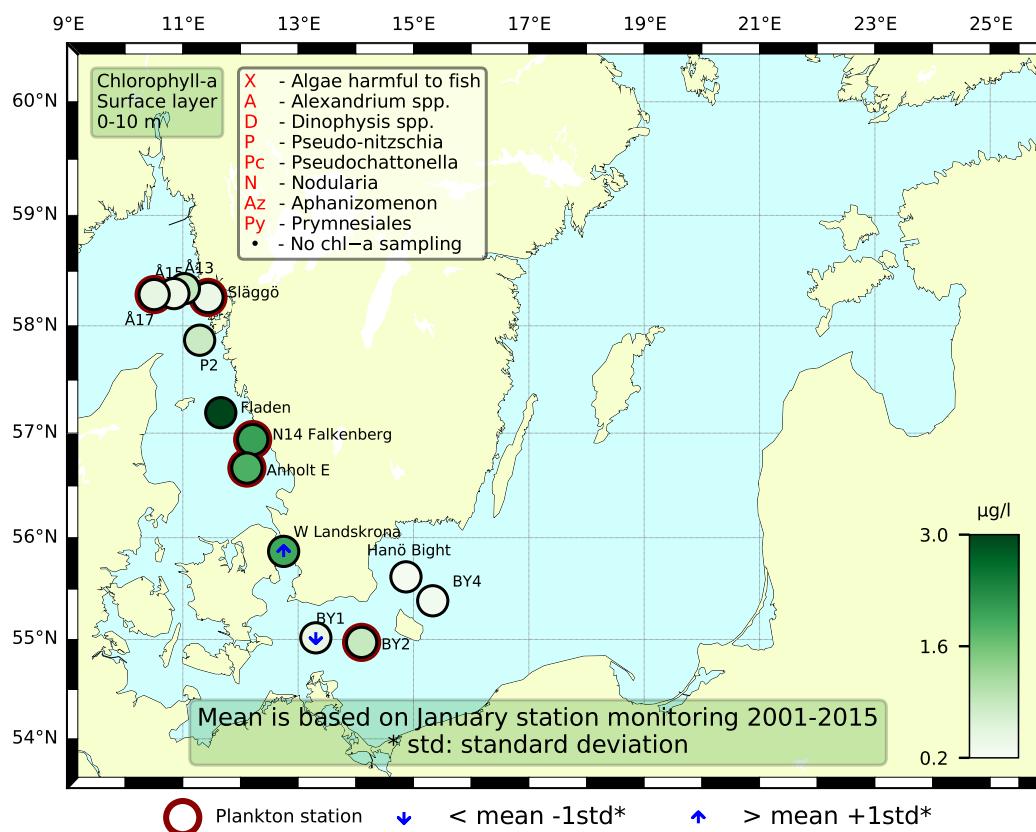


Sammanfattning

Pga ett fall av covid-19 ombord på Svea fick expeditionen avbrytas vid Bornholm i södra Östersjön och vända tillbaka till hemmahamnen, Lysekil. Alla stationer i Västerhavet provtogs.

Artdiversiteten av växtplankton var mycket låg med låga totala cellantal vid Skagerrak-stationerna. I Kattegatt var artdiversiteten relativt hög, och dominerades av kiselalger. De totala cellantalen var låga. Klorofyllhalterna var normala för månaden vid alla stationer.

De växtplanktonprov som togs vid BY2 och BY4 i södra Östersjön var mycket artfattiga samt låga i cellantal. De integrerade klorofyllhalterna, 0 - 20 m, var under det normala för denna månaden.



Abstract

Due to a case of covid-19 onboard the R/V Svea, the cruise had to stop at Bornholm in the Southern Baltic and turn back to the home port, Lysekil. All Kattegat and Skagerrak stations were sampled.

The phytoplankton species diversity was very low with low total cell numbers at the Skagerrak stations. In the Kattegat the species diversity was rather high and dominated by diatoms. The total cell numbers were however low. The chlorophyll concentrations were normal for this month at all stations.

The few species found at BY2 and BY4 in the southern Baltic Sea had low cell numbers. The integrated chlorophyll concentrations, 0 - 20 m, were below normal for this month.

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

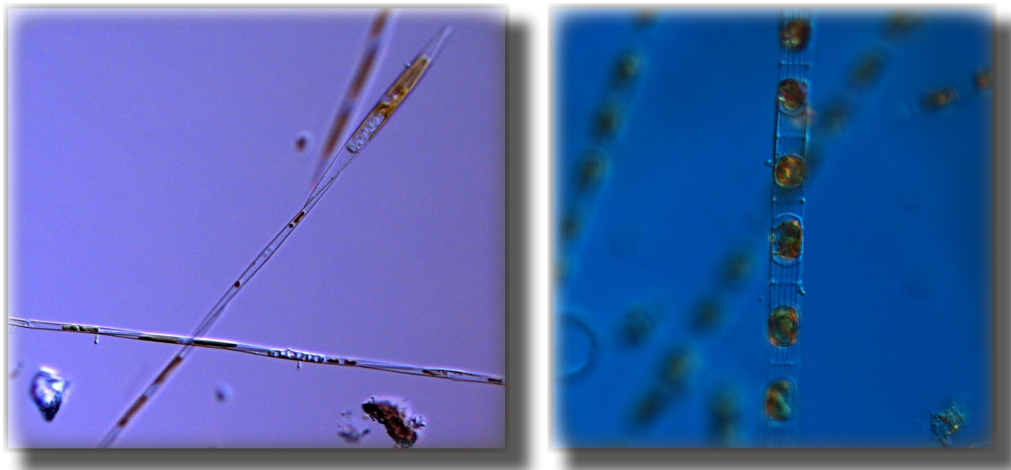
The Skagerrak

Å17 (open Skagerrak) 10th of January

The phytoplankton species diversity and the total cell numbers were very low. Only a few species were present in very low numbers. The integrated chlorophyll concentrations were normal for this month.

Släggö (Skagerrak coast) 10th of January

The species diversity and the total cell numbers were low. The most numerous species was the diatom *Skeletonema marinoi*. The integrated chlorophyll concentrations were within normal for this month.



*Pseudo-nitzschia** (left) and *Skeletonema marinoi* were the most abundant diatoms at Anholt E and N14 Falkenberg.

The Kattegat

Anholt E 11th of January

The species diversity was relatively high and dominated by diatoms, but the total cell numbers were moderate. The potentially toxic genus *Pseudo-nitzschia* and *S. marinoi* were the most abundant diatoms whereas *Tripos lineatus* was the most numerous dinoflagellate. The integrated chlorophyll concentrations were normal for this month.

N14 Falkenberg 11th of January

The phytoplankton situation was more or less the same as at Anholt E. The dinoflagellate *Peridiniella danica* was abundant at N14 though. The integrated chlorophyll concentrations were normal for this month.

The Baltic

BY2 12th of January

The phytoplankton diversity was very low. There were only small species present of which cryptomonads and ciliates were the most numerous organisms. The integrated chlorophyll concentrations, 0 - 20 m, were below normal for this month.

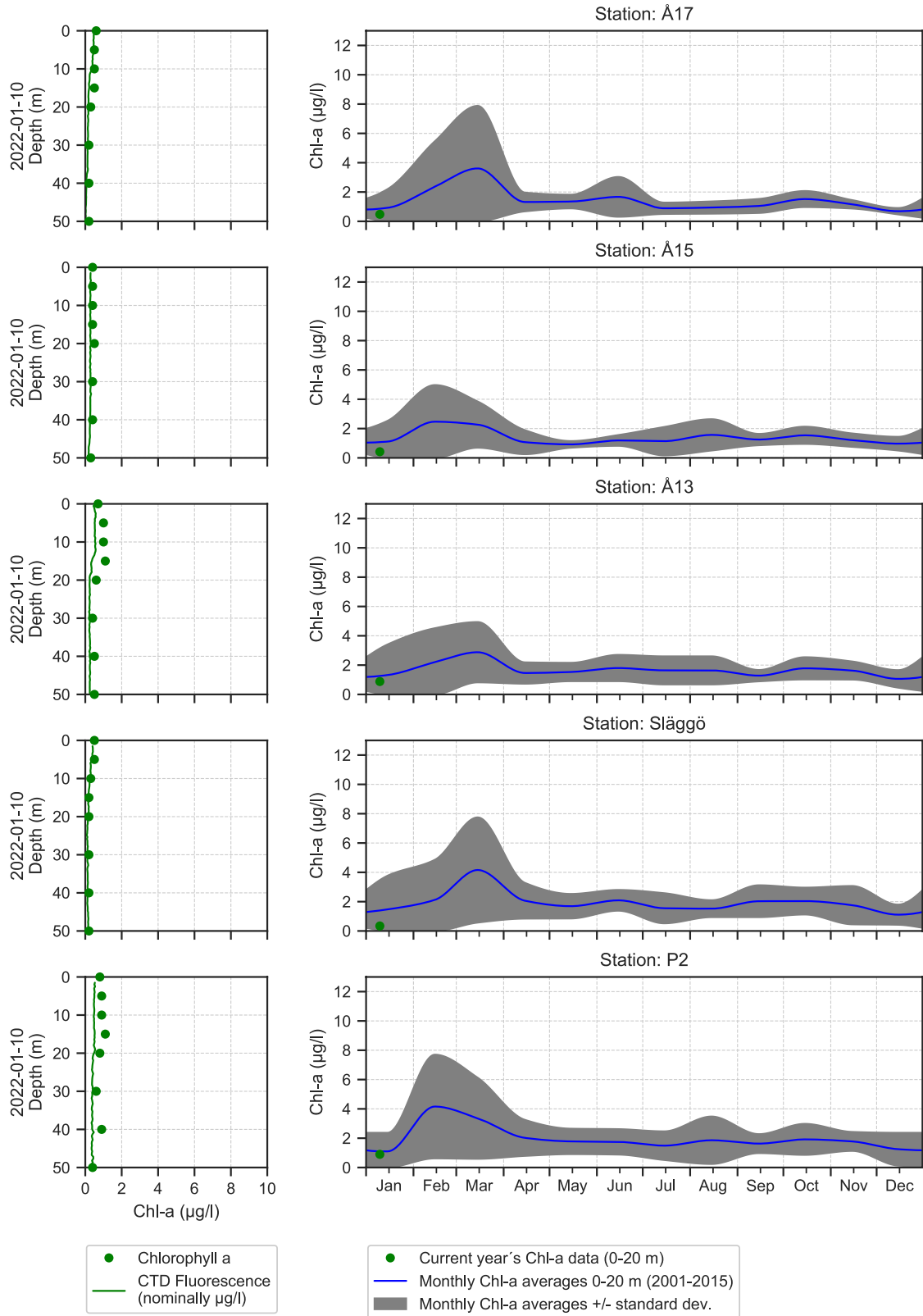
BY4 12th of January

Being the last station before ending the cruise, phytoplankton was sampled in stead of at BY5 which would have been the next stop. The diversity was however very low and very few species were found in very low cell numbers. The integrated chlorophyll concentrations, 0 - 20 m, were below normal for this month.

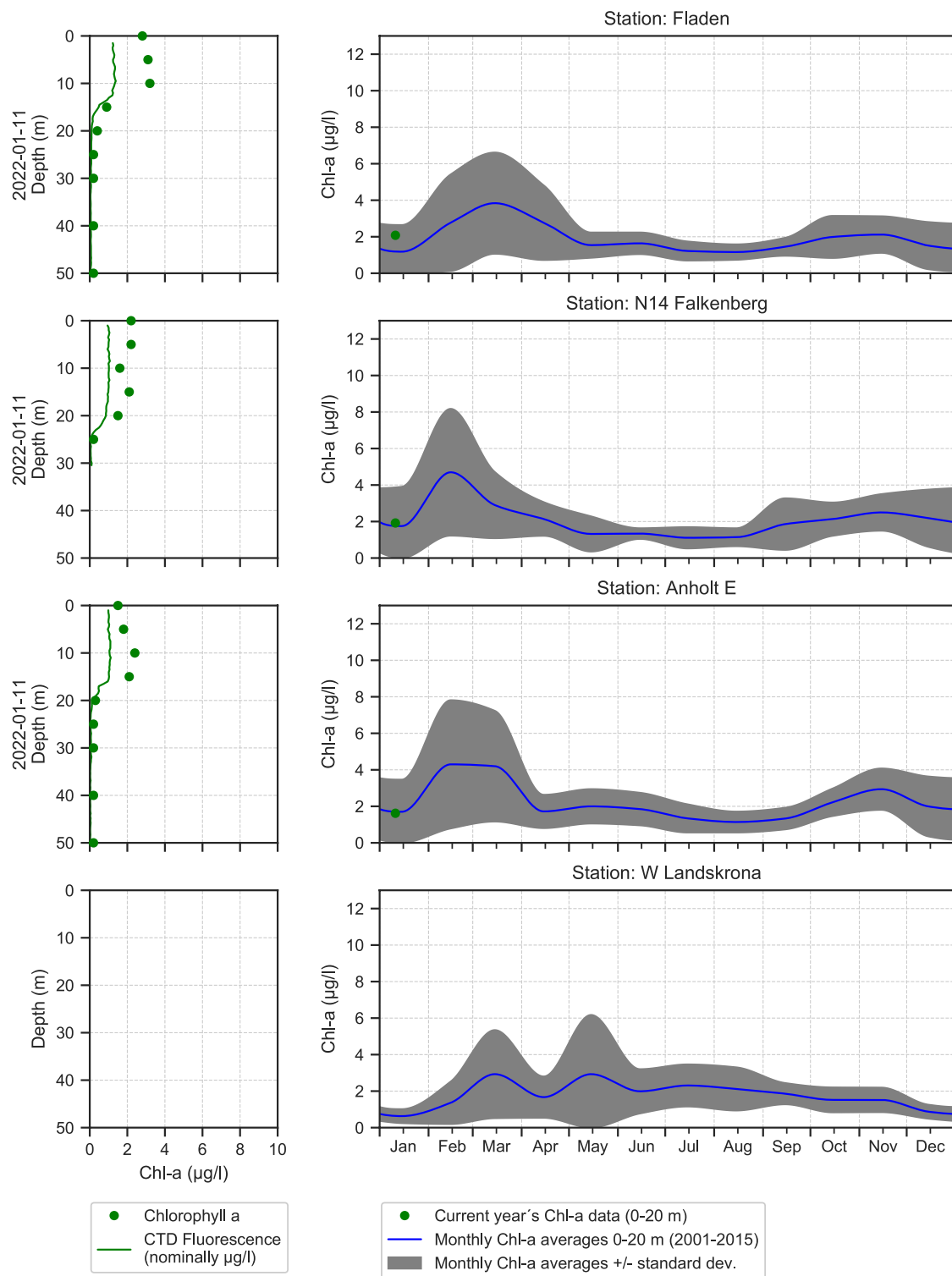
Selection of observed species	Anholt E	N14	Släggö	Å17
Red=potentially toxic species	11/1	11/1	10/1	10/1
Hose 0-10 m	presence	presence	presence	presence
<i>Cerataulina pelagica</i>	common	present		
<i>Chaetoceros convolutus</i>		present		
<i>Chaetoceros danicus</i>	present	present	present	
<i>Chaetoceros debilis</i>		present		
<i>Coscinodiscus concinnus</i>		present		
<i>Cylindrotheca closterium</i>			present	present
<i>Dactyliosolen fragilissimus</i>	present			
<i>Ditylum brightwellii</i>	present			present
<i>Guinardia delicatula</i>	present	present		
<i>Guinardia flaccida</i>	present			
<i>Leptocylindrus danicus</i>	present			
<i>Leptocylindrus minimus</i>	present	present		
<i>Nitzschia longissima</i>	present	present	present	
<i>Paralia sulcata</i>			present	
<i>Proboscia alata</i>	present	present	present	
<i>Proboscia indica</i>			present	
<i>Pseudo-nitzschia</i>	common	common	present	present
<i>Rhizosolenia imbricata</i>			present	
<i>Rhizosolenia setigera</i>	present	present		
<i>Skeletonema marinoi</i>	common	common	common	present
<i>Thalassionema nitzschioides</i>			present	
<i>Thalassiosira angulata</i>	present	present		
<i>Thalassiosira anguste-lineata</i>	present			
<i>Thalassiosira constricta</i>		present		
<i>Thalassiosira gravida</i>	present			
<i>Thalassiosira punctigera</i>	present			
<i>Azadinium</i>				present
<i>Dinophysis acuminata</i>	present	present		present
<i>Dinophysis norvegica</i>	present	present	present	
Gymnodiniales	present	present	present	present
<i>Gymnodinium verruculosum</i>		present	present	
<i>Gyrodinium spirale</i>	present	present	present	present
<i>Heterocapsa</i>				present
<i>Karenia mikimotoi</i>				present
<i>Katodinium glaucum</i>	present			
Peridinales		present	present	present
<i>Peridiniella danica</i>	present	common		
<i>Protoperidinium</i>	present			
<i>Protoperidinium bipes</i>				present
<i>Tripes lineatus</i>	common	common	present	
<i>Tripes longipes</i>		present	present	present
<i>Tripes muelleri</i>	present	present	present	present
Cryptomonadales	common	common	present	present
<i>Pyramimonas</i>		present		
<i>Heterosigma akashiwo</i>	present	present	present	present
<i>Apedinella radians</i>				present
<i>Octactis speculum</i>	present	present	present	present
<i>Pseudochattonella</i>	present	present		
<i>Pseudopedinella</i>	present	present	present	
<i>Emiliania huxleyi</i>	present	present		present
<i>Pseudanabaena</i>		present		
Flagellates		present		
<i>Leucocryptos marina</i>	present	present		
Ciliophora	present	present		present
<i>Laboea strobila</i>	present		present	

Selection of observed species	BY2 ARKONA	BY4
Red=potentially toxic species	12/1	12/1
Hose 0-10 m	presence	presence
Centrales	present	
Cylindrotheca closterium	present	
Skeletonema marinoi	present	
<i>Dinophysis norvegica</i>		present
Gymnodiniales	present	present
Heterocapsa		present
Heterocapsa rotundata	present	
<i>Karlodinium veneficum</i>	present	
Peridinales	present	
Cryptomonadales	present	present
Pseudopedinella pyriformis		present
Eutreptiella	present	
<i>Prymnesiales</i>	present	
Snowella	present	
Binuclearia lauterbornii	present	
Oocystis	present	
Flagellates	present	present
Mesodinium rubrum	present	present
Ciliophora	present	present

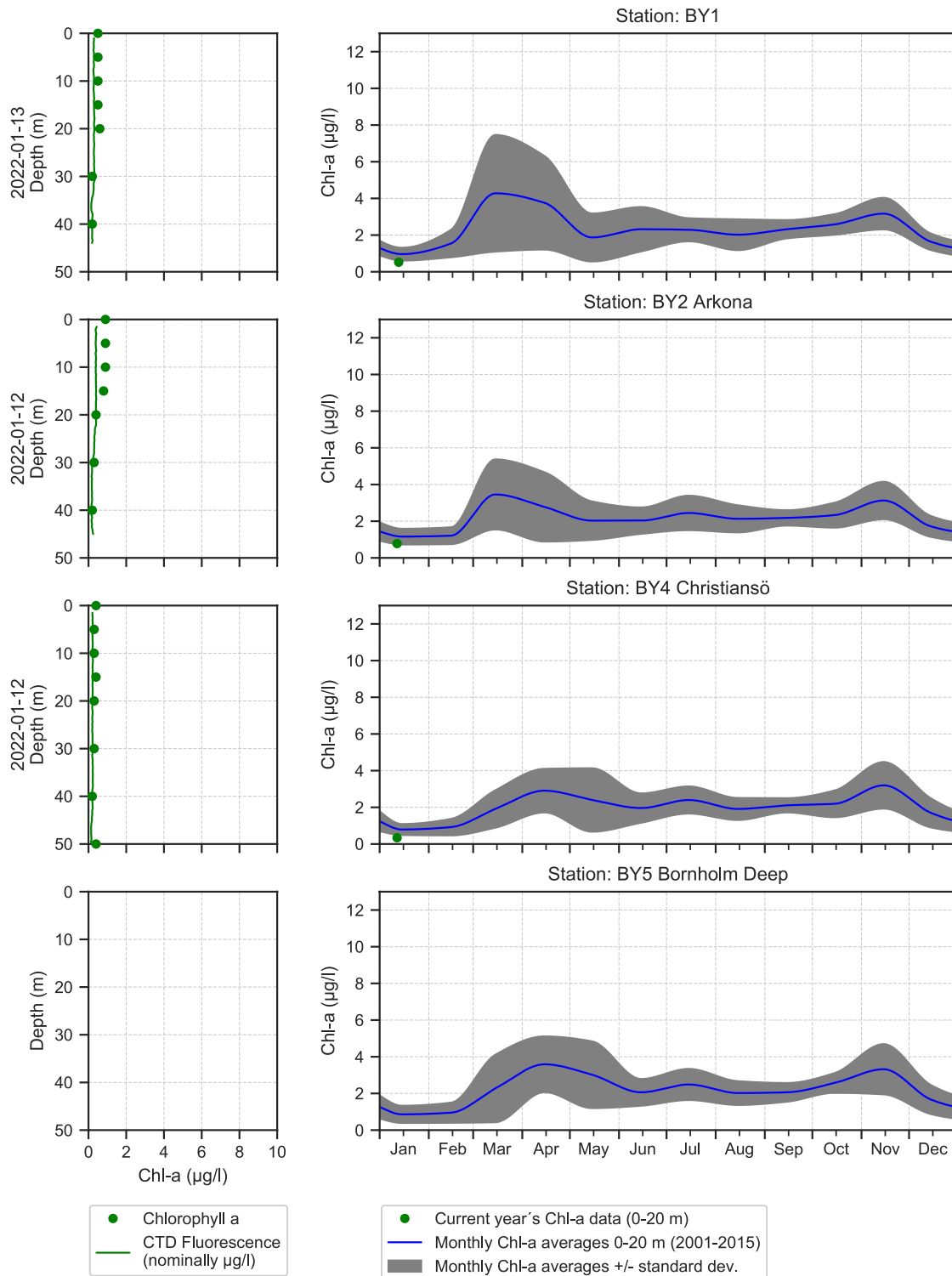
The Skagerrak



The Kattegat and The Sound



The Southern Baltic



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 occurring 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 algbloomningar 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
<i>Alexandrium</i> 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; headache, dizziness, nausea, vomiting, diarrhoea. Extreme case Muscular paralysis; pronounced respiratory difficulty; choking sensation; death through respiratory paralysis may occur within 2-24 hours after ingestion.
<i>Dinophysis</i> spp.	Diarrhetic 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.
<i>Pseudo-nitzschia</i> spp.	Amnesic shellfish poisoning (ASP)	Milda symptom: Efter 3-5 timmar: yrsel, illamående, kräkningar, diarré, magkramp Extrema symptom: Yrsel, hallucinationer, förvirring, förlust av korttidsminnet, kramp	Mild case: Within 3-5 hours: dizziness, nausea, vomiting, diarrhoea, abdominal cramps. Extreme case: dizziness, hallucinations, confusion, loss of memory, cramps.
<i>Chaetoceros concavicornis</i> / <i>C. convolutus</i>	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.
<i>Pseudochattonella</i> 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.

Översikt 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.

