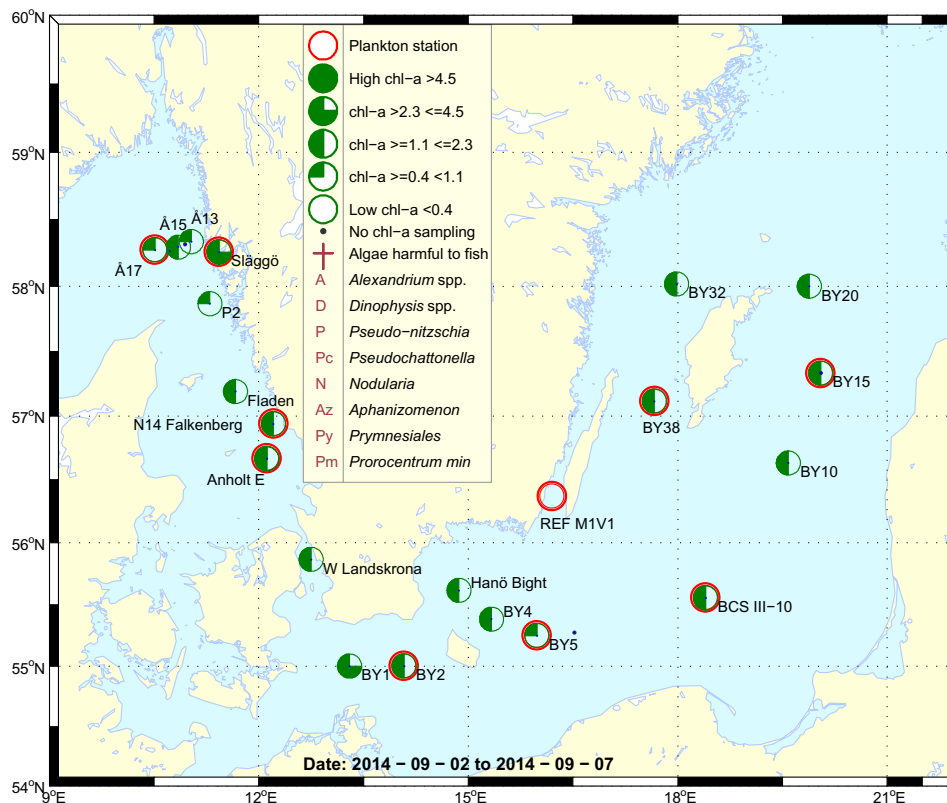


Sammanfattning

Det fanns en del växtplankton med höga cellantal i proverna från Skagerrak och Kattegatt, framför allt vid de mest kustnära stationerna, Släggö i Skagerrak och N14 i Kattegatt.

De integrerade (0-20 m) klorofyllvärdena låg inom det normala för denna månad. Klorofyllmaxima låg på runt 15 meters djup i Skagerrak och 10 meter i Kattegatt.

I Östersjön var växtplanktondiversiteten mycket låg. Filamentösa cyanobakterier saknades och klorofyllhalterna var låga. De integrerade (0-20 m) klorofyllvärdena låg under det normala för denna månad vid de flesta av Östersjöstationerna.



Abstract

There were several phytoplankton species with high cell numbers in the samples from the Skagerrak and Kattegat area, mainly at the coastal stations Släggö in the Skagerrak and N14 in the Kattegat.

The integrated (0-20 m) chlorophyll *a* concentrations were normal for this month. Chlorophyll *a* maxima were found at around 15 meters depth in the Skagerrak and at 10 meters in the Kattegat.

In the Baltic phytoplankton diversity was very low. Filamentous cyanobacteria were absent and the chlorophyll concentrations were low. The integrated (0-20 m) chlorophyll *a* concentrations were below normal for this month at most of the Baltic stations.

More detailed information on species composition and abundance

The Skagerrak

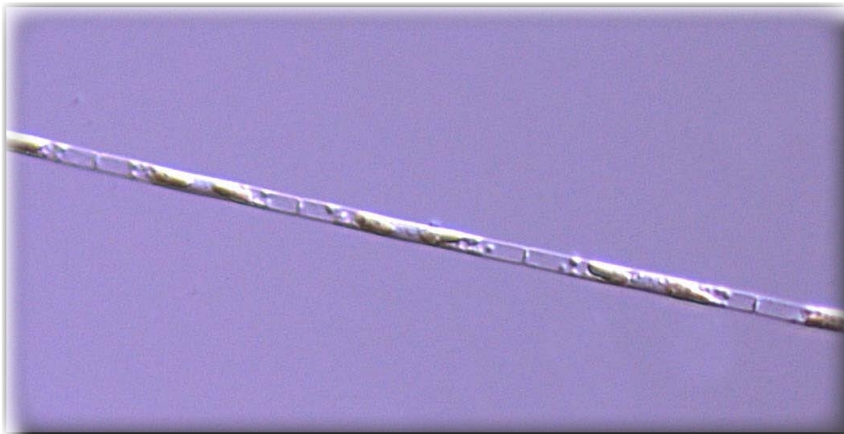
Å17 (open Skagerrak) 4th of September

Both diatoms and dinoflagellates were rich when it comes to species diversity, but cell numbers were low. Only ciliates and small cryptomonads were common.

Släggö (Skagerrak coast) 5th of September

The phytoplankton diversity was high and the diatom *Leptocylindrus minimus* dominated the sample. Several dinoflagellates were numerous too.

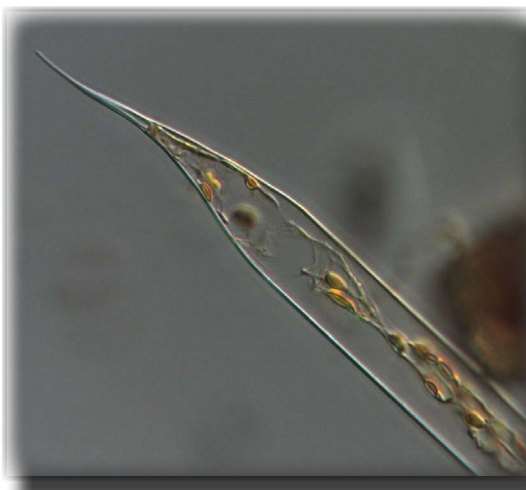
The integrated (0-20 m) chlorophyll *a* concentrations were normal for this month.



The diatom *Leptocylindrus minimus* was the most numerous species at station Släggö.

The Kattegat

Anholt E 4th and 5th of September and N14 Falkenberg 4th of September



A few dinoflagellate species and the diatom *Cerataulina pelagica* were rather numerous at both visits at Anholt E and at N14. Generally speaking, there were quite many species with low cell numbers at Anholt, at N14 there were larger cell counts of diatoms. The uncommon visitor *Pseudosolenia calcar-avis* was found in all of three Kattegat samples, and was numerous at N14 in particular.

The integrated (0-20 m) chlorophyll *a* concentrations were normal for this month. The chlorophyll maxima were found at 0-5 meters at N14 and at around 10 meters at the other Kattegat stations.

The diatom *Pseudosolenia calcar-avis* was present at the Kattegat stations.

The Baltic Sea

All phytoplankton samples from the Baltic stations had few species with low cell numbers. Filamentous cyanobacteria were absent.

The integrated (0-20 m) chlorophyll *a* concentrations were below normal for this month at most stations.



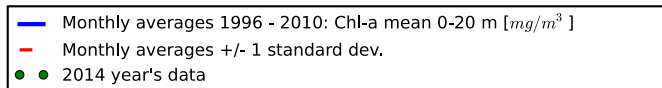
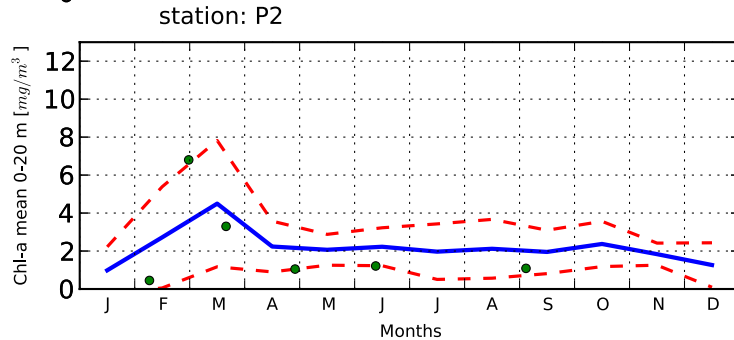
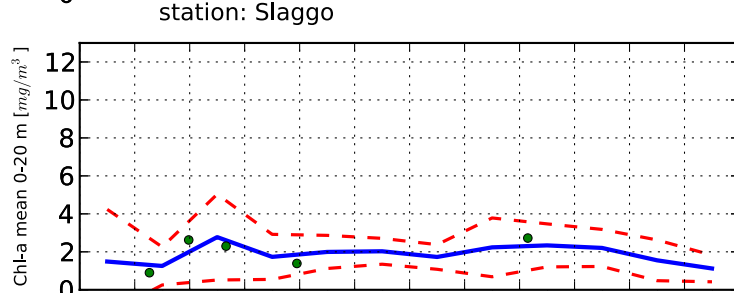
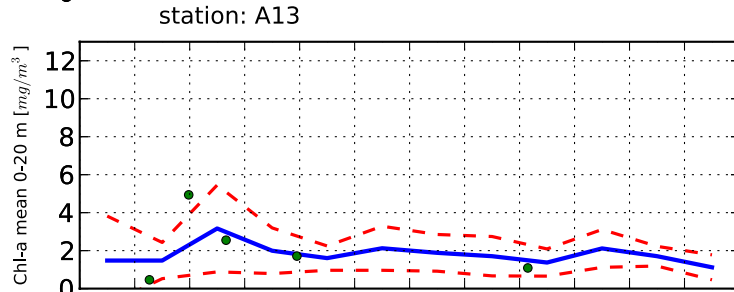
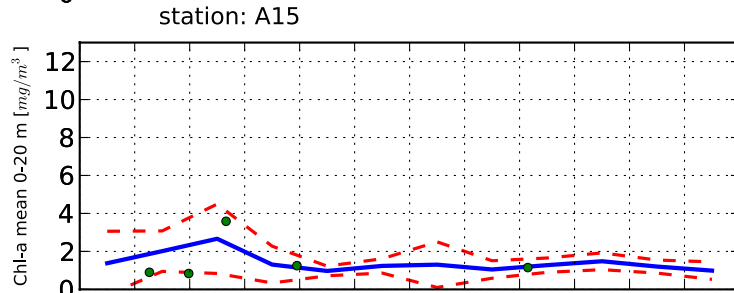
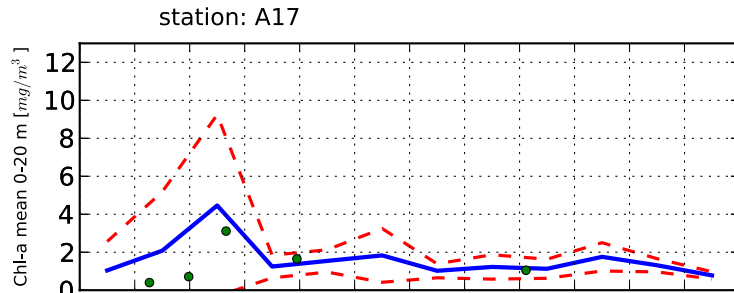
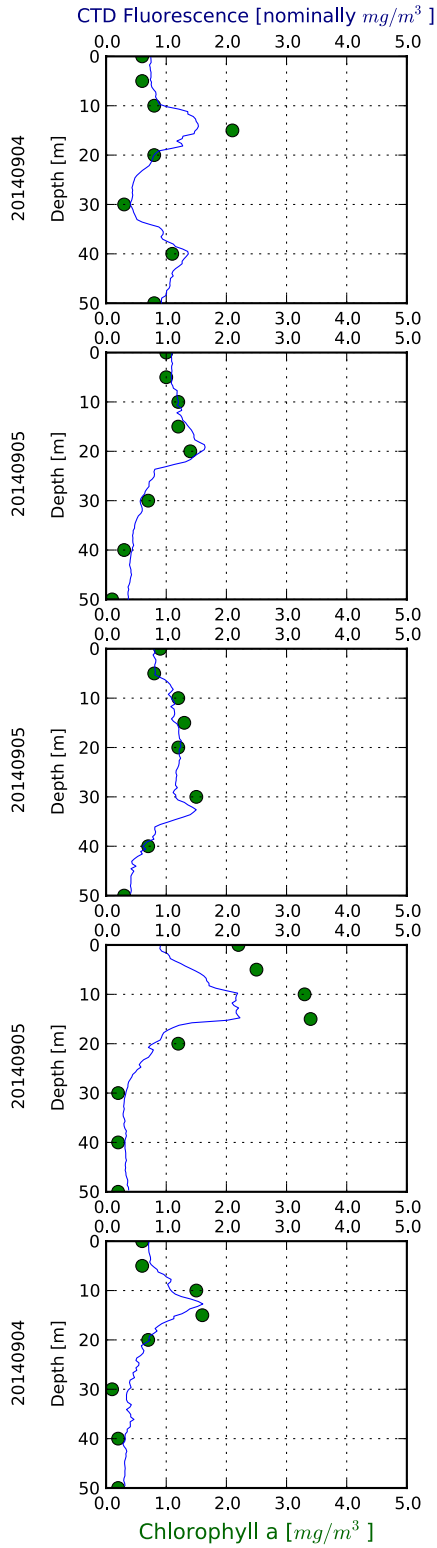
The diatom *Chaetoceros impressus*, one of few species present in the BY5 phytoplankton sample.

Phytoplankton analysis and text by:
Ann-Turi Skjevik

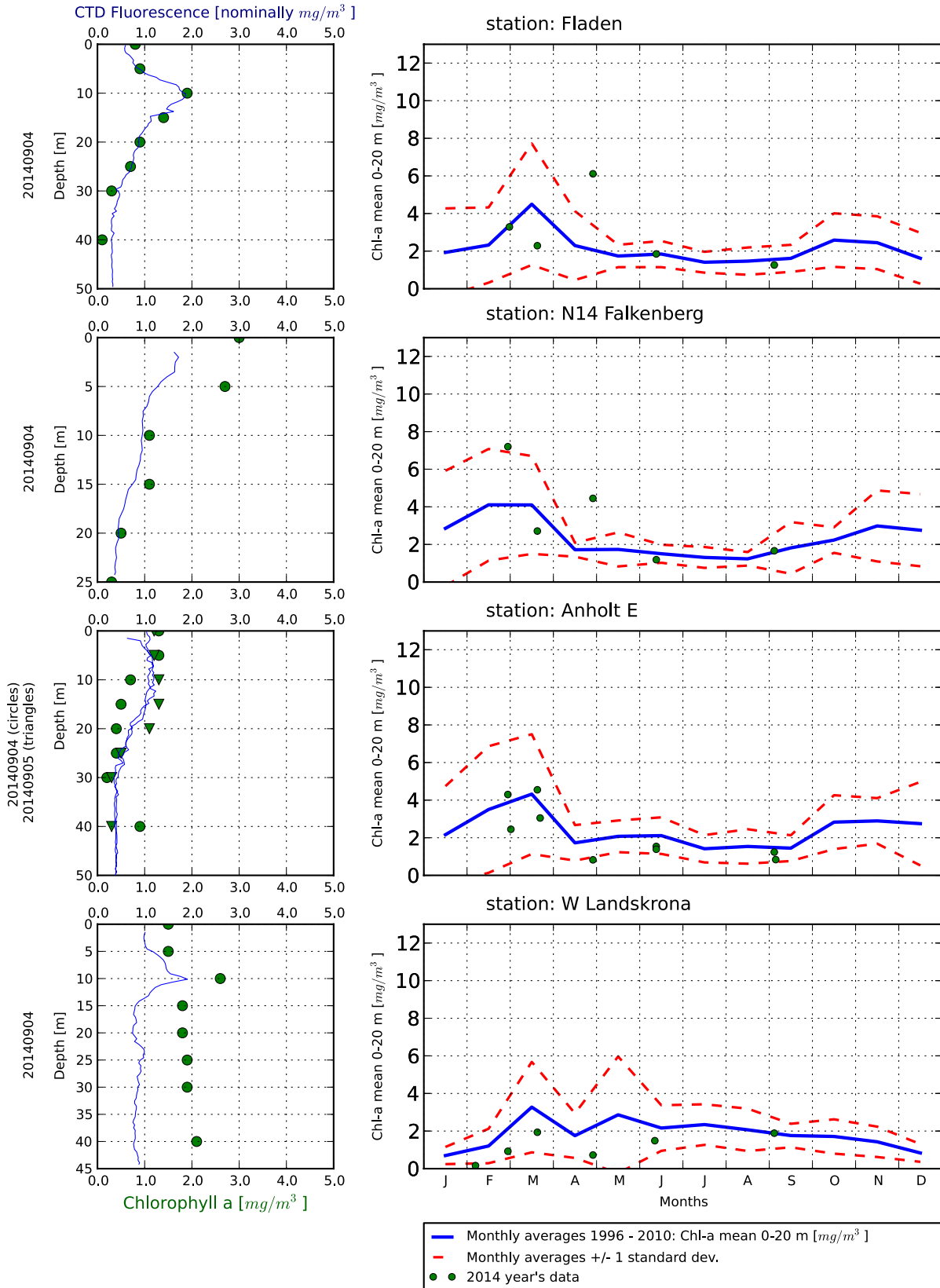
Selection of observed species	Anholt E	Anholt E	N14	Släggö	Å17
Red=potentially toxic species	4/9	5/9	4/9	5/9	4/9
Hose 0-10 m	presence	presence	presence	presence	presence
Asterionellopsis glacialis				present	
Cerataulina pelagica	common	common	very common	present	present
Chaetoceros affinis	present	present	present		present
Chaetoceros danicus	present				
Chaetoceros debilis	present			present	
Chaetoceros socialis		present	present		present
Coscinodiscus spp	present	present			
Cylindrotheca closterium				present	present
Dactyliosolen fragilissimus			present	present	present
Ditylum brightwellii	present				present
Guinardia delicatula	present		present		
Leptocylindrus danicus		present	present	present	present
Leptocylindrus minimus		present	present	dominating	present
Nitzschia longissima		present		present	present
Proboscia alata	present				present
Pseudo-nitzschia spp	present	present	common	present	present
Pseudosolenia calcar-avis	present	present	very common		
Rhizosolenia pungens			present		
Skeletonema marinoi		present	present	present	present
Alexandrium spp					present
Alexandrium pseudogonyaulax				present	
Azadinium spp	present		present	present	present
Ceratium furca	present	present		common	present
Ceratium fusus	common	common	common	present	present
Ceratium lineatum	present	present	present		
Ceratium macroceros			present		present
Ceratium tripos	present	common	present	common	present
Dinophysis acuminata	present			present	
Dinophysis acuta	present	present		present	present
Dinophysis norvegica		present		present	
Gymnodiniales	present		present		present
Gyrodinium flagellare		present	present	present	present
Katodinium glaucum				common	present
Lingulodinium polyedrum	present	present	present	present	
Noctiluca scintillans	present				
Prorocentrum micans	common	common		common	
Protoperidinium spp	present	present			present
Dinobryon balticum				present	
Dinobryon faculiferum	present			present	
Chrysochromulina cf. pringsheimii				present	
Prymnesiales	common		present	common	present
Chlorodendrales				present	
Pyramimonas spp	present		present	present	
Dictyocha fibula		present	present	present	present
Pseudopedinella spp		present	present		present
Pseudopedinella pyriformis		present			
Cryptomonadales	common	common	common	common	common
Calliakantha natans		common	present		
Craspedophyceae	present	present			present
Ebria tripartita		present		common	
Leucocryptos marina				present	
Ciliophora	common	present	common	common	common
Mesodinium rubrum	present			present	
Strombidium spp	present				

Selection of observed species	BCS III-10	BY2 Arkona	BY5 Bornholmsdjupet	BY15 Gotlandsdjupet	BY38 Karlsödjupet
Red=potentially toxic species	3/9	3/9	3/9	2/9	7/9
	presence	presence	presence	presence	presence
Centrales				common	
Chaetoceros danicus	present			present	
Chaetoceros wighamii	present		present	present	present
Coscinodiscus centralis		present	present		
Coscinodiscus granii		present			
Coscinodiscus spp		present	present		present
Skeletonema marinoi		present			
<i>Dinophysis acuminata</i>		present			
Gymnodiniales	present	common			
Gymnodinium simplex		present			present
Heterocapsa spp	present				
Heterocapsa triquetra		present			
Peridinales		present			
Prorocentrum micans					present
Cryptomonadales	common	present	common	very common	present
Pseudopedinella pyriformis	present			present	
Pseudopedinella spp		common	present		present
<i>Prymnesiales</i>	present	present	present	common	present
Pyramimonas spp	common	common	present	common	present
Pterosperma spp	present				
Calliakantha natans		present			
Craspedophyceae			present		
Ebria tripartita		present			present
Ciliophora	common	present	common	very common	present
Helicostomella subulata		present	common		common
Mesodinium rubrum				common	present

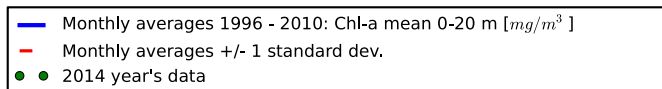
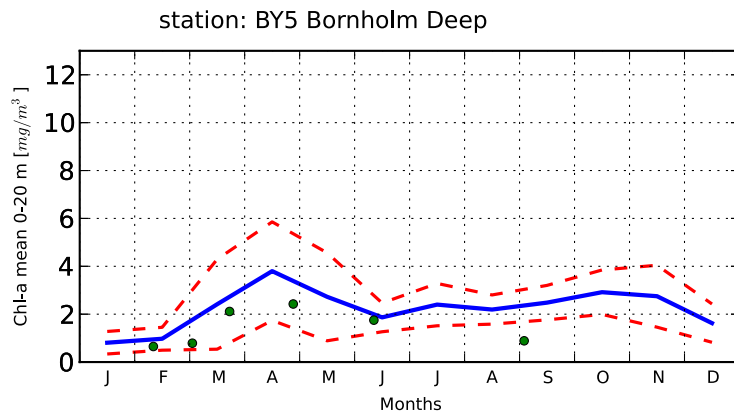
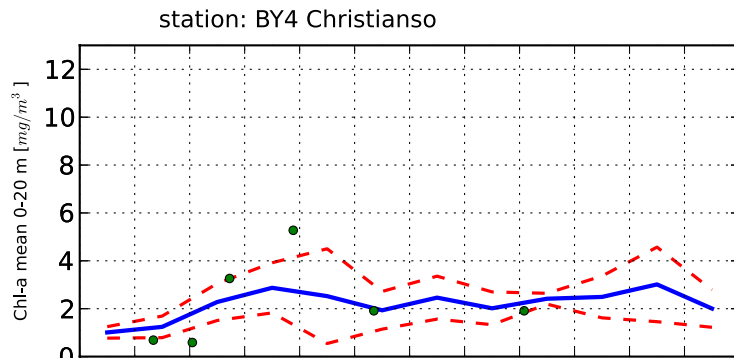
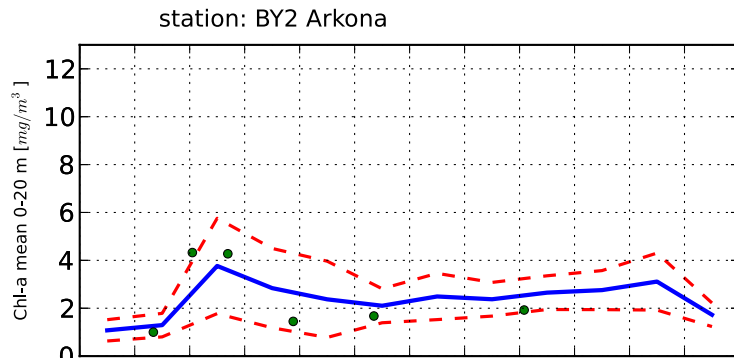
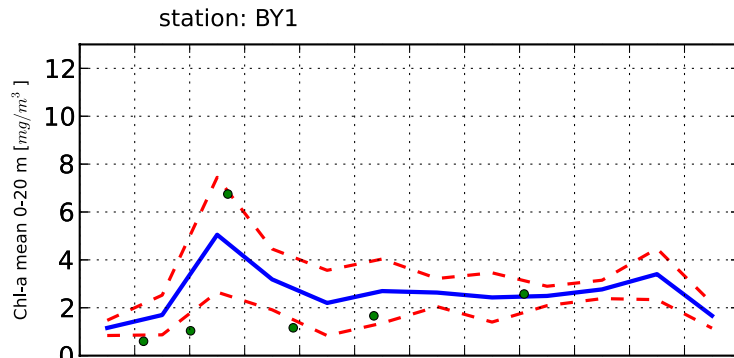
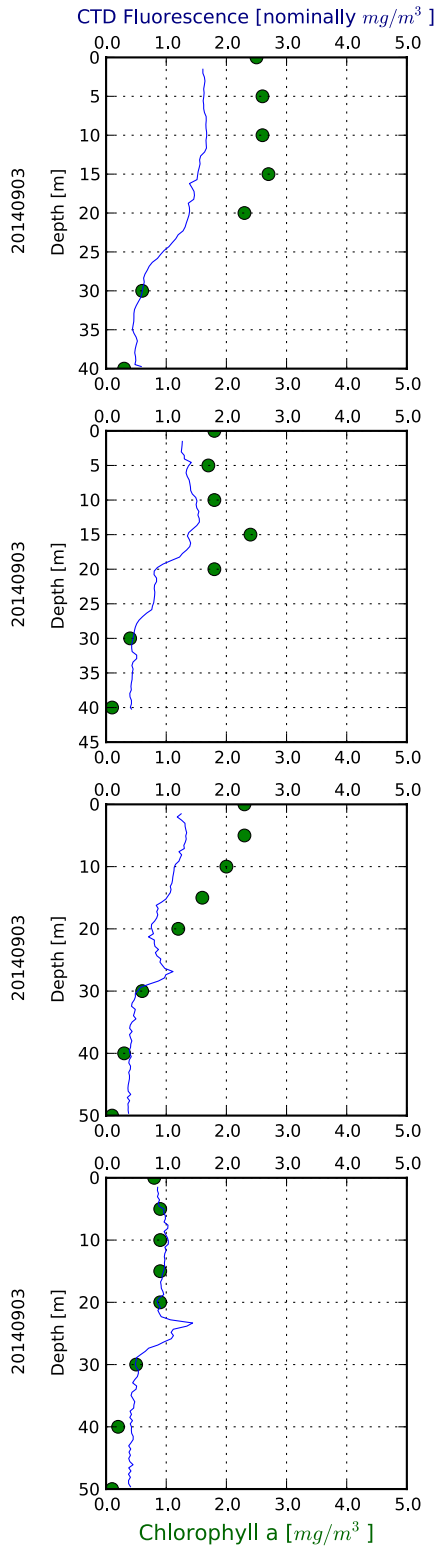
The Skagerrak



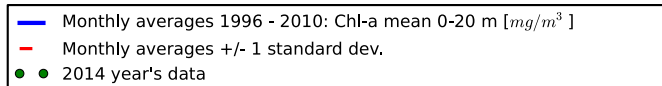
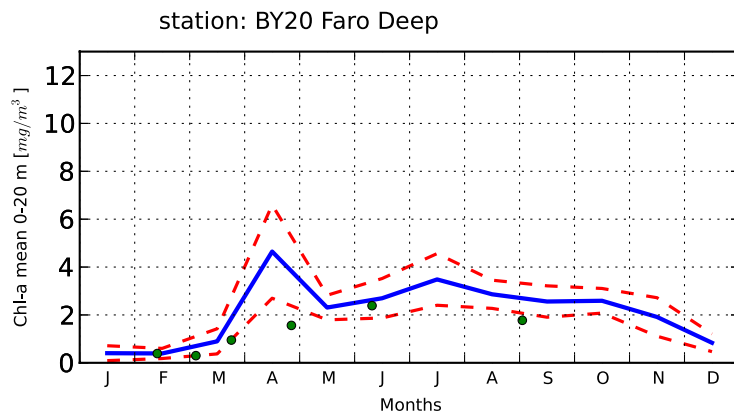
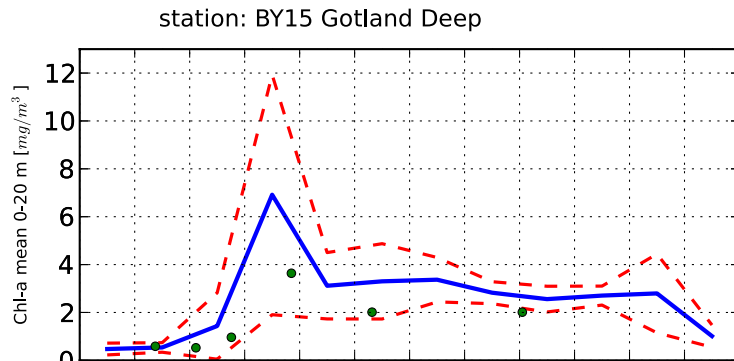
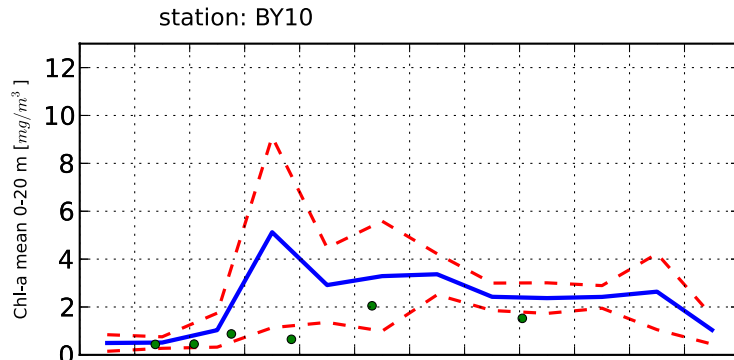
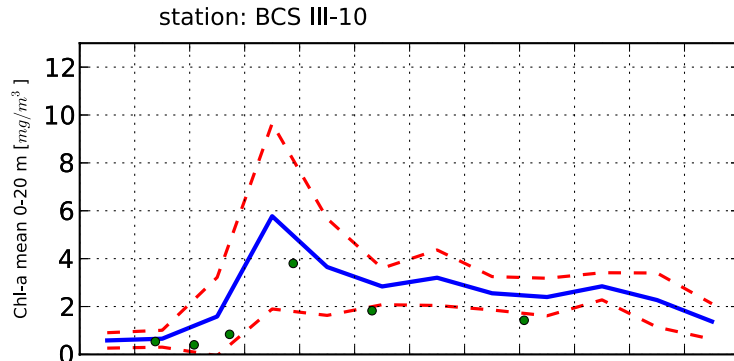
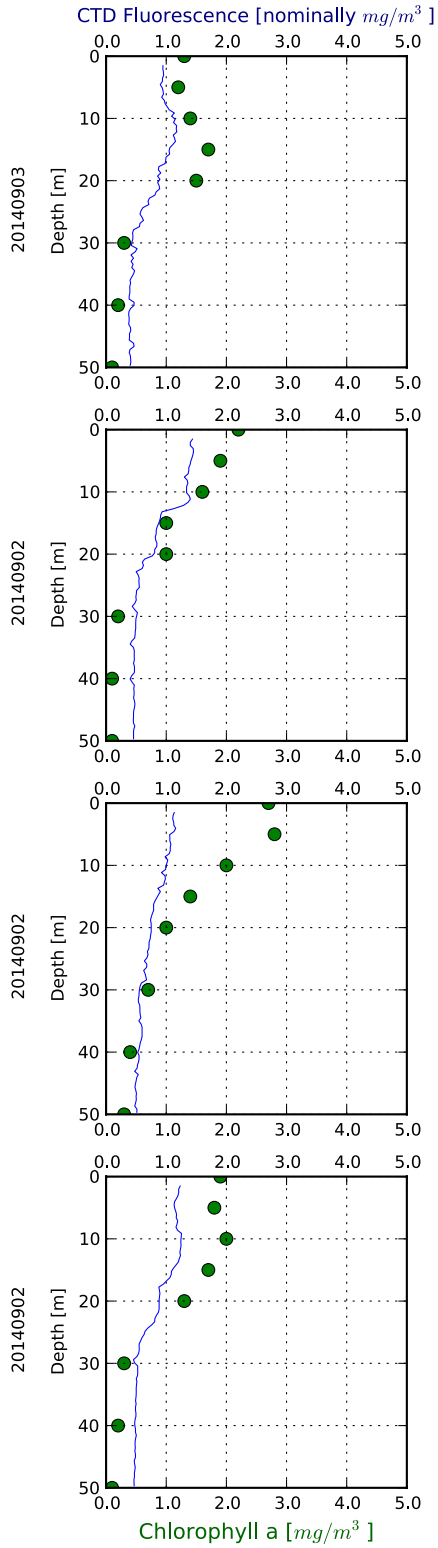
The Kattegat and The Sound



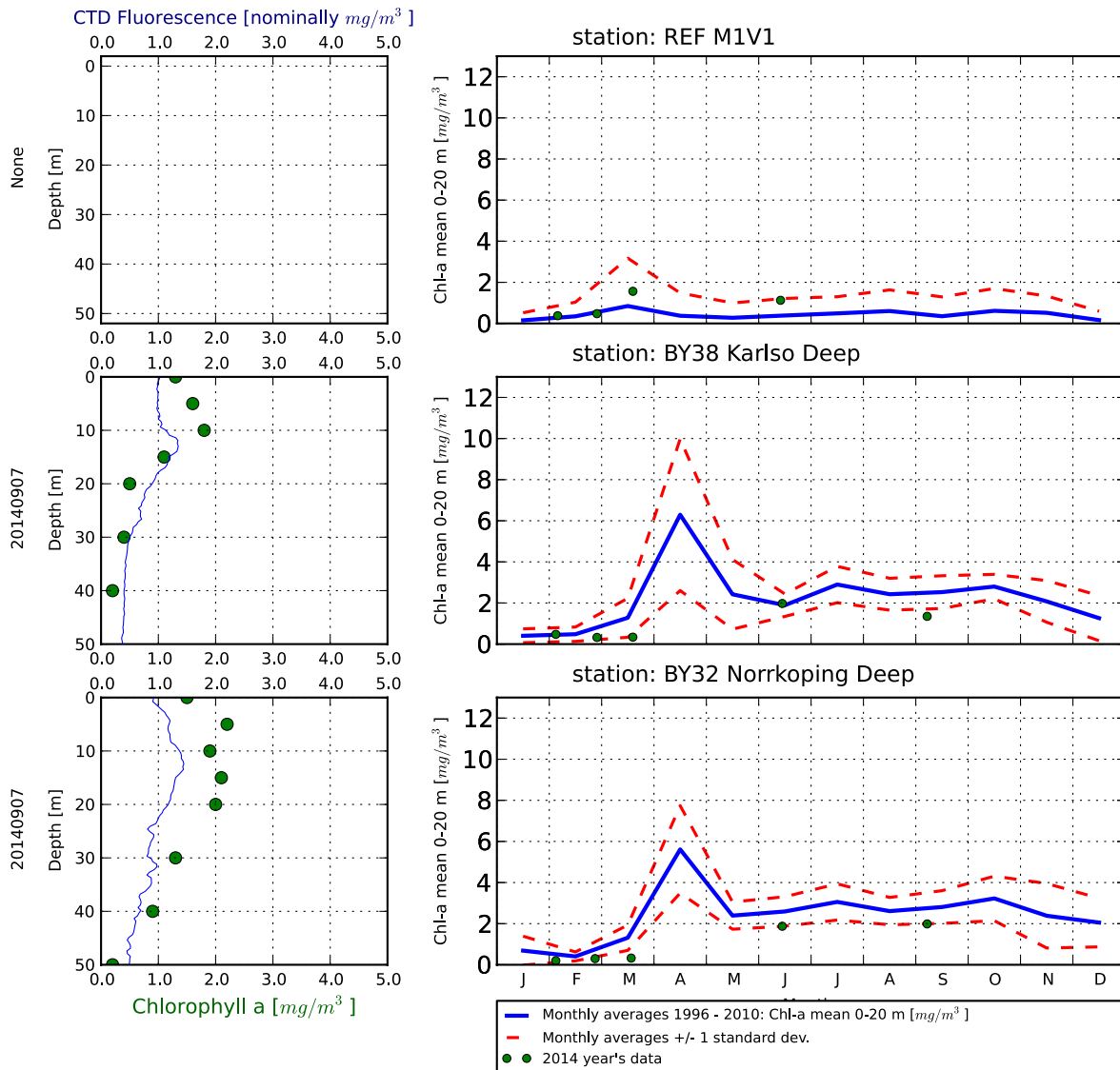
The Southern Baltic



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.

