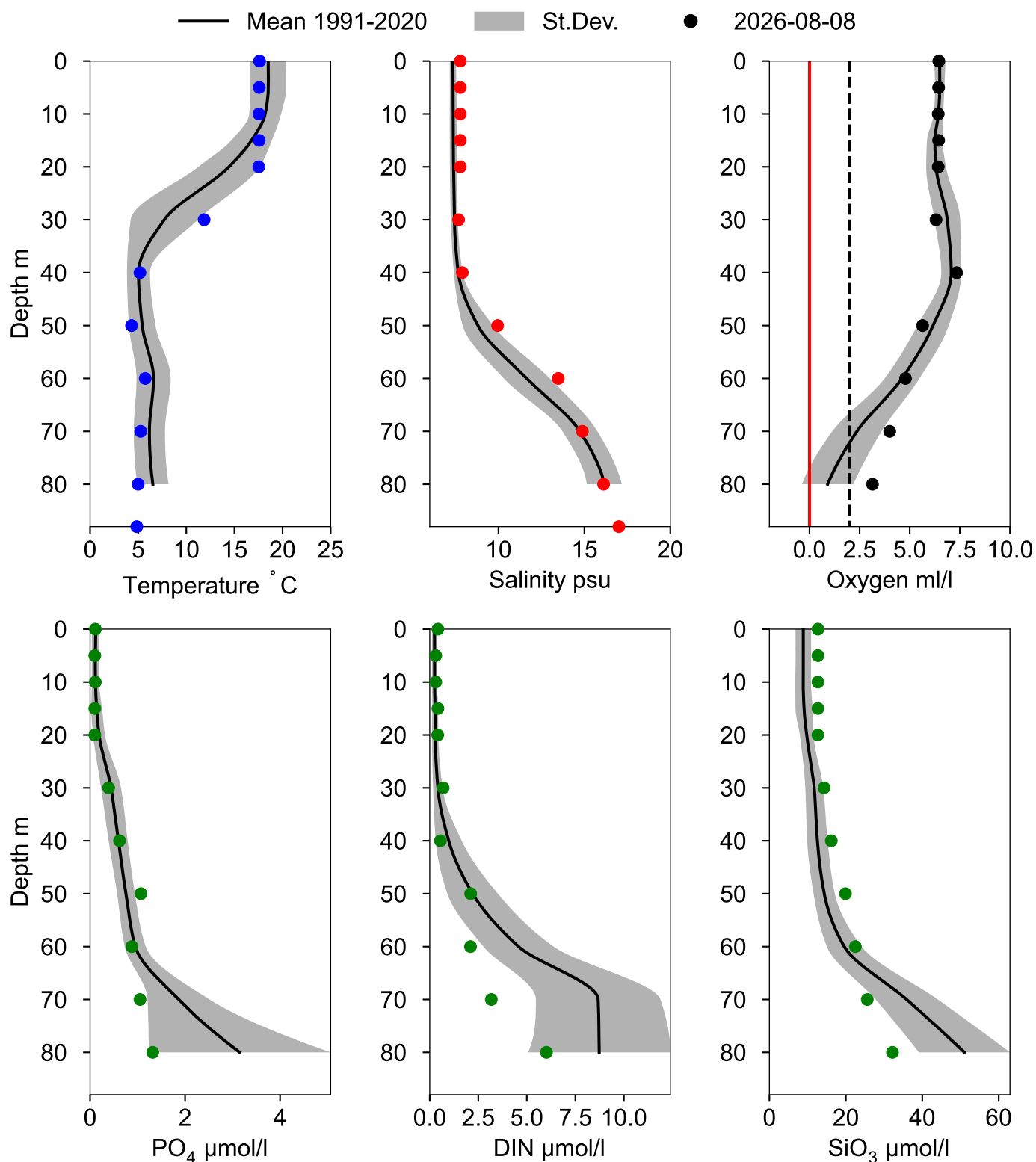
— Mean 1991-2020    St.Dev.    ● 2026



## OXYGEN IN BOTTOM WATER (depth >= 80 m)



# Vertical profiles BY5 BORNHOLMSDJ August



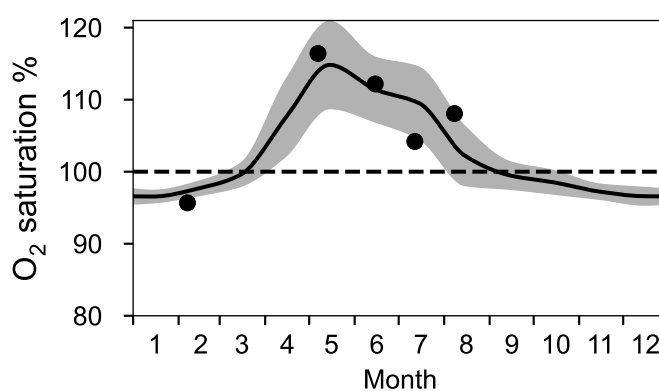
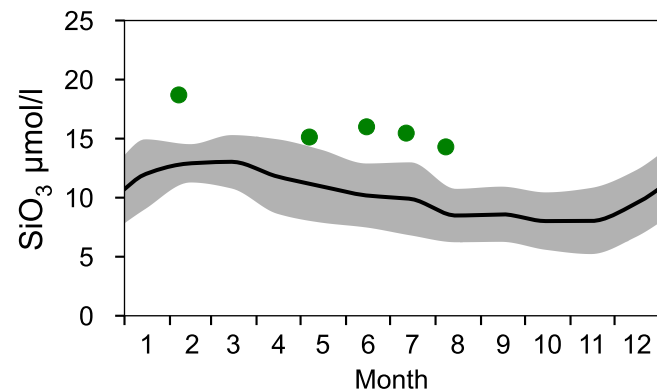
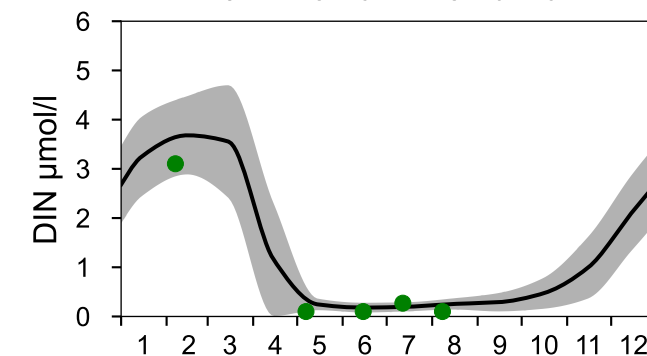
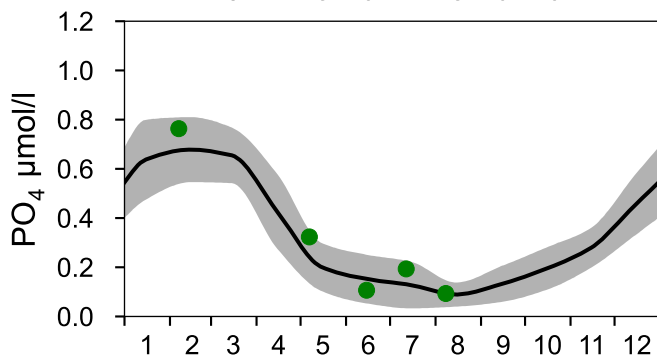
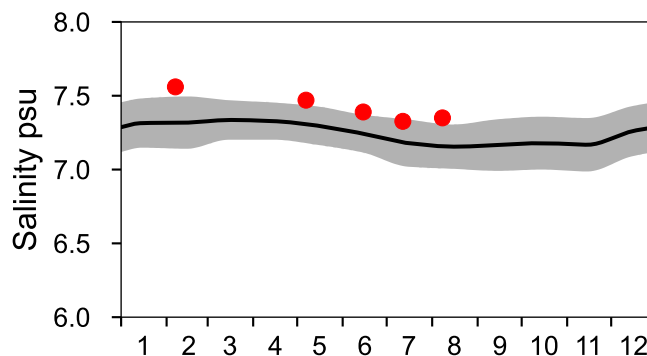
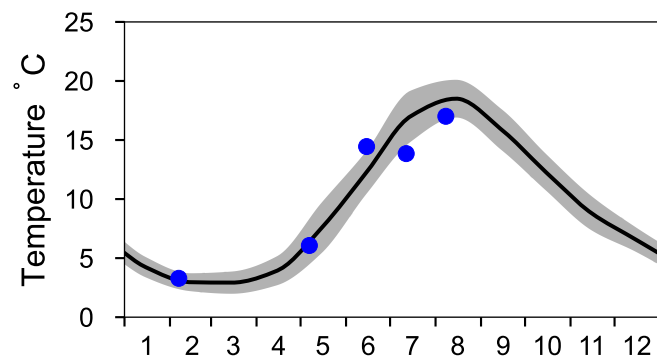
# STATION BCS III-10 SURFACE WATER (0-10 m)

Annual Cycles

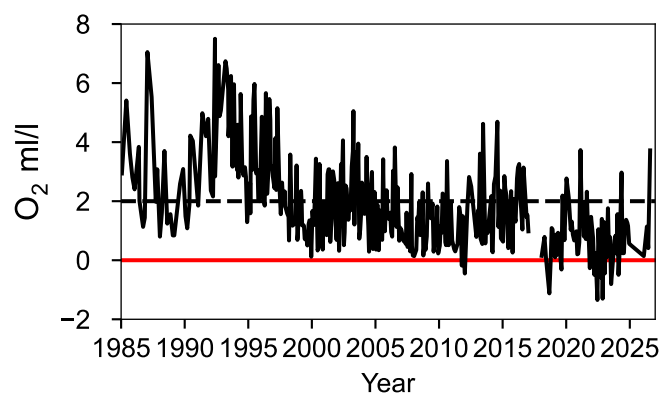
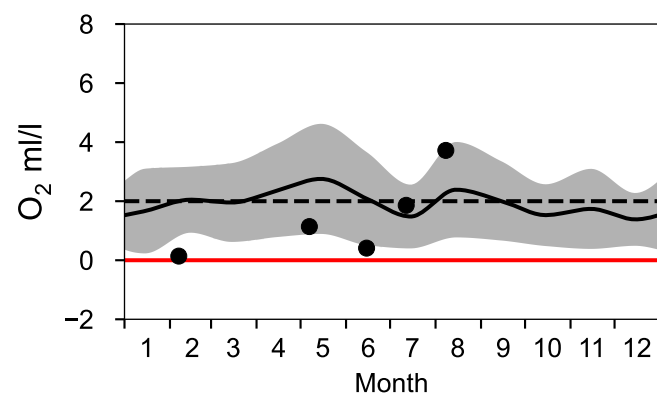
— Mean 1991-2020

■ St.Dev.

● 2026

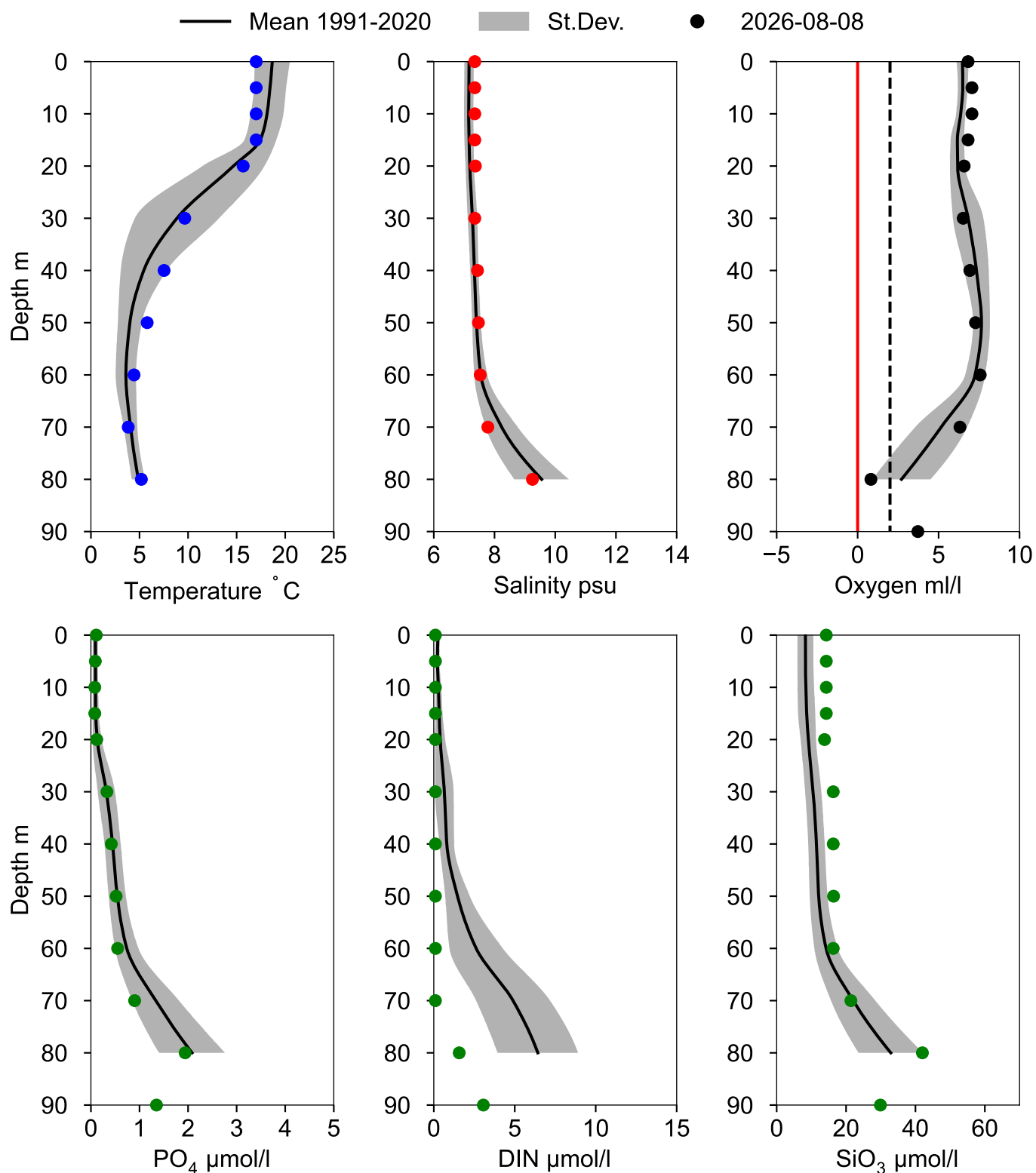


## OXYGEN IN BOTTOM WATER (depth >= 80 m)



# Vertical profiles BCS III-10

## August



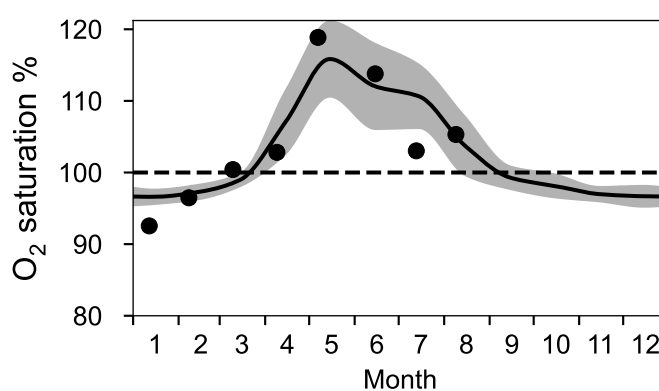
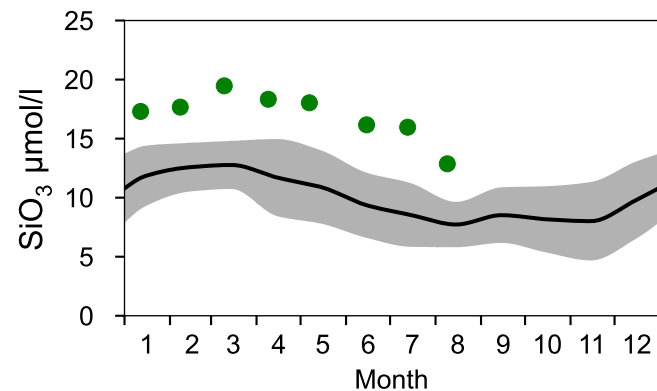
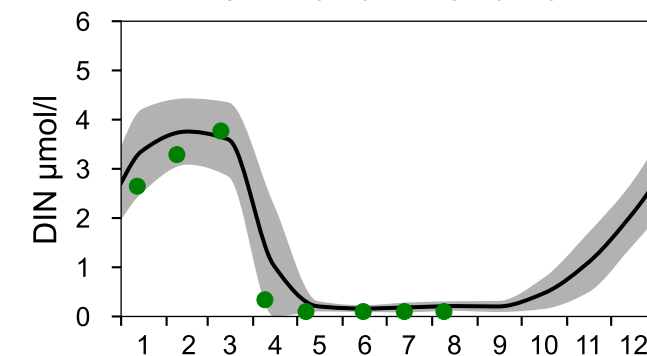
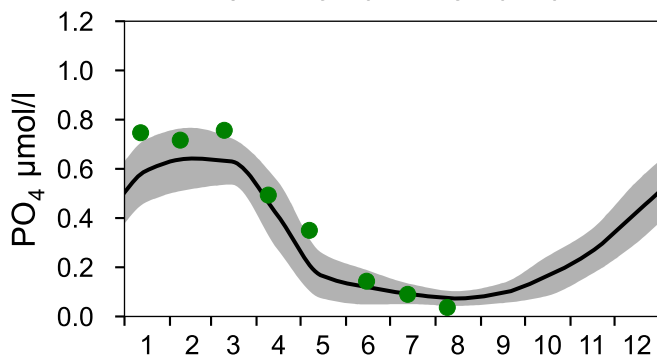
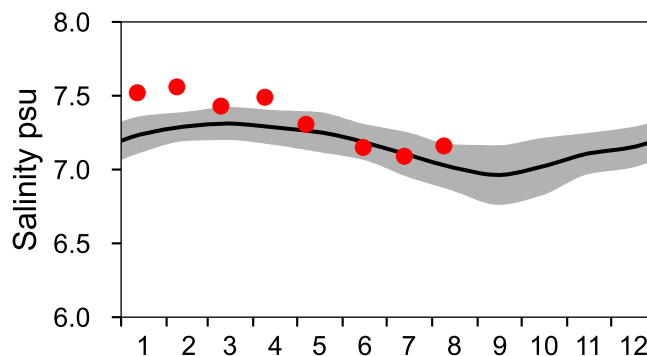
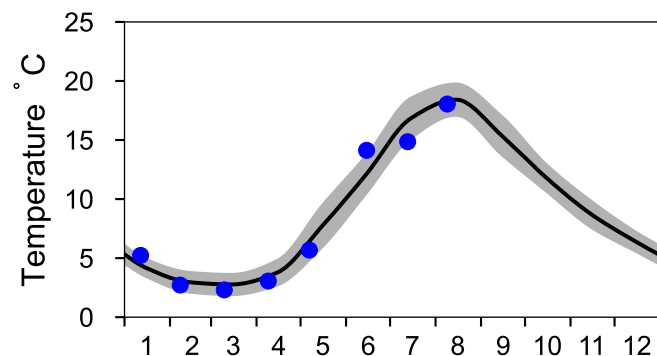
# STATION BY10 SURFACE WATER (0-10 m)

Annual Cycles

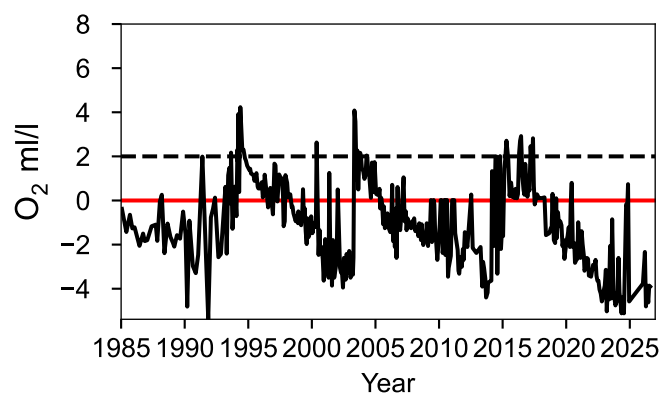
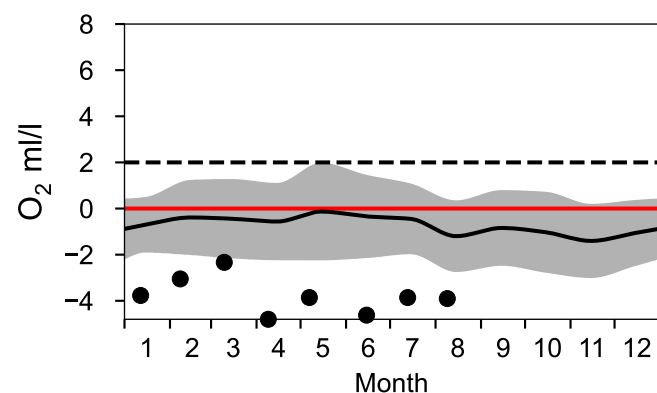
— Mean 1991-2020

■ St.Dev.

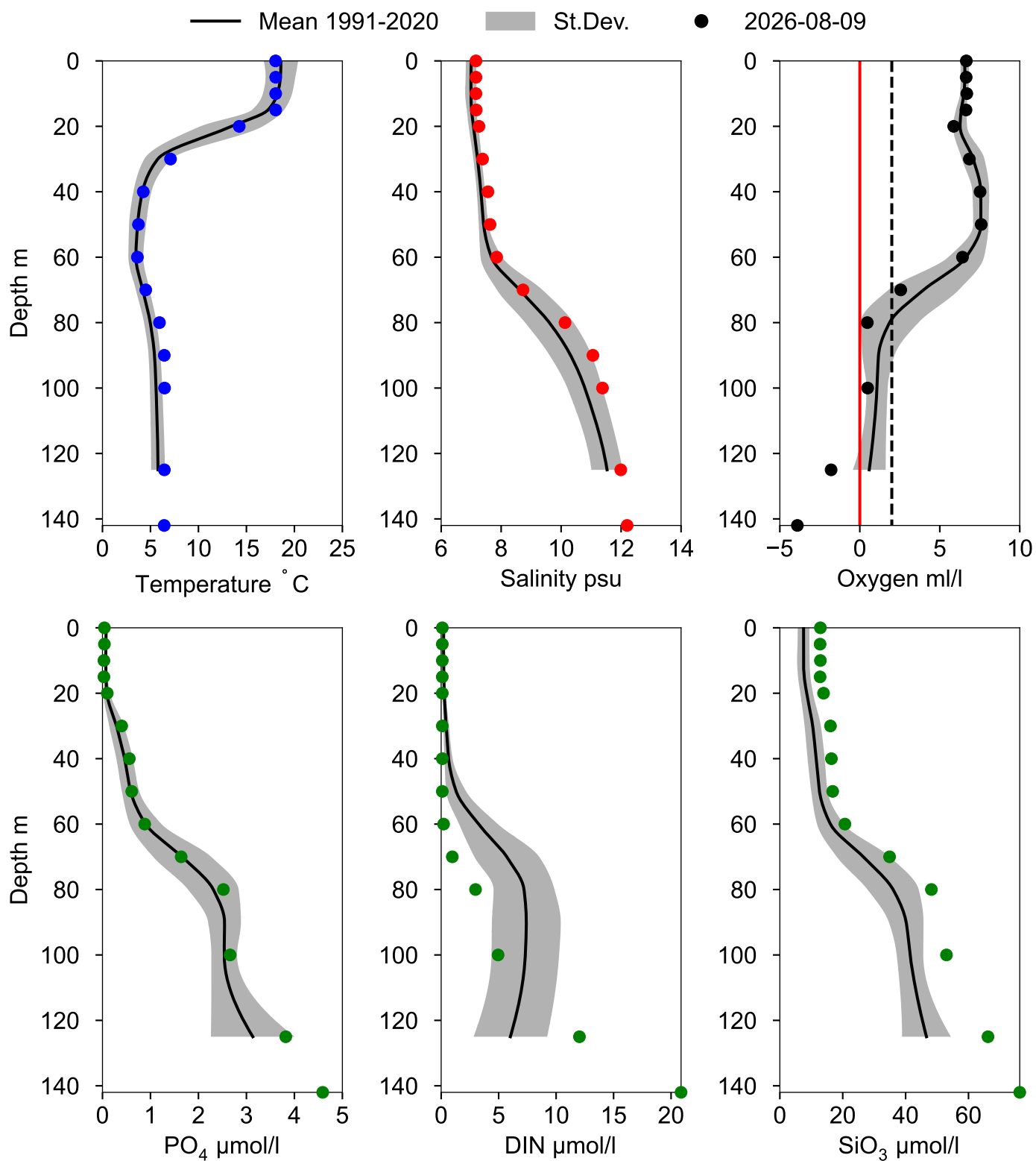
● 2026



## OXYGEN IN BOTTOM WATER (depth >= 125 m)



# Vertical profiles BY10 August



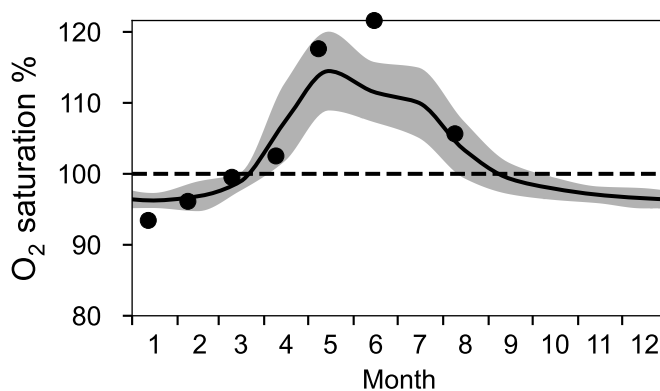
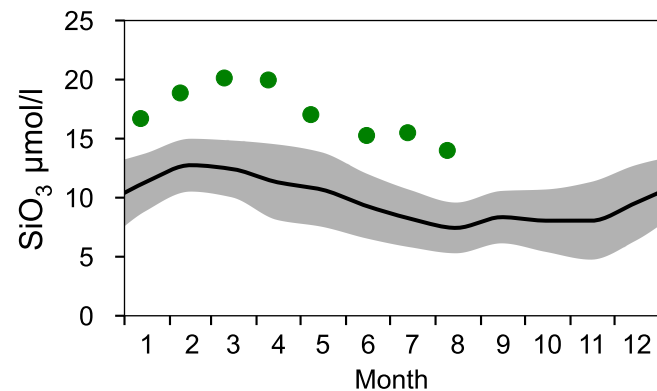
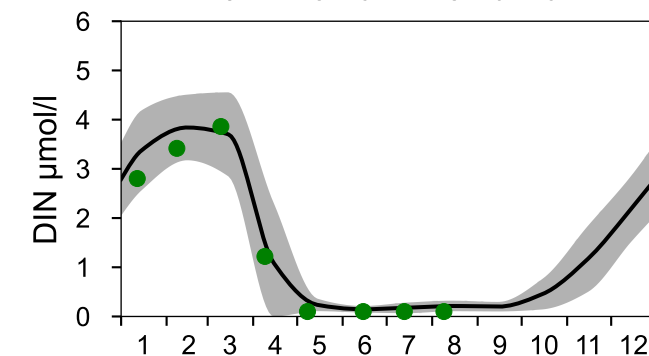
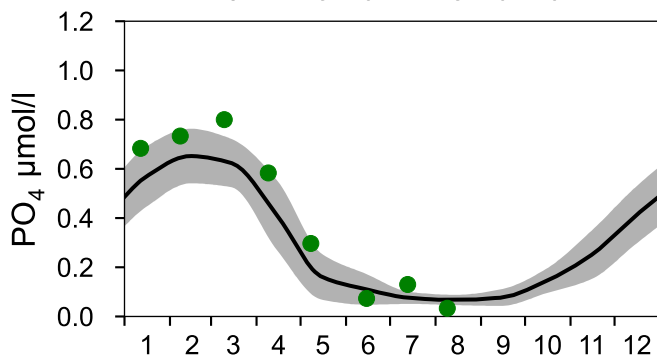
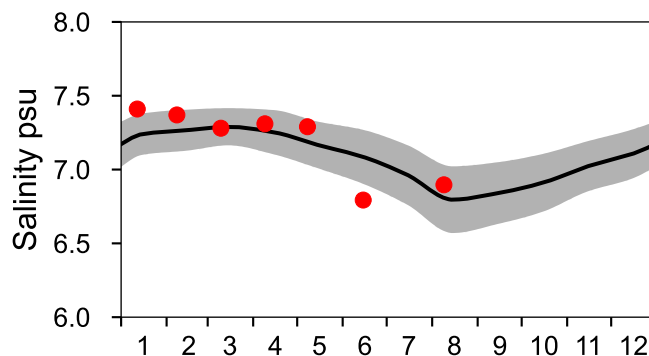
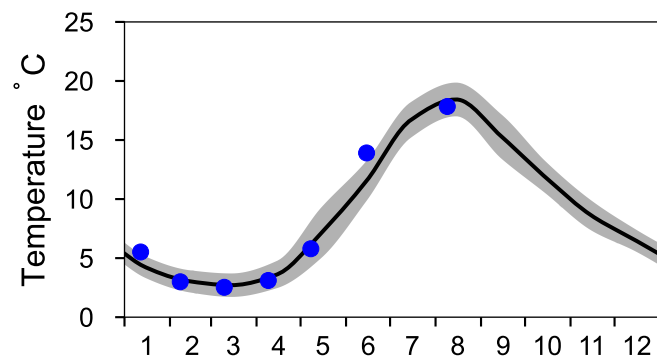
# STATION BY15 GOTLANDSDJ SURFACE WATER (0-10 m)

Annual Cycles

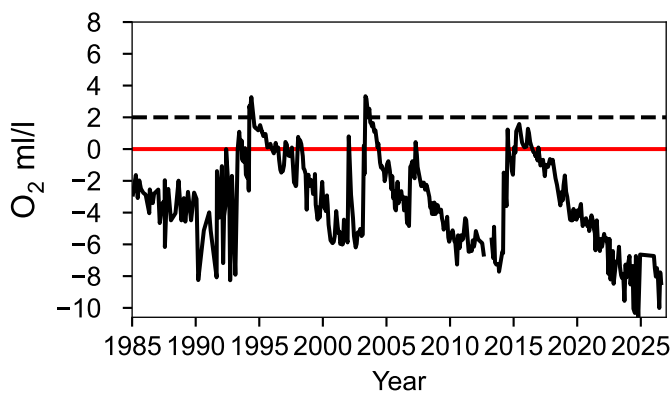
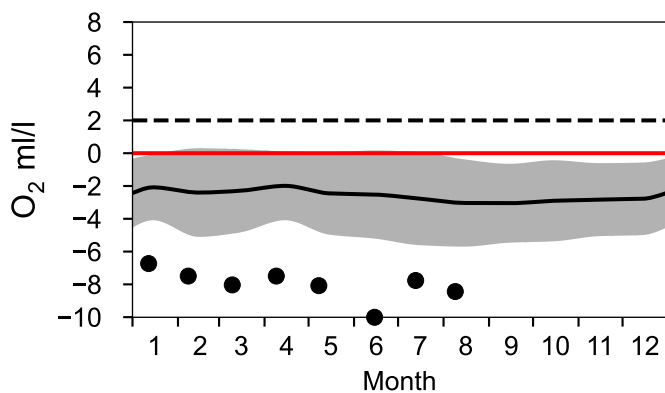
— Mean 1991-2020

■ St.Dev.

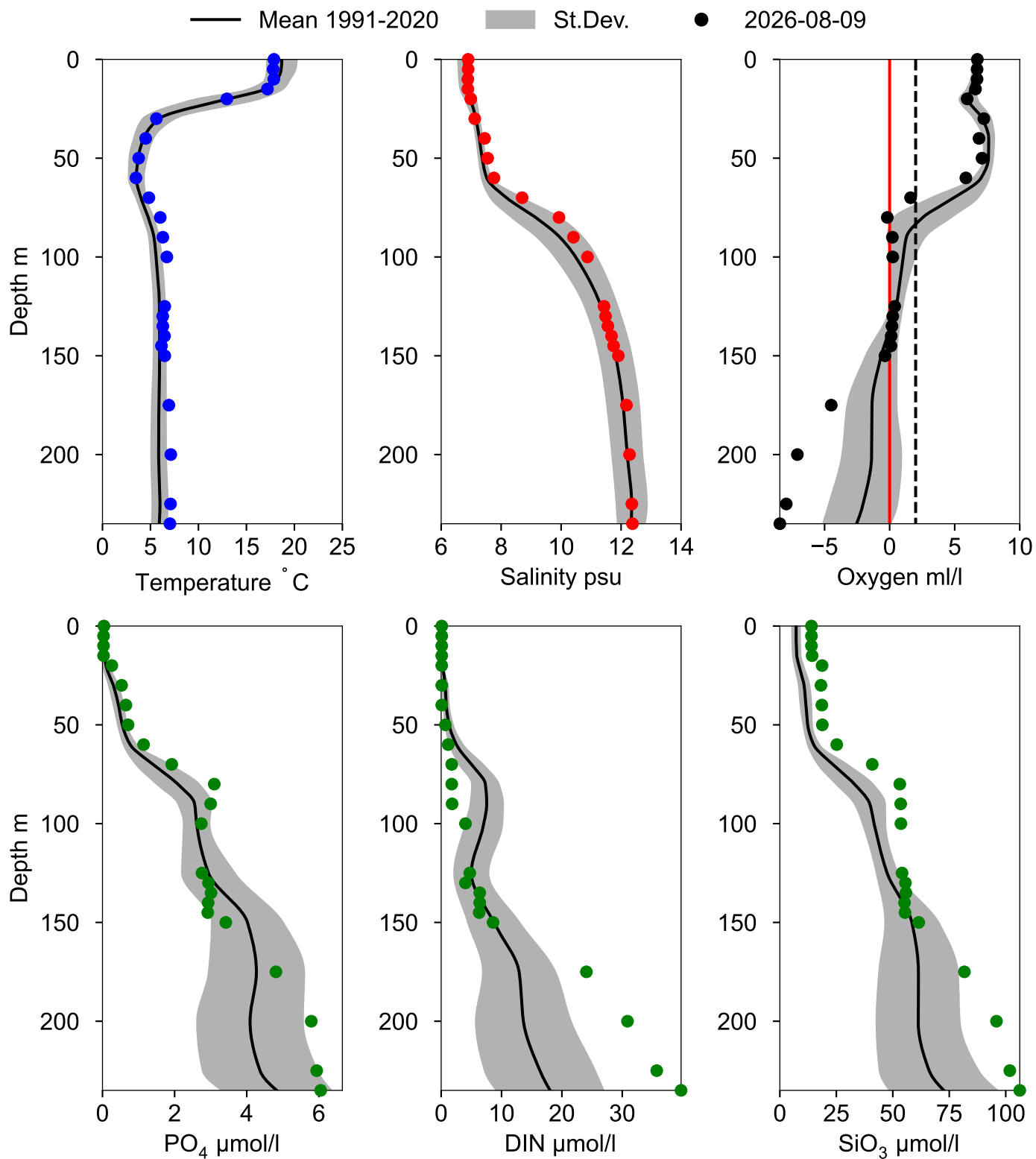
● 2026



## OXYGEN IN BOTTOM WATER (depth >= 225 m)



# Vertical profiles BY15 GOTLANDSDJ August



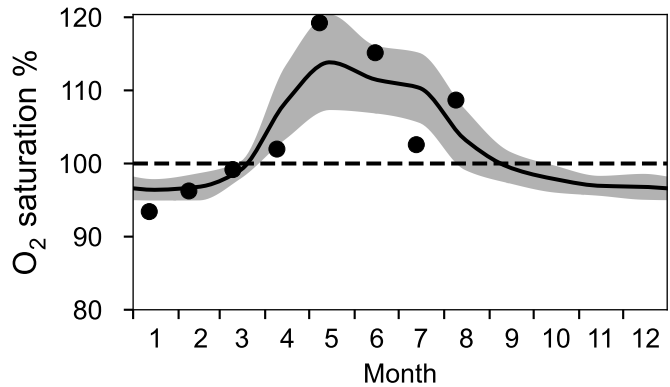
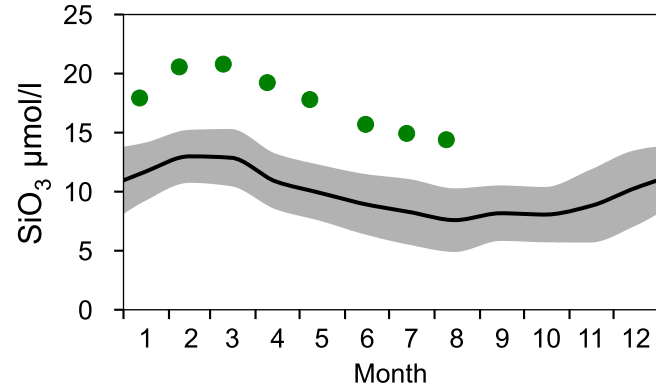
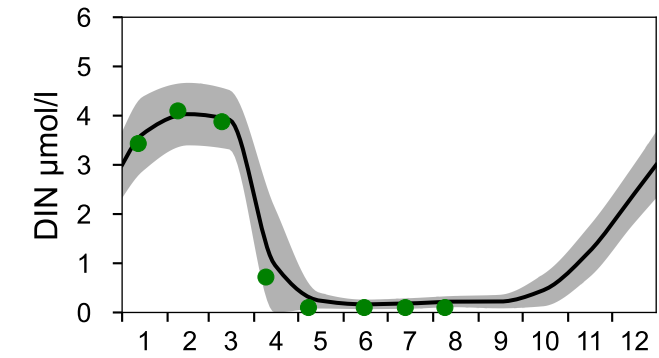
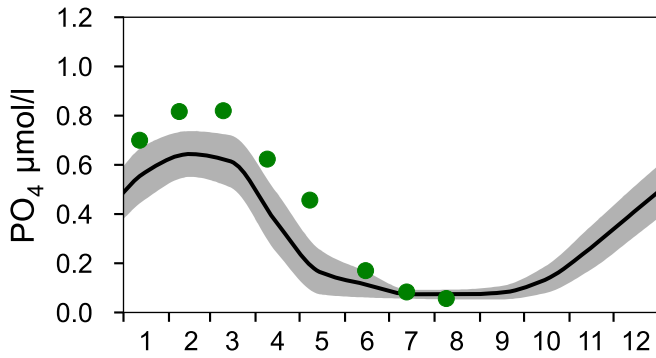
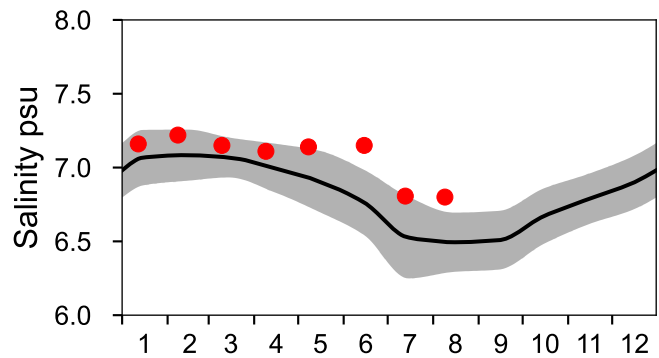
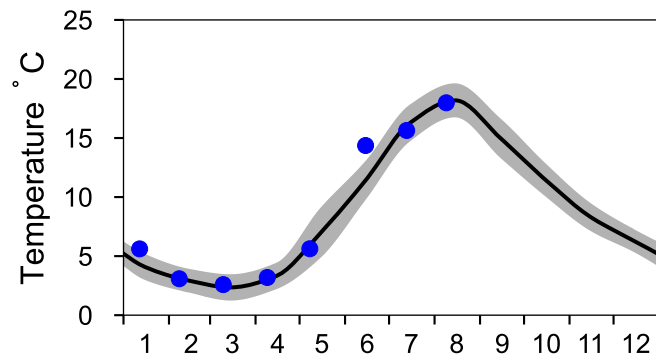
# STATION BY20 FÄRÖDJ SURFACE WATER (0-10 m)

Annual Cycles

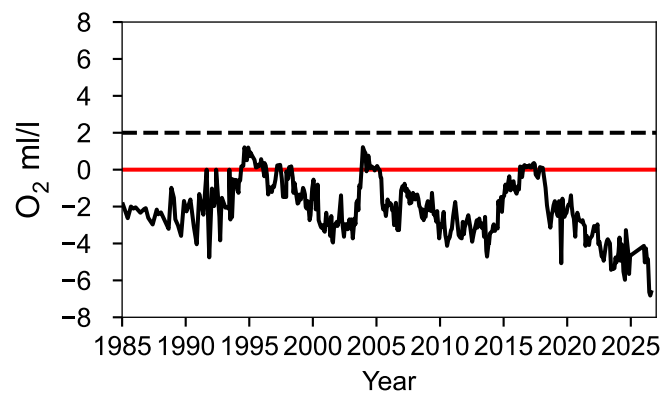
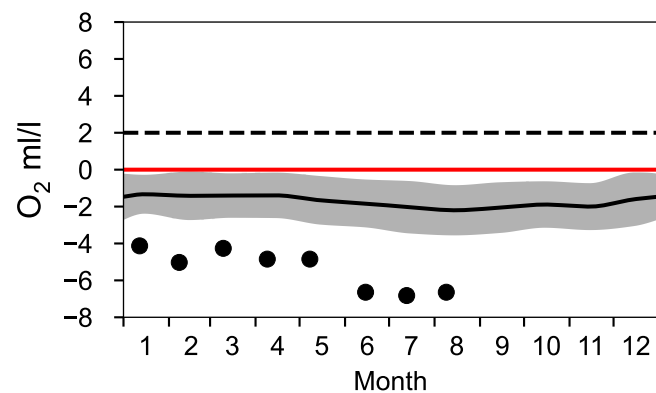
— Mean 1991-2020

■ St.Dev.

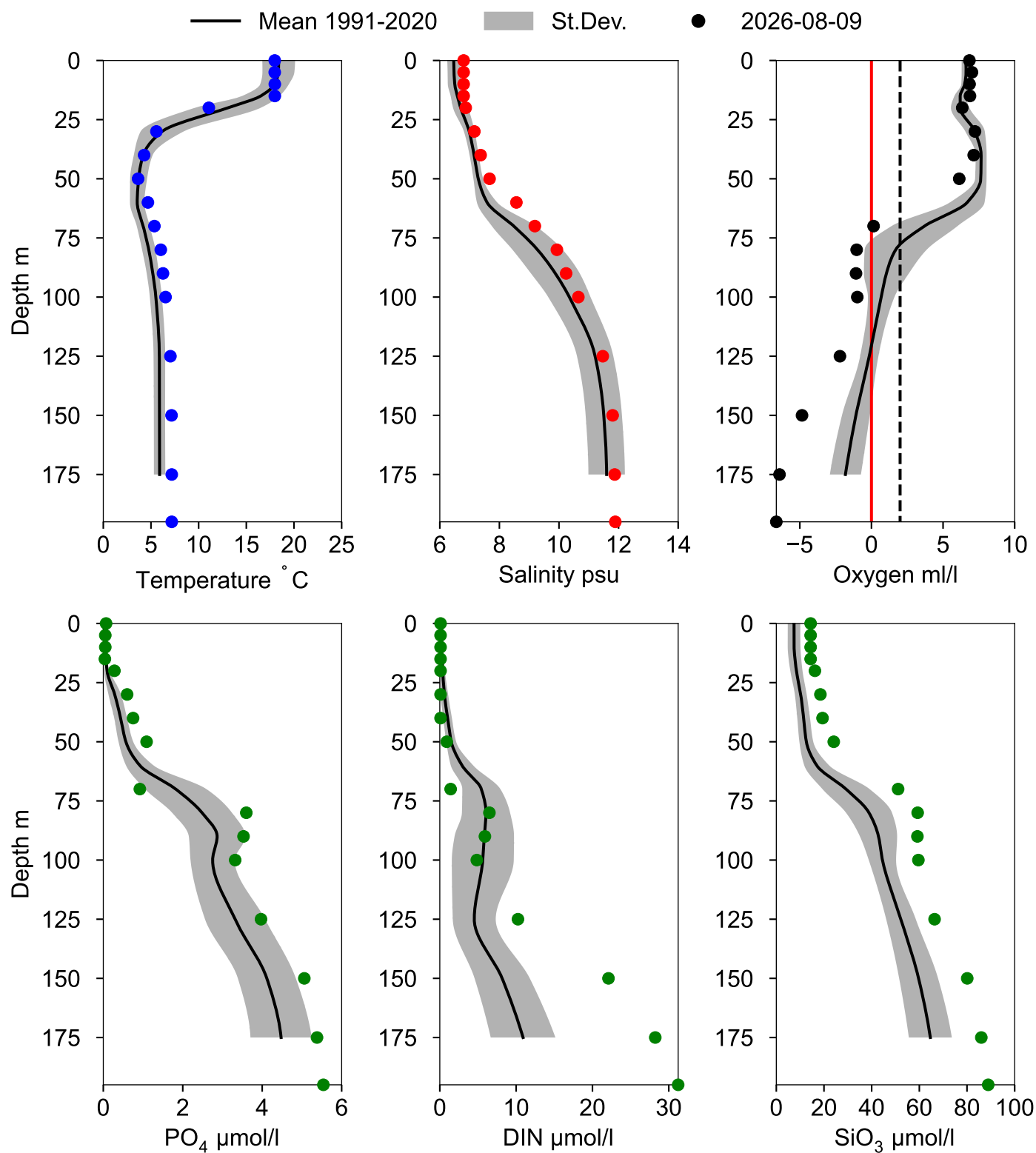
● 2026



## OXYGEN IN BOTTOM WATER (depth >= 175 m)



# Vertical profiles BY20 FÅRÖDJ August



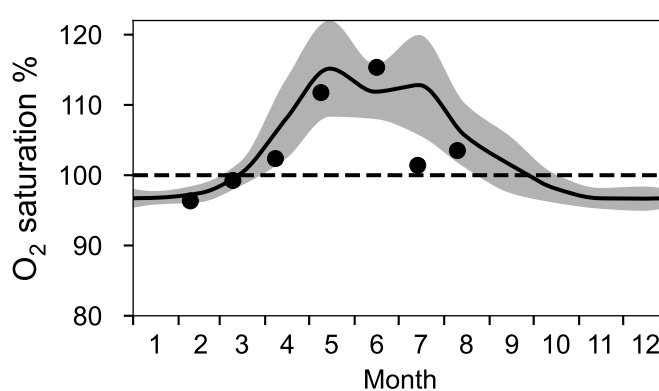
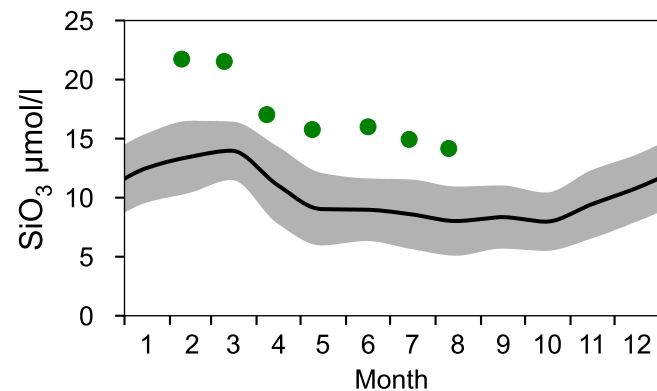
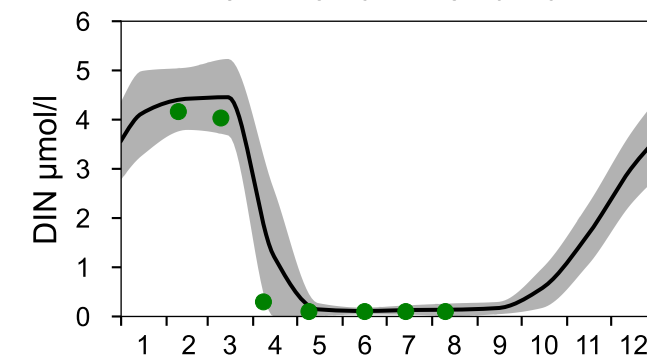
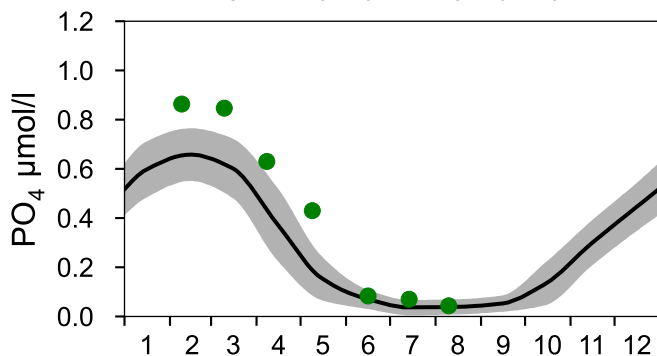
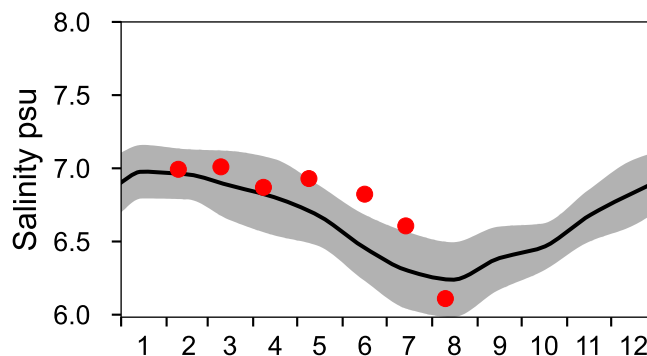
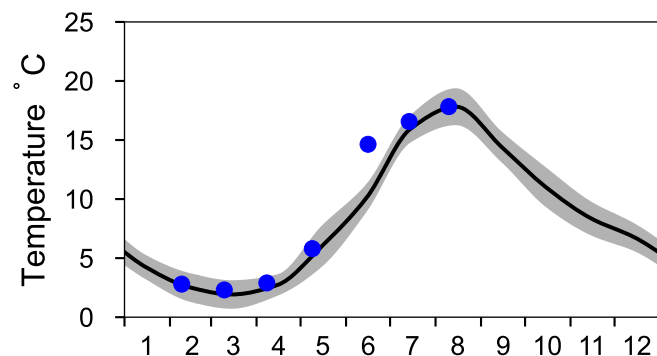
# STATION BY29 / LL19 SURFACE WATER (0-10 m)

Annual Cycles

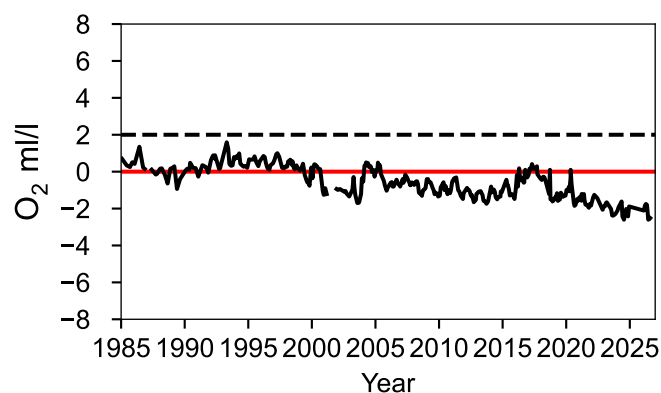
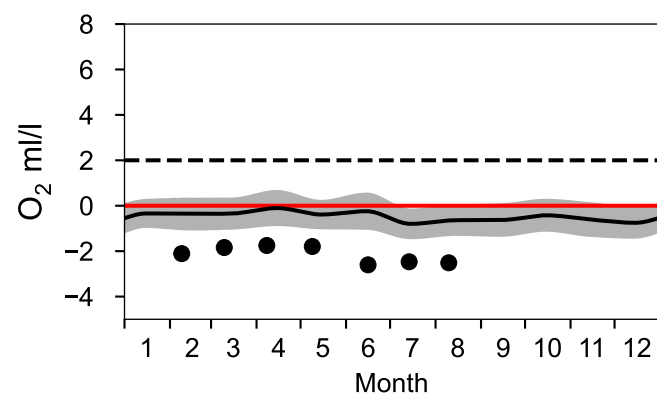
— Mean 1991-2020

■ St.Dev.

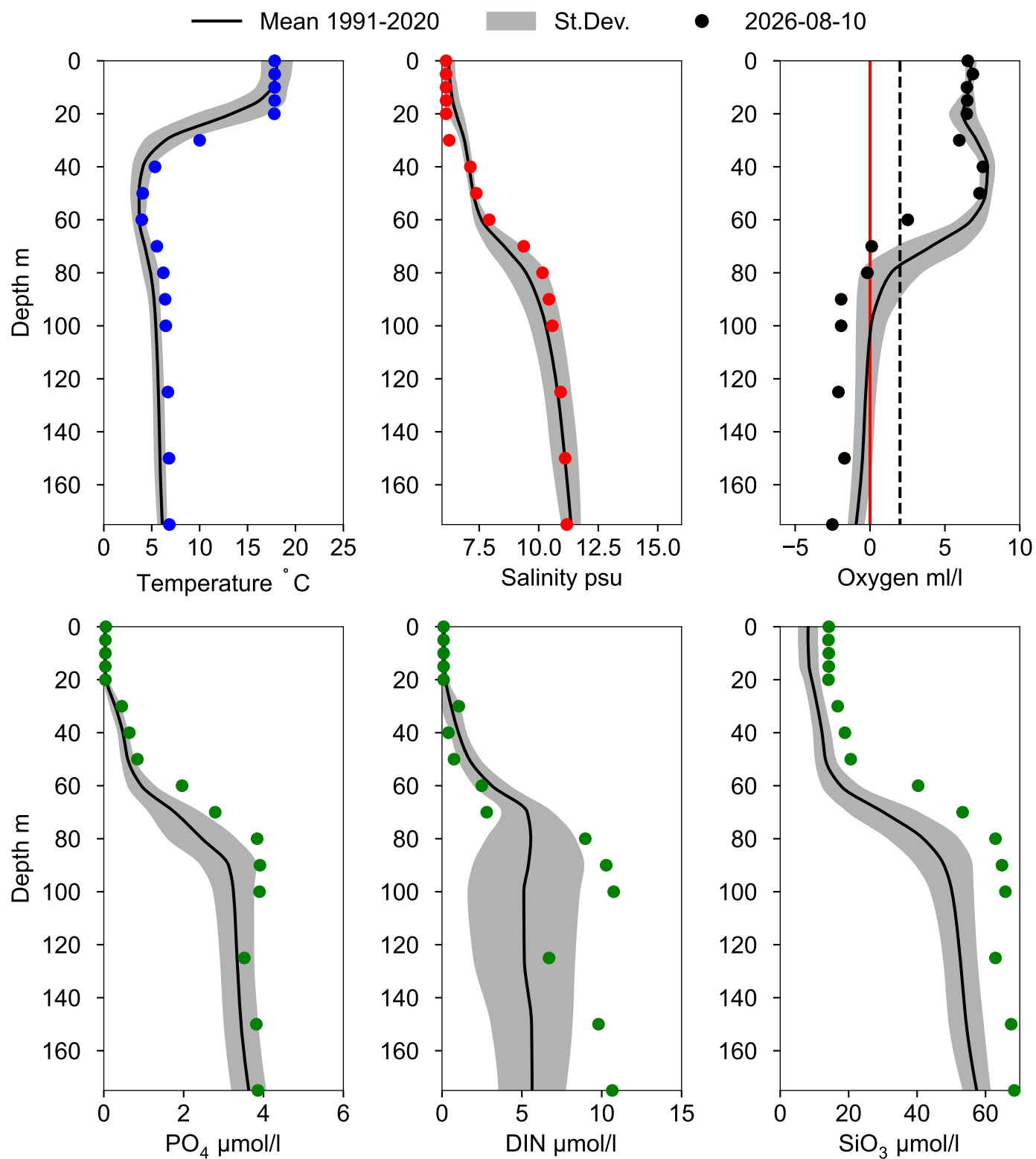
● 2026



## OXYGEN IN BOTTOM WATER (depth >= 150 m)



# Vertical profiles BY29 / LL19 August



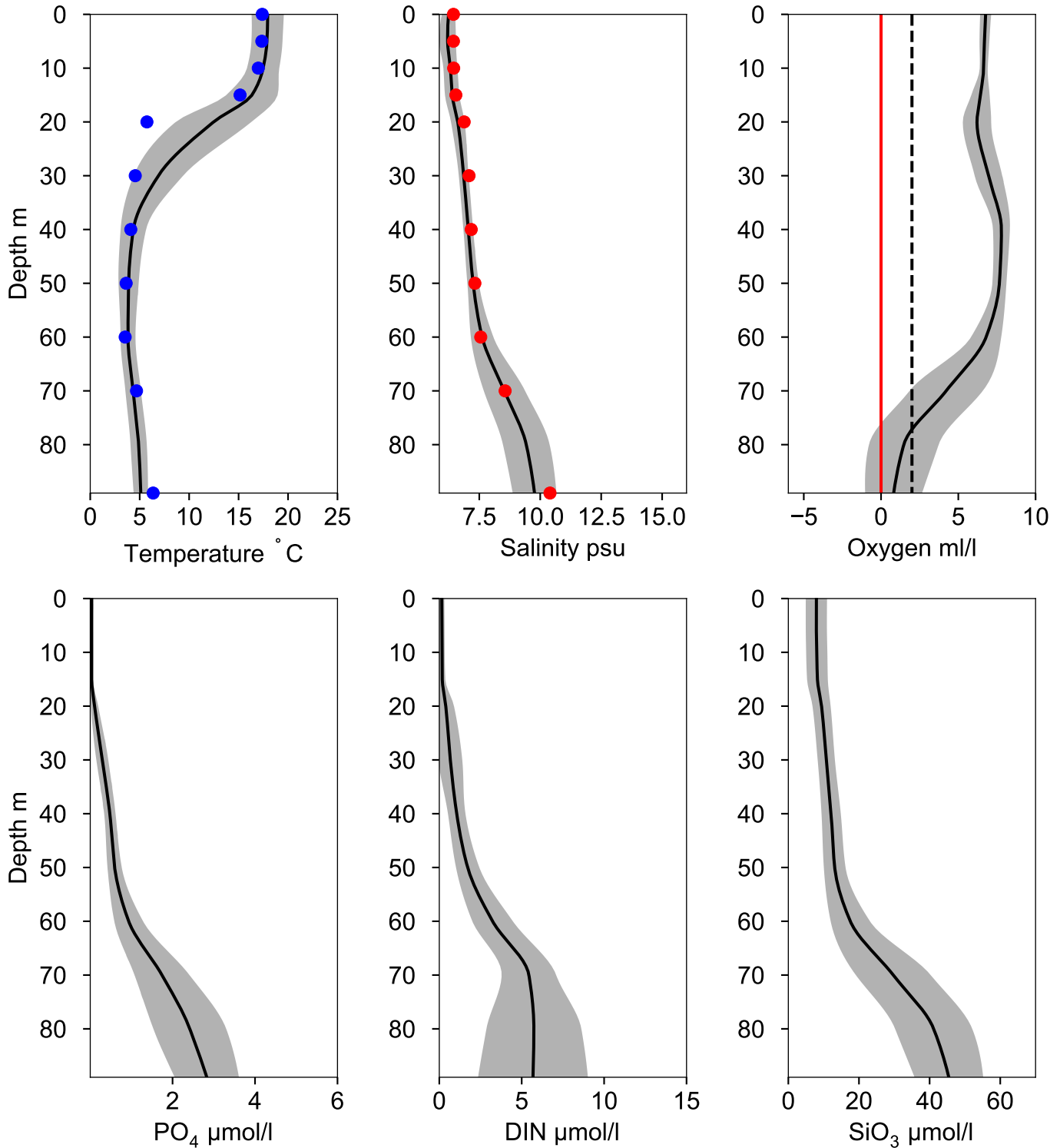
# Vertical profiles HUVUDSKÄR BUOY August

Statistics based on data from: Norra Egentliga Östersjön

— Mean 1991-2020

■ St.Dev.

● 2026-08-10



# STATION BY30 SURFACE WATER (0-10 m)

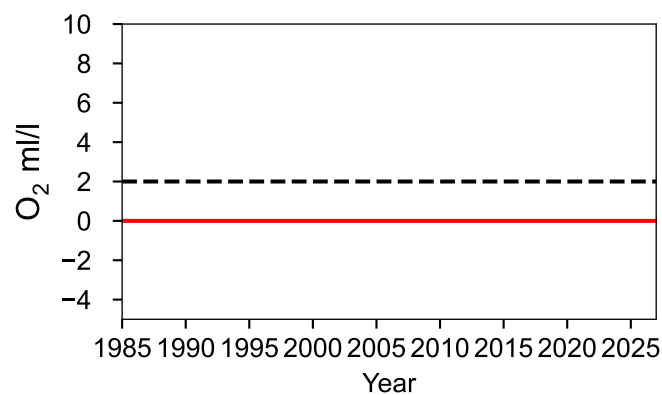
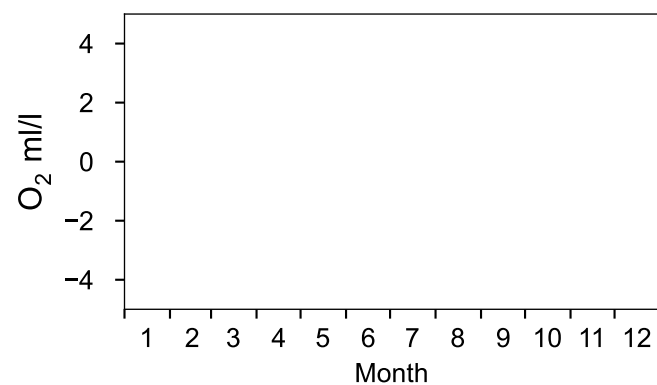
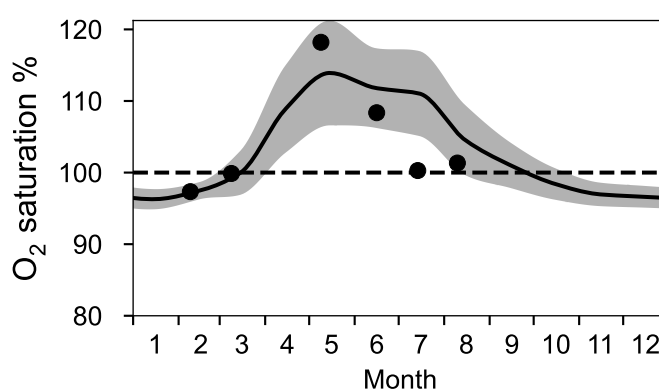
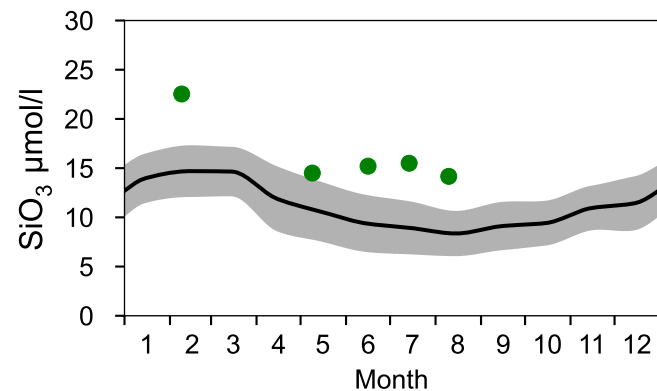
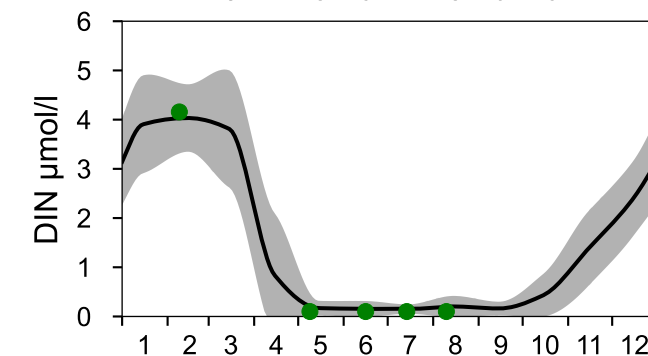
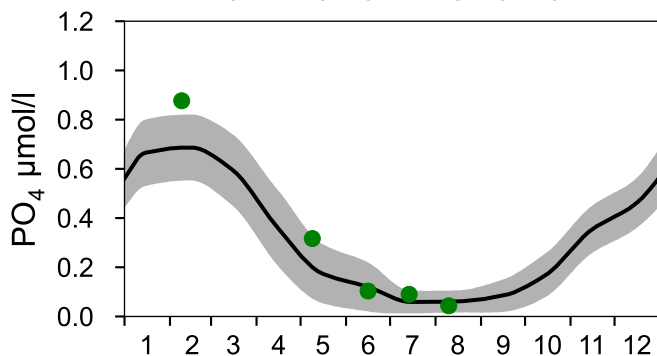
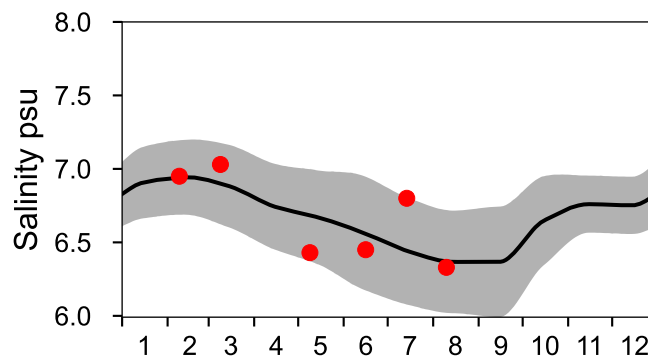
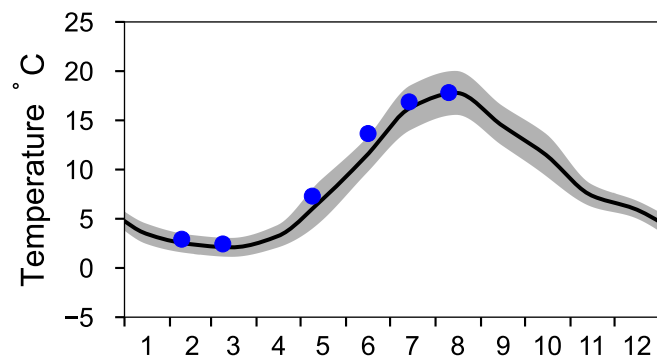
## Annual Cycles

Statistics based on data from: Västra Gotlandshavet

— Mean 1991-2020

■ St.Dev.

● 2026



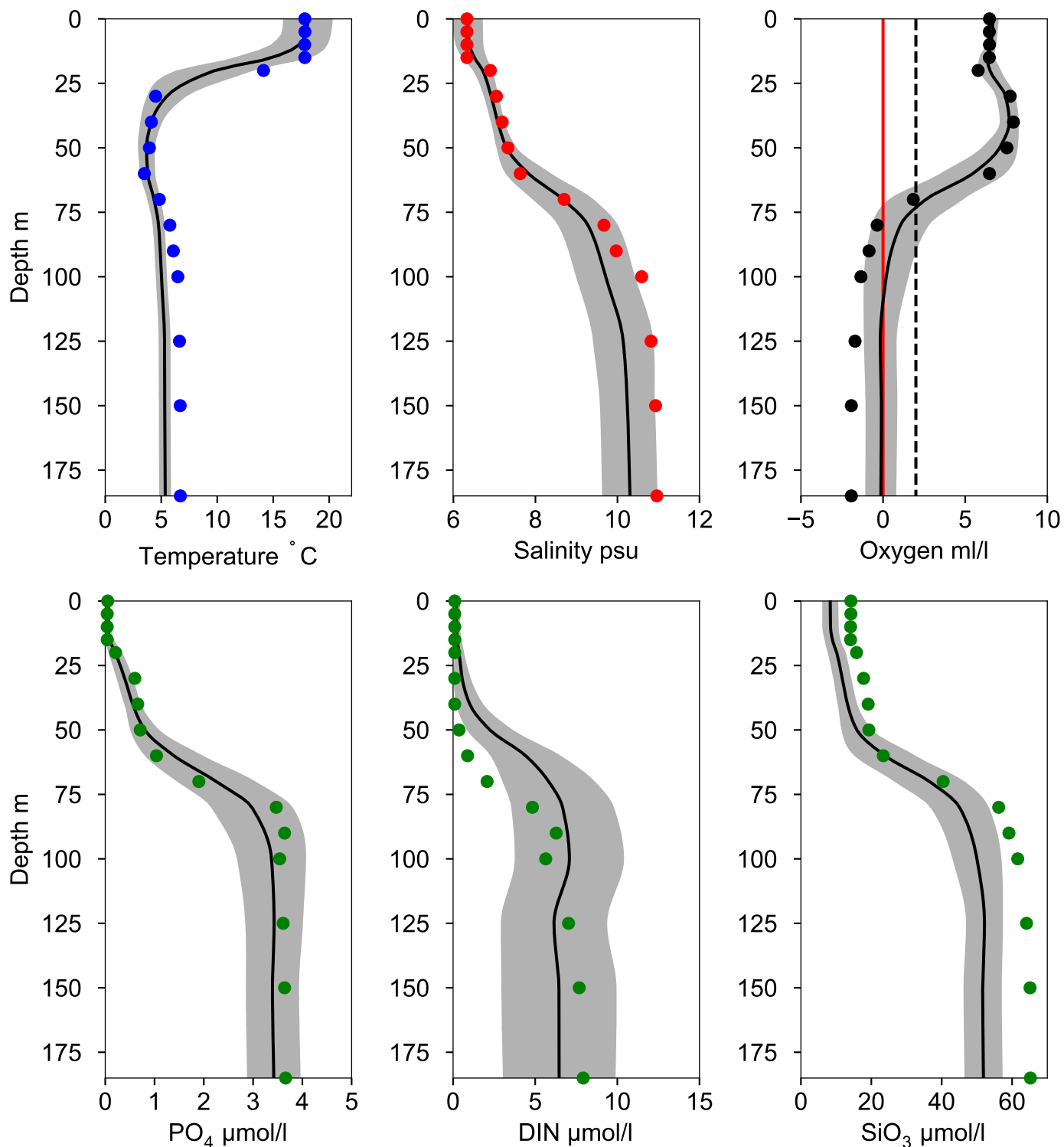
# Vertical profiles BY30 August

Statistics based on data from: Västra Gotlandshavet

— Mean 1991-2020

■ St.Dev.

● 2026-08-10



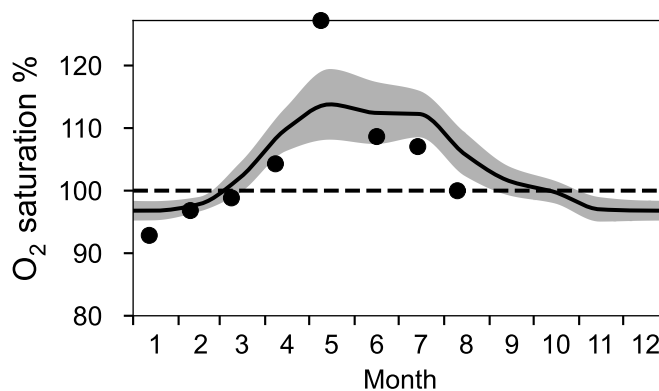
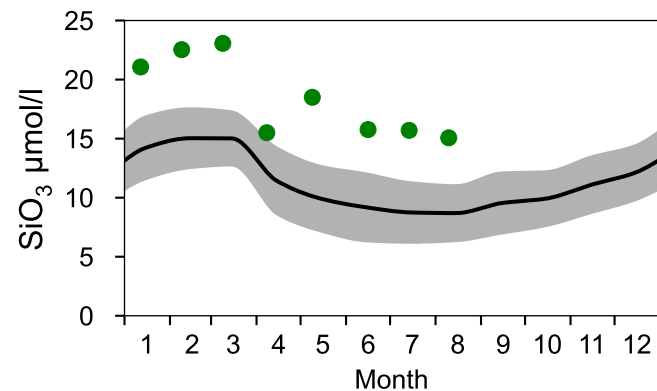
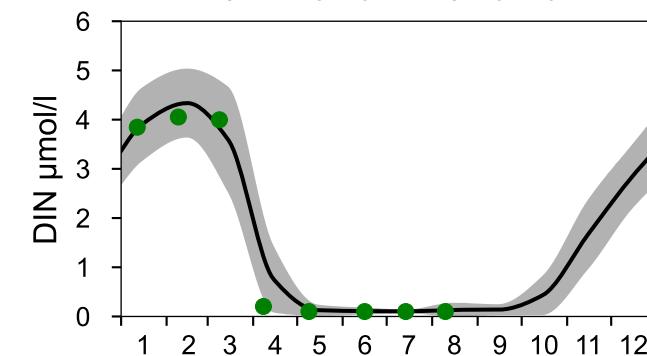
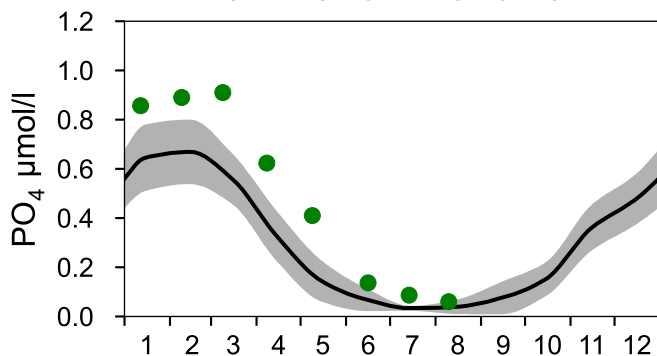
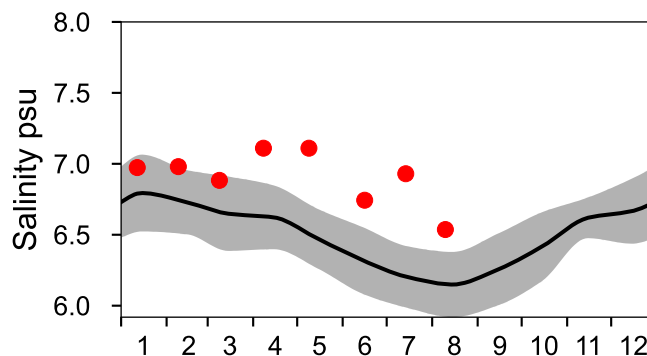
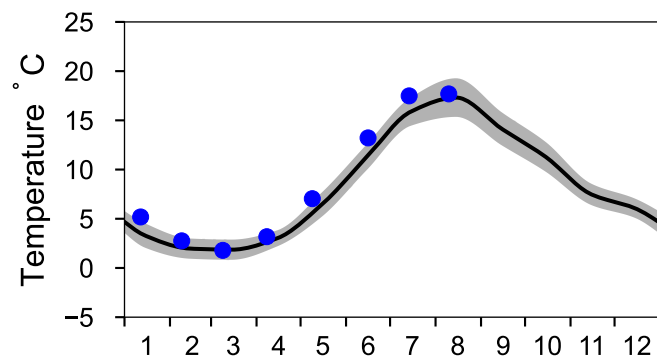
# STATION BY31 LANDSORTSDJ SURFACE WATER (0-10 m)

Annual Cycles

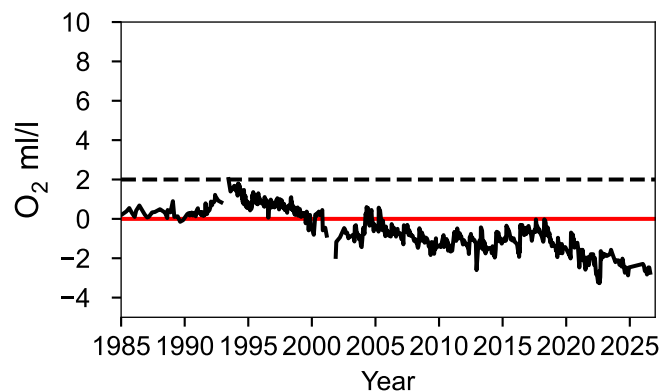
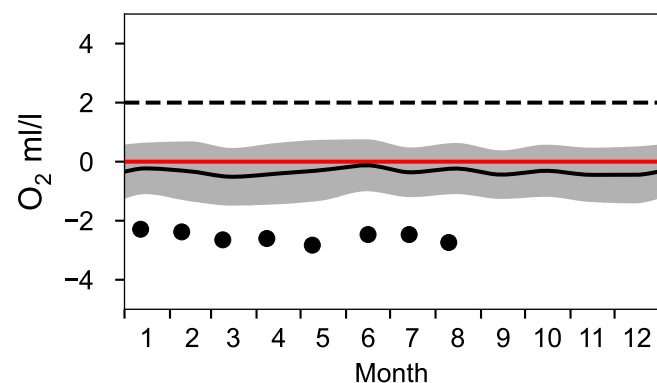
— Mean 1991-2020

■ St.Dev.

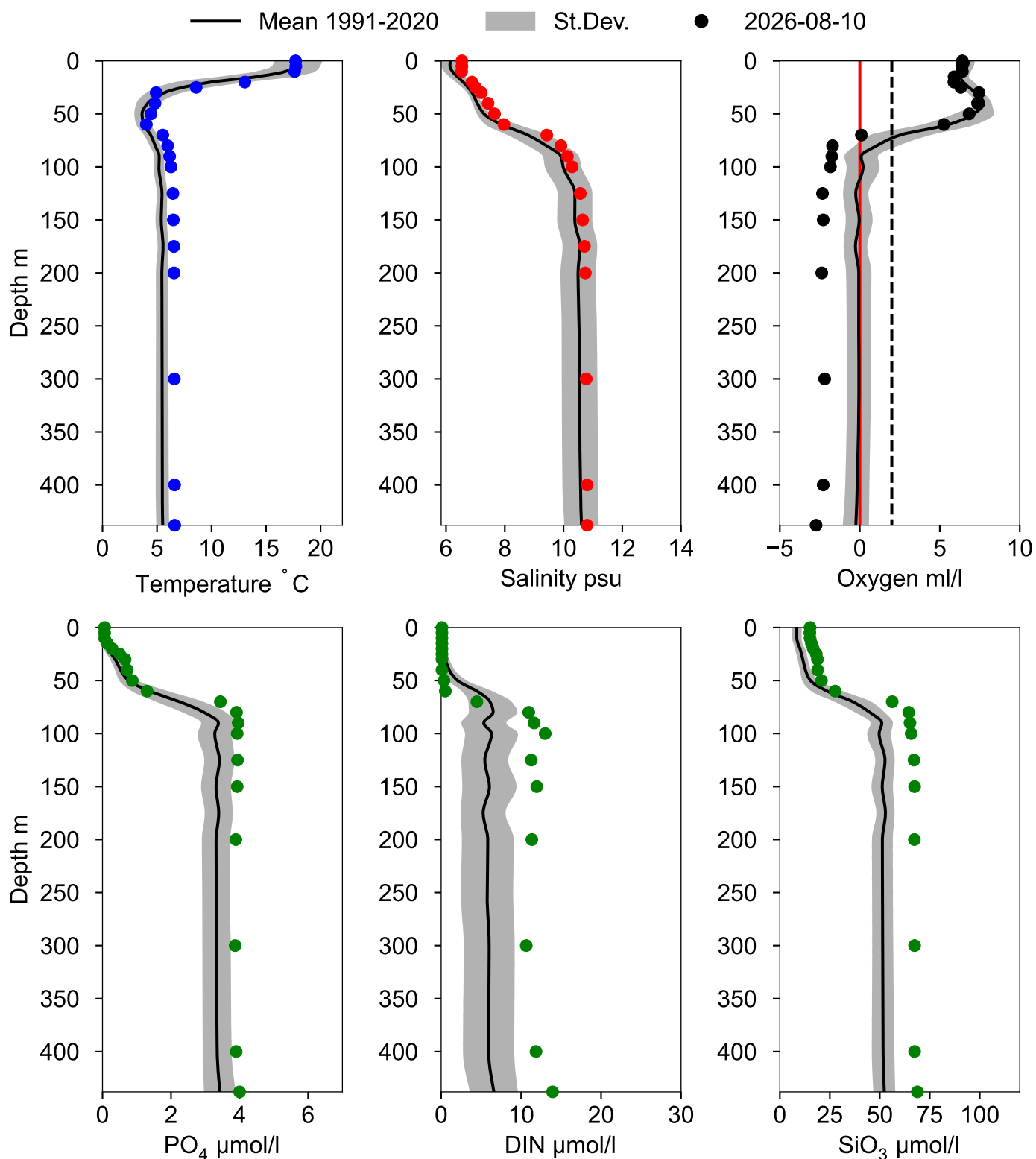
● 2026



## OXYGEN IN BOTTOM WATER (depth >= 419 m)



# Vertical profiles BY31 LANDSORTSDJ August



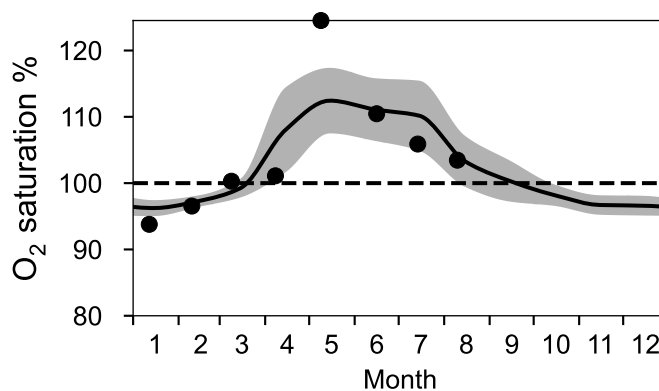
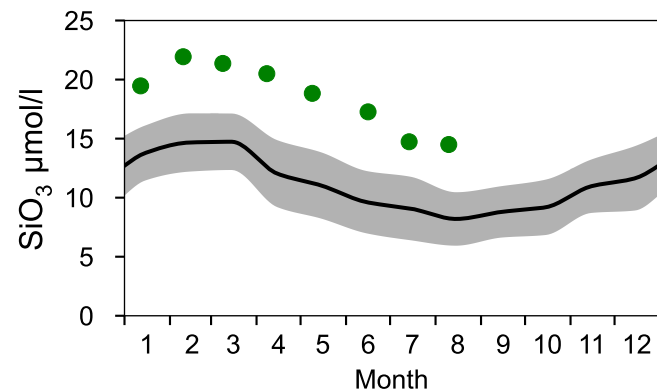
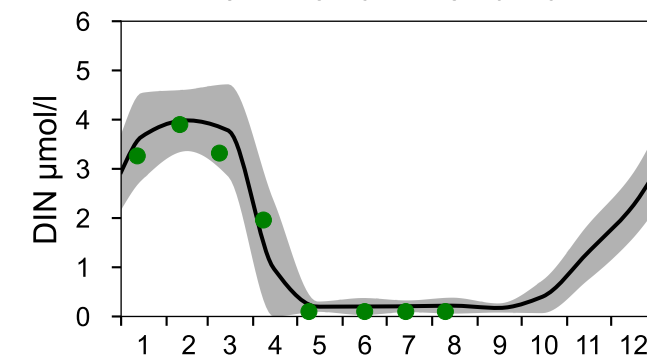
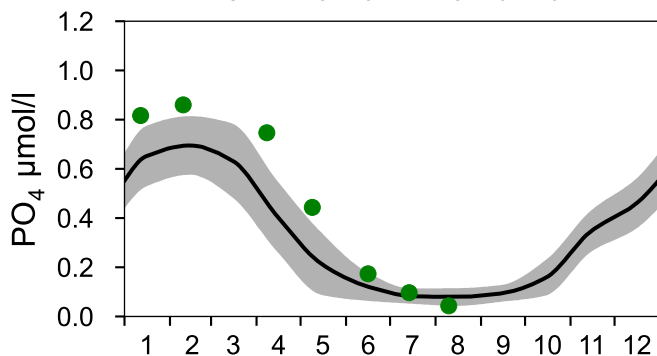
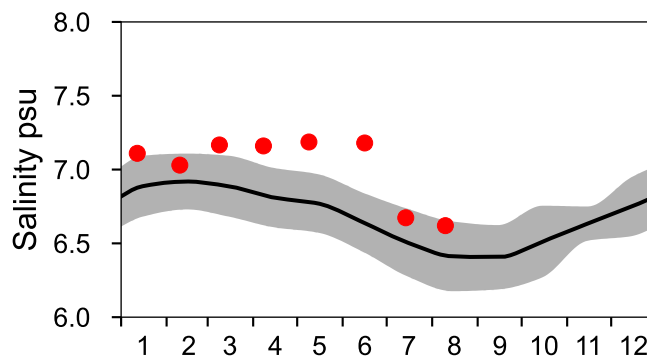
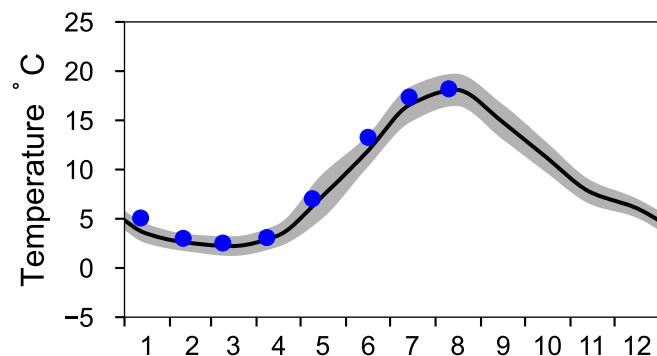
# STATION BY32 NORRKÖPINGSDJ SURFACE WATER (0-10 m)

Annual Cycles

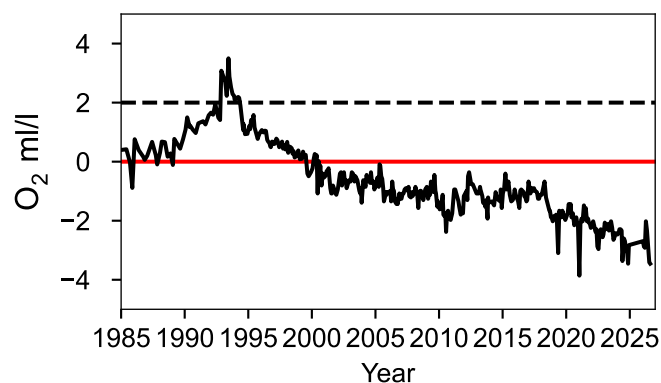
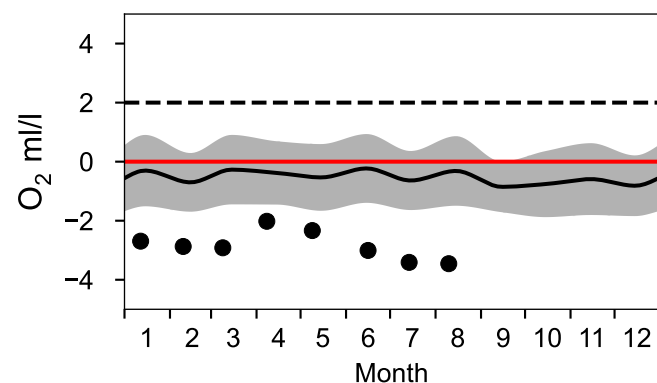
— Mean 1991-2020

■ St.Dev.

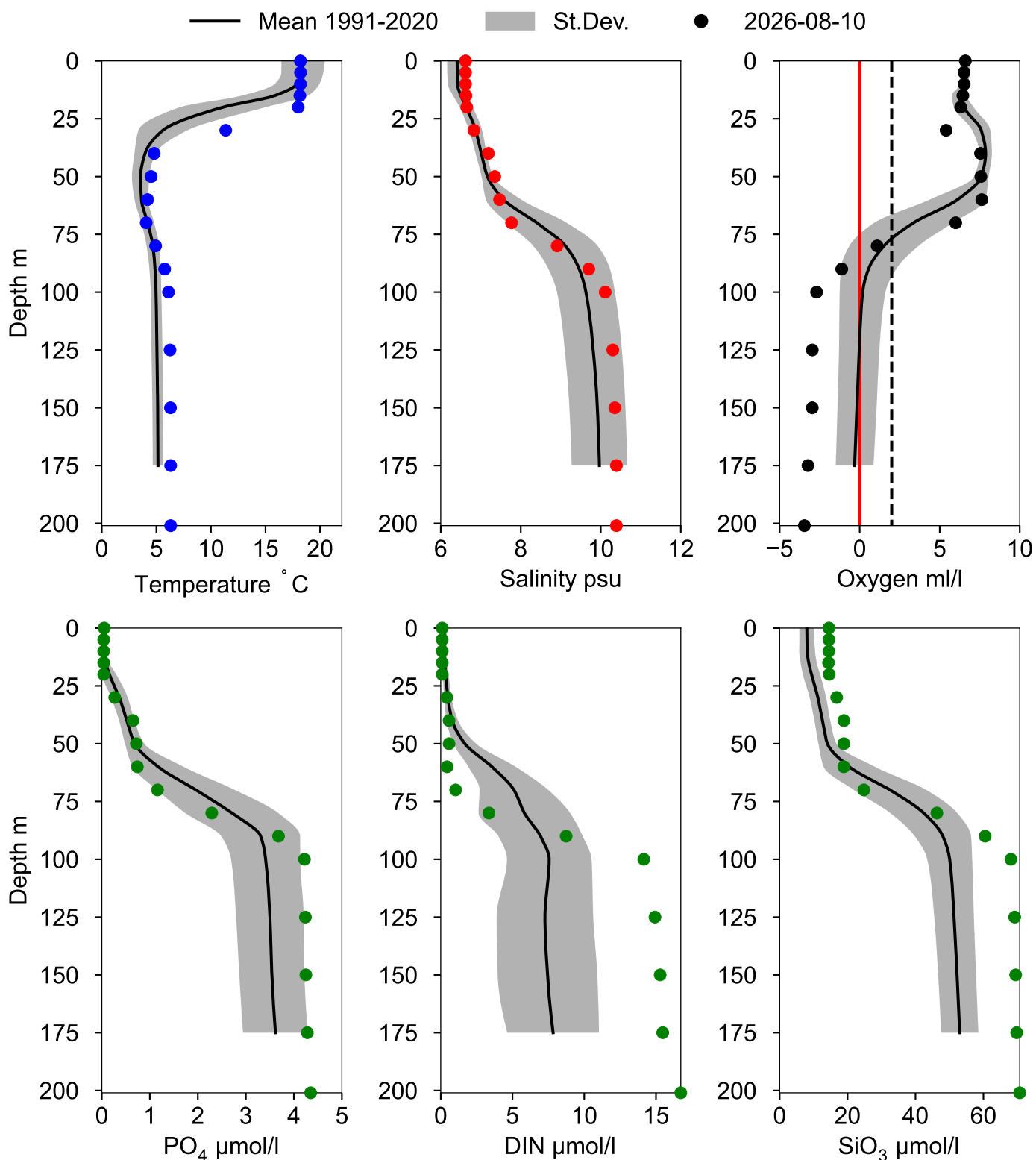
● 2026



## OXYGEN IN BOTTOM WATER (depth >= 175 m)



# Vertical profiles BY32 NORRKÖPINGSDJ August



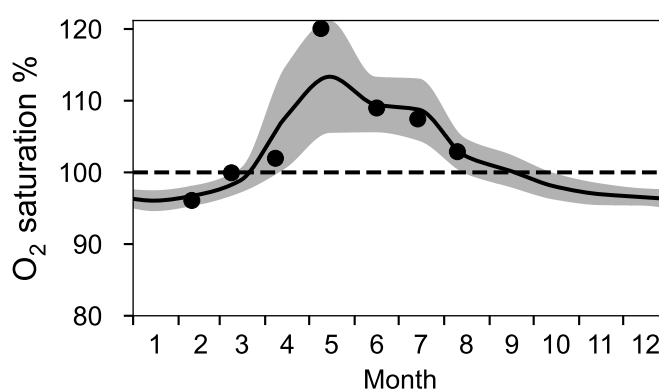
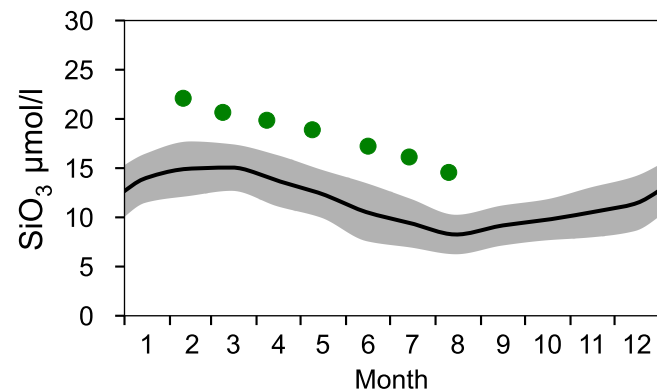
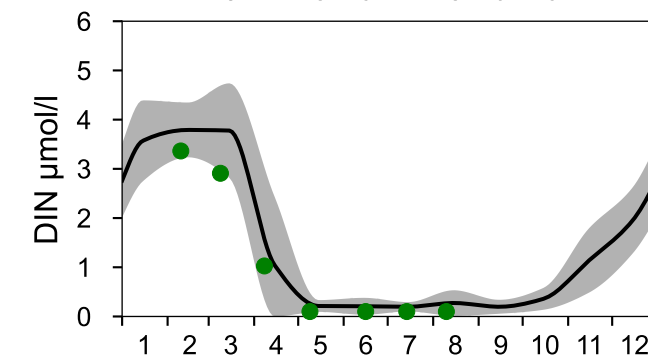
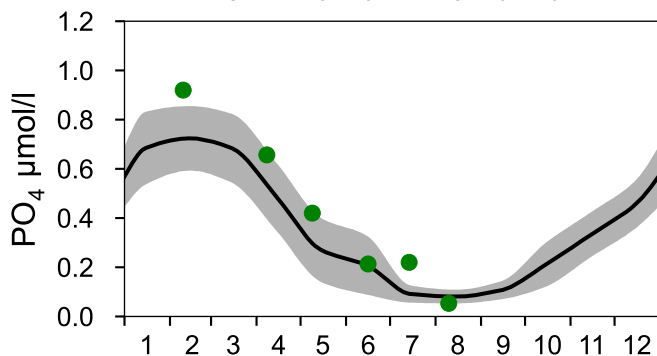
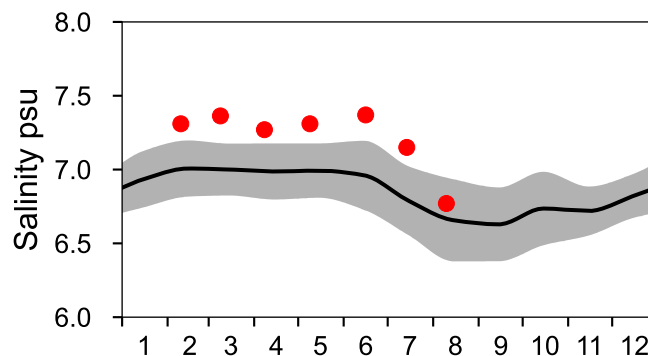
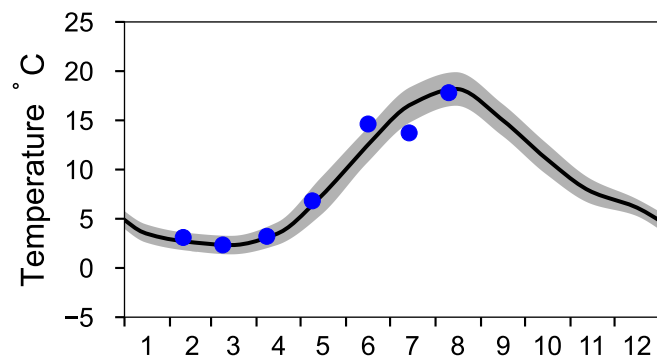
# STATION BY38 KARLSÖDJ SURFACE WATER (0-10 m)

Annual Cycles

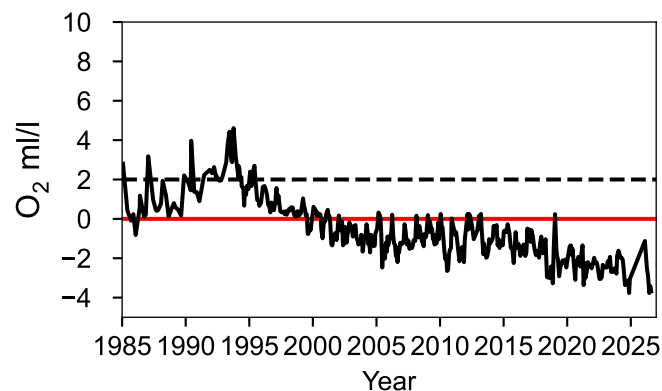
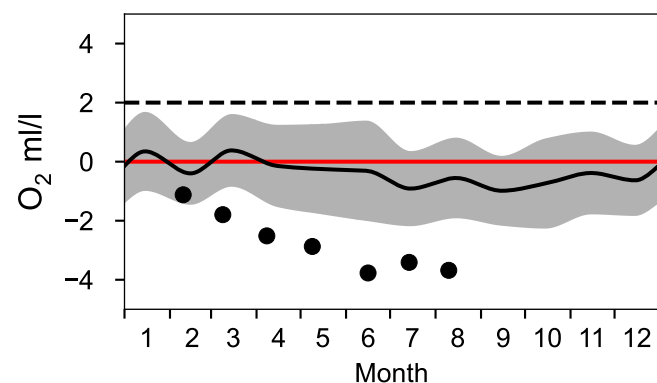
— Mean 1991-2020

■ St.Dev.

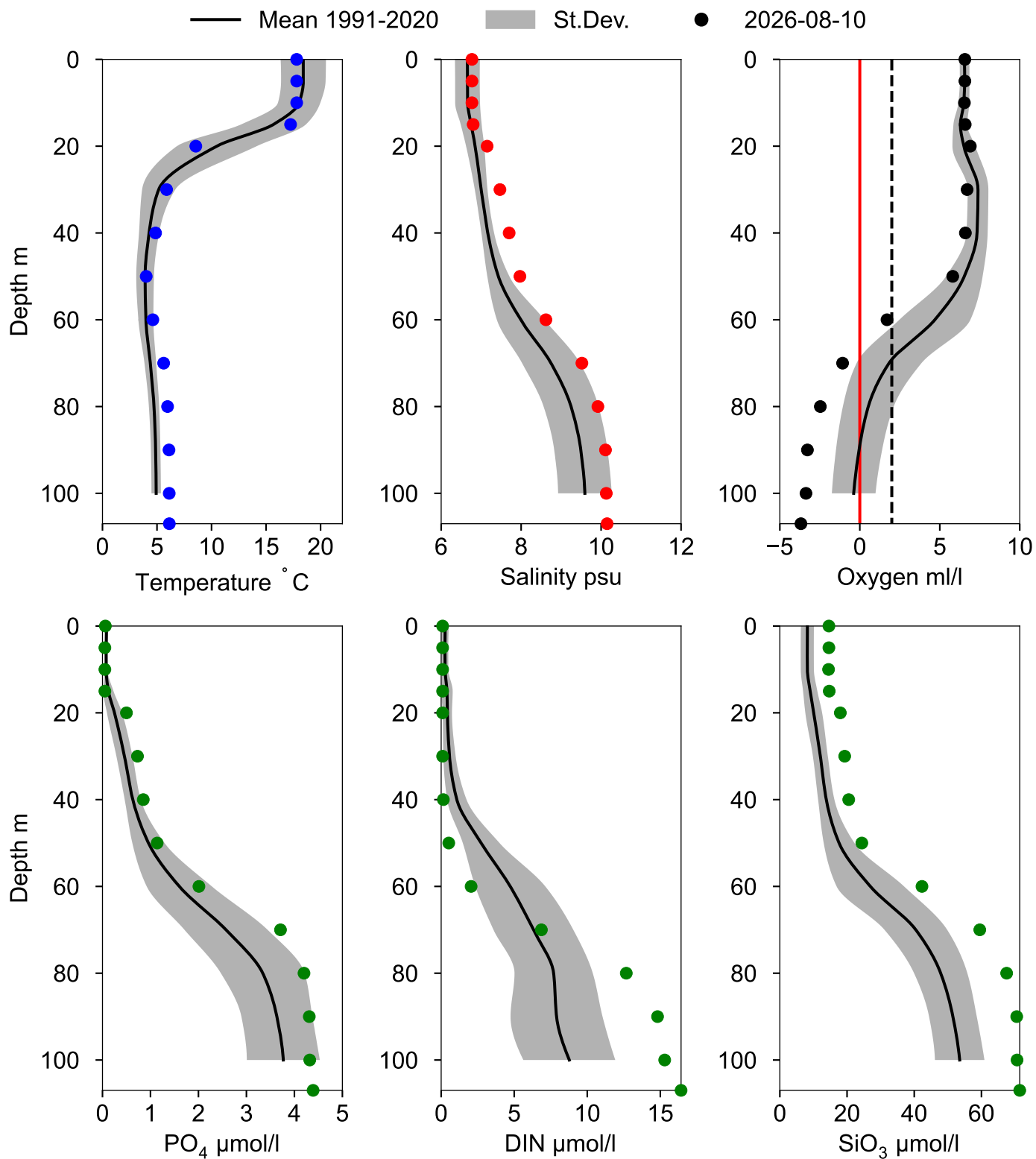
● 2026



## OXYGEN IN BOTTOM WATER (depth >= 100 m)



# Vertical profiles BY38 KARLSÖDJ August



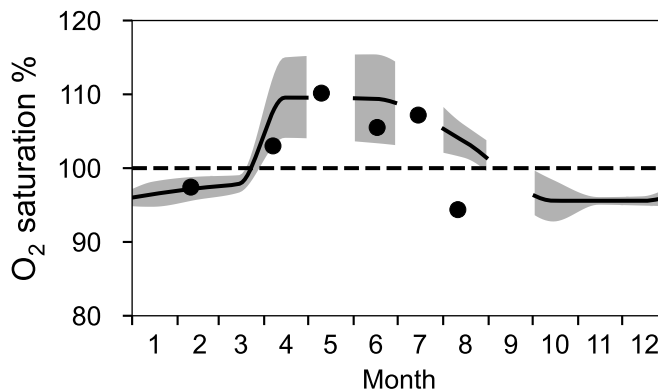
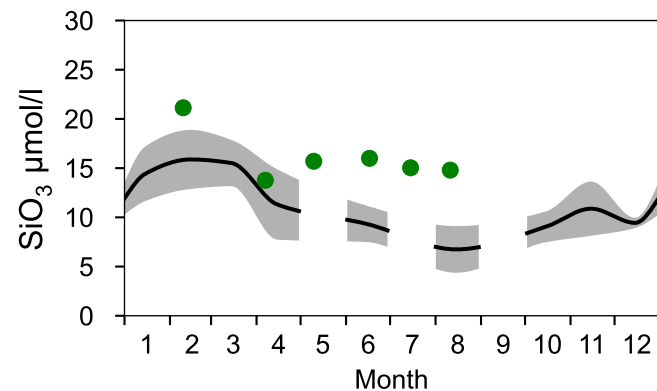
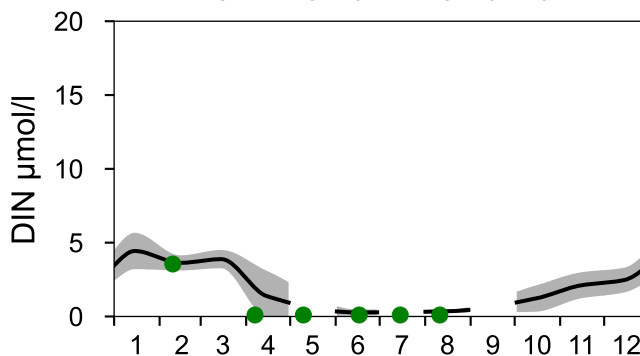
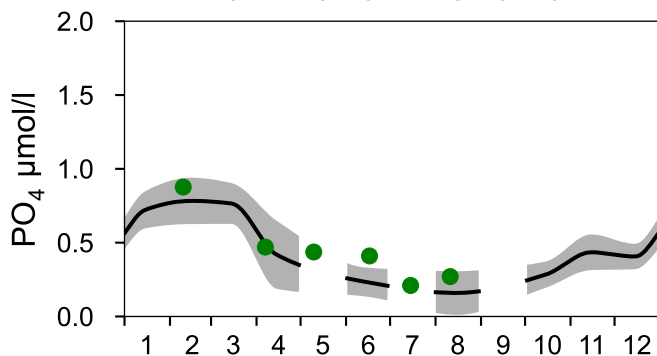
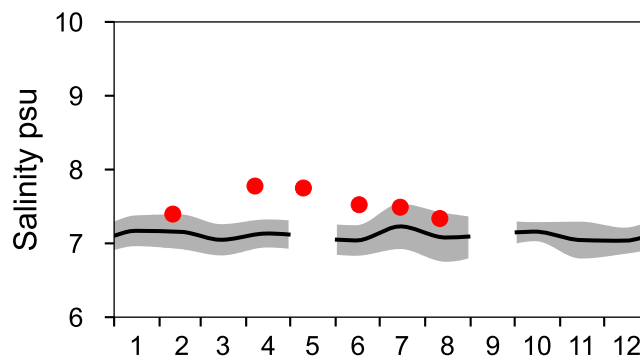
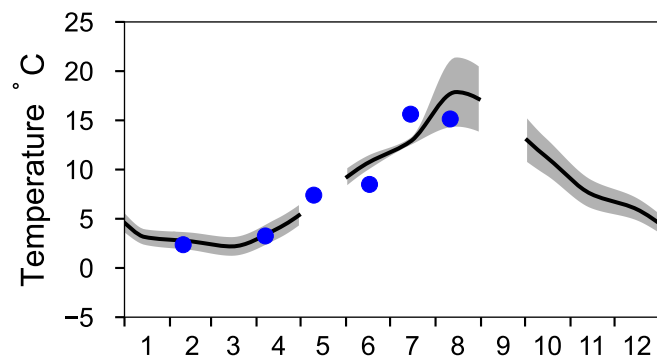
# STATION BY39 ÖLANDS S UDDE SURFACE WATER (0-10 m)

Annual Cycles

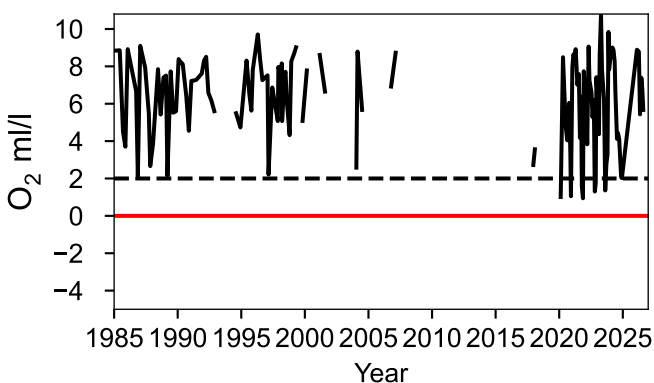
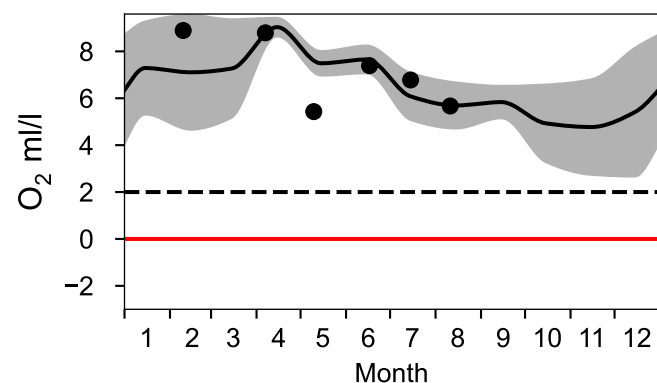
— Mean 1991-2020

■ St.Dev.

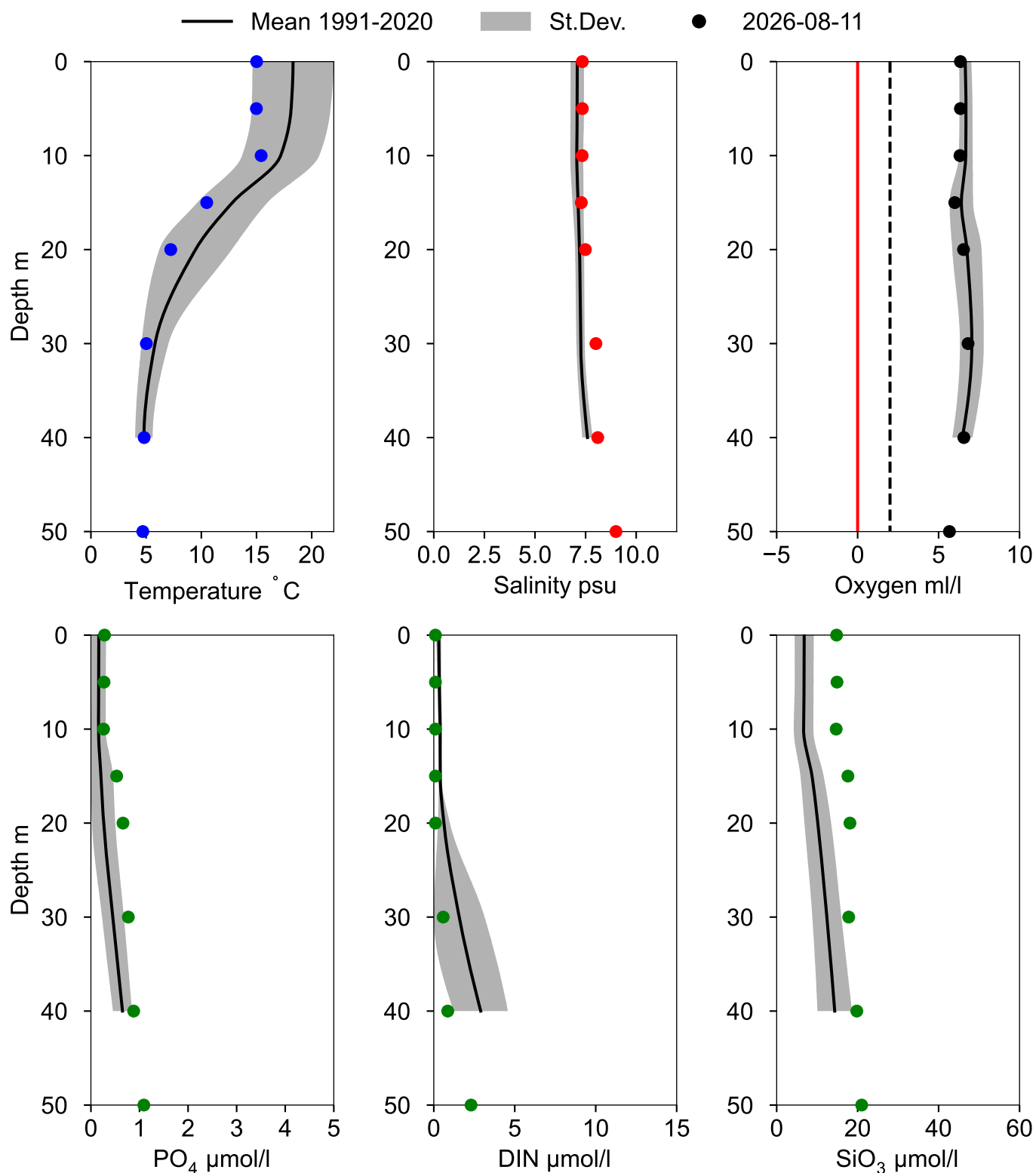
● 2026



## OXYGEN IN BOTTOM WATER (depth >= 40 m)



# Vertical profiles BY39 ÖLANDS S UDDE August



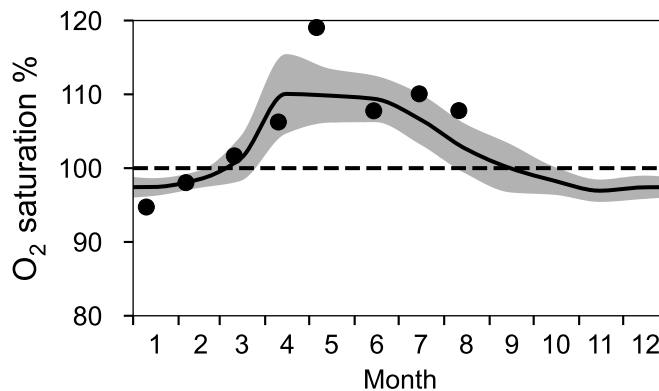
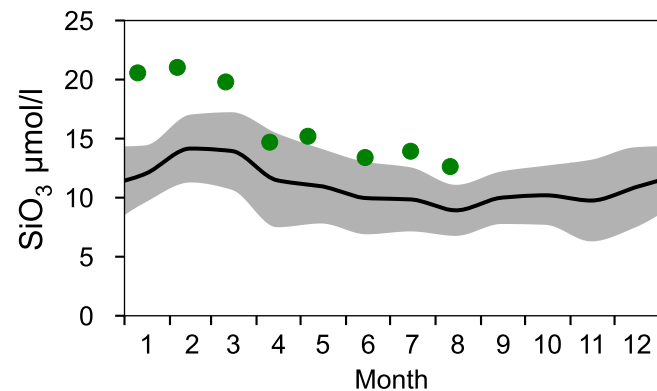
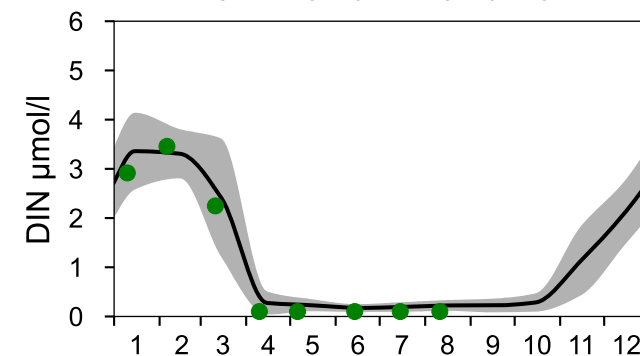
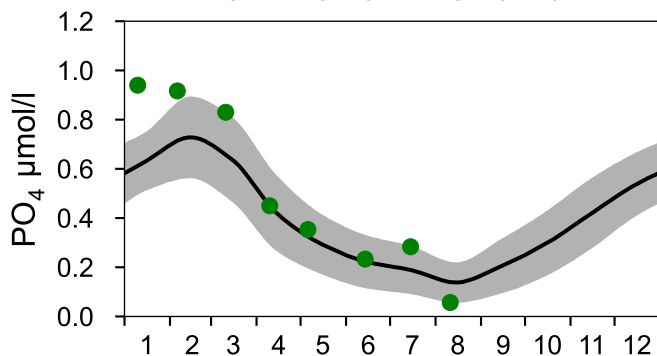
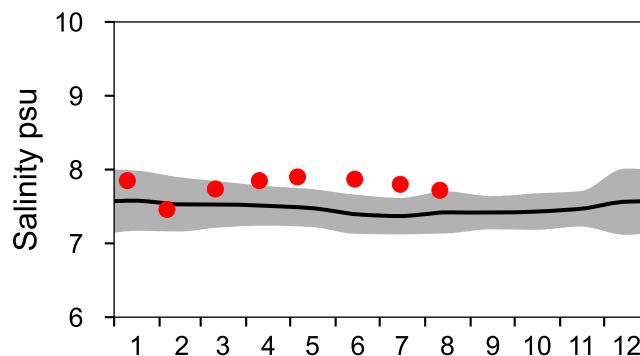
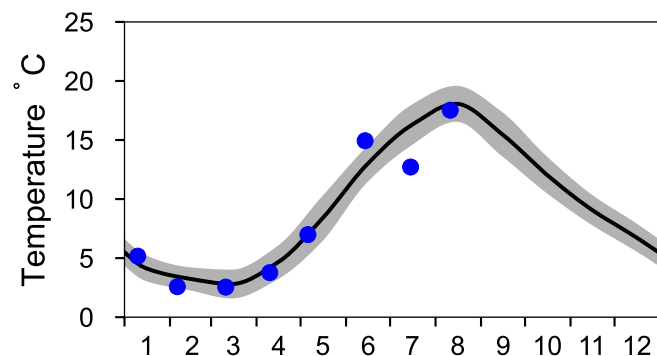
# STATION HANÖBUKTEN SURFACE WATER (0-10 m)

Annual Cycles

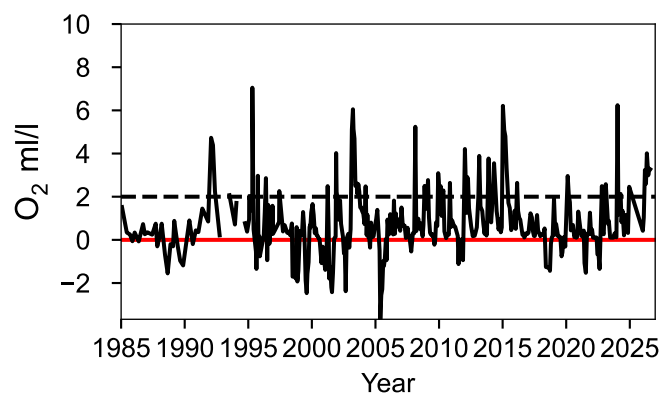
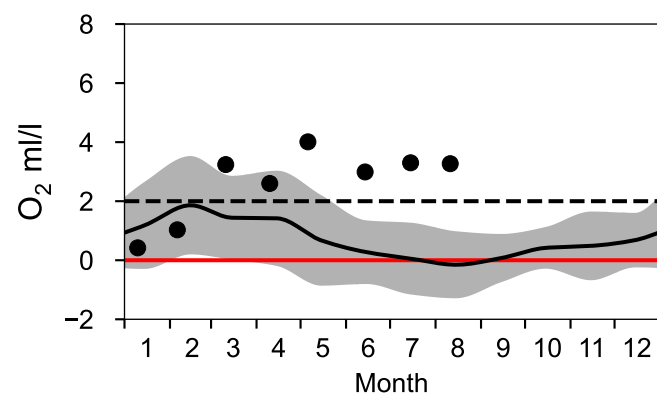
— Mean 1991-2020

■ St.Dev.

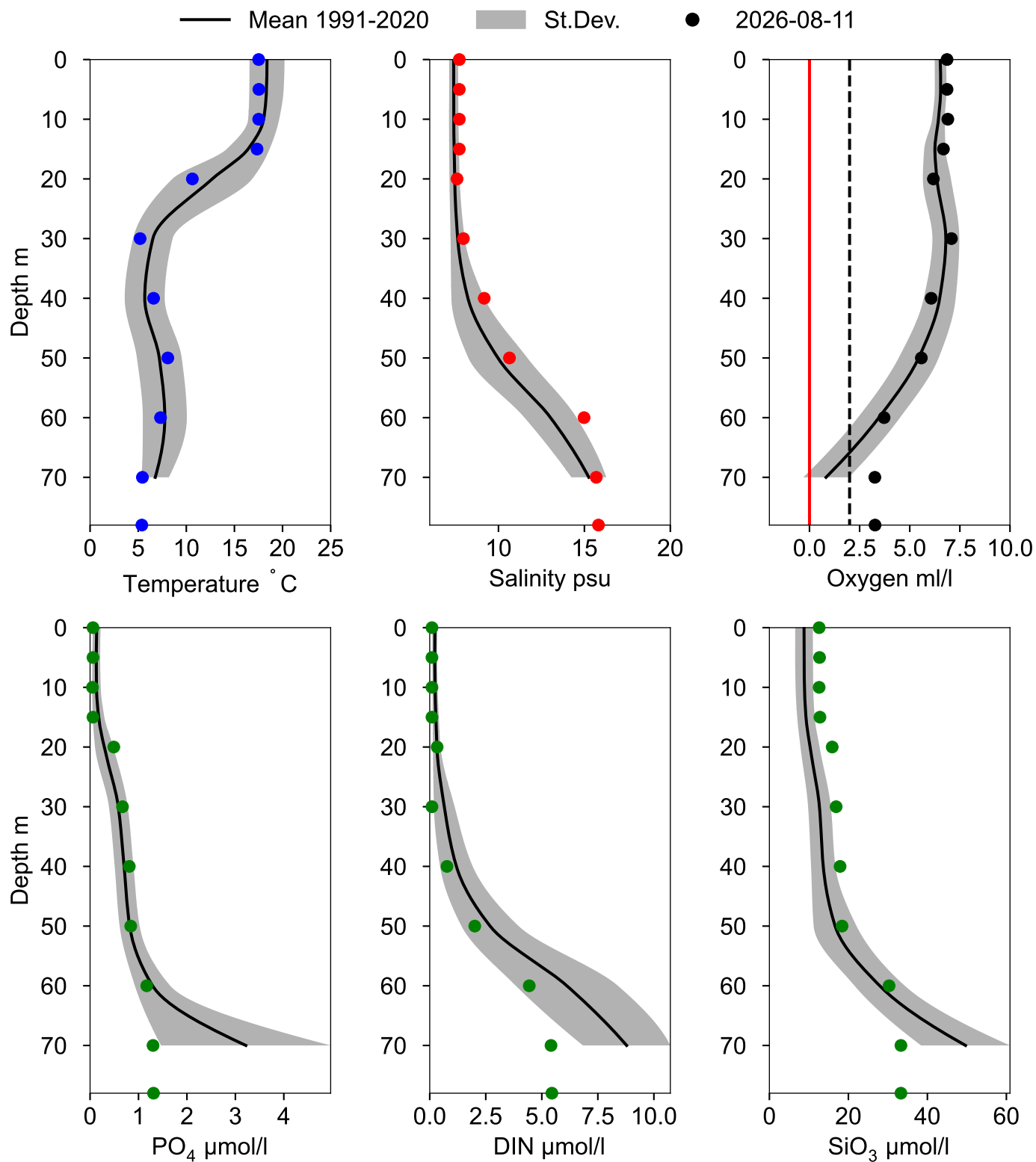
● 2026



## OXYGEN IN BOTTOM WATER (depth >= 70 m)



# Vertical profiles HANÖBUKTEN August



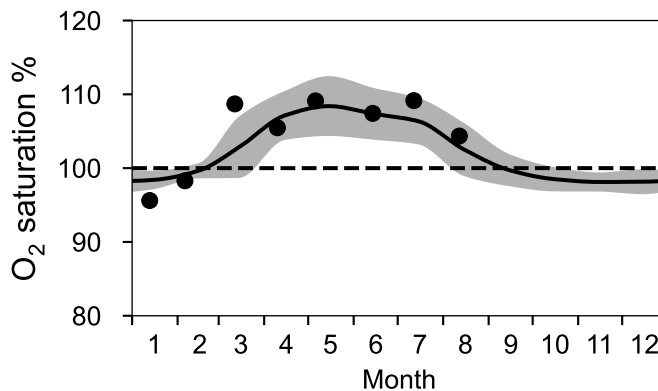
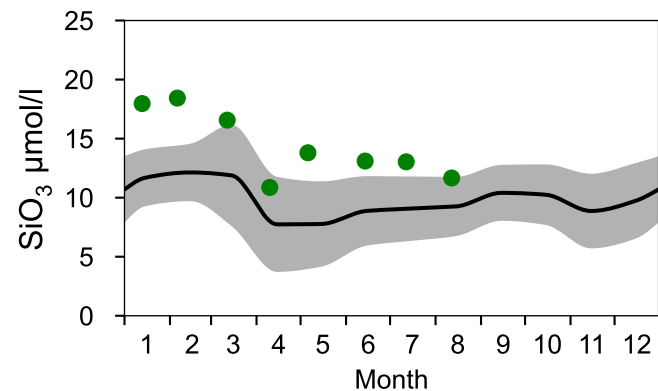
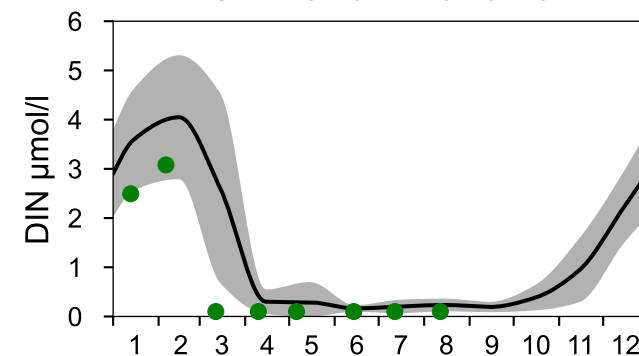
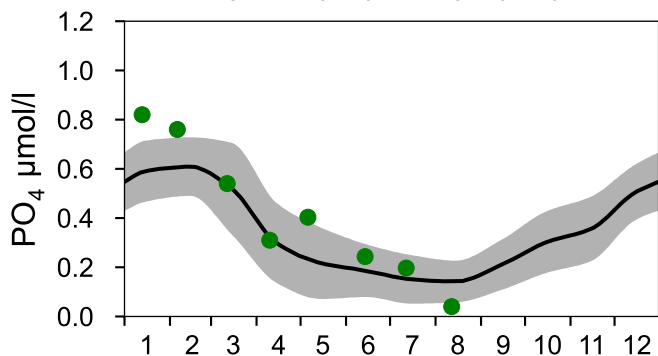
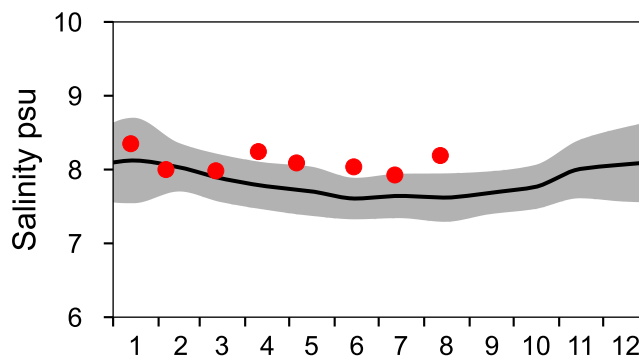
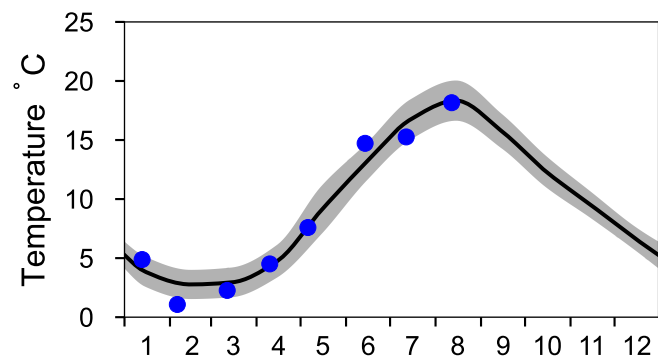
# STATION BY2 ARKONA SURFACE WATER (0-10 m)

Annual Cycles

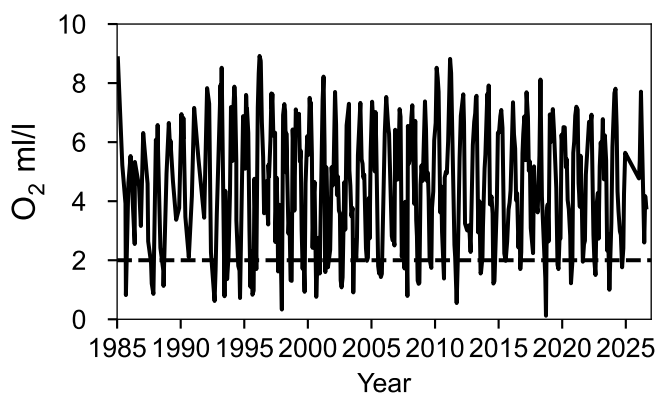
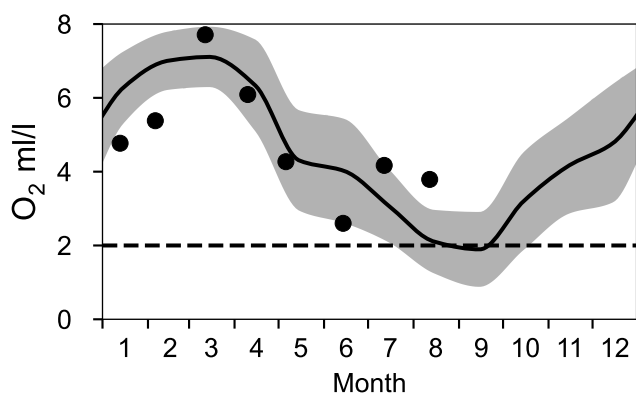
— Mean 1991-2020

■ St.Dev.

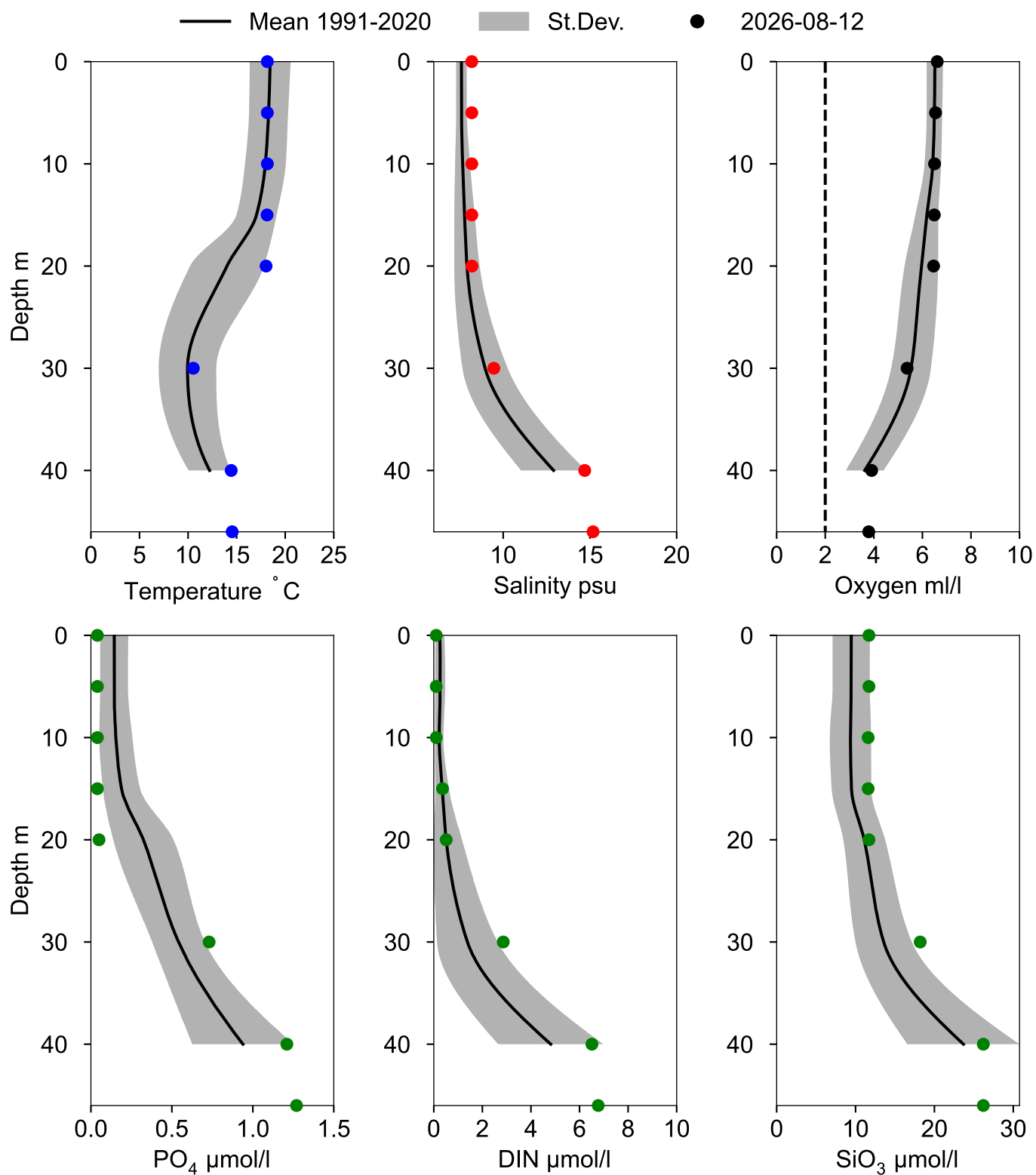
● 2026



## OXYGEN IN BOTTOM WATER (depth >= 40 m)



# Vertical profiles BY2 ARKONA August



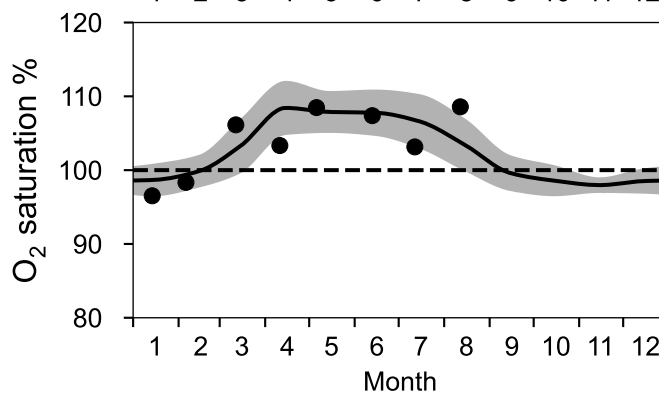
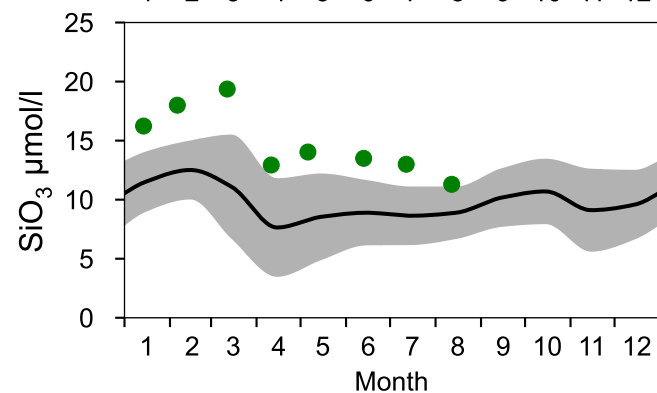
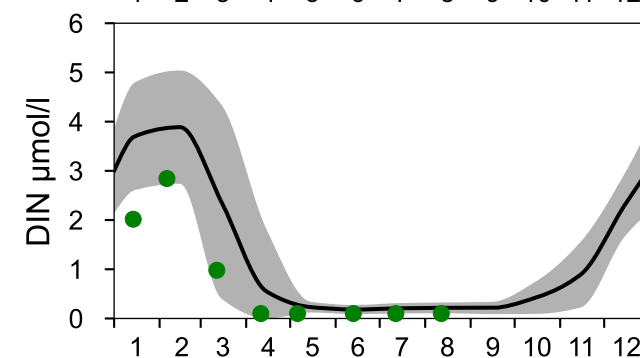
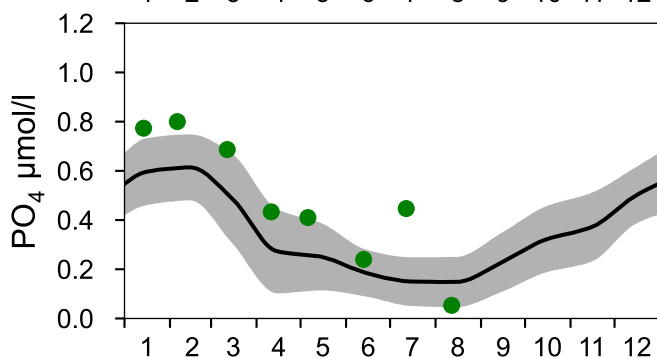
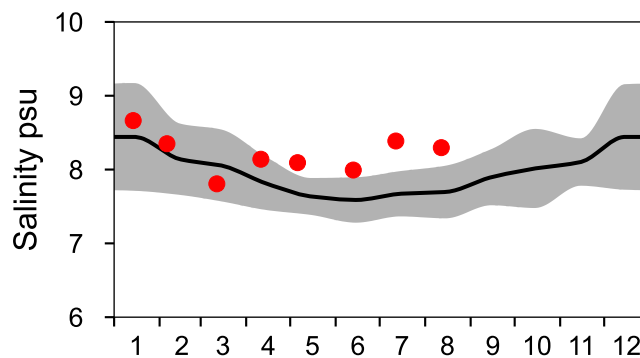
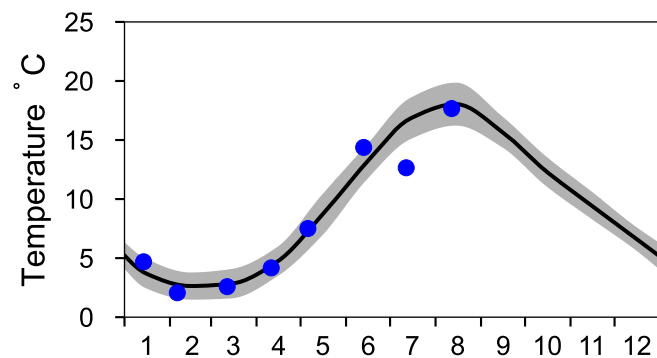
# STATION BY1 SURFACE WATER (0-10 m)

Annual Cycles

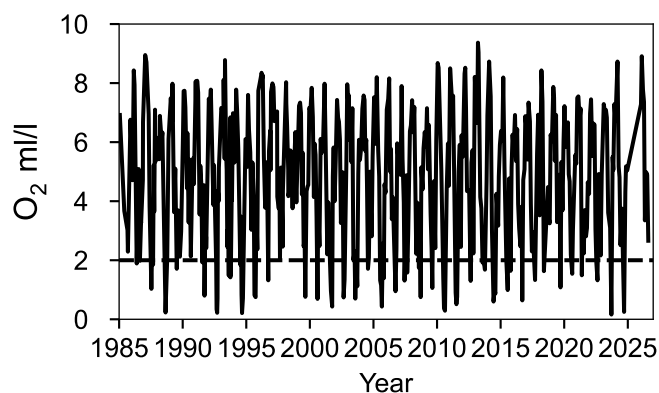
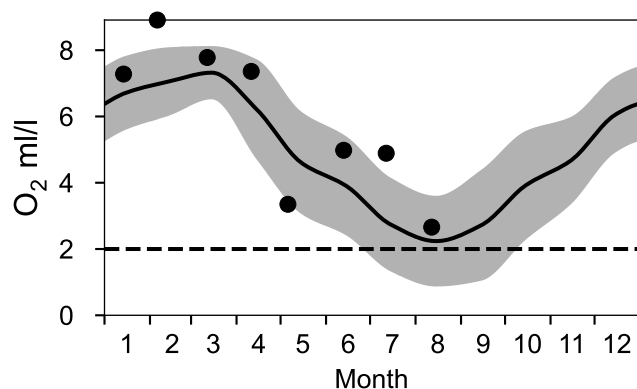
— Mean 1991-2020

■ St.Dev.

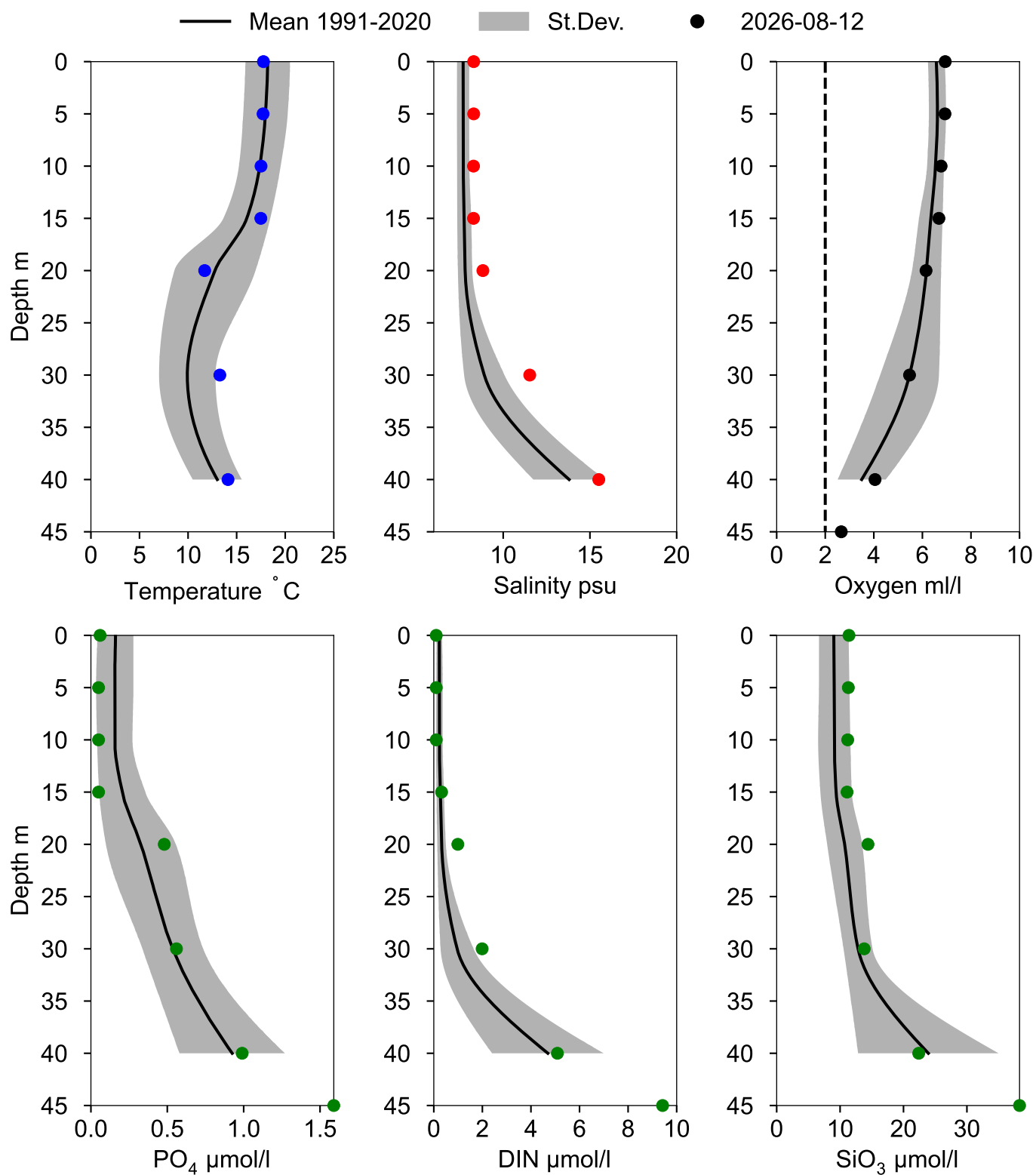
● 2026



## OXYGEN IN BOTTOM WATER (depth >= 39 m)



# Vertical profiles BY1 August



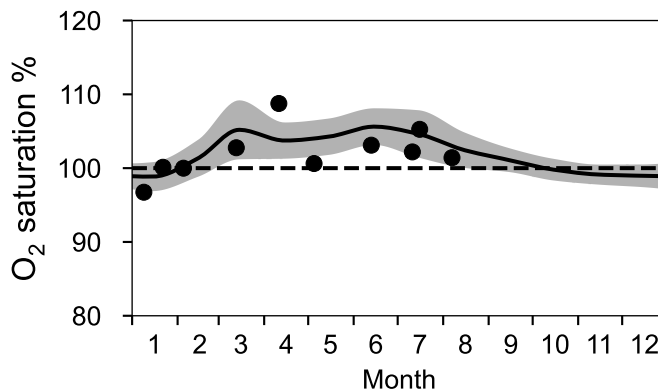
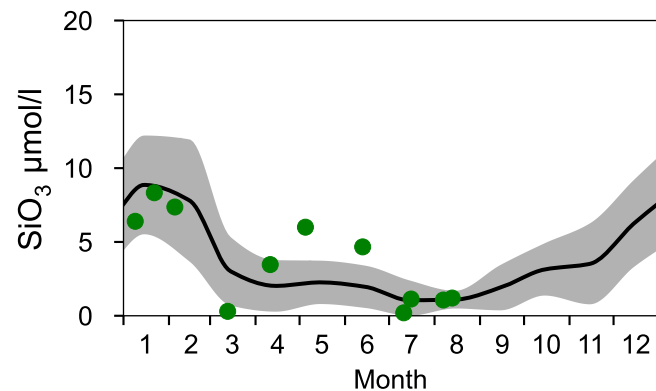
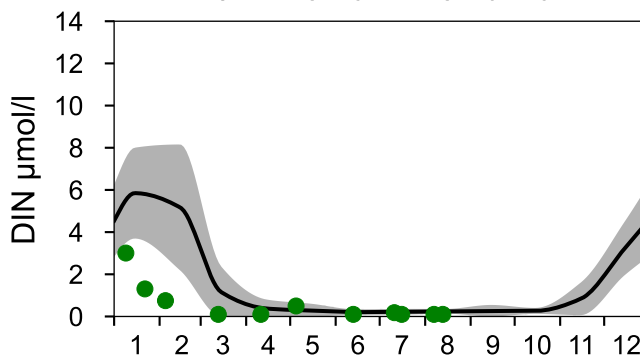
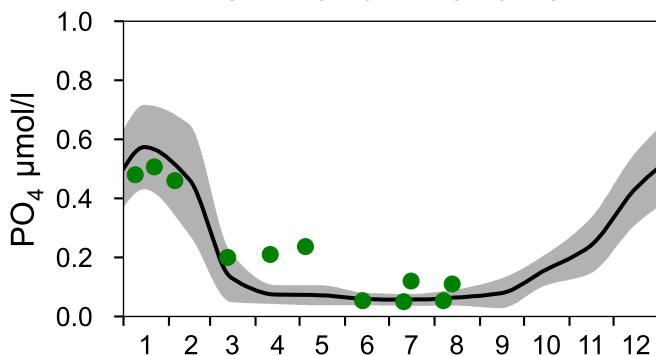
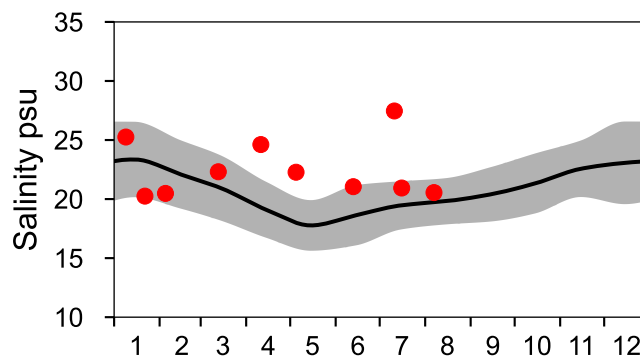
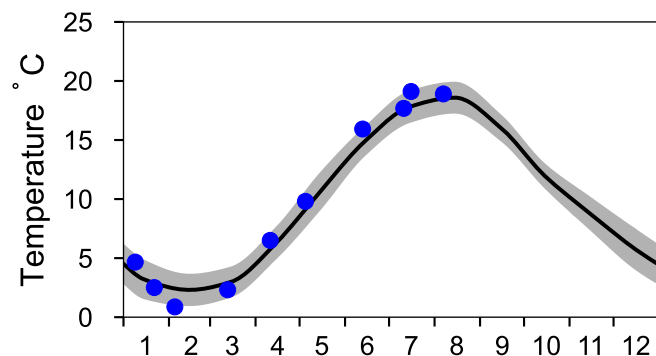
# STATION ANHOLT E SURFACE WATER (0-10 m)

Annual Cycles

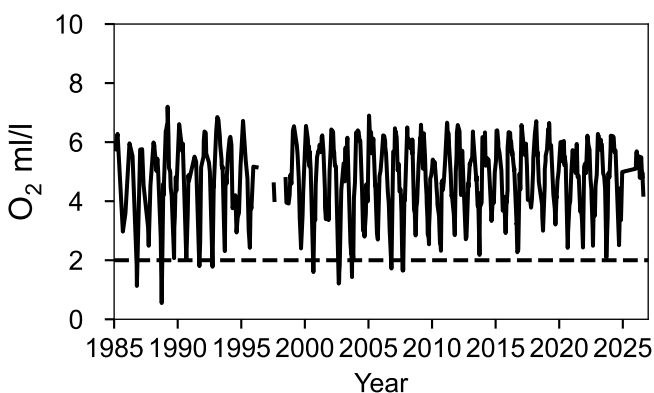
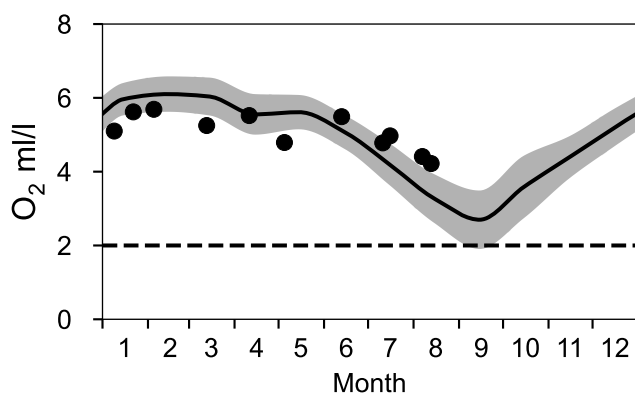
— Mean 1991-2020

■ St.Dev.

● 2026



## OXYGEN IN BOTTOM WATER (depth >= 52 m)



# Vertical profiles ANHOLT E

## August

— Mean 1991-2020

■ St.Dev.

● 2026-08-13

