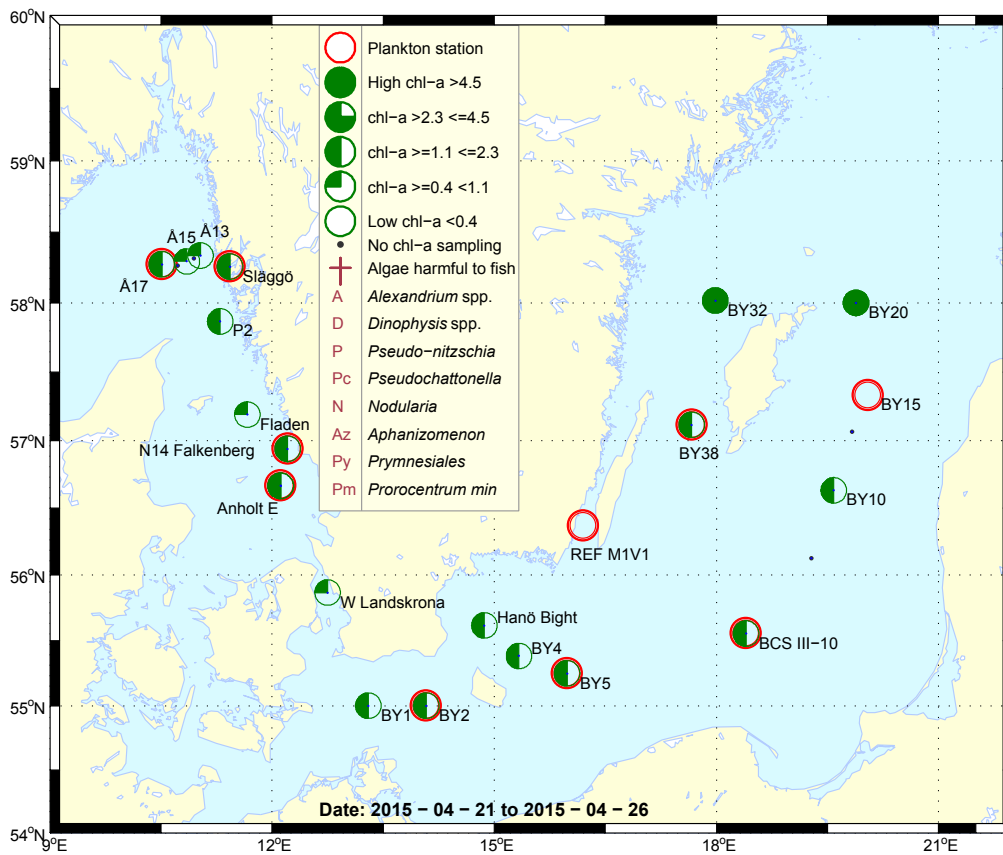


Sammanfattning

På alla stationer i Västerhavet dominerade små flagellater förutom vid Å17 i det öppna Skagerrak. Vid ett par stationer kunde vissa av dessa bestämmas till att tillhöra prymsiales. I Östersjön noterades höga klorofyll *a*-värden i Gotlandsbassängen. Algproverna påvisade dock ingen klar koppling till vilken art som orsakade de höga värdena. I Bornholmsbassängen återfanns rester av en vårblooming.

De integrerade (0-20 m) klorofyll *a*-värdena var låga vid de flesta stationer vilket är helt normalt för månaden. Endast i östra delen av Gotlandsdjupet var klorofyll *a* värdena höga och indikerade en blomning.



Abstract

All stations along the Swedish west coast except for the outer most station in Skagerrak were dominated by small flagellates. Some of the flagellates could be determined to belong to the order prymsiales. In the Baltic Sea the cell density was generally low but a remnant of a spring bloom was found at the Arkona Basin.

The integrated (0-10 m) chlorophyll *a* concentrations were low except for the Eastern Gotland Basin with chlorophyll *a* values indicating an ongoing bloom.

More detailed information on species composition and abundance

The Skagerrak

Å17 (open Skagerrak) 23rd of April

The cell concentration was overall low at this station. The dinoflagellate *Ceratium longipes* together with the diatoms *Guinardia delicatula* and *Proboscia alata* were present in moderate cell numbers.

The integrated (0-10m) chlorophyll *a* concentration was low which is normal for this month.

Släggö (Skagerrak coast) 24th of April

Small flagellates (2-4 μ m) dominated in cell numbers on this sampling occasion (fig. 1). Some of these flagellates could be identified as belonging to the order prymnesiales. The toxic dinoflagellate genus *Dinophysis* was also present in rather high numbers.

The integrated (0-10 m) chlorophyll *a* concentrations were at the lower part of what is normal for this month.



Fig.1: Small flagellates dominated at all stations but Å17 on the Swedish west coast.

The Kattegat

N14 Falkenberg 23rd of April and Anholt E 23rd and 24th of April

The diatom spring bloom had ended in the Kattegat. Small flagellates (2-4 μ m) dominated the sample at both stations and all sampling occasions. Different species of dinoflagellates were also common and only few cells of diatoms were present.

The integrated (0-10m) chlorophyll *a* concentration was low but within normal for this month at all stations.

The Baltic Sea

BY2 Arkona Basin 22nd of April

Remnants of a diatom spring bloom were still present on this sampling occasion (fig. 2). The diatom *Skeletonema marinoi* still dominated the phytoplankton community. Different naked dinoflagellates together with different ciliates were also relatively common.



Fig.2: Remnants of a diatom bloom in the Arkona Basin where the diatoms *Skeletonema marinoi* and *Chaetoceros similis* were found in relatively high cell numbers.

BY5 Bornholm Basin 22nd of April

The diatom spring bloom had ended on this sampling occasion. Most common were different ciliates such as *Mesodinium rubrum*

BCS III-10 21st of April

The cell concentration was low. Several cells of the potentially toxic dinoflagellate *Dinophysis norvegica* were found.

BY15 21st of April

The cell concentration in the integrated sample (0-10m) was moderate and consisted mainly of different dinoflagellates such as *Peridiniella catenata* (fig. 3). The integrated chlorophyll *a* concentration (0-20m) indicated a bloom. The reason for this discrepancy might be that most cells were located below the depth of the sampling hose at 10 meters or more.

BY38 26th of April

The species diversity was relatively high. Various ciliates such as *Mesodinium rubrum* were most common.

The integrated (0-20 m) chlorophyll *a* concentrations were low at all of the Baltic stations which is normal for this month.

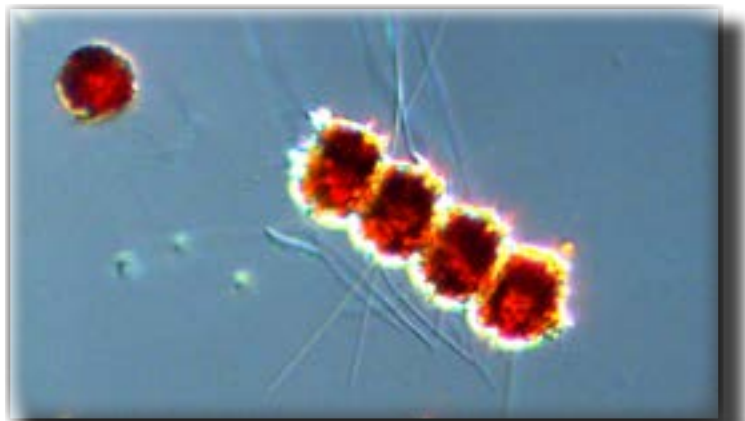
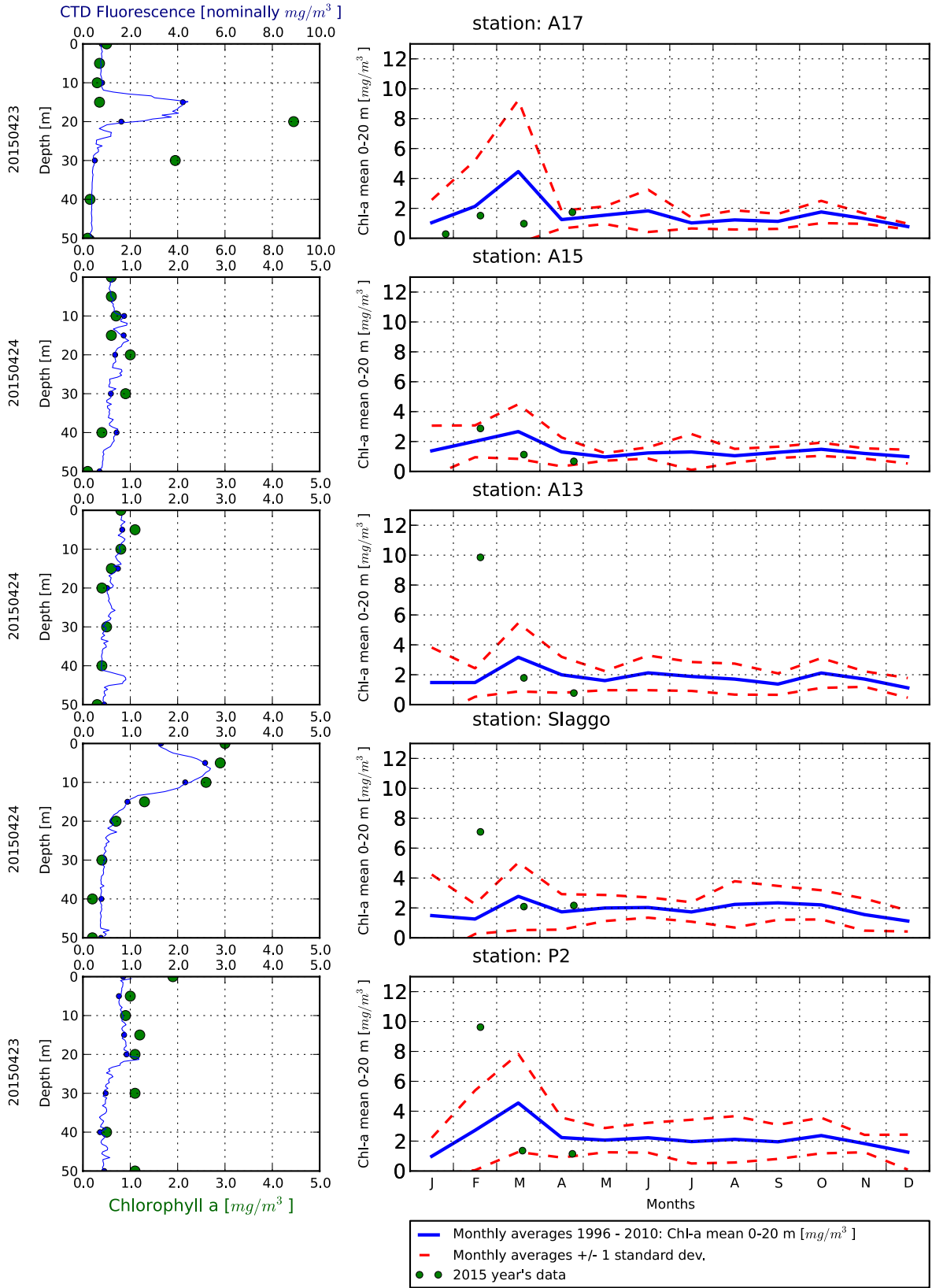


Fig.3 The dinoflagellate species *Peridiniella catenata* was common at a couple of stations in the Baltic Proper.

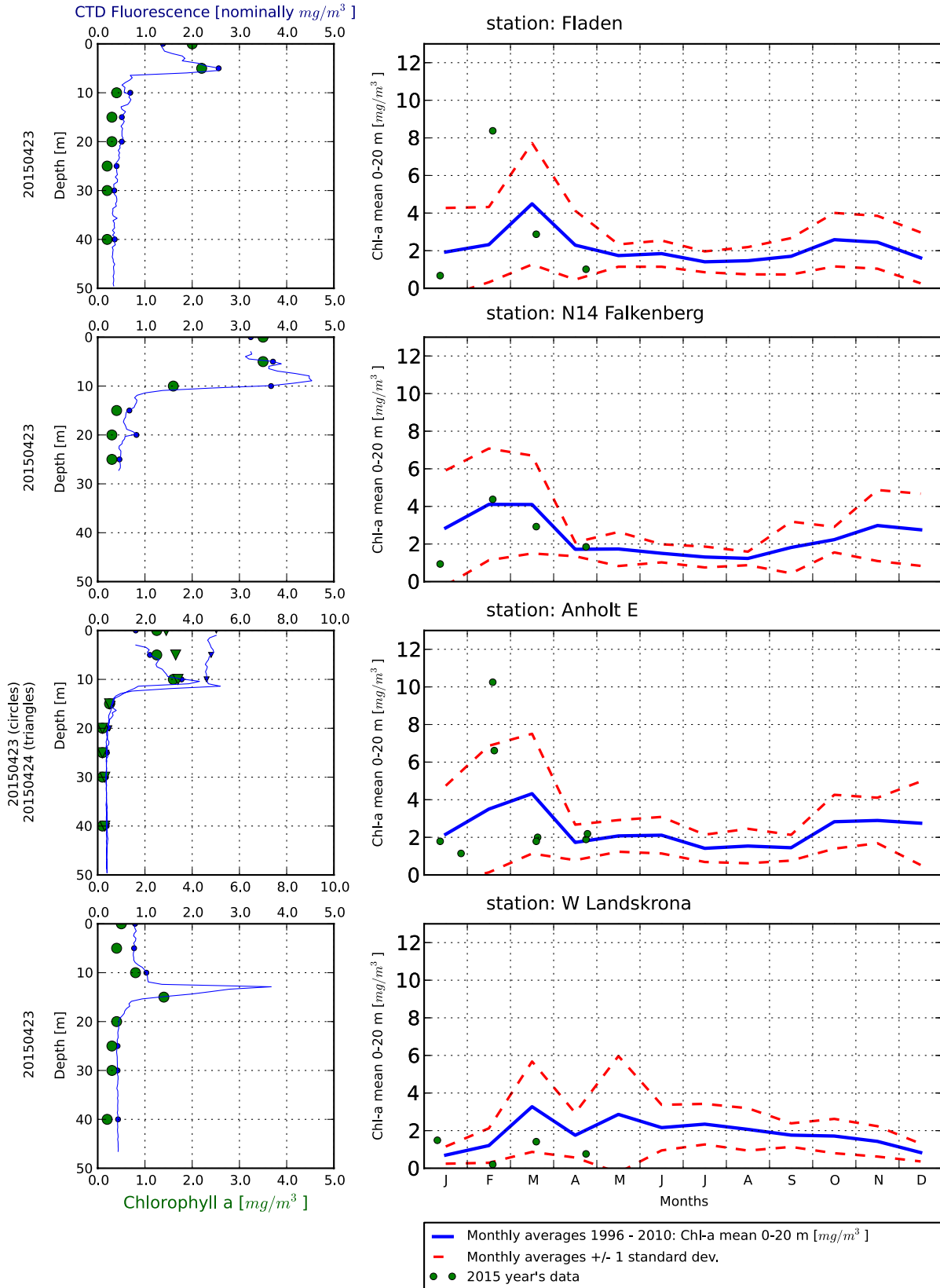
Selection of observed species	Å17	Släggö	N14	Anholt E	Anholt E
Red=potentially toxic species	2015-04-23	2015-04-24	2015-04-23	2015-04-23	2015-04-24
Hose 0-10 m	presence	presence	presence	presence	presence
Bacillariophyceae	present				
<i>Pseudo-nitzschia</i> spp		present			
<i>Thalassionema nitzschioides</i>		present			
<i>Guinardia delicatula</i>	common				
<i>Leptocylindrus danicus</i>			present		
<i>Proboscia alata</i>	common	present	present	present	present
<i>Rhizosolenia hebetata</i> f. <i>semispina</i>		present	present		present
<i>Rhizosolenia imbricata</i>	present				
<i>Skeletonema marinoi</i>		present	present		
<i>Thalassiosira nordenskiöldii</i>		present			
<i>Chaetoceros danicus</i>		present			
<i>Licmophora</i> spp		present			present
<i>Ceratium fusus</i>			present		present
<i>Ceratium lineatum</i>		present	present		present
<i>Ceratium longipes</i>	common	common	common	present	common
<i>Ceratium tripos</i>	present	present	present		common
<i>Dinophysis acuminata</i>	present	common	present		present
<i>Dinophysis norvegica</i>	present	common	present	present	common
<i>Dinophysis rotundata</i>				present	
Gymnodiniales	present	common	common	common	common
<i>Gyrodinium spirale</i>			present	present	present
<i>Heterocapsa</i> spp		present			
<i>Katodinium glaucum</i>			present	present	present
Peridinales	present				present
<i>Prorocentrum micans</i>		present			
<i>Protoceratium reticulatum</i>		present	present	present	present
<i>Protoperidinium</i> spp	present	present			present
<i>Protoperidinium depressum</i>		present	present		present
<i>Pyramimonas</i> spp	present				
Cryptomonadales	present	common	present	present	present
<i>Leucocryptos marina</i>	present	present			present
<i>Ebria tripartita</i>	present	present			
<i>Eutreptiella</i> spp	present				
<i>Eutreptiella gymnastica</i>		present			
<i>Emiliana huxleyi</i>	present				
Prymnesiales	present	common	common	present	present
<i>Telonema subtile</i>					present
Flagellates	present	very common	very common	very common	very common
Craspedophyceae					present
<i>Mesodinium rubrum</i>	present				
Ciliophora	present	present			common

Selection of observed species	BY2	BY5	BCS III-10	BY15	BY38
Red=potentially toxic species	2015-04-22	2015-04-22	2015-04-21	2015-04-21	2015-04-26
Hose 0-10 m	presence	presence	presence	presence	presence
Navicula spp					present
Skeletonema marinoi	very common	present	present		present
Thalassiosira spp				present	
Thalassiosira baltica				present	
Chaetoceros spp		present			present
Chaetoceros danicus			present		present
Chaetoceros similis	common	present	common		present
Amylax triacantha		present		present	
<i>Dinophysis acuminata</i>		present	present	present	present
<i>Dinophysis norvegica</i>	present	present	common	present	present
Gymnodiniales	common	present	present	common	present
Gyrodinium spirale					present
Heterocapsa spp	present				
Katodinium glaucum		present		present	
Peridinales	present	present		very common	common
Peridiniella catenata			common	common	
Peridiniella danica					common
<i>Protoceratium reticulatum</i>					present
Protoberidinium spp		present			
Protoberidinium bipes					present
Protoberidinium pellucidum				present	
Cryptomonadales	present	present	present	present	present
Leucocryptos marina					present
Dinobryon spp	present	present		present	present
Pyramimonas spp				present	
Eutreptiella gymnastica					present
<i>Prymnesiales</i>		present		present	
Aphanizomenon spp				present	
Aphanocapsa spp	present	present	common	present	present
Aphanothece spp	present	present	common	present	present
Snowella spp		present			
Cyanobacteria colony			present		
Lemmermanniella spp	present	present			
Ebria tripartita	present				
Planctonema lauterbornii		present	present		present
Flagellates	present	present			present
Oocystis spp		present			present
Craspedophyceae			present		common
Mesodinium rubrum	present	common	present	present	common
Ciliophora	common	common	present	present	common

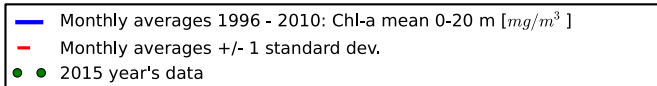
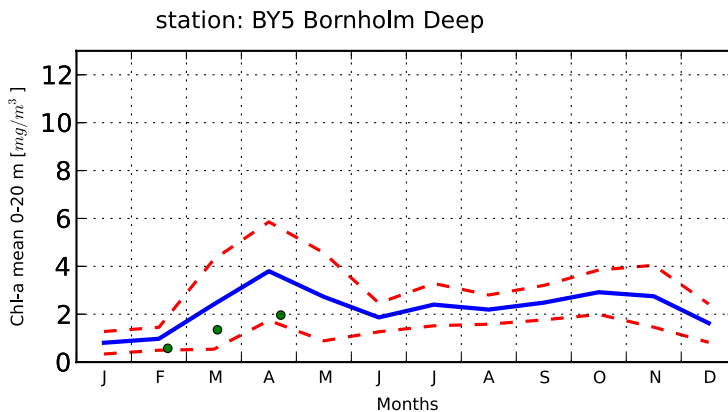
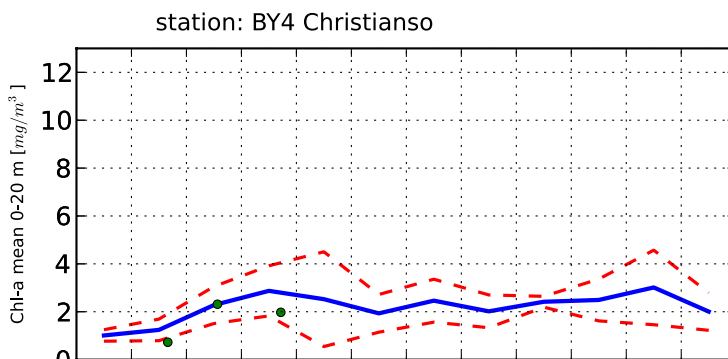
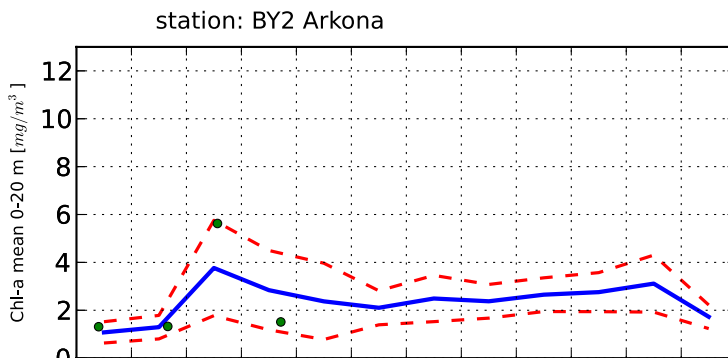
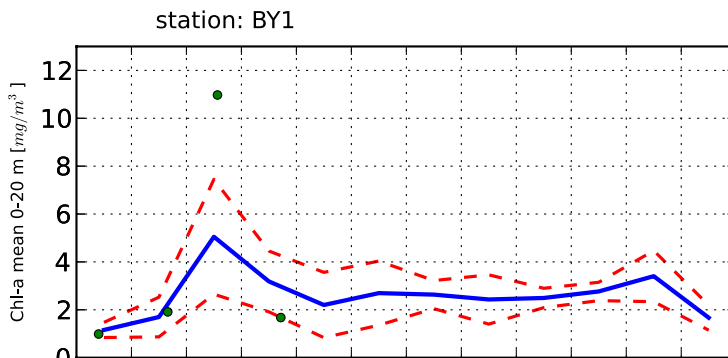
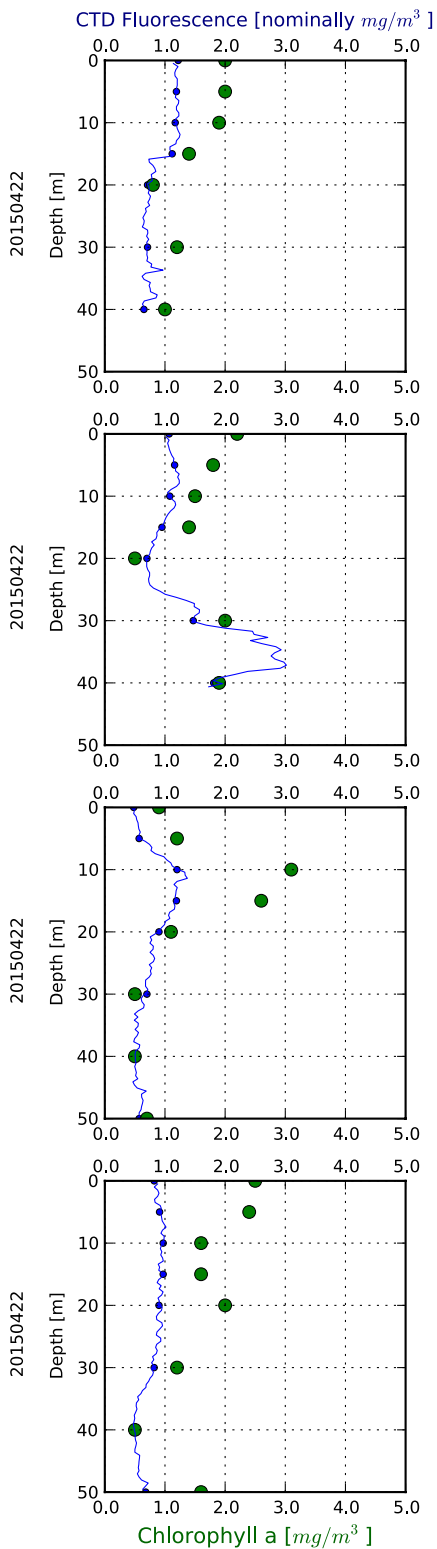
The Skagerrak



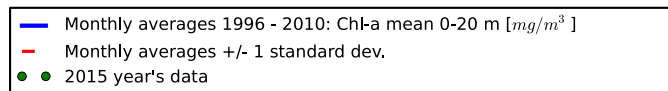
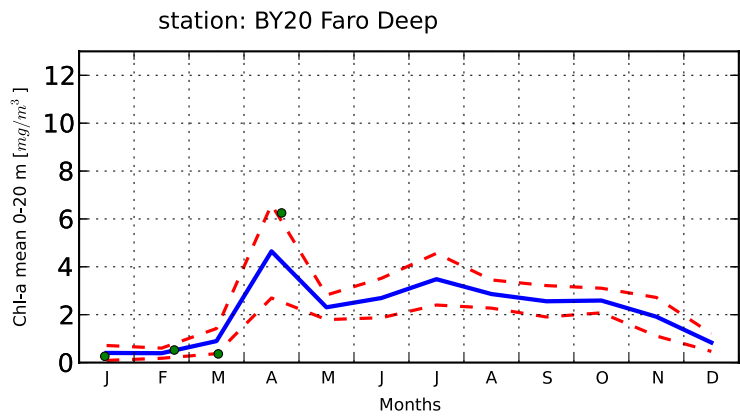
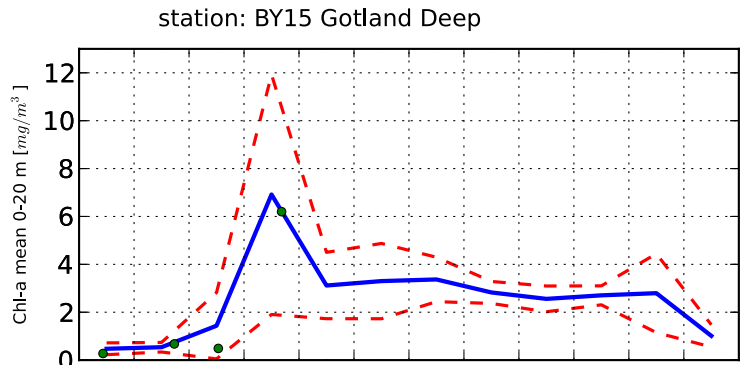
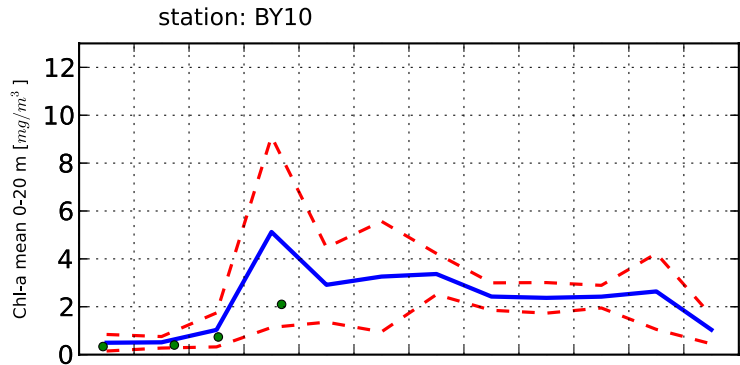
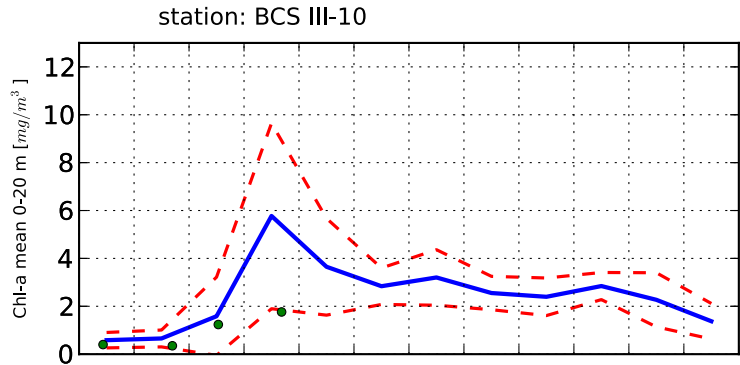
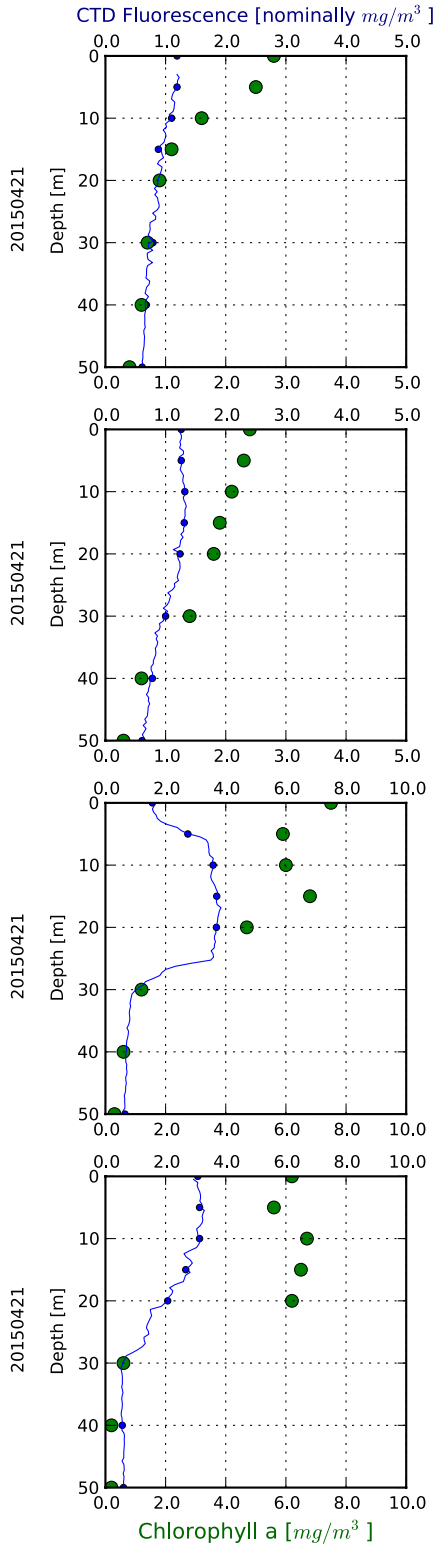
The Kattegat and The Sound



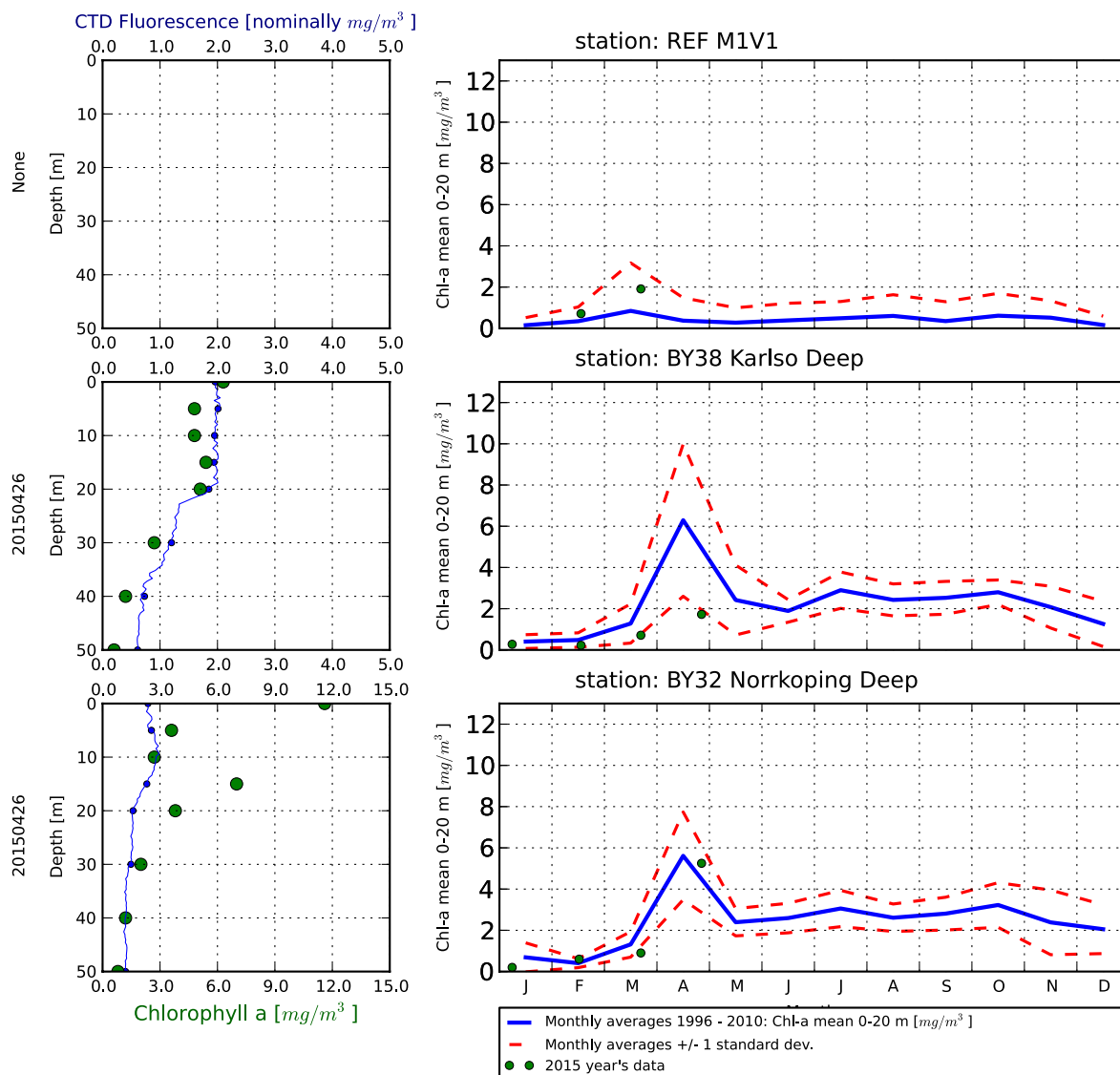
The Southern Baltic



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 algblomningar finns under perioden juni-augusti på www.smhi.se.

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.

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, kramper	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 (0-20 m) vid de olika stationerna. 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 (0-20 m) at sampling stations. Presence of harmful algae at stations where species analysis is performed is shown with a symbol.

