

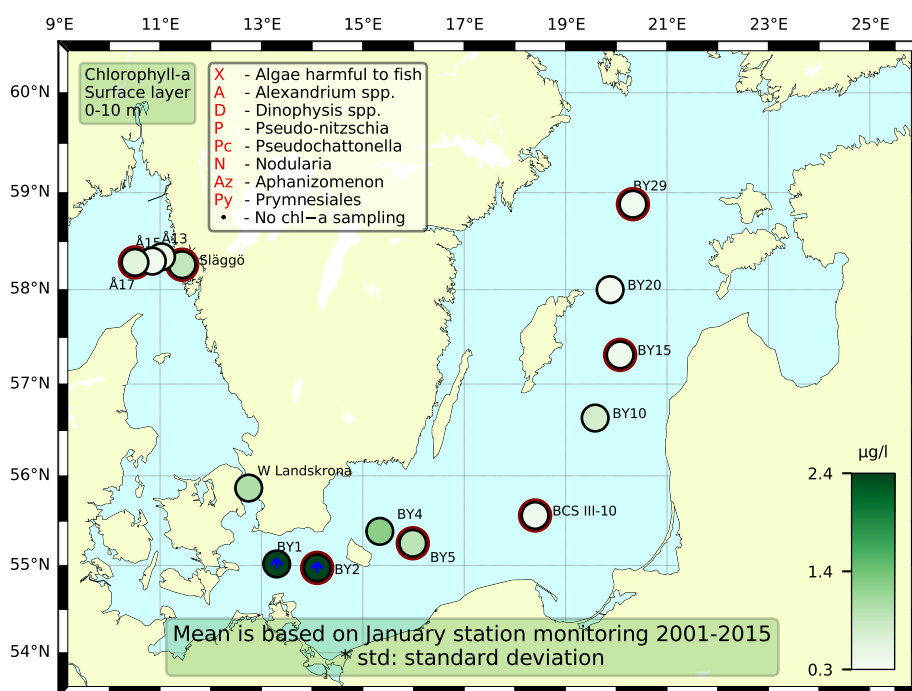
Sammanfattning

Vid denna expedition provtogs endast hälften av de planerade stationerna på grund av problem med fartyget som orsakade att provtagningen fick avbrytas.

Vid Å17 längst ut i Skagerrak och Släggö vid kusten var diversiteten av växtplankton och klorofyllhalterna låga, vilket är normalt för månaden.

I Östersjön var växtplanktonsamhället i vintervila vid de flesta stationer. Endast vid BY2 var cellkoncentrationen lite högre och kiselalgen *Dactyliosolen fragilissimus* var talrik. Små arter av cryptomonader, pico cyanobakteriekolonier och ciliater var annars vanliga vid samtliga stationer. Grönalgen *Binuclearia lauterbornii* var relativt vanlig vid de östra stationerna. Klorofyllhalterna var generellt sett låga, vilket är normalt för månaden.

I årets första AlgAware har vi uppdaterat klorofyllkartan och -diagrammen.



Abstract

Only half of the amount of stations that were planned to be sampled during the cruise were actually visited due to engine problems which caused cancellation of the remaining cruise.

At Å17, the most westerly Skagerrak station and at Släggö at the coast, the phytoplankton diversity and chlorophyll concentrations were low, which is normal for this month.

The phytoplankton community was in its winter rest in the Baltic. The only exception was BY2 where total cell concentrations were slightly higher compared to the other stations. The diatom *Dactyliosolen fragilissimus* was common at BY2. Overall the samples consisted of small cells of different cryptomonads, pico cyanobacteria colonies and ciliates. The green algae *Binuclearia lauterbornii* was relatively abundant at the eastern and northern stations. The chlorophyll concentrations were overall low.

In the first AlgAware of 2020, the chlorophyll map and diagrams have been updated.

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

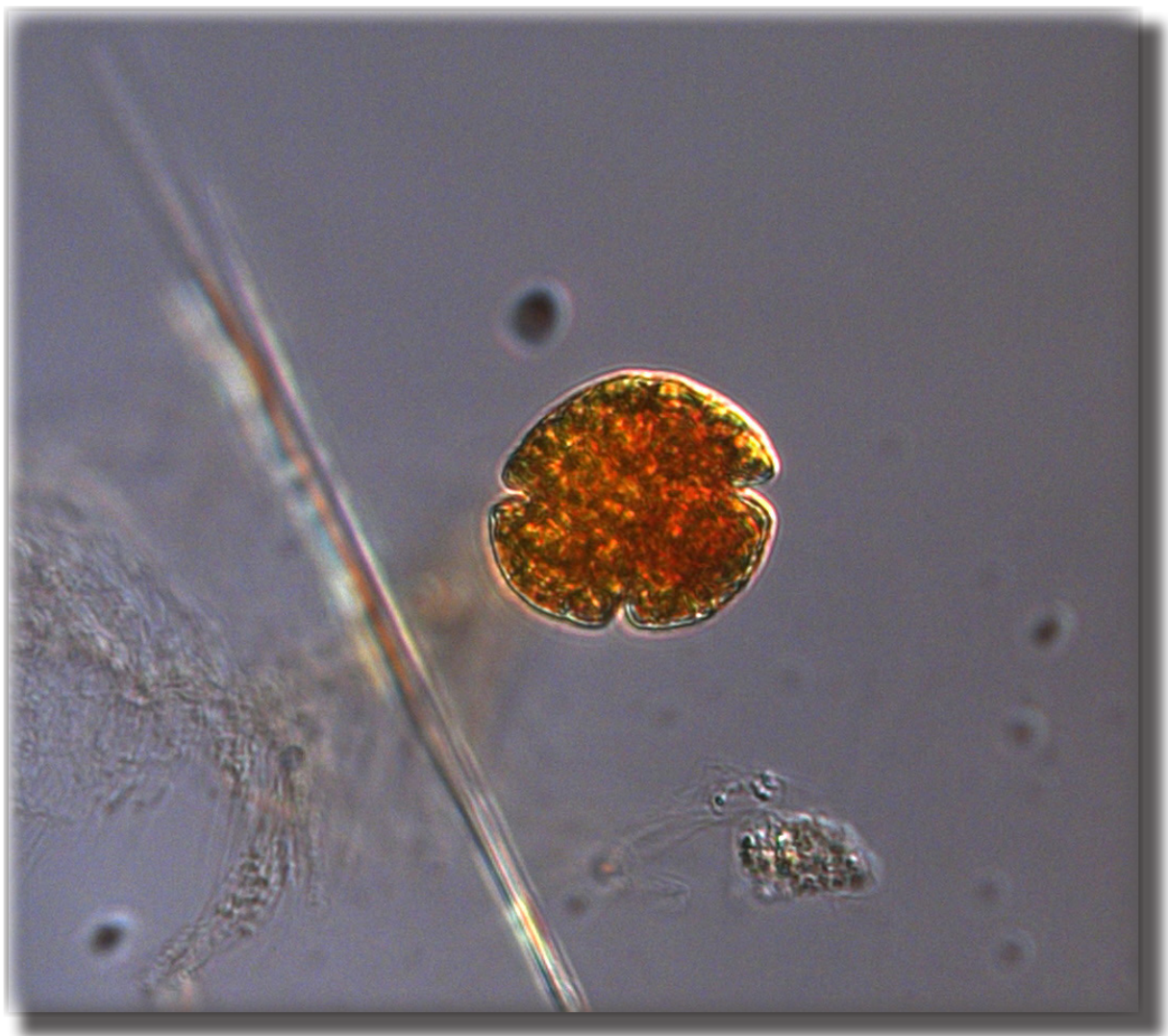
The Skagerrak

Å17 (open Skagerrak) 7th of January

The phytoplankton diversity and the total cell concentrations were low. The potentially toxic genus *Pseudo-nitzschia** was relatively common. The integrated chlorophyll concentration (0-20m) was low as expected for this month.

Släggö (Skagerrak coast) 7th of January

The phytoplankton diversity was moderate and the total cell concentration was low. Different species of the dinoflagellate genus *Ceratium* and the dinoflagellate *Karenia mikimotoi* were common. The integrated chlorophyll concentration (0-20m) was in the lower range of what is normal.



The dinoflagellate *Karenia mikimotoi* was relatively abundant at Släggö in the Skagerrak. (Photo: A-T Skjevik).

BY2 9th of January

The total cell concentration was moderate and the dominant species was the diatom *Dactyliosolen fragilissimus*. Besides the diatom the sample had moderate concentrations of colony forming cyanobacteria and different species of the order cryptomonadales. The integrated chlorophyll concentration (0-20m) was above average for this month.

BY5 10th and BY15 11th of January

Both the species diversity and the total cell concentrations were low. The green algae genera *Oocystis* and *Binuclearia lauterbornii* as well as several species of cryptomonadales were common. Various colony forming cyanobacteria were recorded. The integrated chlorophyll concentration (0-20m) was within normal for this month.

BCSIII-10 10th of January

Both the species diversity and the total cell concentrations were low. The sample was dominated by different ciliates among which *Mesodinium rubrum* was present. The integrated chlorophyll concentration (0-20m) was within normal for this month.

BY29 11th of January

Both the diversity and the total cell concentrations were low. Quite a few filaments of the cyanobacterium *Aphanizomenon flosaquae* were found. The sample also had quite many cells of the green algae genus *Oocystis*. No chlorophyll data was available for this station.

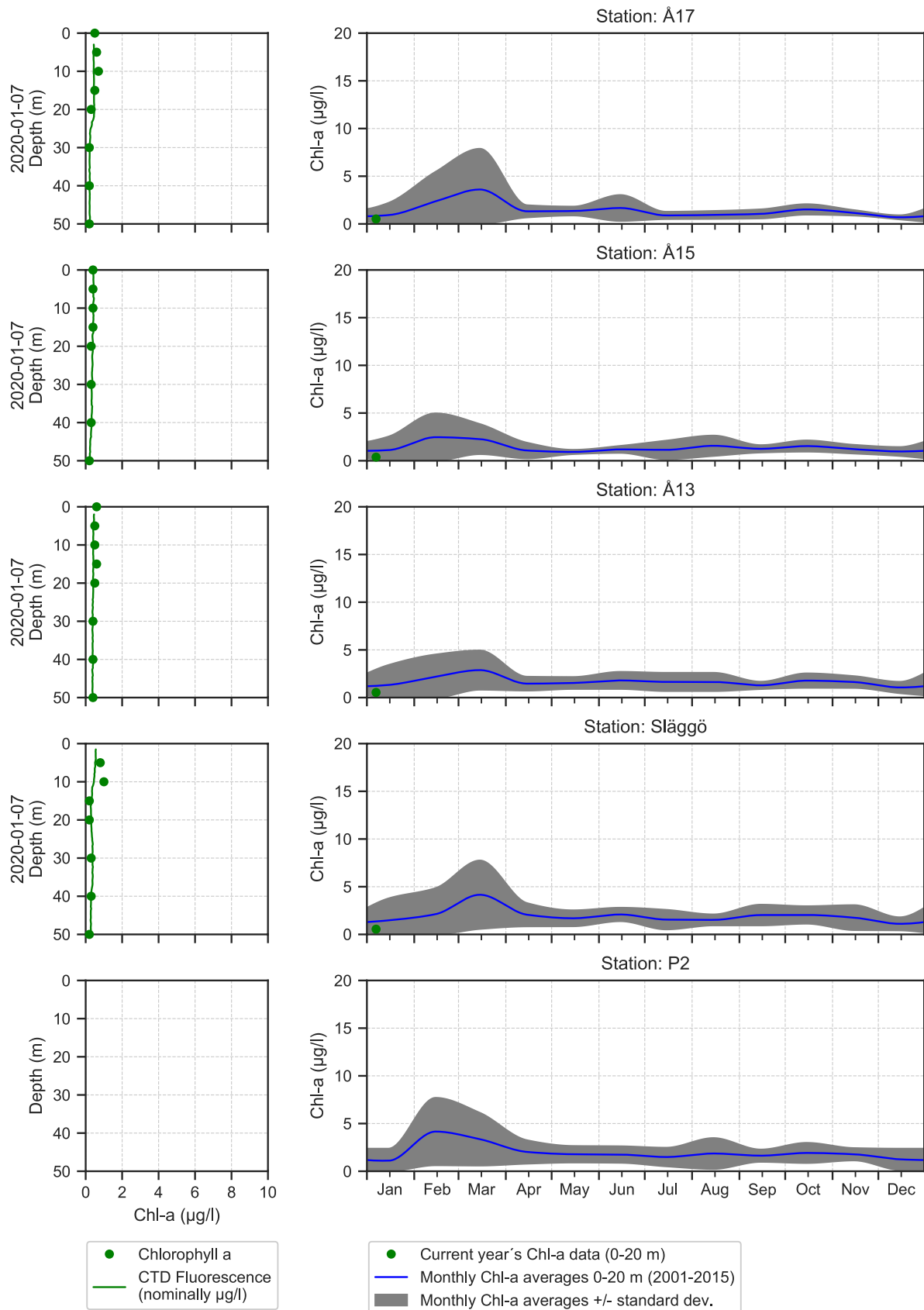


At BY29, the most northern station, several filaments of the cyanobacterium *Aphanizomenon flosaquae* were found. (Photo: Marie Johansen).

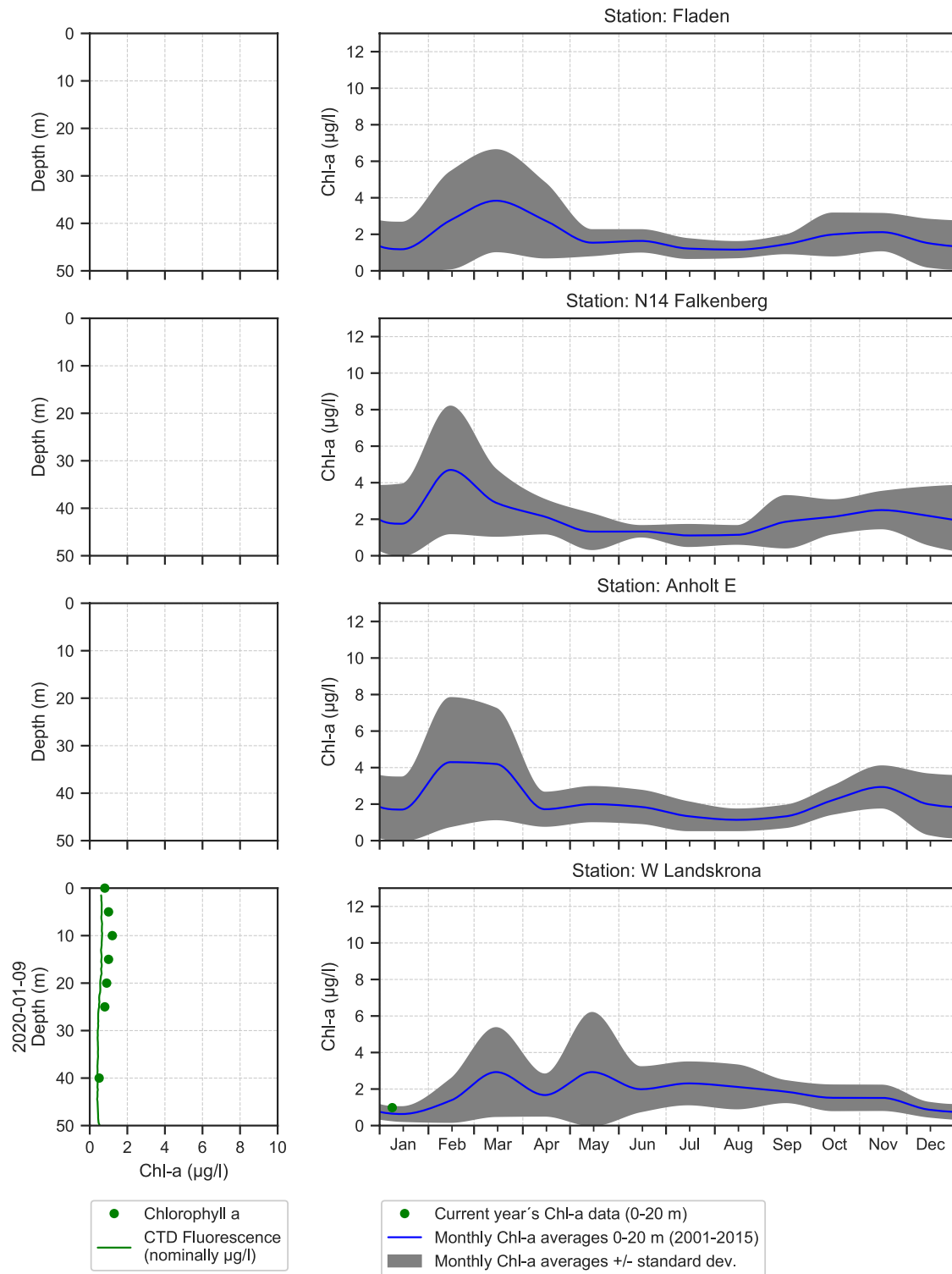
Selection of observed species	Släggö	Å17
Red=potentially toxic species	7/1	7/1
Hose 0-10 m	presence	presence
Asterionellopsis glacialis	present	
Centrales		present
Cylindrotheca closterium		present
Dactyliosolen fragilissimus	present	
Ditylum brightwellii		present
Leptocylindrus danicus	present	
Nitzschia longissima	present	present
Pennales	present	
Pseudo-nitzschia		common
Skeletonema marinoi	common	present
Thalassiosira gravida	present	
Thalassiosira punctigera	present	
Ceratium furca	common	present
Ceratium lineatum	common	common
Ceratium tripos	common	present
Dinophysis norvegica	common	
Gymnodiniales	common	common
Karenia mikimotoi	common	present
Katodinium glaucum	present	
Peridinales	present	
Prorocentrum micans	present	
Pleurochrysis	present	
Cryptomonadales	common	
Dictyocha speculum	present	present
Pseudanabaena	common	
Ciliophora	common	common
Mesodinium rubrum		present

Selection of observed species	BCSIII-10	BY2	BY5	BY15	BY29
Red=potentially toxic species	10/1	9/1	10/1	11/1	11/1
Hose 0-10 m	presence	presence	presence	presence	presence
Actinocyclus	present		present	present	present
Centrales		present		present	
Chaetoceros castracanei	present	present			
Chaetoceros danicus				present	
Dactyliosolen fragilissimus		very common			
Skeletonema marinoi	present	present	present		present
<i>Dinophysis acuminata</i>					present
Gymnodiniales			present	common	common
Heterocapsa rotundata		present			
Peridiniales	present				
Peridiniella catenata	present				
Monoraphidium				present	
Oocystis			present	common	common
Binuclearia lauterbornii	present	present	common	common	present
Cryptomonadales	present	common	common	common	present
Dictyocha speculum		present		present	
Aphanizomenon flosaquae					common
Aphanocapsa		present	present		
Aphanothece	present			present	
Lemmermanniella	present	present	present		
Snowella	present	common	present	common	present
Ciliophora	common	common	present	present	common
Mesodinium rubrum	common	present	present	present	present

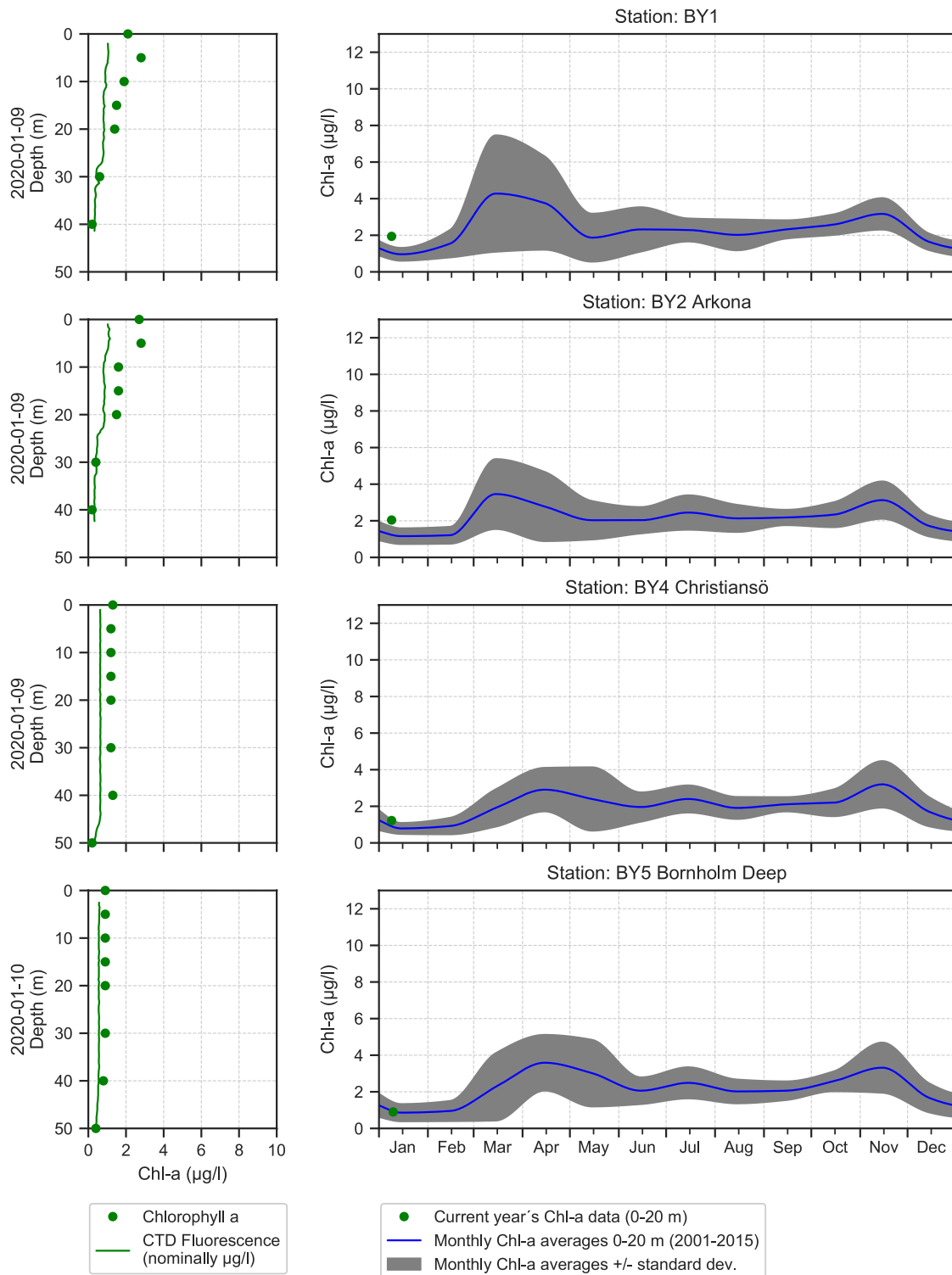
The Skagerrak



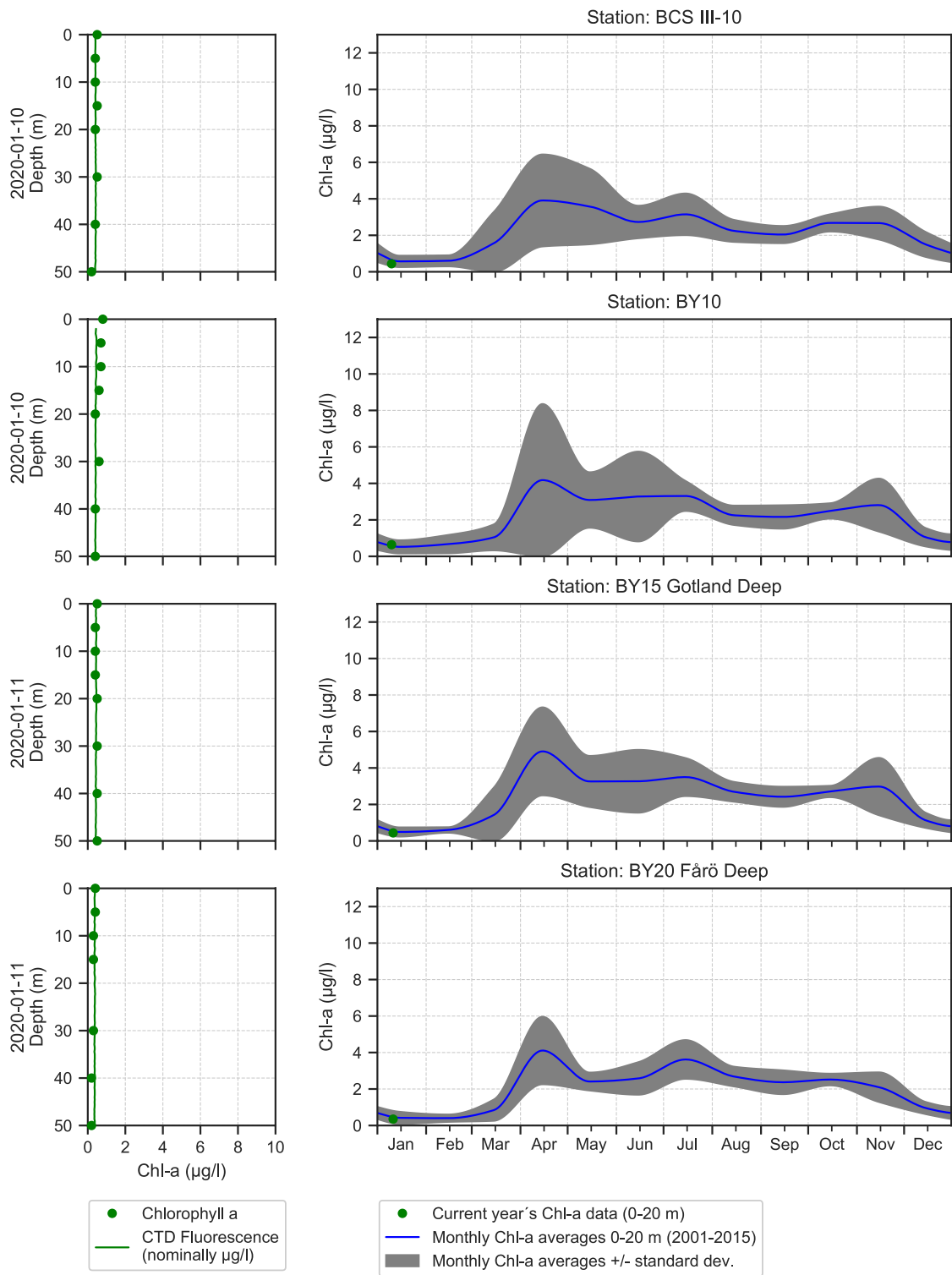
The Kattegat and The Sound



The Southern Baltic



The Eastern 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.

