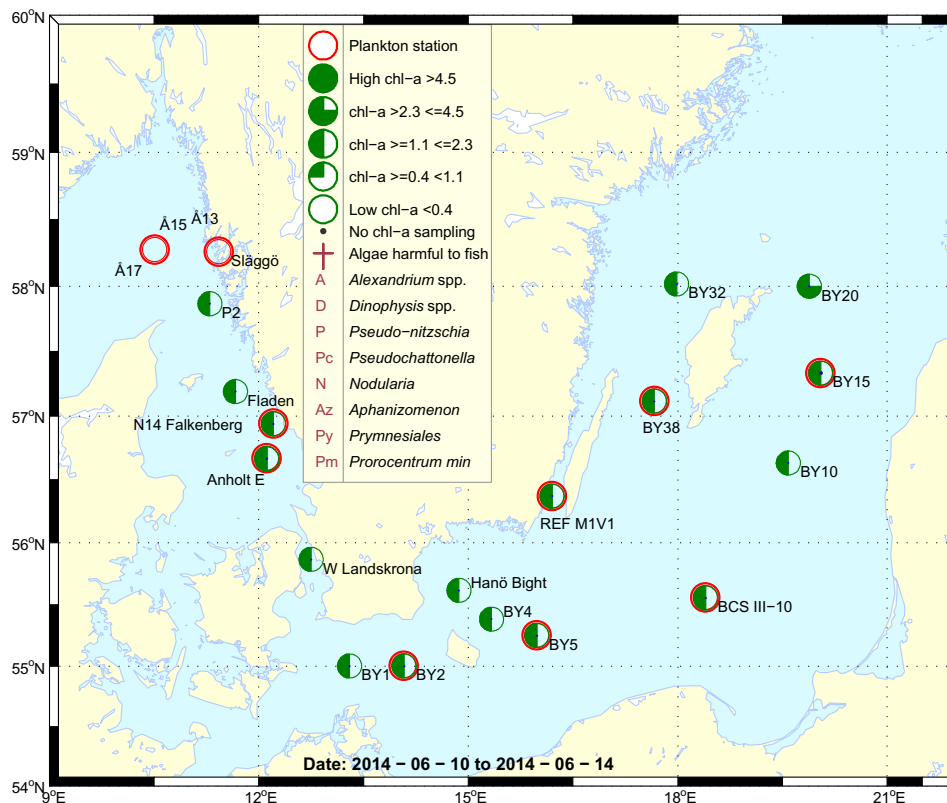


Sammanfattning

Växtplanktonanalyserna omfattar enbart Östersjön, klorofylldiagram finns från Kattegatt och Östersjön.

Den filamentösa cyanobakterien *Aphanizomenon flos-aquae* hade ökat rejält i mängd vid de flesta Östersjöstationerna. Den potentiellt giftiga cyanobakterien *Nodularia spumigena* förekom i mycket små mängder vid fyra av sex stationer. I östra Gotlandsbassängen kunde man se cyanobakterier i vattnet med blotta ögat och satellitövervakningen har också visat stråk i vattnet i samma område. Detta ger en väldigt tidig start på årets cyanobakterieblomning. En redan utfärdad vindprognos kan dock röra ner filamenten i vattnet så det nuvarande läget behöver inte innebära att ytansamlingar ska komma att uppstå ännu.

De integrerade (0-20 m) klorofyll *a*-värdena var normala för denna månaden i alla de uppmätta områdena.



Abstract

The phytoplankton analyses cover the Baltic Proper only, the chlorophyll diagrams are from the Kattegat and the Baltic Sea.

The filamentous cyanobacteria *Aphanizomenon flos-aquae* had increased a lot at most of the Baltic phytoplankton stations. In the Eastern Gotland Basin cyanobacteria were visible in the water and the satellite surveillance also showed traces of cyanobacteria in the same area. This consequently gives us a very early start of this year's cyanobacteria bloom. An already forecasted wind may however stir the filaments down in the water, meaning that the present situation may not lead to surface aggregations as yet.

The integrated (0-20 m) chlorophyll *a* concentrations were normal for this month in all of the observed areas.

More detailed information on species composition and abundance

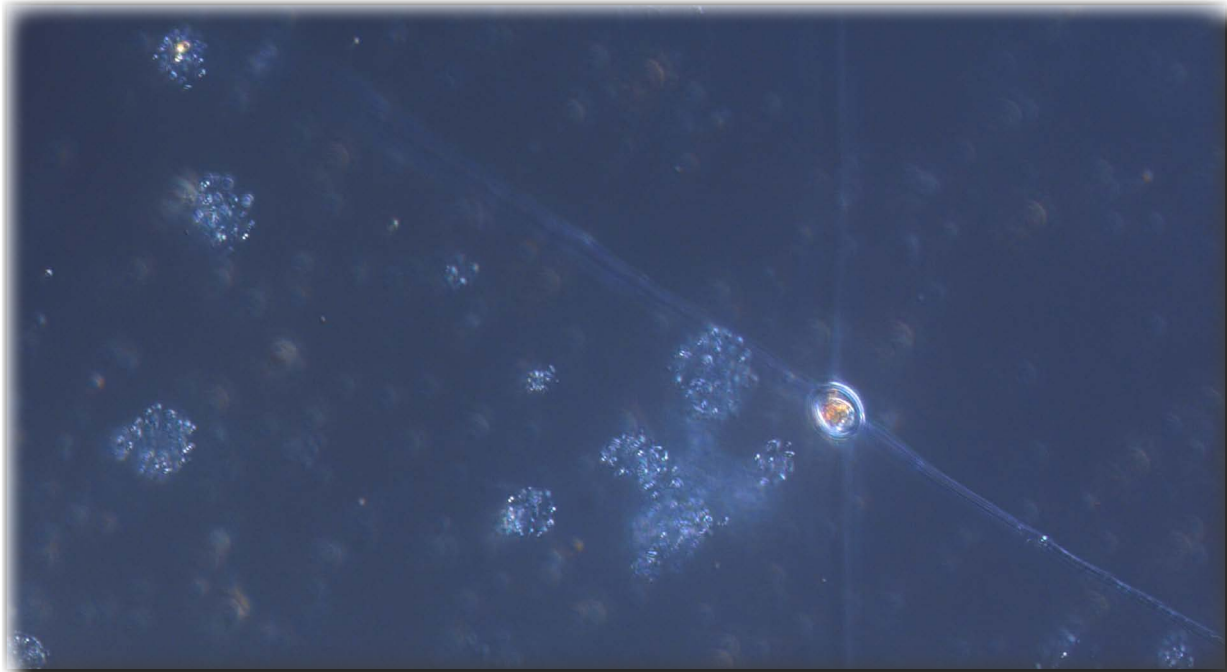
The Baltic Sea

BY2 Arkona 11th of June

Small flagellated species were the most common. The filamentous cyanobacterium *Aphanizomenon flos-aqua* was present in low amounts.

BY5 Bornholms basin 11th of June

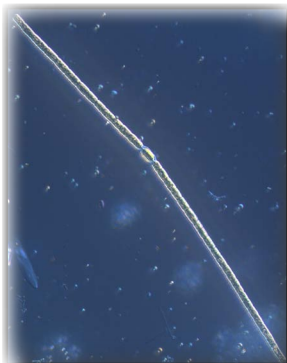
The filamentous cyanobacterium *Aphanizomenon flos-aqua* was very common and traces of *Nodularia spumigena* were found. The diatom *Chaetoceros danicus* was very common. Cyanobacteria colonies with picosized cells were abundant.



The diatom *Chaetoceros danicus* was abundant at BY5 and "clouds" in different shapes of various species of cyanobacteria colonies were abundant at all of the Baltic stations.

BCS III-10 10th of June and BY38 14th of June

The filamentous cyanobacterium *Aphanizomenon flos-aqua* and pico cyanobacteria colonies were common.



BY15 10th of June

The filamentous cyanobacterium *Aphanizomenon flos-aqua* was very common and traces of *Nodularia spumigena* were found. Cyanobacteria colonies with picosized cells were abundant. *A. flos-aquae* was abundant in a surface sample as well and cyanobacteria were visible in the water from on board the research vessel Aranda.

Ref M1V1 Kalmar Sound 13th of June

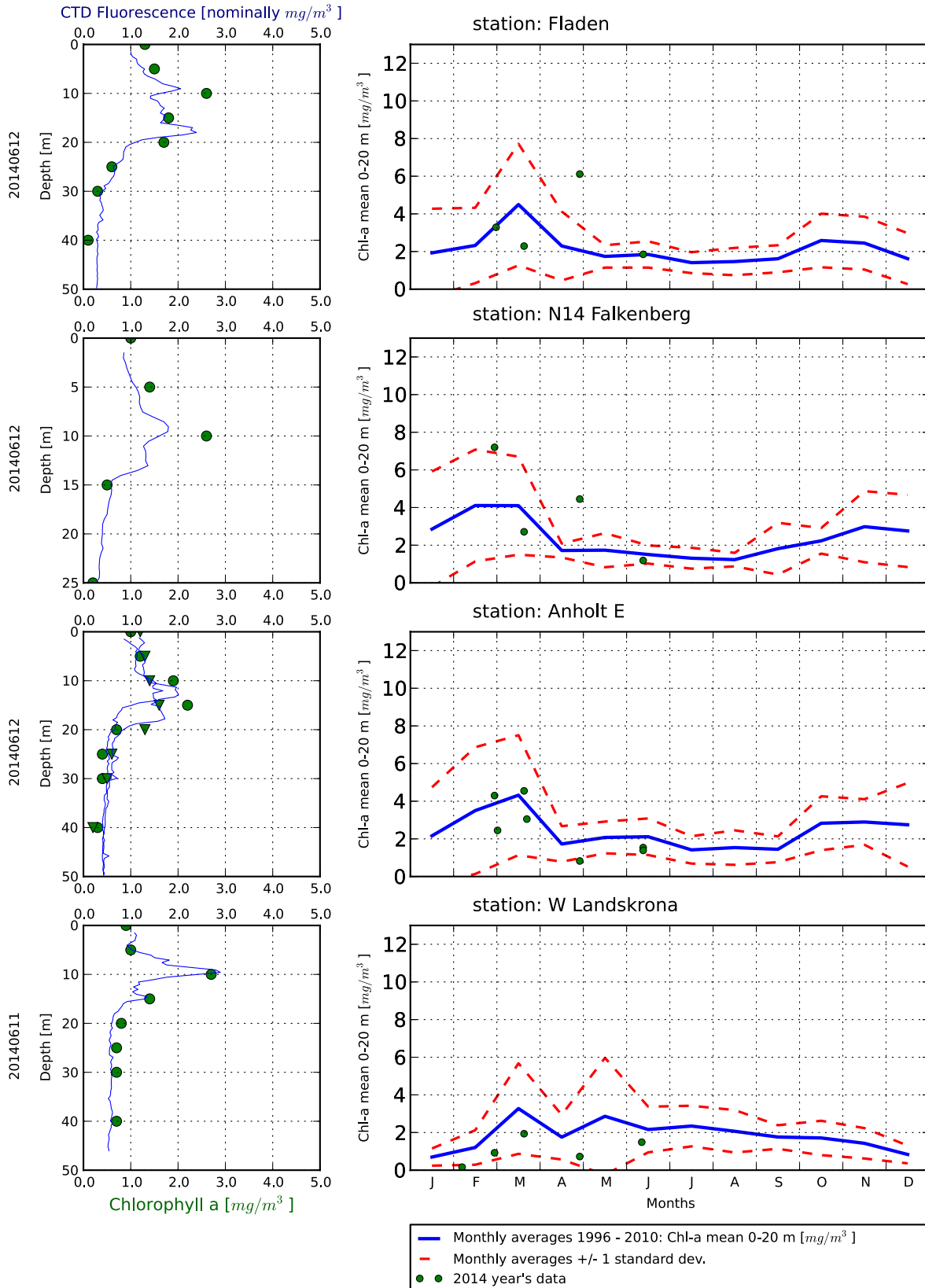
The filamentous cyanobacterium *Aphanizomenon flos-aqua* was very common and traces of *Nodularia spumigena* were found. Pico cyanobacteria colonies were abundant.

Aphanizomenon flos-aquae

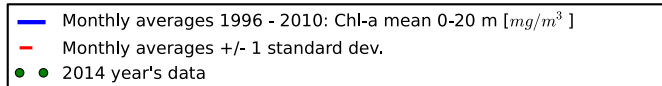
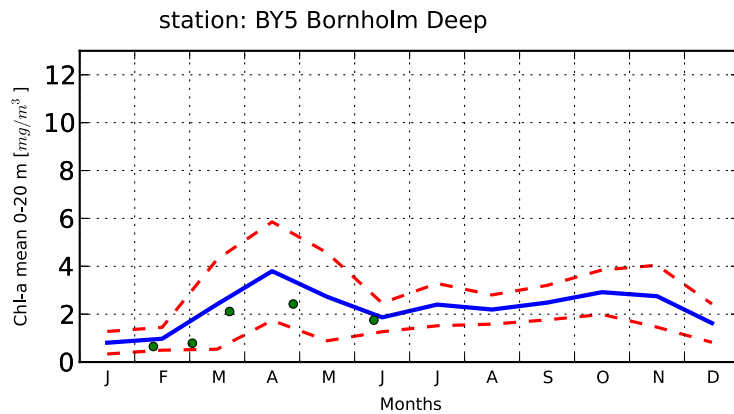
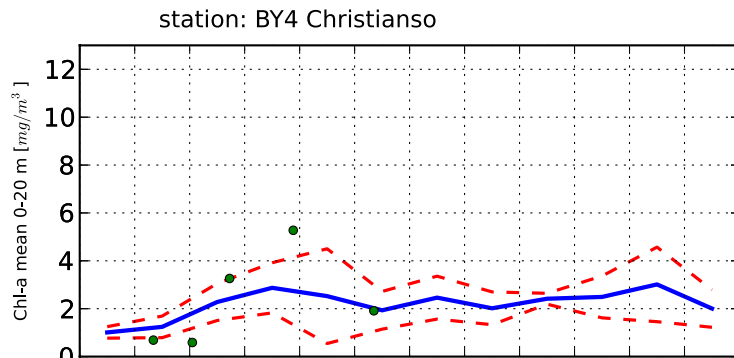
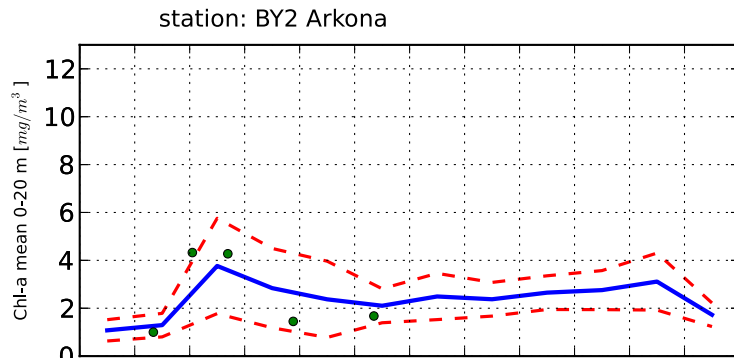
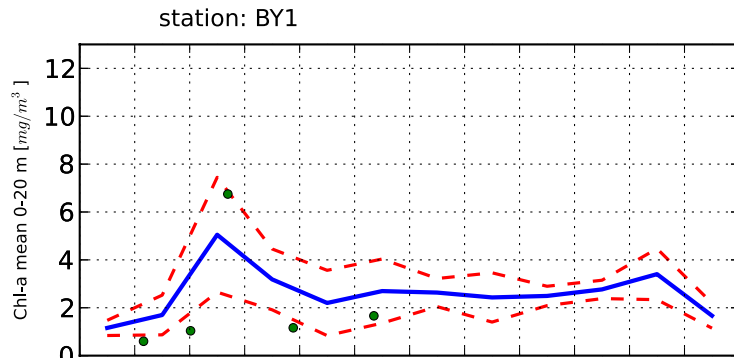
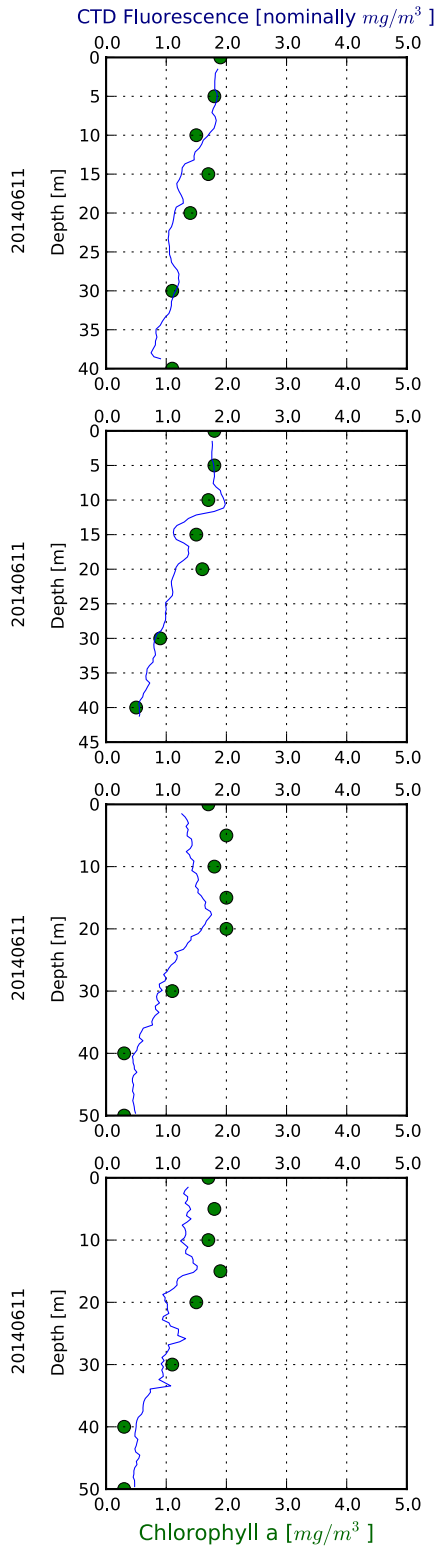
Phytoplankton analysis and text by:
Ann-Turi Skjevick

Selection of observed species	BY2	BY5	Ref M1V1	BY15	BCS III-10	BY38
Red=potentially toxic species	11/6	11/6	13/6	10/6	10/6	14/6
	presence	presence	presence	presence	presence	presence
Bacillariophyceae	present			present		present
Chaetoceros danicus	common	very common			present	present
Chaetoceros impressus	present	present			present	
Chaetoceros subtilis			present		present	
Chaetoceros wighamii				present		
Cyclotella choctawhatcheeana	present		present			
Ceratium tripos	present		present			
Dinophysis acuminata				present		
Dinophysis norvegica			present	common	common	present
Heterocapsa spp	present					
Heterocapsa rotundata	present					
Heterocapsa triquetra			present			
Karlodinium veneficum	present					
Prorocentrum minimum		present	present	present		present
Dinobryon spp						present
Dinobryon balticum			present			
Dinobryon faculiferum			common			
Prymnesiales	common	common	present		common	common
Cryptomonadales	common	present	present		present	present
Chlorodendrales			present			
Pterosperma spp			present	present		present
Pyramimonas spp	present	present	present		common	common
Planctonema lauterbornii	present	common	present	present	common	common
Anabaena spp			present			
Aphanizomenon flos-aquae	present	very common	very common	very common	common	common
Aphanothece spp	present		present	present		common
Aphanothece paralleliformis	present	common		present	common	present
Cyanodictyon spp	common	common	common		common	common
Lemmermanniella spp	present	common	common		common	present
Nodularia spumigena		present	present	present		present
Snowella spp	present	common			present	present
Calliakantha longicaudata				present		
Calliakantha natans				present		
Craspedophyceae			present			present
Ebria tripartita						present
Ciliophora	present	present	present	present	common	present
Mesodinium rubrum	present	present		common	common	

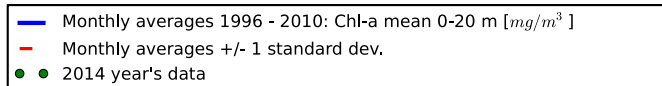
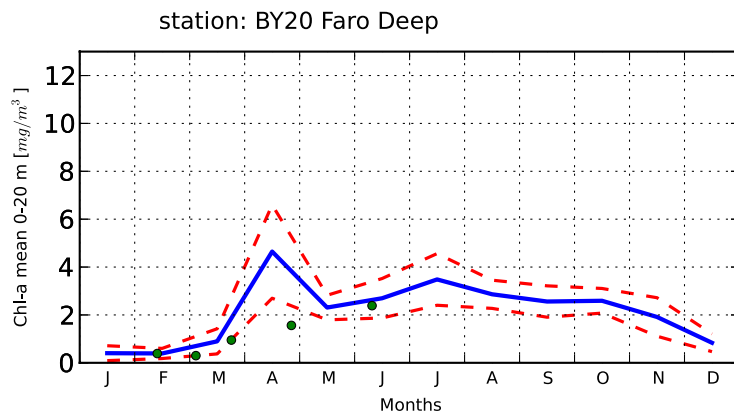
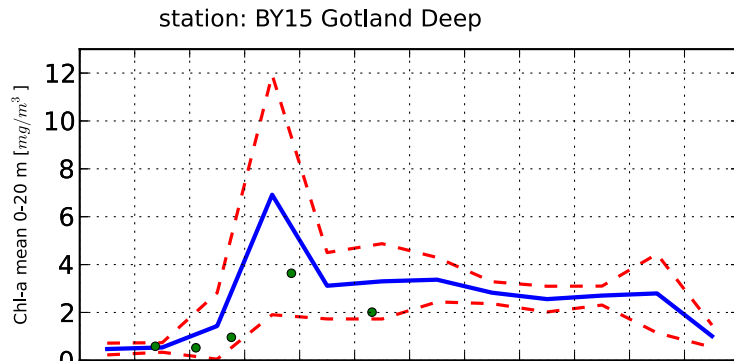
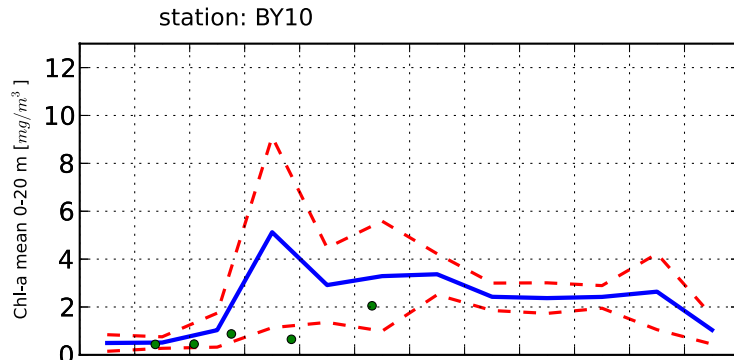
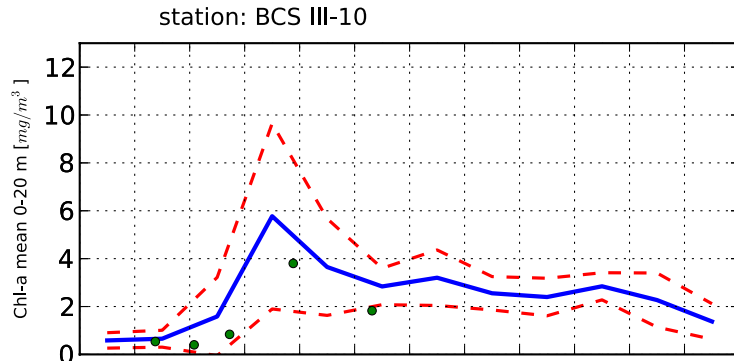
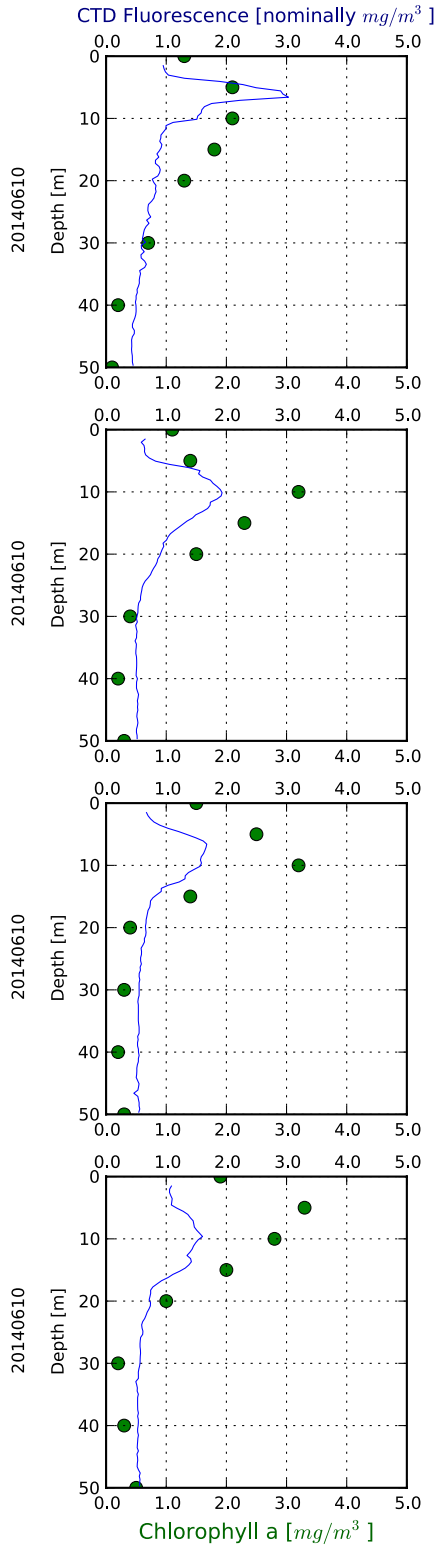
The Kattegat and The Sound



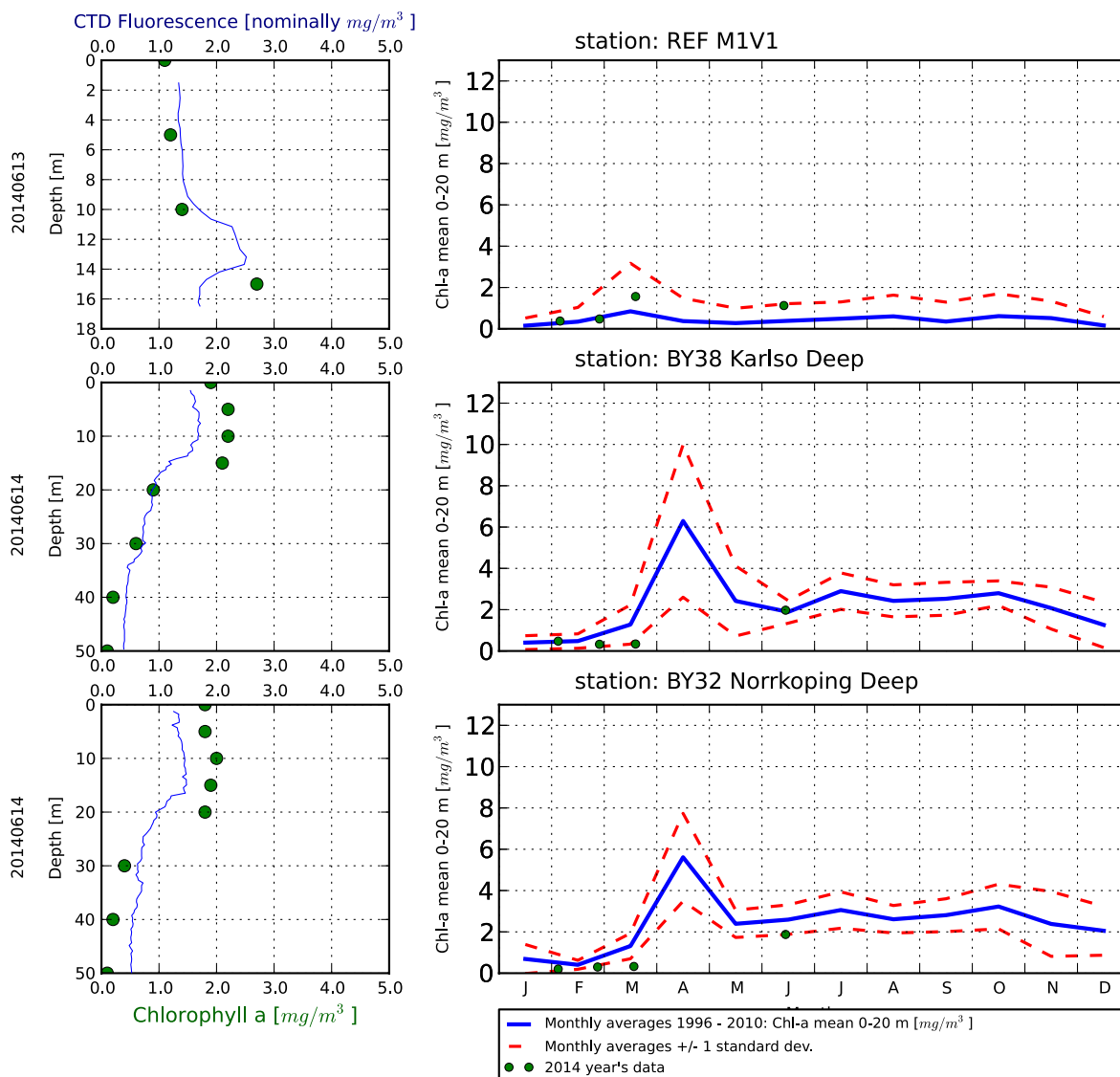
The Southern Baltic



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.

