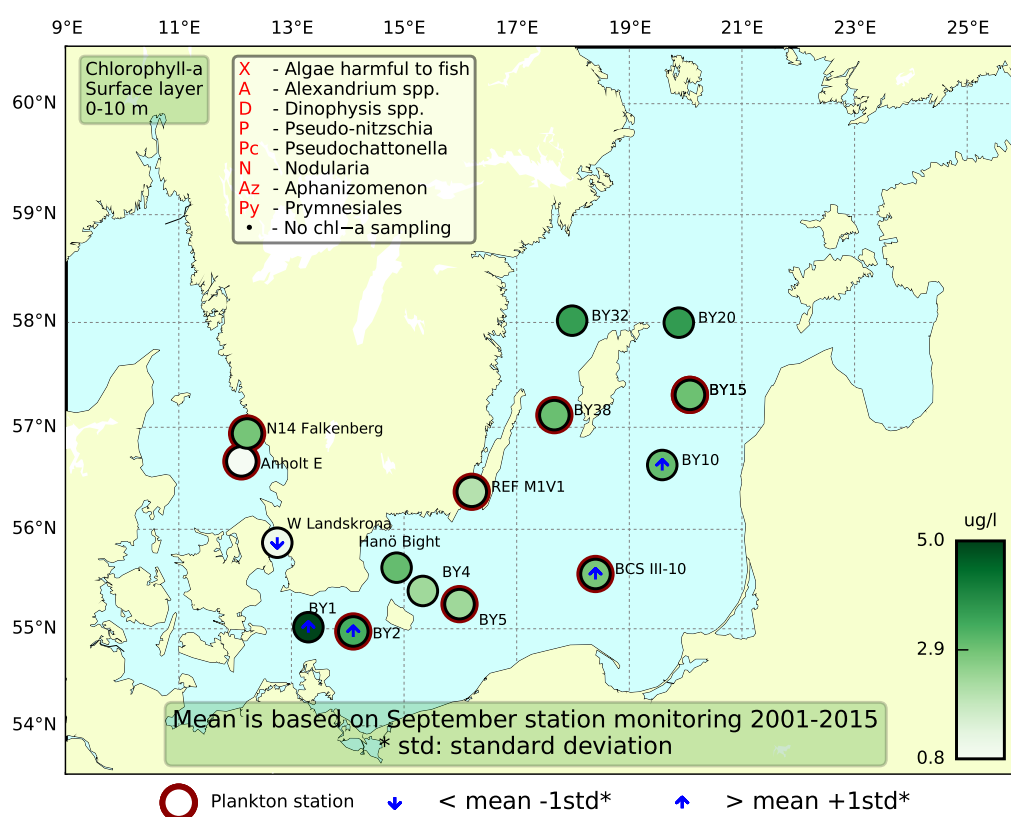


Sammanfattning

På grund av hårda vindar fick Skagerrak strykas. N14 Falkenberg och Anholt E i Kattegatt provtogs, men Anholt E kunde besökas bara en gång. Vid båda stationerna var celltätheten samt artdiversiteten låg och dominerades av små celler. Kalkalgen *Emiliania huxleyi* var talrikast men även olika cryptomonader var vanliga. Bland de större arterna var dinoflagellatsläktet *Ceratium* representerat av flertalet arter men i låga celltätheter. Olika nakna dinoflagellater var vanliga vid N14 Falkenberg. De integrerade klorofyllhalterna visade på halter inom det normala för månaden.

I sydvästra Östersjön var de integrerade (0-10 och 0-20 m) klorofyllhalterna över det normala för denna månad och orsakades till stor del av kiselalger. Klorofyllhalterna var höga även i sydöstra Östersjön samt vid BY32 (0-20 m), men där var det ingen självklar orsak, proverna var artfattiga och cellantalen var generellt sett låga.



Abstract

Due to strong winds the Skagerrak could not be sampled. N14 Falkenberg and Anholt E in the Kattegat were sampled although Anholt E was visited only once during the cruise. The total cell numbers and the biodiversity were low at both stations and were dominated by small cells. The coccolithophorid *Emiliania huxleyi* was found with the highest cell numbers. Different species of the order cryptomonadales were also common. Different species of the dinoflagellate genus *Ceratium* were most common of the larger cells. Naked dinoflagellates were also common at N14 Falkenberg. The integrated chlorophyll concentrations were within normal for this month.

In the southwestern Baltic, the integrated chlorophyll (0-10 and 0-20 m) concentrations were above normal for this month which mainly was caused by diatoms. Even in the southeastern Baltic Proper as well as at BY32 (0-20 m), chlorophyll concentrations were elevated, but the cause was not obvious here considering the generally low cell numbers.

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

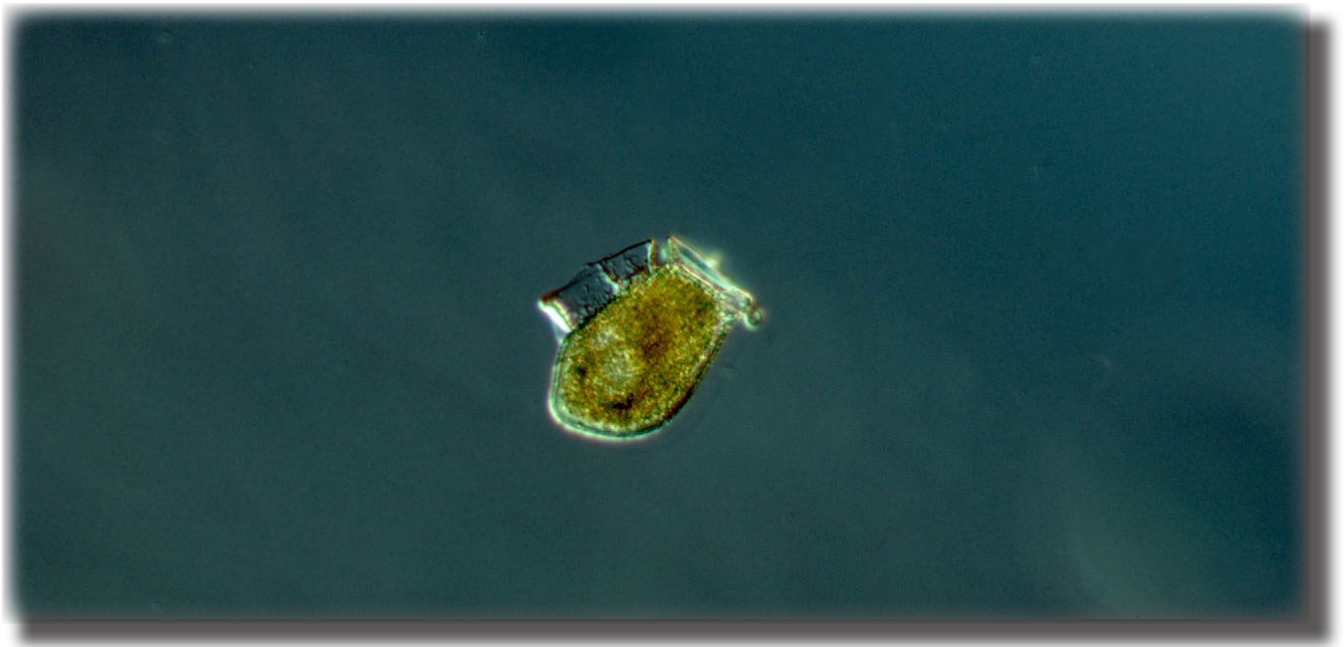
The Kattegat

Anholt E 15th of September

The total cell numbers and biodiversity were low and dominated by small cells where the coccolithophorid *Emiliana huxleyi*, was found with the highest cell numbers. Different species of the order cryptomonadales were also found in relatively high cell numbers. Among the larger cells the dinoflagellate *Dinophysis acuta** was found as well as several species of the genus *Ceratium*. The chlorophyll concentrations were within normal for this month.

N14 Falkenberg 15^h of September

The total cell numbers and biodiversity were low. The larger cells were represented by the dinoflagellate *Ceratium furca*. The intermediate sized cells were dominated by naked dinoflagellates such as *Gymnodinium litoralis*. The community was however dominated by small cells where the coccolithophorid *Emiliana huxleyi* was found with the highest cell numbers. The chlorophyll concentrations were low but within normal for this month.



The species diversity and total cell numbers were low at both stations at the Kattegat coast. The dinoflagellate *Dinophysis acuta* which has been rare in Swedish waters for some years was found at Anholt E.

The Baltic Sea

BY2 16th of September

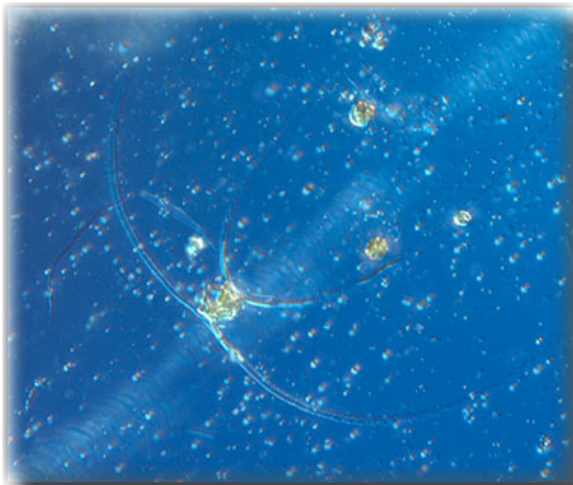
The phytoplankton diversity was higher than at the other stations. There were quite high cell numbers of the diatoms *Dactyliosolen fragilissimus*, *Pseudosolenia calcar-avis* and *Chaetoceros* cf. *convolutus*. The dinoflagellate *Prorocentrum cordatum* was also rather numerous. A few filaments of the cyanobacterium *Nodularia spumigena** were observed. The integrated (0-10 and 0-20 m) chlorophyll concentrations were above normal for this month.

BY5 17th of September

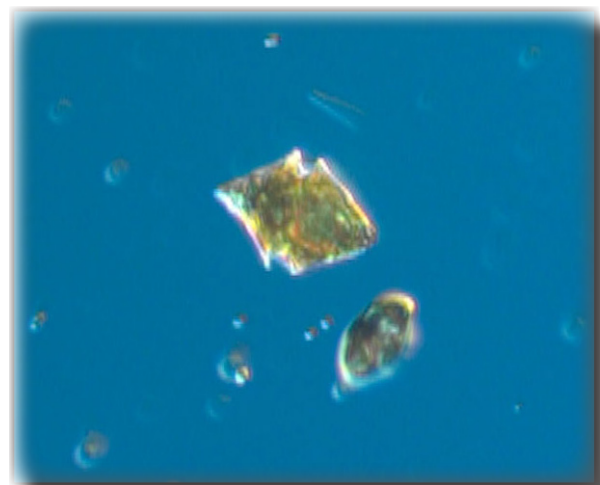
The phytoplankton situation was similar to the one at BY2 although the cell numbers were lower. The chlorophyll concentrations were normal for this month.

BCSIII-10 17th of September

The phytoplankton diversity was low and only small species were abundant like the flagellate *Pyramimonas* spp. and naked dinoflagellates. The integrated (0-10 and 0-20 m) chlorophyll concentrations were above normal for this month.



The diatom *Chaetoceros* cf. *convolutus* was observed in the southwestern Baltic.



Cryptomonads (lower cell) were abundant at all of the Baltic stations, and the dinoflagellate *Heterocapsa triquetra* was abundant in the Kalmar Sound (REFM1V1).

BY15 18th of September

Small cells like cryptomonads and pico cyanobacteria colonies were abundant. A few filaments of the cyanobacterium *Aphanizomenon* and the green algae *Binuclearia lauterbornii* were present. The diatom *Chaetoceros castracanei* was present. The chlorophyll concentrations were normal for this month.

RefM1V1 14th of September

A few filaments of the cyanobacterium *Aphanizomenon* were present. Cryptomonads and the relatively small dinoflagellates *Prorocentrum cordatum* and *Heterocapsa triquetra* were abundant. The chlorophyll concentrations were normal for this month.

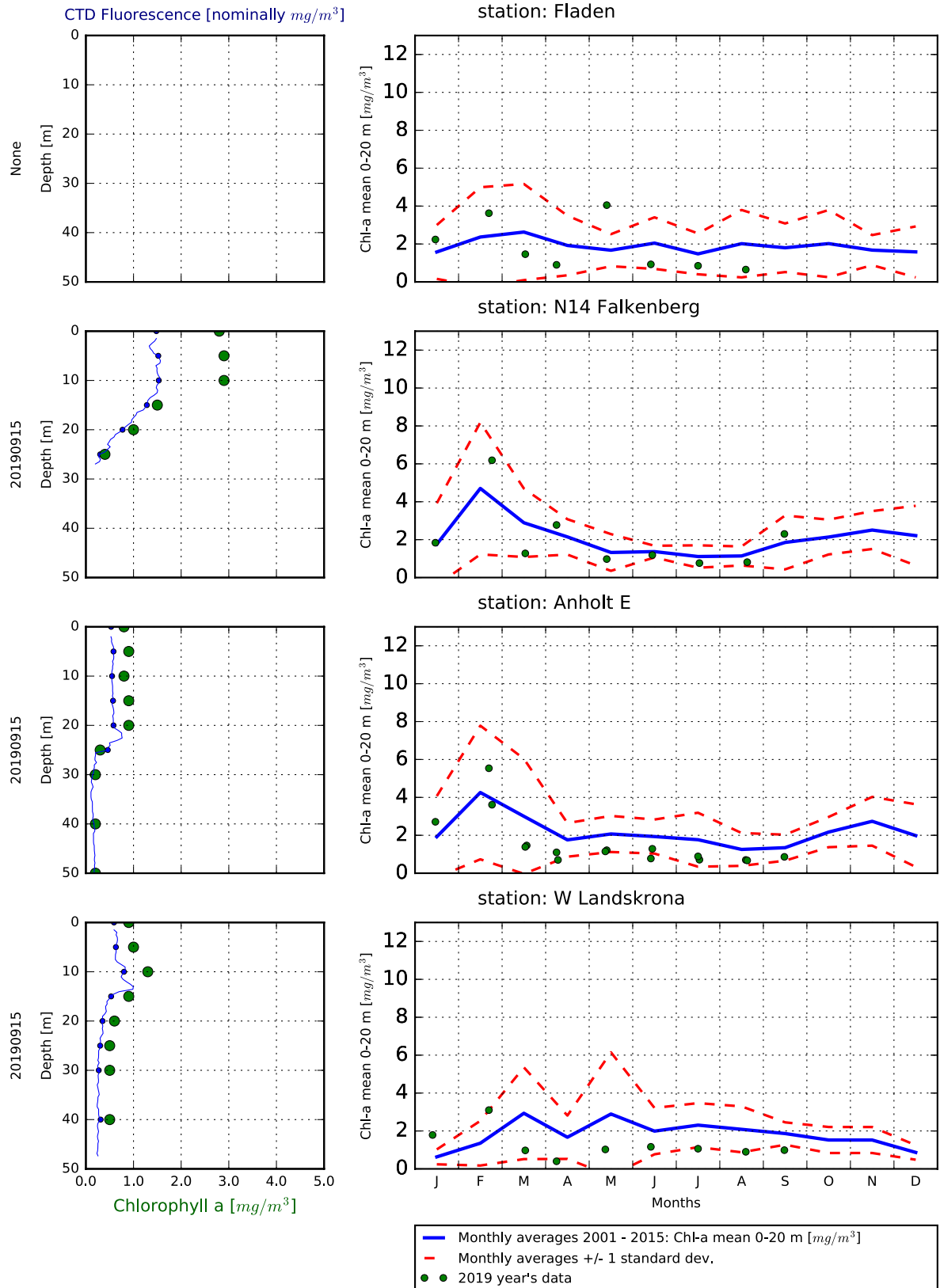
BY38 13th of September

The phytoplankton diversity was very low. Ciliates and cryptomonads were the most numerous organisms. The chlorophyll concentrations were normal for this month.

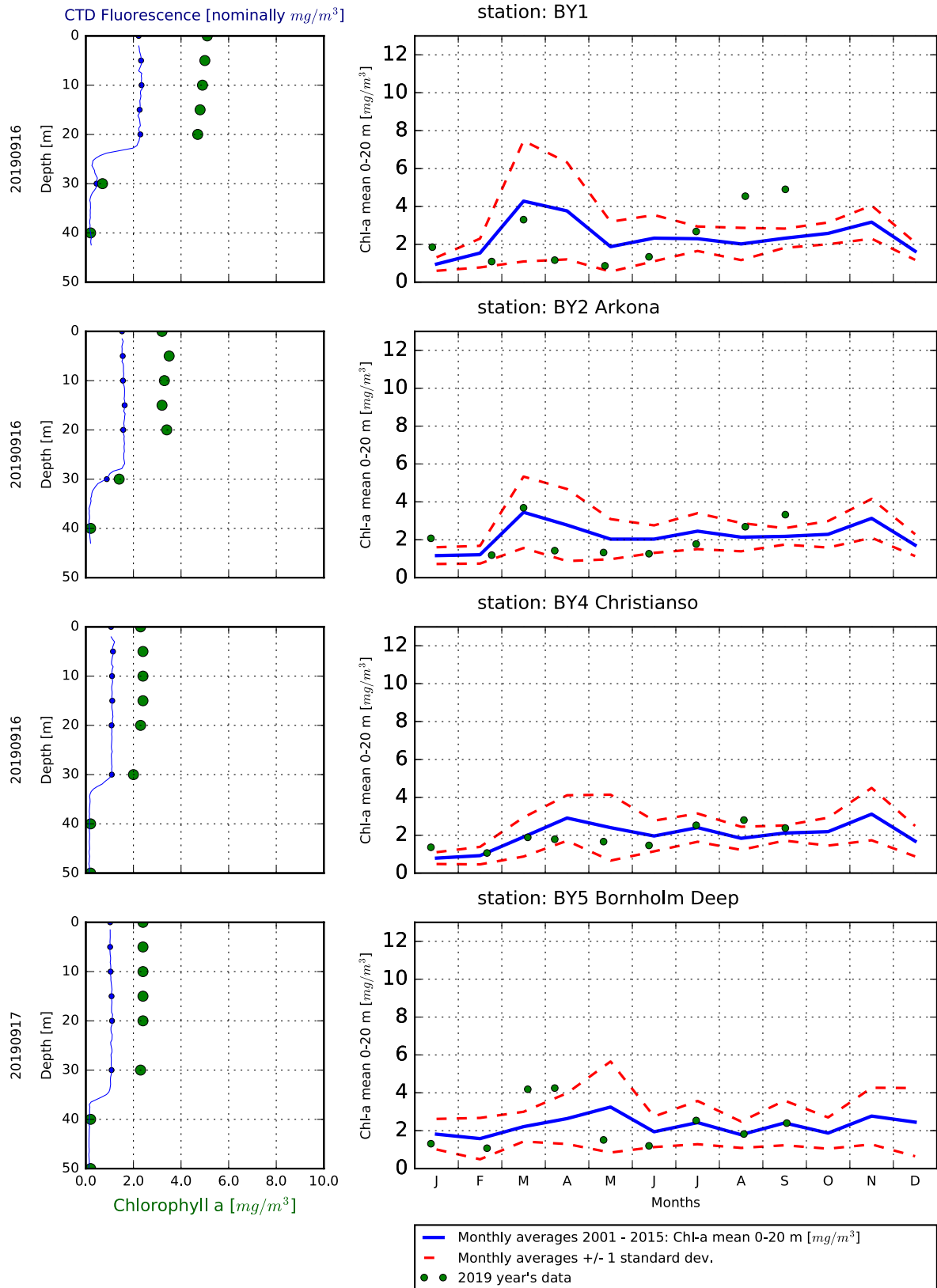
Selection of observed species	Anholt E	N14 Falkenberg
Red=potentially toxic species	16/9	15/9
Hose 0-10 m	presence	presence
<i>Cerataulina pelagica</i>		present
<i>Chaetoceros affinis</i>	present	
<i>Chaetoceros contortus</i>	present	present
<i>Chaetoceros convolutus</i>	present	present
<i>Chaetoceros curvisetus</i>	present	
<i>Leptocylindrus danicus</i>		present
<i>Nitzschia longissima</i>		common
<i>Paralia sulcata</i>		present
<i>Pseudo-nitzschia</i>	present	
<i>Skeletonema marinoi</i>	present	common
<i>Ceratium furca</i>	present	present
<i>Ceratium fusus</i>	present	present
<i>Ceratium tripos</i>	present	
<i>Dinophysis acuminata</i>	present	
<i>Dinophysis acuta</i>	present	
<i>Gonyaulax</i>	present	
Gymnodiniales		common
<i>Gymnodinium litoralis</i>		present
<i>Gymnodinium verruculosum</i>		present
<i>Karenia mikimotoi</i>		present
<i>Lingulodinium polyedrum</i>	present	
Peridinales		present
<i>Prorocentrum micans</i>	present	common
<i>Protoperidinium conicum</i>		present
<i>Protoperidinium divergens</i>	present	
<i>Emiliana huxleyi</i>	common	
Cryptomonadales	common	common
Ciliophora	present	common
<i>Mesodinium rubrum</i>	present	

Selection of observed species	BCSIII-10	BY2	BY5	BY15	BY38	REFM1V1
Red=potentially toxic species	17/9	16/9	17/9	18/9	13/9	14/9
Hose 0-10 m	presence	presence	presence	presence	presence	presence
Centrales				present		
Chaetoceros castracanei		present		present	present	present
Chaetoceros convolutus		present				
Chaetoceros danicus	present			present		present
Chaetoceros thronsenii						present
Cyclotella choctawhatcheeana		present				
Cylindrotheca closterium		present			present	present
Dactyliosolen fragilissimus		common	present			
Nitzschia longissima			present			present
Pseudosolenia calcar-avis		common	present			
Skeletonema marinoi						present
Amphidinium crassum	present		present			
Gymnodiniales	common	present	common	present	present	
Gymnodinium verruculosum	present	present	present		present	
Heterocapsa	present		present			present
Heterocapsa rotundata					present	
Heterocapsa triquetra	present				present	common
Prorocentrum cordatum		present	present		present	common
Prorocentrum triestinum				present		
Cryptomonadales	common	common	common	common	common	common
Prymnesiales	present	present	present	present		
Pseudopedinella		present		present		
Pseudopedinella pyriformis			present			
Aphanizomenon		present	present	present	present	present
Aphanocapsa				present		
Aphanothece paralleliformis				present		present
Cyanodictyon						present
Dolichospermum						present
Lemmermanniella				present	present	
Monoraphidium	present					
Nodularia spumigena		present				
Snowella	present	present		present	present	
Binuclearia lauterbornii		present		present	present	present
Oocystis				present	present	
Eutreptiella	present	present	present		present	present
Pterosperma	present		present	present	present	
Pyramimonas	present	present		present	present	present
Katablepharis remigera				present		
Leucocryptos marina				present		present
Ebria tripartita	present	present		present		
Ciliophora	common	present	present	present	common	present
Coxiella helix					present	
Mesodinium rubrum	present	present	present	present		present

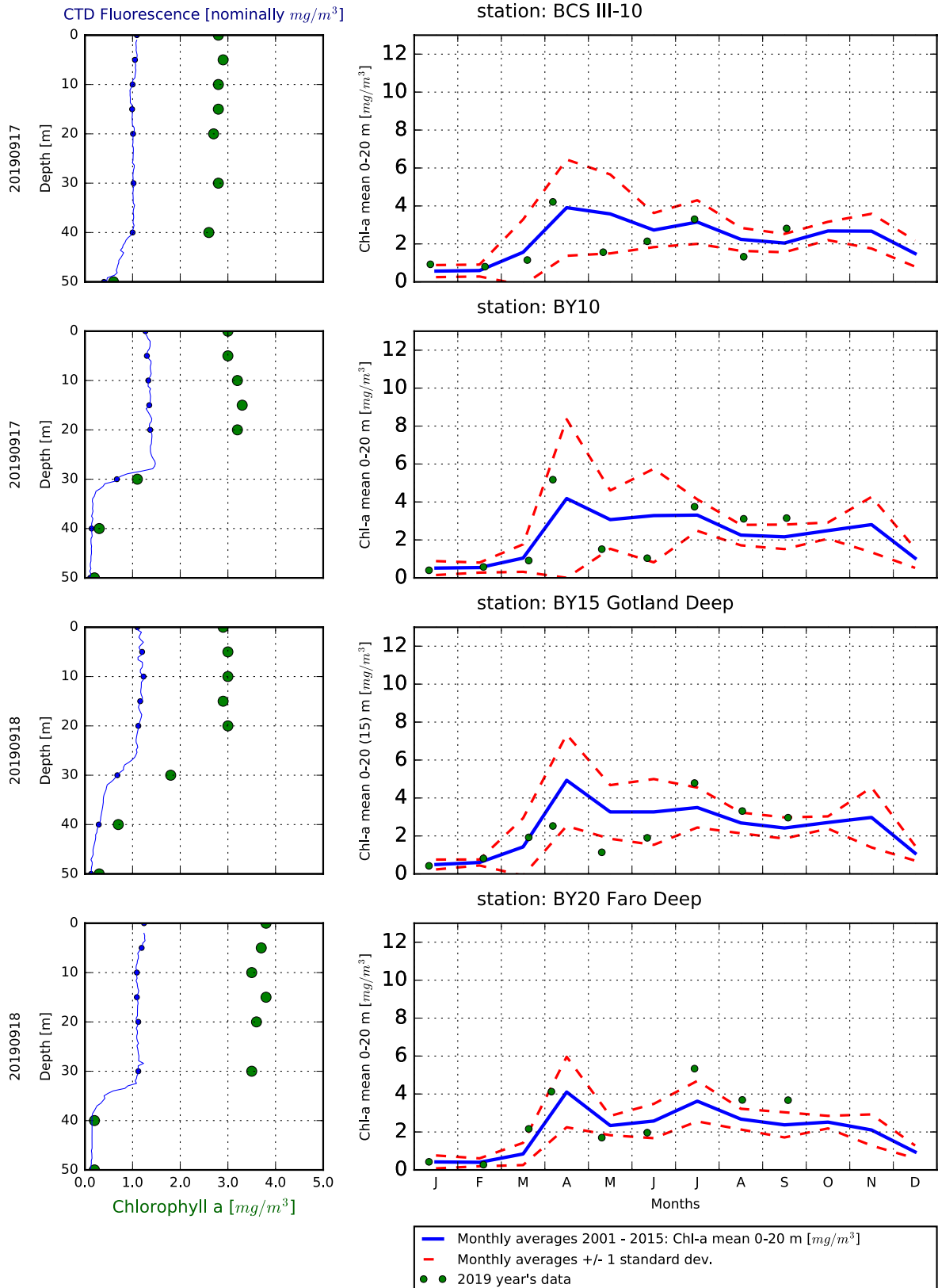
The Kattegat and The Sound



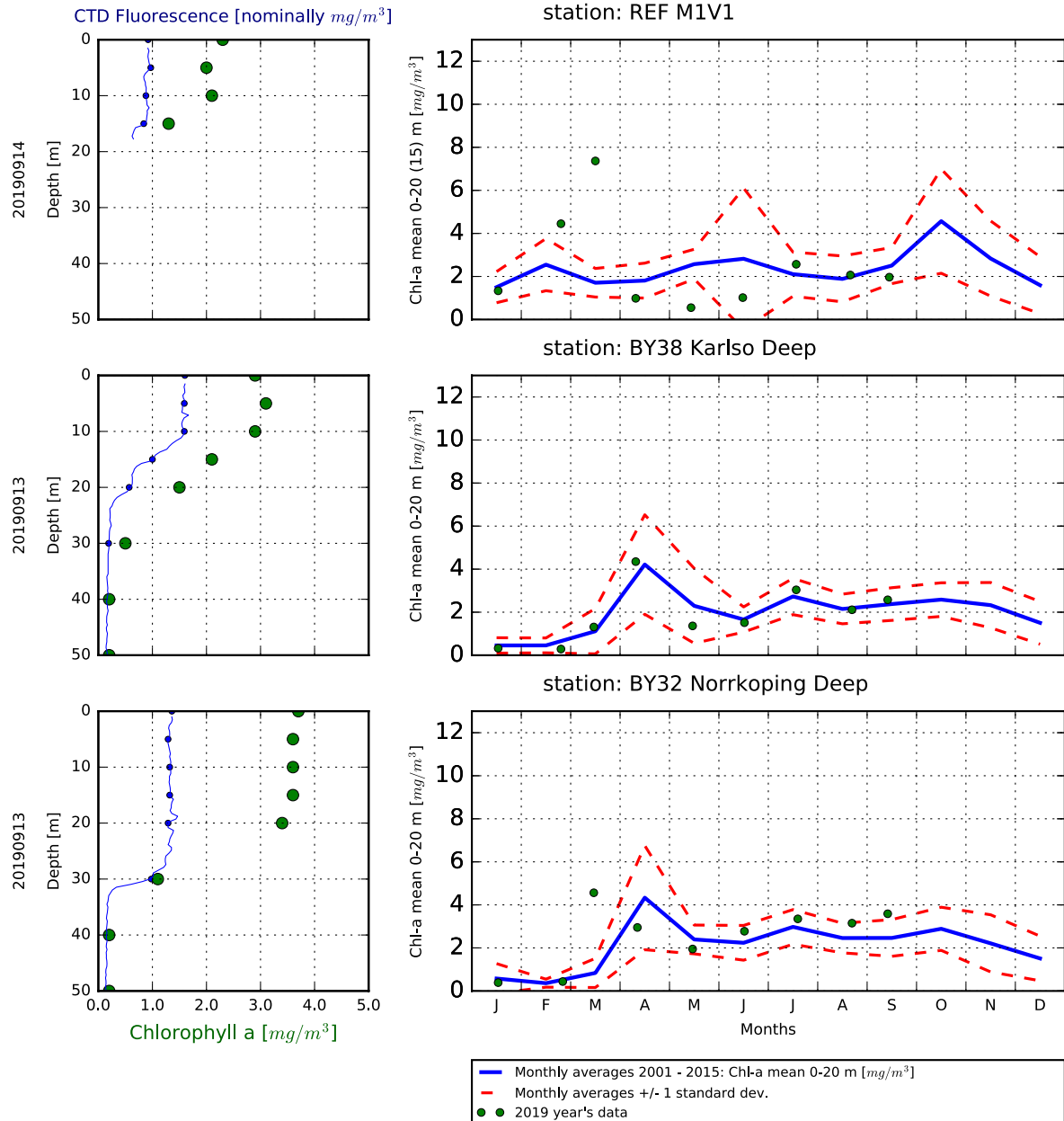
The Southern Baltic



The Eastern Baltic



The Western 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.

