SMHI
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AlgAware
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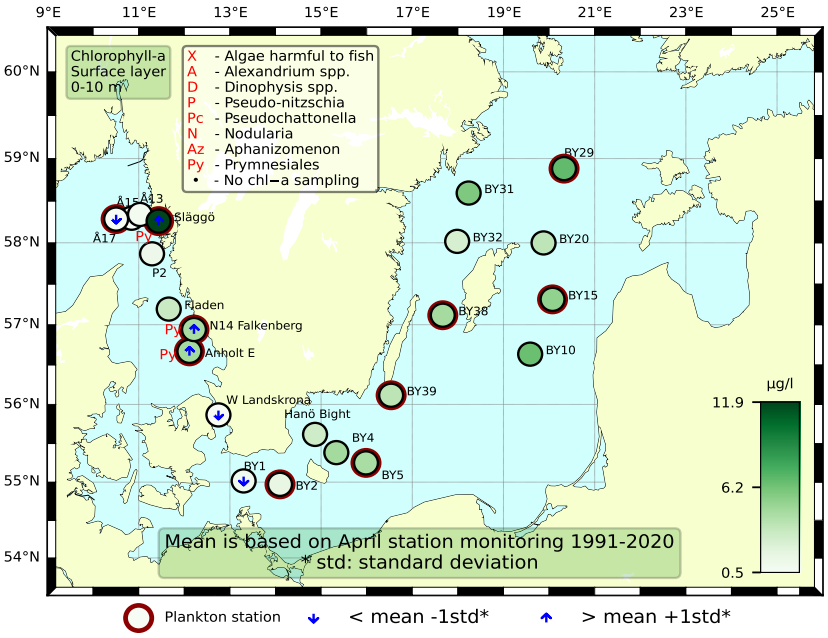
ALGAL SITUATION IN
MARINE WATERS SURROUNDING SWEDEN

Sammanfattning

Artdiversiteten var normal i Västerhavet medans totala celltätheten var mycket hög. Ända undantaget var längst ut i Skagerrak, vid Å17, där både celltäthet och diversitet var låg. Små till medelstora flagellater dominerade samhället vid samtliga stationer förutom vid Å17. Den mest dominerande arten var svår att identifiera men kan tillhöra orden prymnesiales eftersom cellerna verkade ha en kort haptonema. Levande prov tagna av Kristinebergs center dagen efter påvisade cellerna i levande form som var i bättre upplösning men fortfarande svåra att få till art. De integrerade klorofyllhalterna (0–10 m och 0–20 m) var över det normala för månaden vid samtliga stationer i Skagerak förutom vid Å17 där det var lägre än normalt.

Diversiteten och cellantalen av växtplankton var generellt sett normala i Egentliga Östersjön. Vårblomningen var pågående vid de flesta stationer, med varierande mängd av de typiska vårblomningsarterna som kiselalgerna *Skeletonema marinoi*, *Pauliella taeniata* och *Melosira arctica*, men också dinoflagellaten *Peridiniella catenata*. Däremot var vårblomningen helt över vid BY2 Arkona. De integrerade klorofyllhalterna var inom det normala för månaden vid samtliga stationer.



Abstract

Species diversity was normal but cell abundance was high along the Swedish west coast. The only exception was the outer most station in Skagerrak, Å17, where the cell abundance and biodiversity was low. Small to medium sized flagellates dominated all samples except at Å17. The most numerous taxa found was difficult to get to a scientific name but might belong to the order prymnesiales as some cells seemed to have a short haptonema. A live sample was collected the day after sampling at Släggö by Kristineberg center and they had a better shape but were still difficult to name to any scientific entity. The integrated chlorophyll concentrations (0-10 m and 0-20 m) were above the normal range for the month at all stations except at Å17 where they were below normal.

Diversity and cell abundances of phytoplankton were generally moderate in the Baltic Proper. The spring bloom was ongoing at most stations, with varying amounts of typical spring bloom species such as the diatoms *Skeletonema marinoi*, *Pauliella taeniata* and *Melosira arctica*, but also the dinoflagellate *Peridiniella catenata*. However, at BY2 Arkona the spring bloom was completely over. The integrated chlorophyll concentrations were within the normal range for this month at all stations

Below follows a more detailed information on species composition and abundance. Species marked with * are potentially toxic or harmful.

The Skagerrak

Släggö (Skagerrak coast) 12th of April
Total cell abundance was very high with a clear dominance of small flagellated cells. The sample was dominated by a species of unknown name that most likely belong to the order Prymnesiales and also might belong to the genus *Prymnesium* as some cells had a short haptonema. Other common flagellates were different cryptomonads and *Apedinella radians*. The dinoflagellates were few and mainly consisted of *Peridiniella danica* and a few cells of the toxic genus *Dinophysis**. Diatoms were even fewer with only a few pennate cells and one chain of S*keletonema marinoi.* The integrated 0–10 and 0–20 m chlorophyll concentrations were well above the normal range for this month especially the 0-10 meters integrate depth.

Å17 (Skagerrak coast) 12th of April
Both species diversity and total cell abundance were low compared to Släggö. The larger cells were represented by occasional cells of the genus *Tripos*. Diatoms were also few and *S. marinoi* was found in short chains The smaller cells were represented by the genus *Pyramimonas*, *A. radians* and different cells of Cryptomonadales. The integrated 0–10 and 0–20 m chlorophyll concentrations were below the normal range for this month.

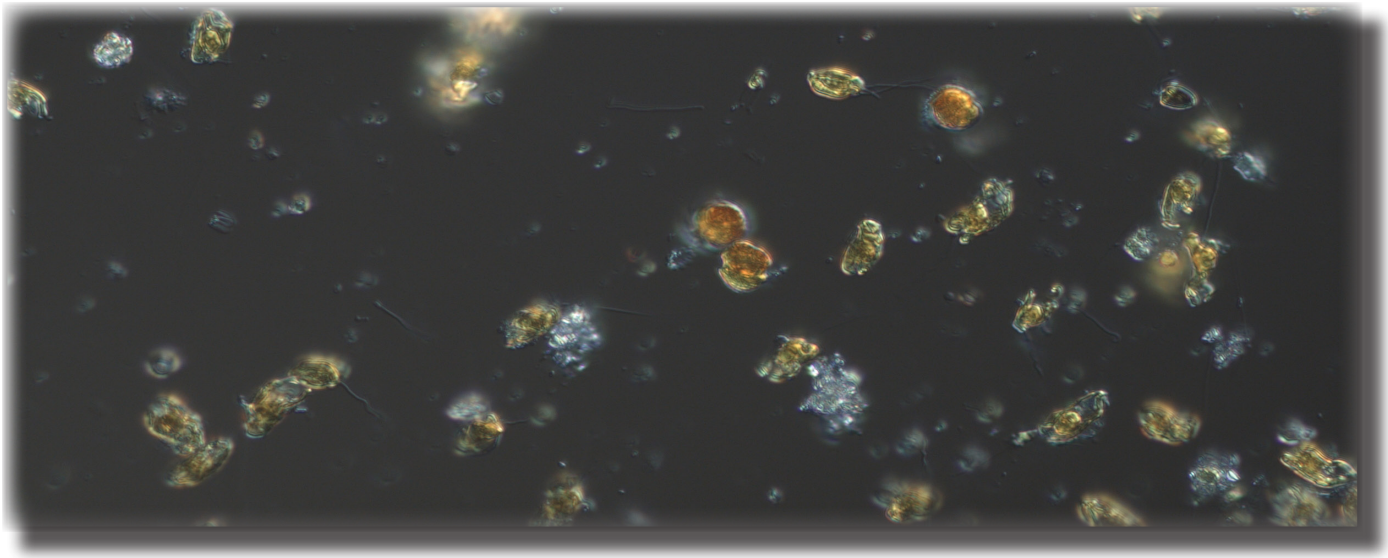


Fig 1. The occurrence of a still unidentified flagellate was high at all stations along the Swedish west coast, with the exception Å17. It was named cf. *Prymnesium* in this report concidering that a haptomena and two flagelles were observed. Photo: M. Johansen.

The Kattegat

N14 Falkenberg 11th of April
Total cell abundance was very high with a clear dominance of small flagellated cells. The sample was dominated by the same species found at Släggö. Different cryptomonads, some cells looking like the genus *Pseudochattonella* * and *A. radians* were also found. The dinoflagellates were represented by for example low numbers of the genus *Tripos, P. danica* and the genus *Protoperidinium*. Very few diatoms were present and mainly represented by *S. marinoi*. The integrated 0–10 and 0–20 m chlorophyll concentrations were above normal range for this month.

Anholt E 11th of April
Total cell abundance was very high with a clear dominance of the small flagellated cells found along the coast. Different cryptomonads, the genus *Dinobryon*, some cells looking like the genus *Pseudochattonella** and *A. radians* were also common. The dinoflagellates were represented by heterotrophs like *Gyrodinium spirale* and *P. danica*. Diatoms were present mainly represented by the genus *Thalassiosira.* The integrated 0–10 and 0–20 m chlorophyll concentrations were above normal range for this month.

The Baltic

BY29 8th of April

The phytoplankton diversity and abundances were both moderate. Diatoms were represented by various *Chaetoceros* species, the chain forming *Pauliella taeniata*, a few *Skeletonema marinoi* and *Thalassiosira baltica*. Dinoflagellates were quite abundant with Gymnodiniales and both *Peridiniella catenata* and *P. danica*. The smaller cells were also quite abundant with *Pyramimonas*, cryptomonads and *Eutreptiella*. Various ciliates were present and very few strains of the cyanobacterium *Aphanizomenon*. The integrated 0–10 chlorophyll concentration was within the normal range for this month.

BY31 Landsort deep 8th of April

The phytoplankton diversity and abundances were both low. Diatoms were represented by *Chaetoceros wighamii*, the chain forming *P. taeniata* and *S marinoi*. Dinoflagellates were few with mostly Gymnodiniales and *Protoperidinium bipes*. The smaller cells were mainly cryptomonads and there were also some ciliates. The integrated 0–10 chlorophyll concentration was within the normal range for this month.

BY38 Karlsö deep 8th of April

The phytoplankton diversity was high and abundances were moderate. Diatoms were represented by various *Chaetoceros* species, the chain forming *P. taeniata*, *Skeletonema marinoi* and *Melosira arctica*. Dinoflagellates were quite abundant with both Gymnodiniales and Peridiniales, and a few *Dinophysis acuminata** was present. The smaller cells were also quite abundant with cryptomonads and *Eutreptiella*, as well as various ciliates. The integrated 0–10 and 0–20 m chlorophyll concentrations were within the normal range for this month.

BY15 Gotland deep 9th of April

The phytoplankton diversity was high and abundances were moderate. Diatoms were few both in abundance and diversity. Dinoflagellates were quite abundant with Gymnodiniales and both *P. catenata* and *P. danica*, as well as a few *D. acuminata** present. The green algae *Binuclearia lauterbornii* was numerous, as well as the smaller cells, ciliates and various cyanobacteria, both colony forming and some *Aphanizomenon*. The integrated 0–10 and 0–20 m chlorophyll concentrations were within the normal range for this month.

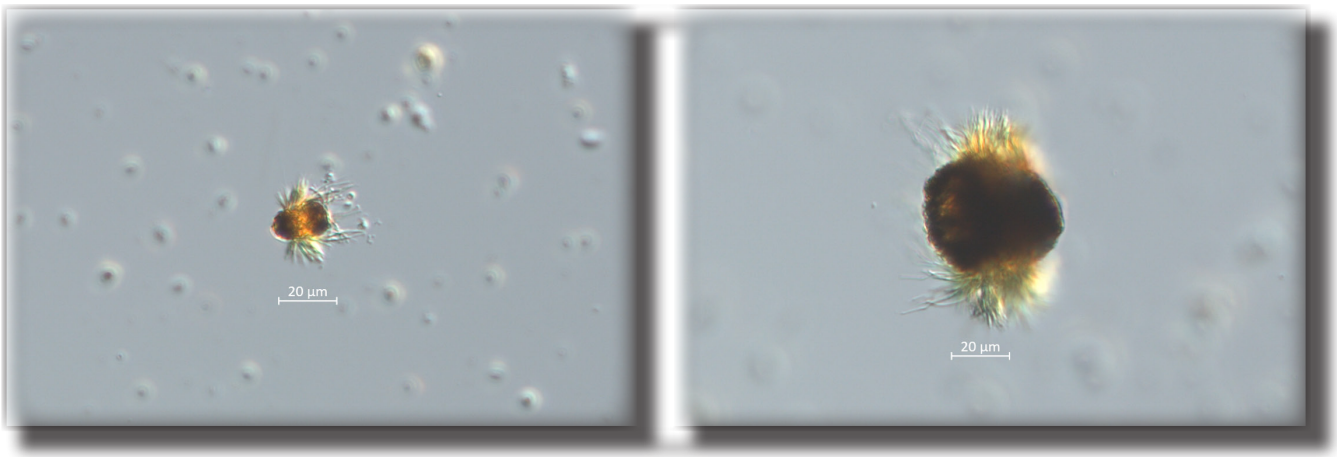


Fig 2. The size comparison between the ciliates *Mesodinium rubrum* (left) *M. major* (right), photographed at BY2. Both cells are photographed in the same magnification and images have not been altered. Photo: M. Karlberg.

BY39 Öland south 9th of April
The phytoplankton diversity was low while abundances were high. Diatoms dominated with especially *S. marinoi*, but also *M. arctica* and some Chaetoceros species and *T. baltica*. Among the dinoflagellates there were some Gymnodiniales and *P. catenata*. The amount of smaller cells were also quite low with cryptomonads and various ciliates. The integrated 0–10 and 0–20 m chlorophyll concentrations were within the normal range for this month.

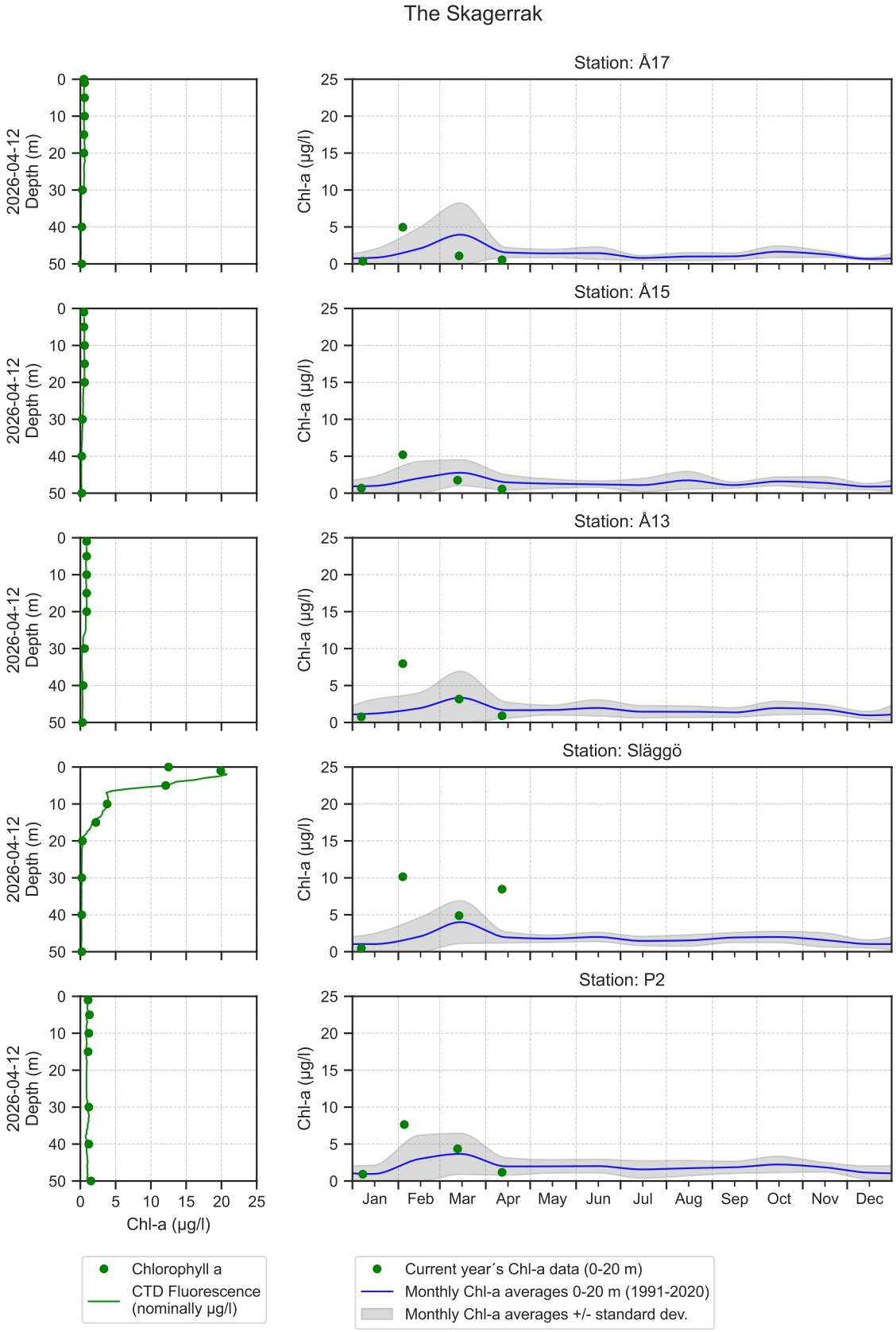
BY5 Bornholm deep 11th of April
The phytoplankton diversity and abundances were both high. Diatoms dominated with especially *S. marinoi* and different Chaetoceros species. Dinoflagellates were diverse in species but they were not that numerous. The smaller cells were mainly *Dinobryon balticum* and cryptomonads, as well as some various ciliates. Cyanobacteria was represented by several filament of *Aphanizomenon*. The integrated 0–10 and 0–20 m chlorophyll concentrations were within the normal range for this month.

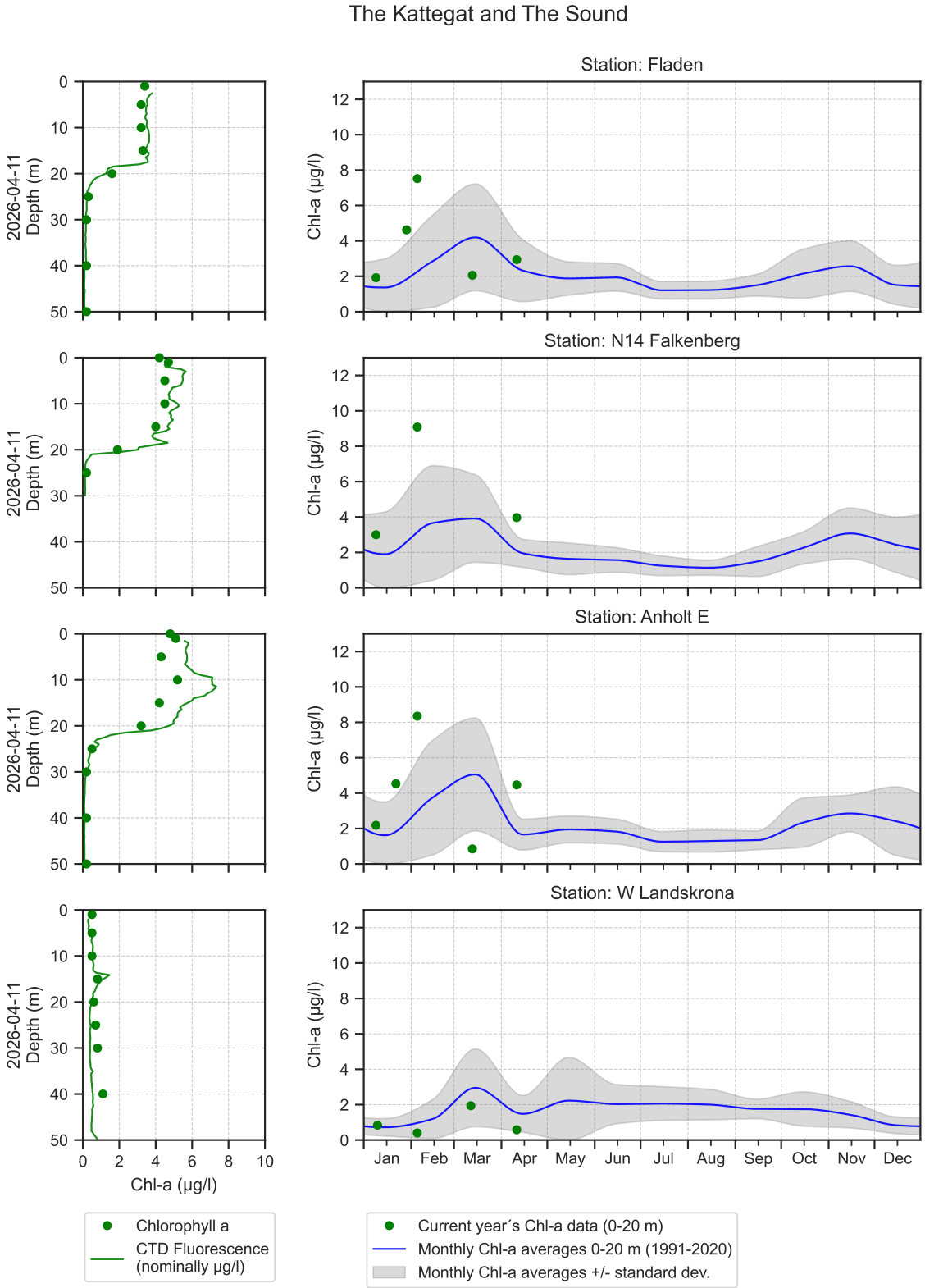
BY2 Arkona 11th of April
The phytoplankton diversity and abundances were low. Diatoms were almost non-existing. Dinoflagellates were quite abundant with both Gymnodiniales and Peridiniales. The smaller cells comprised of species of *Dinobryon*, *Pyramimonas* and cryptomonads. Several colony forming cyanobacteria genera were present. The ciliates were numerous as well as two species of *Mesodinium*. The integrated 0–10 and 0–20 m chlorophyll concentrations were low but within the normal range for this month.

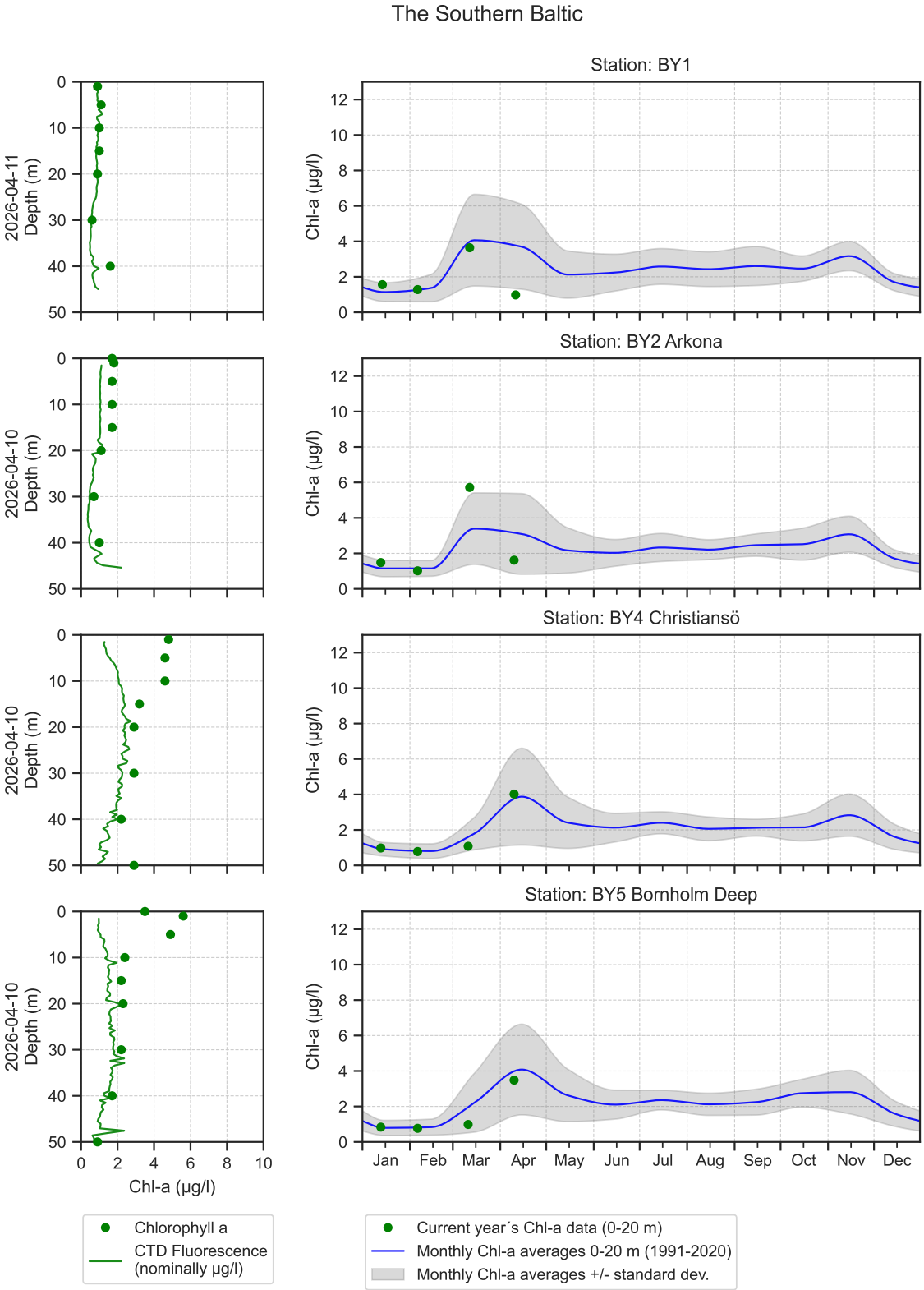
Phytoplankton analysis and text:
Marie Johansen and Maria Karlberg.

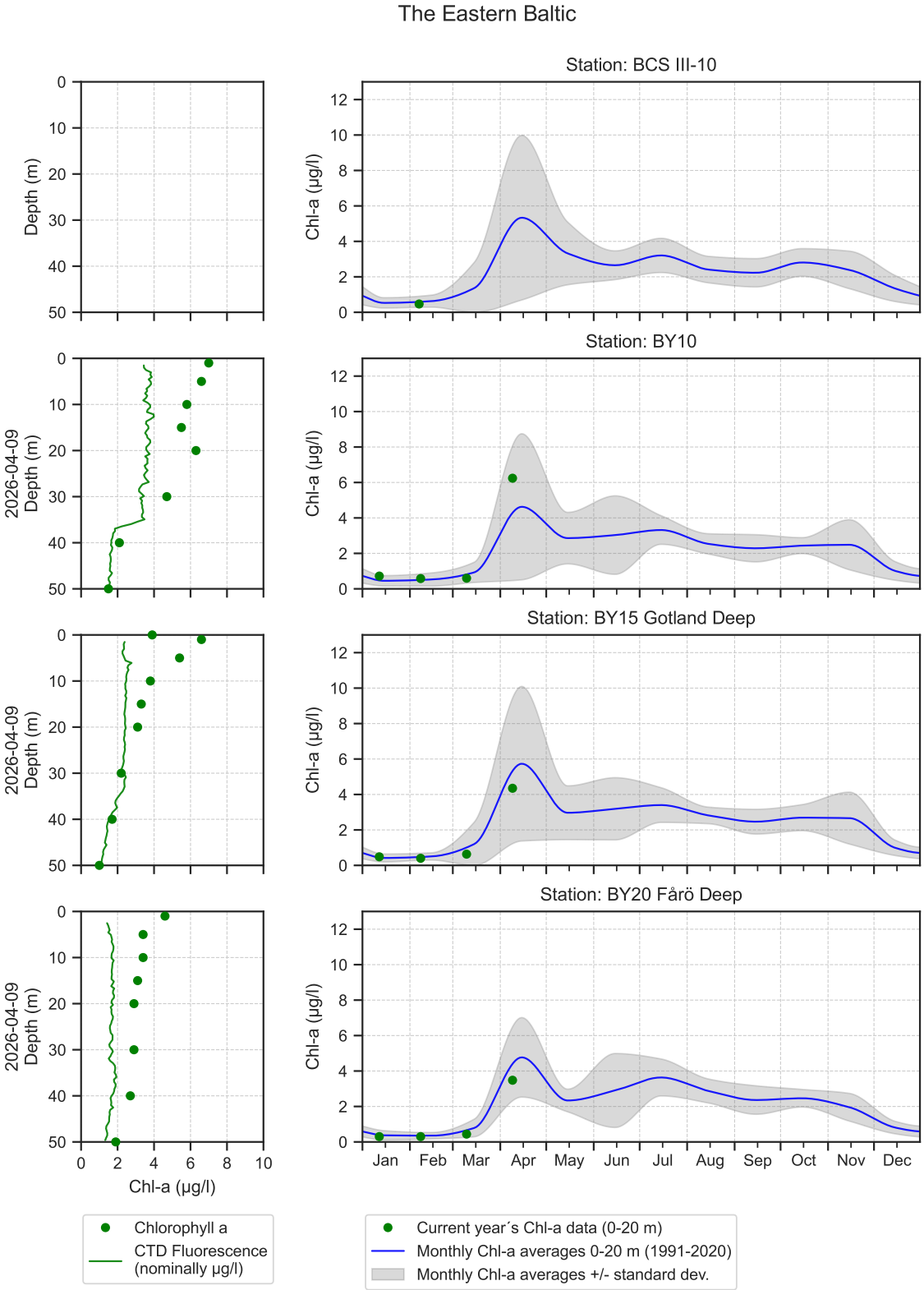
Selection of observed species	Anholt E	N14	Släggö	Å17
Red=potentially toxic species	11/4	11/4	12/4	12/4
Hose 0-present0 m	presence	presence	presence	presence
Chaetoceros	present			
Pennales			present	
Pseudo-nitzschia			present	
Skeletonema marinoi		present	present	
Thalassiosira	present			
Thalassiosira anguste-lineata	present	present		
Dinophysis acuminata			present	
Dinophysis norvegica	present	present	present	
Gymnodiniales			present	present
Gyrodinium spirale	common	present	present	present
Karlodinium veneficum	present			
Katodinium glaucum	present		present	
Peridiniales		present	present	present
Peridiniella danica	common	present	common	
Protoceratium reticulatum		present		
Protoperidinium	present		present	
Protoperidinium pallidum		present		
Protoperidinium pellucidum	present	present		
Scrippsiella GRP			present	
Tripos fusus		present	present	
Tripos lineatus	present	present	present	
Tripos macroceros				present
Tripos muelleri		present	present	present
Dinobryon	common	present		
Dinobryon balticum	present			
Prymnesiales	present		present	
cf. Prymensium	dominating	very common	dominating	
Chlorodendrales	present	present		
Eutreptiella braarudii			present	
Eutreptiella gymnastica			present	
Pyramimonas	present		present	common
Cryptomonadales	present	common	common	common
Katablepharis remigera			present	
Leucocryptos marina	common	present		
Apedinella radians	common	present	common	common
Octactis speculum	present			
Pseudochattonella		common		
Pseudanabaena	present			
Choanoflagellatea		present	present	present
Ciliophora	common	present	present	
Laboea strobila			present	
Tintinnidae			present	

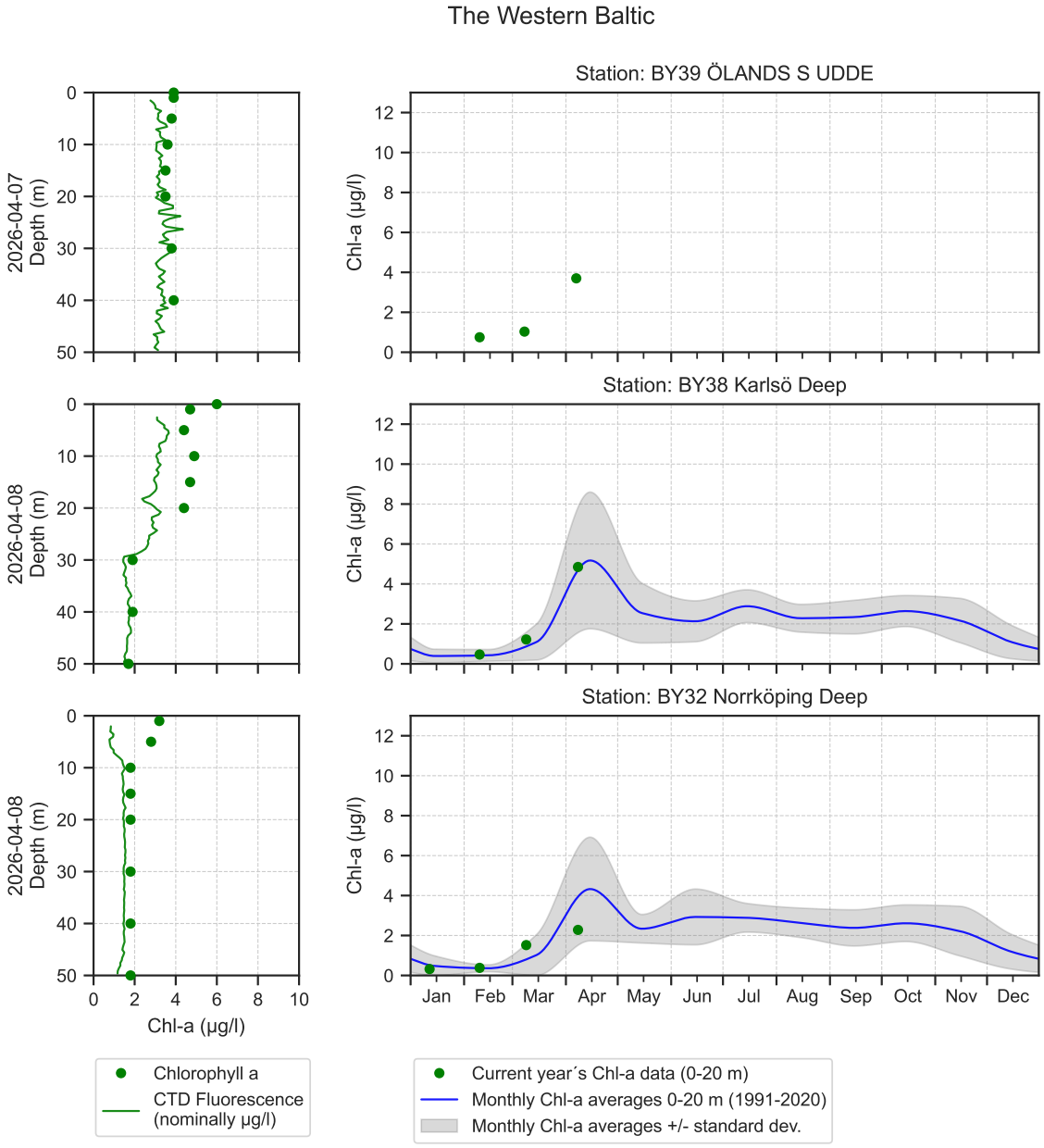
Selection of observed species	BY29	BY31	BY38	BY15	BY39	BY5	BY2
Red=potentially toxic species	8/4	8/4	8/4	9/4	9/4	10/4	11/4
Hose 0-10 m	presence	presence	presence	presence	presence	presence	presence
Actinocyclus octonarius						present	
Chaetoceros	present	present	common	present	present	present	
Chaetoceros danicus	present						
Chaetoceros subtilis	present		present			common	
Chaetoceros tenuissimus				present			
Chaetoceros throndsenii						present	
Chaetoceros wighamii	present	common	common		present	common	
Coscinodiscus radiatus						present	
Melosira arctica			present		common	present	
Nitzschia longissima			present	present			
Pauliella taeniata	common	common	present				
Skeletonema marinoi	present	common	common	present	dominating	very common	present
Thalassiosira			present				
Thalassiosira baltica	common	present		present	present		
Amphidinium crassum			present			present	
Amylax triacantha				present			present
Dinophysis acuminata			present	present			
Gymnodiniales	common	common	common	common	present	common	common
Gymnodinium verruculosum						present	present
Heterocapsa rotundata	common	present	common	common	present	present	common
Katodinium glaucum			present	present		present	present
Peridiniales			present				present
Peridiniella catenata	common	present	common	common	present	present	present
Peridiniella danica	present			present		present	present
Protoperidinium bipes		common	present				
Tripos lineatus					present		
Dinobryon		present	present		present		present
Dinobryon balticum	present		present			common	
Dinobryon faculiferum						present	present
Binuclearia lauterbornii				common	present	present	present
Pyramimonas	common	present	present	present	present		common
Cryptomonadales	common	common	common	common	common	common	common
Eutreptiella	common	present	common	common	present	present	present
Aphanizomenon	present			present		present	
Aphanothece paralleliformis							present
Cyanodictyon				present			present
Lemmermanniella	present		present	present			present
Pseudanabaena				present			
Snowella				present	present		present
Calliacantha natans	present	present	present		present	present	
Ebria tripartita	present	present	present		common	present	present
Ciliophora	present	present	common	present	present	common	common
Mesodinium	present	present	present	present	present	present	common
Mesodinium rubrum	present	present	common	present	present	present	common


The Skagerrak
Station: Å17
Station: Å15
Station: Å13
Station: Släggö
Station: P2
2026-04-12
Depth (m)
Chl-a (µg/l)
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Chlorophyll a
CTD Fluorescence (nominally µg/l)
Current year´s Chl-a data (0-20 m)
Monthly Chl-a averages 0-20 m (1991-2020)
Monthly Chl-a averages +/- standard dev.


The Kattegat and The Sound
Station: Fladen
Station: N14 Falkenberg
Station: Anholt E
Station: W Landskrona
2026-04-11
Depth (m)
Chl-a (µg/l)
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Chlorophyll a
CTD Fluorescence (nominally µg/l)
Current year´s Chl-a data (0-20 m)
Monthly Chl-a averages 0-20 m (1991-2020)
Monthly Chl-a averages +/- standard dev.


The Southern Baltic
Station: BY1
Station: BY2 Arkona
Station: BY4 Christiansö
Station: BY5 Bornholm Deep
2026-04-11
2026-04-10
Depth (m)
Chl-a (µg/l)
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Chlorophyll a
CTD Fluorescence (nominally µg/l)
Current year´s Chl-a data (0-20 m)
Monthly Chl-a averages 0-20 m (1991-2020)
Monthly Chl-a averages +/- standard dev.


The Eastern Baltic
Station: BCS III-10
Station: BY10
Station: BY15 Gotland Deep
Station: BY20 Fårö Deep
Depth (m)
2026-04-09
Chl-a (µg/l)
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Chlorophyll a
CTD Fluorescence (nominally µg/l)
Current year´s Chl-a data (0-20 m)
Monthly Chl-a averages 0-20 m (1991-2020)
Monthly Chl-a averages +/- standard dev.



Om klorofylldiagrammen

Klorofyll *a* är ett mått på mängden växtplankton. Prover tas från ett antal djup. Data presenteras både från de fasta djupen och som medelvärden 0-20 m. Utöver resultaten från laboratorieanalyserna av vattenprover mäts klorofyll *a* som fluorescens från ett automatiskt instrument som sänks ned från fartyget. På så sätt kan djupt liggande, ibland tunna lager av växtplankton observeras.

About the chlorophyll graphs

Chlorophyll *a* is sampled from several depths. Data are presented both from the discrete depths and as an average 0-20 m. In addition to the laboratory analysis from the water samples chlorophyll fluorescence is measured in continuous depth profiles from the ship. This is a way to observe thin layers of phytoplankton occuring below the surface.

Om AlgAware

SMHI genomför månatliga expeditioner i Östersjön och Västerhavet. Resultat baserade på semikvantitativ mikroskopanalys av planktonprover samt klorofyllmätningar presenteras kortfattat i denna rapport. Information från SMHIs satellitövervakning av algblomningar finns under perioden juni-augusti på www.smhi.se. Resultat från provtagningarna kan hämtas från SMHI:s databas på sharkweb.smhi.se. Hydrografidata läggs ut varje månad, växtplanktondata läggs ut en gång per år.

About AlgAware

SMHI carries out monthly cruises in the Baltic and the Kattegat/Skagerrak. Results from semi quantitative microscopic analysis of phytoplankton samples as well as chlorophyll measurements are presented in brief in this report. Information from SMHIs satellite monitoring of algal blooms is found on www.smhi.se during the period June-August. Results from the expeditions are found in the SMHI database, sharkweb.smhi.se. Data are published monthly, phytoplankton data however, are published once a year.

Art / Species	Gift / Toxin	Eventuella symptom	Clinical symptoms
Alexandrium spp.	Paralytic shellfish poisoning (PSP)	**Milda symptom:** Inom 30 min.: Stickningar eller en känsla av bedövning runt läpparna, som sprids gradvis till ansiktet och nacken; stickningar i fingertoppar och tår; Huvudvärk; yrsel, illamående, kräkningar, diarré **Extrema symptom:** Muskelförlamning; andningssvårigheter; känsla av att kvävas; Man kan vara död inom 2-24 timmar efter att ha fått i sig giftet, på grund av att andningsmuskulaturen förlamas.	**Mild case:** Within 30 min: tingling sensation or numbness around lips, gradually spreading to face and neck; prickly sensation in fingertips and toes; headake, dizziness, nausea, vomiting, diarrhoea. **Extreme case** Muscular paralysis; pronounced respiratory difficulty; choking sensation; death trough respiratory paralysis may occur within 2-24 hours after ingestion.
Dinophysis spp.	Diarrehetic shellfish poisoning (DSP)	**Milda symptom:** Efter cirka 30 minuter till några timmar: yrsel, illamående, kräkningar, diarré, magont **Extrema symptom:** Upprepad exponering kan orsaka cancer	**Mild case:** Within 30 min-a few hours: dizziness, nausea, vomiting, diarrhoea, abdominal pain. **Extreme case:** Repeated exposure may cause cancer.
Pseudo- niztschia spp.	Amnesic shellfish poisoning (ASP)	**Milda symptom:** Efter 3-5 timmar: yrsel, illamående, kräkningar, diarré, magkramper **Extrema symptom:** Yrsel, hallucinationer, förvirring, förlust av korttidsminnet, kramper	**Mild case:** Within 3-5 hours: dizziness, nausea, vomiting, diarrhoea, abdominal cramps. **Extreme case:** dizziness, hallucinations, confusion, loss of memory, cramps.
Chaetoceros concavicornis/ C.convolutus	Mechanical damage through hooks on setae	**Låg celltäthet:** Ingen påverkan. **Hög celltäthet:** Fiskens gälar skadas, fisken dör.	**Low cell numbers:** No effect on fish. **High cell numbers:** Fish death due to gill damage.
Pseudochattonella spp.	Fish toxin	**Låg celltäthet:** Ingen påverkan. **Hög celltäthet:** Fiskens gälar skadas, fisken dör.	**Low cell numbers:** No effect on fish. **High cell numbers:** Fish death due to gill damage.

Oversikt över några potentiellt skadliga alger och det aktuella giftets effekt. Overview of potentially harmful algae and effects of toxins. Manual on harmful marine microalgae (2003 - UNESCO Publishing).

Kartan på framsidan visar viktat medelvärde för klorofyll *a,* µg/l (0-10 m) vid de olika stationerna. Pil upp eller ned indikerar om resultatet är över eller under en standardavvikelse från medel. Medel är beräknat utifrån aktuell månad under perioden 2001-2015. Förekomst av skadliga alger vid stationer där arter analyseras markeras med symbol.

The map on the front page shows weighted mean of chlorophyll *a*, µg/l (0-10 m) at sampling stations. The arrow up or down indicate whether the result is above or below one standard deviation from mean. The mean value is calculated using results from the actual month during the period 2001-2015. Presence of harmful algae at stations where species analysis is performed is shown with a symbol.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