

## Sammanfattning

Rapporten innehåller resultat från två utsjöresor i november. Egentliga Östersjön undersöktes i början av månaden, Västkusten och sydvästra Östersjön i slutet.

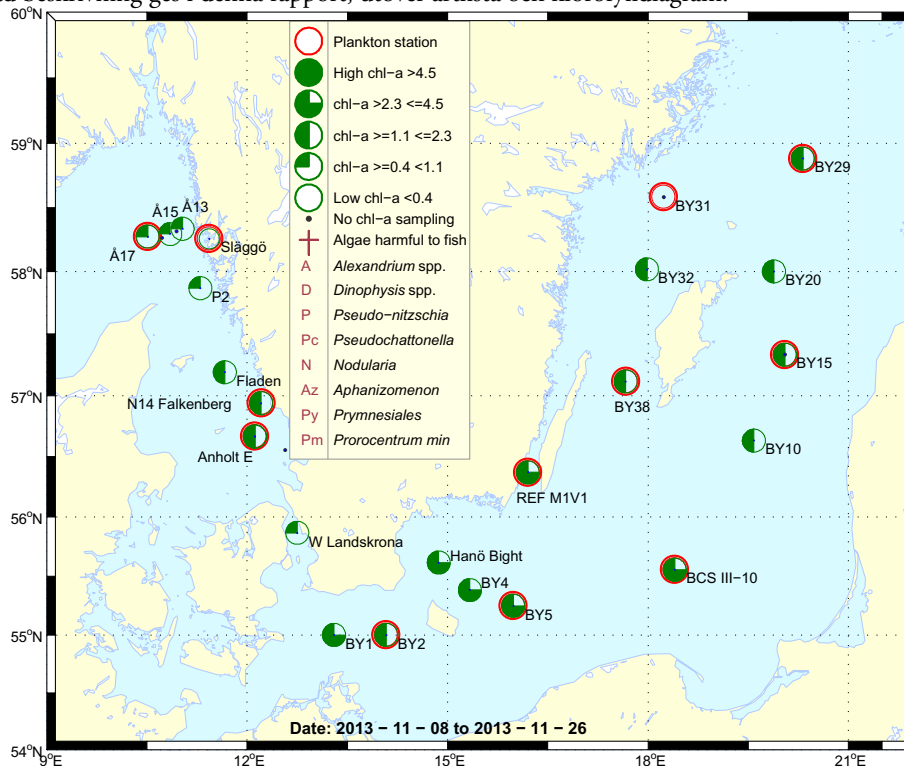
Artantal och cellantal var låga i Skagerrak. I Kattegatt var artdiversiteten ganska hög även om cellantalen var relativt låga. Det för fisk skadliga släktet *Pseudochattonella*\* observerades vid Släggö i Skagerrak och vid Anholt E i Kattegatt. Ett prov från klorofyllfluorescensmaximum på 5 meter vid Anholt E dominerades av *Ceratium lineatum*, *Pseudo-nitzschia* spp\* och *Dictyocha speculum*.

De integrerade klorofyll *a*-värdena låg omkring medel vid samtliga stationer.

Kiselalgsläktet *Coscinodiscus* var vanligt förekommande vid nästan alla Östersjöstationer. I övrigt dominerade små flagellater och piko-cyanobakteriekolonier. Den potentiellt skadliga arten cf. *Prymnesium polylepis*\* fanns vid BY2, REF M1V1 och vid BY29.

Klorofyll *a*-värdena var något förhöjda i södra Östersjön, vid BY5 och REF M1V1 låg de integrerade värdena över medel för denna månad.

Ingen mer detaljerad beskrivning ges i denna rapport, utöver artlista och klorofylldiagram.



## Abstract

This report presents the results from two November cruises. The Baltic Proper was visited in the beginning of the month, and the Skagerrak, the Kattegat and Southwestern Baltic areas in the end.

The number of species and cell numbers were low in the Skagerrak area. In the Kattegat the species diversity was rather high although the cell numbers were low. A genus harmful for fish, *Pseudochattonella*\*, was observed at the Skagerrak station Släggö and the Kattegat station Anholt E. A sample from a chlorophyll fluorescence maximum at 5 meters depth at Anholt E was dominated by *Ceratium lineatum*, *Pseudo-nitzschia* spp\* and *Dictyocha speculum*.

The integrated chlorophyll *a* concentrations were approximately at average at all stations.

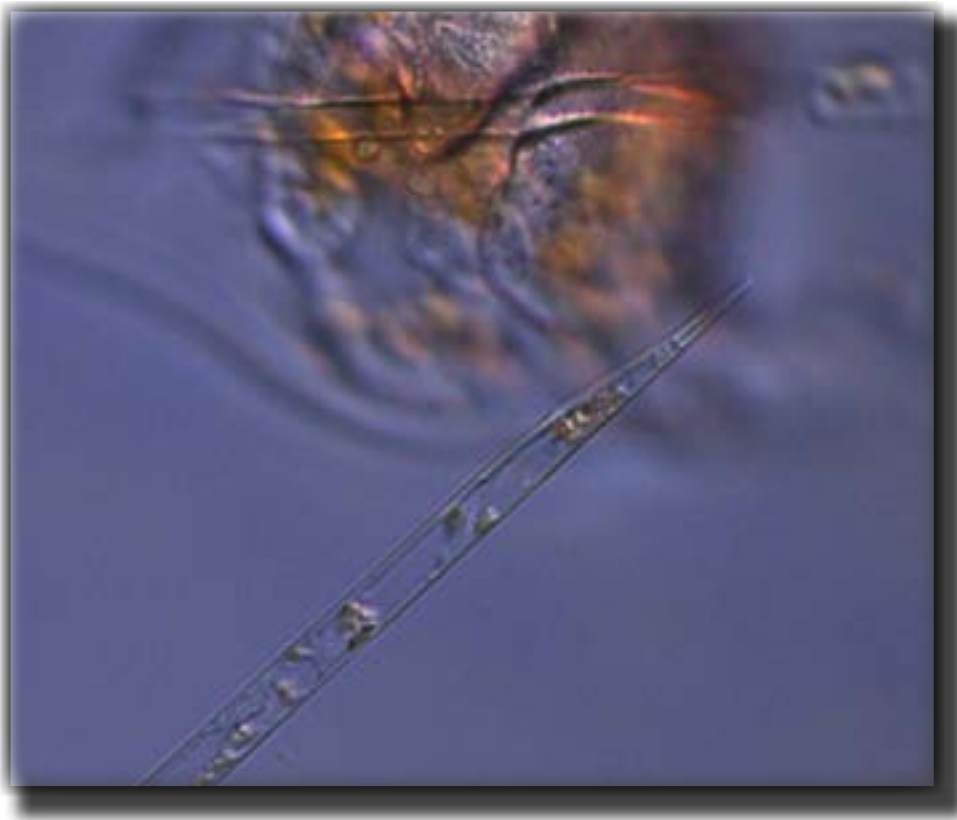
The diatom genus *Coscinodiscus* was common in the Baltic samples. Small flagellated species and pico cyanobacteria colonies dominated at the Baltic stations. The potentially harmful species cf. *Prymnesium polylepis*\* was observed at BY2, REF M1V1 and at BY29.

The chlorophyll *a* concentrations were somewhat high in the Southern Baltic, at stations BY5 and REF M1V1 the integrated concentrations were above average for this month.

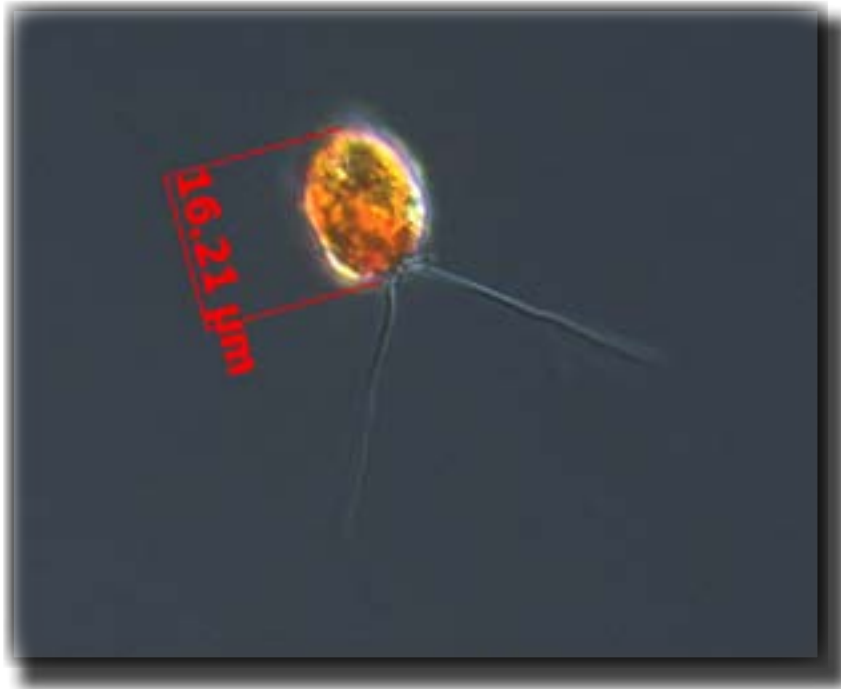
No further detailed information will be presented in this report, only a species list and chlorophyll diagrams.



The flagellate *Pseudochattonella* spp is harmful for fish. The genus was observed at Anholt E and at Släggö.



The diatom *Rhizosolenia hebetata* was common at Anholt E.



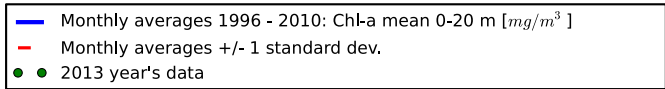
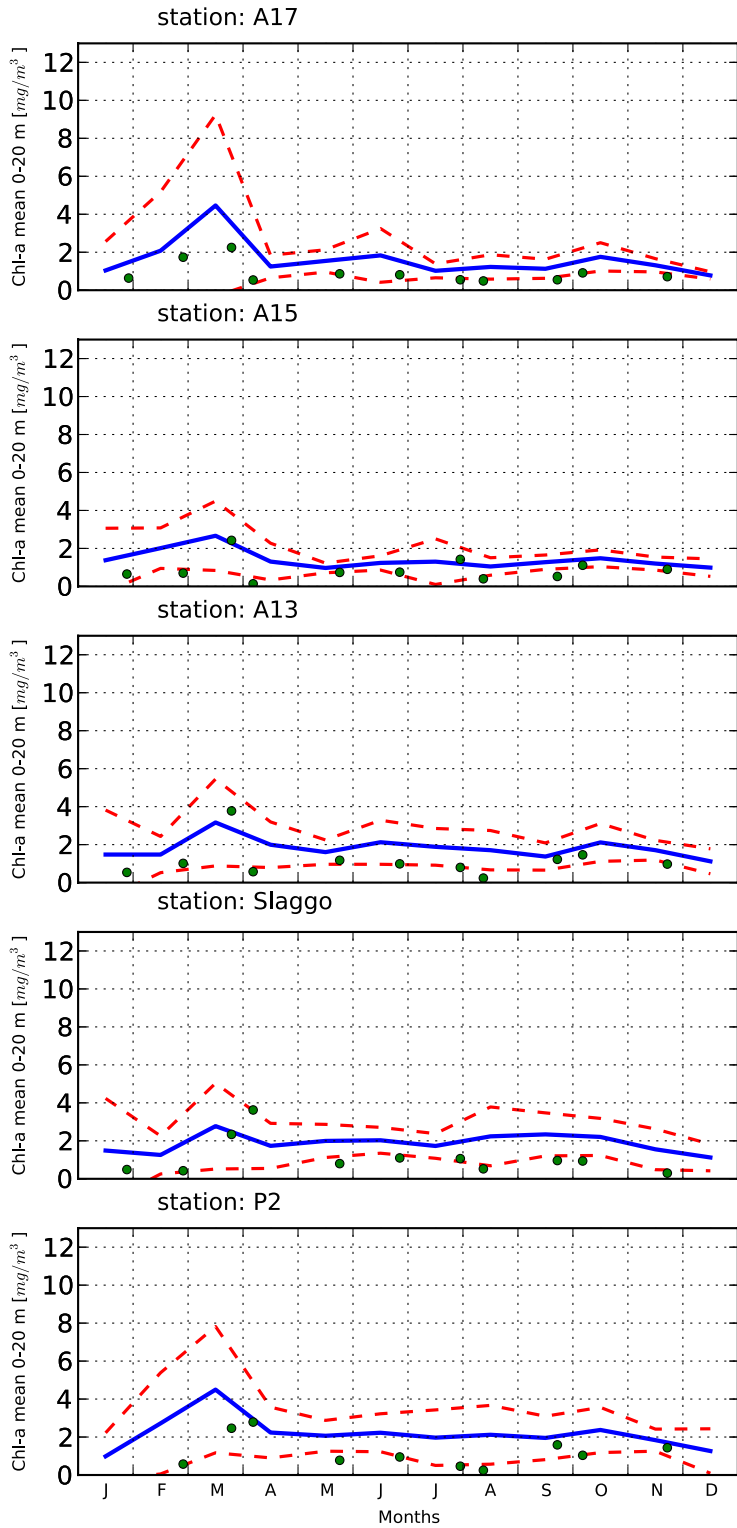
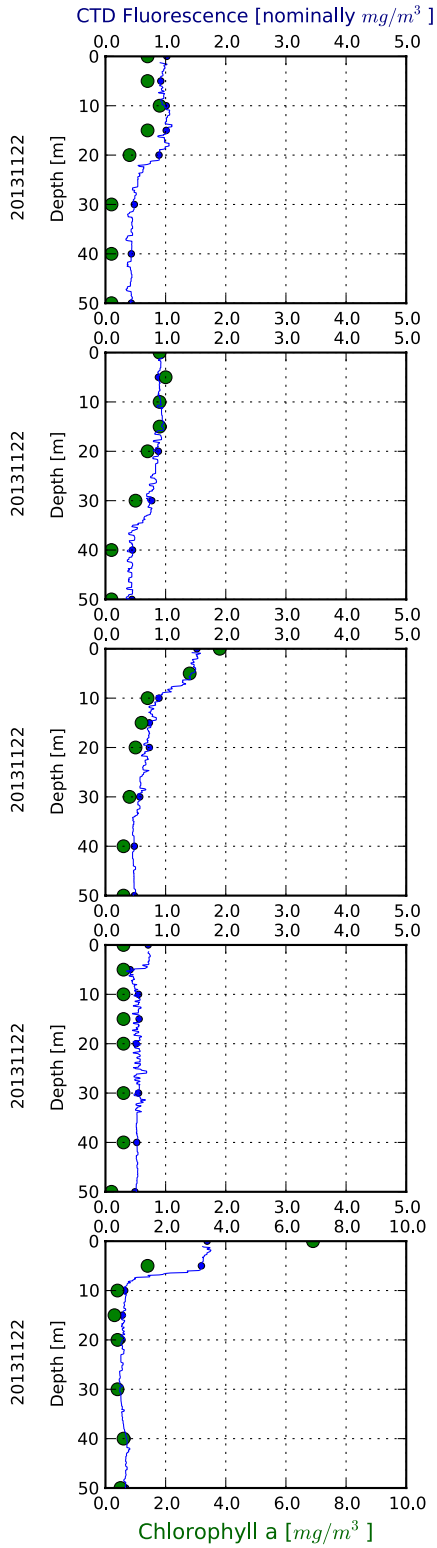
The potentially harmful flagellate *Prymnesium polylepis* was found at the Baltic stations BY2, BY29 and REF M1V1.

Phytoplankton analysis and text by:  
Ann-Turi Skjevik

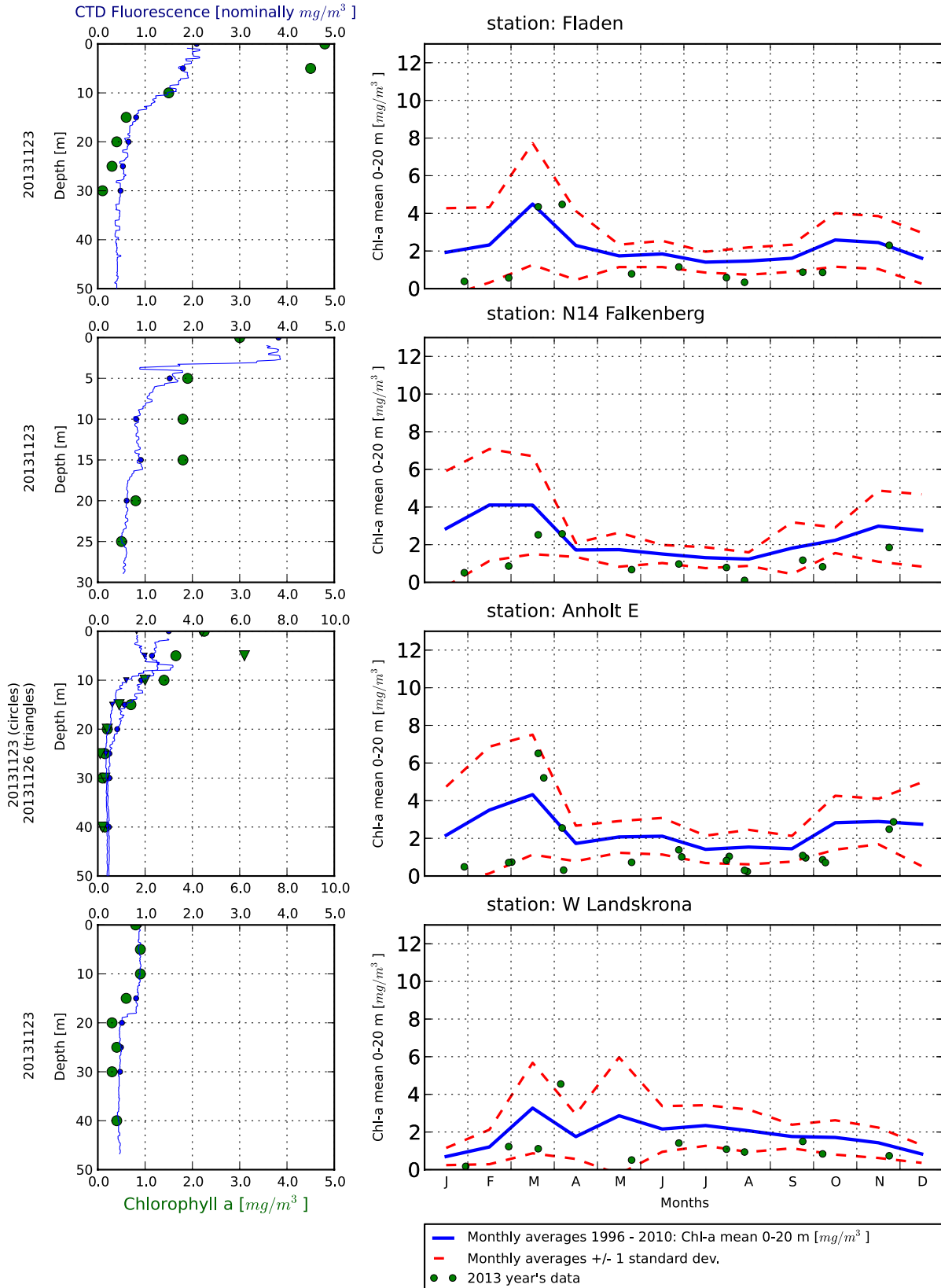
Selection of observed species	Å17	Släggö	N14	Anholt E	Anholt E
Red=potentially toxic species	22/11	22/11	23/11	23/11	26/11
Hose 0-10 m	presence	presence	presence	presence	presence
<i>Asterionellopsis glacialis</i>		present			
<i>Cerataulina pelagica</i>			present	present	present
<i>Chaetoceros curvisetus</i>					present
<i>Chaetoceros debilis</i>				present	present
<i>Chaetoceros subtilis</i>				present	present
<i>Cyclotella</i> spp				present	
<i>Dactyliosolen fragilissimus</i>					present
<i>Ditylum brightwellii</i>					present
<i>Guinardia delicatula</i>				present	
<i>Guinardia flaccida</i>			present		
<i>Nitzschia longissima</i>		present		present	
<i>Proboscia alata</i>			present	present	present
<i>Pseudo-nitzschia</i> spp	present		present	common	common
<i>Rhizosolenia imbricata</i>		present			
<i>Rhizosolenia hebetata</i>				common	present
<i>Rhizosolenia setigera</i>		present		present	present
<i>Skeletonema marinoi</i>	present		present		present
<i>Thalassionema nitzschioides</i>	present	present			present
<i>Thalassiosira angulata</i>	present		present	present	present
<i>Thalassiosira nordenskiöldii</i>					present
<i>Thalassiosira punctigera</i>			present	present	present
<i>Ceratium furca</i>	present	present			
<i>Ceratium fusus</i>			common	common	common
<i>Ceratium lineatum</i>	present	present	common	common	common
<i>Ceratium longipes</i>					present
<i>Ceratium tripos</i>			common	common	common
<i>Dinophysis acuminata</i>			present	present	present
<i>Dinophysis norvegica</i>			present	present	
Gymnodiniales spp	present	present	present	present	present
<i>Gyrodinium flagellare</i>	present		present	present	
<i>Polykrikos schwartzii</i>				present	present
<i>Prorocentrum micans</i>	present	present	common	present	present
<i>Prorocentrum minimum</i>					present
<i>Protoperdinium</i> spp			present		present
<i>Prymnesiales</i> spp	present		present	present	present
<i>Dictyocha speculum</i>		present	common	common	common
<i>Pseudochattonella</i> spp		present		present	
<i>Pterosperma</i> spp		present			
<i>Pyramimonas</i> spp	present			present	
Cryptomonadales spp	present	common	common	common	common
Craspedophyceae			present		present
<i>Leucocryptos marina</i>				present	
<i>Mesodinium rubrum</i>	present			present	present
<i>Tiarina fusus</i>			present	present	present
<i>Ciliophora</i> spp	present	present	common	present	present

Selection of observed species	BY2	BY5	REF M1V1	BY15	BCS III-10	BY38	BY29
Red=potentially toxic species	24/11	24/11	9/11	8/11	9/11	9/11	8/11
	presence	presence	presence	presence	presence	presence	presence
<i>Chaetoceros danicus</i>	common	common	present	present	present		
<i>Chaetoceros impressus</i>	present	present			present		
<i>Coscinodiscus granii</i>			present	present		present	
<i>Coscinodiscus</i> spp	common	very common	common	common	common		present
<i>Cyclotella choctawhatcheana</i>			present			present	present
<i>Skeletonema marinoi</i>			common				
<i>Thalassiosira</i> spp			present				
<i>Amphidinium</i> spp						present	
<i>Ceratium tripos</i>	common						
<i>Dinophysis acuminata</i>		present	present		present		
<i>Dinophysis norvegica</i>				present			present
<i>Dinophysis rotundata</i>					present		
<i>Gymnodinium verruculosum</i>	present				present		
Gymnodiniales	present	present	present	present	present		present
<i>Heterocapsa rotundata</i>	present		present				present
<i>Heterocapsa triquetra</i>			present				
<i>Heterocapsa</i> spp			present				present
<i>Katodinium glaucum</i>			present			present	
<i>Prorocentrum minimum</i>	present	present	present			present	
<i>Protoperidinium</i> spp				present			
<i>Planctonema lauterbornii</i>	present					present	present
<i>Eutreptiella</i> spp	present			present	present	present	present
<i>Pterosperma</i> spp				present			
<i>Pyramimonas</i> spp	present		present	present	present		present
<i>Aphanizomenon flos-aquae</i>	present			present		present	present
<i>Aphanothece paralleliformis</i>					present		
<i>Aphanothece</i> spp	present			present	present		present
<i>Lemmermanniella</i> spp	present		present	present	present		present
<i>Woronichinia</i> spp	present	common	present	common	present	common	present
Cryptomonadales	common	common	very common	very common	very common	very common	very common
<i>Calliakantha natans</i>	present	present		present		present	present
Craspedophyceae		present		present	present	present	
<i>Ebria tripartita</i>			present				
cf. <i>Prymnesium polylepis</i>	present		present				present
Prymnesiales			present				present
<i>Leucocryptos marina</i>	present			present	present		present
<i>Helicostomella subulata</i>	present			present			present
<i>Mesodinium rubrum</i>	present	present	present	present	common	common	common
<i>Strombidium</i> spp			present		present		present
Ciliophora	common	common	present	common	common	common	common

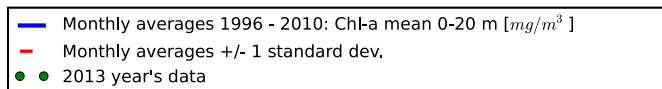
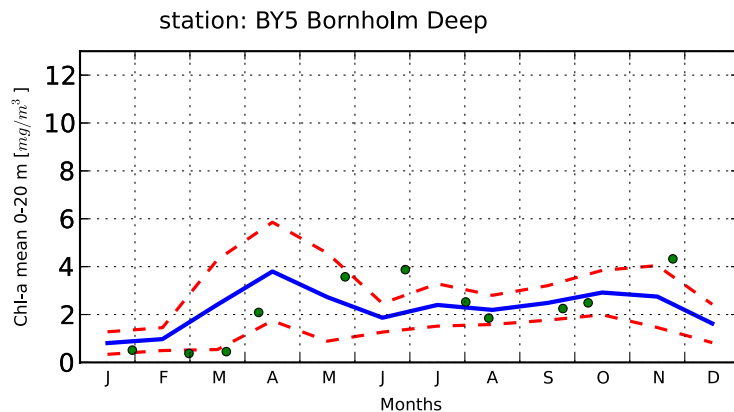
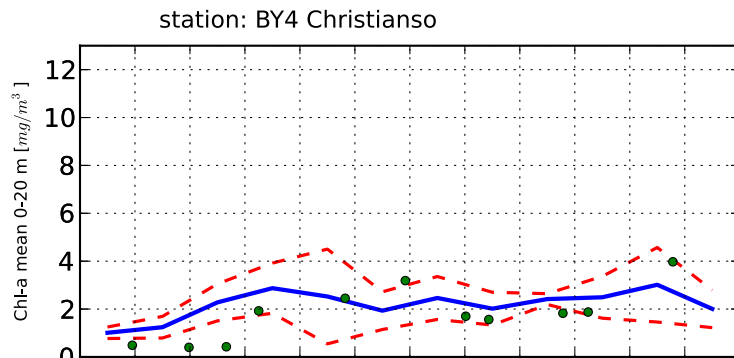
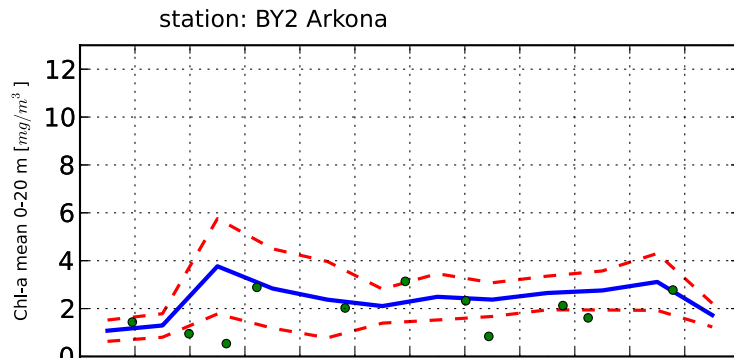
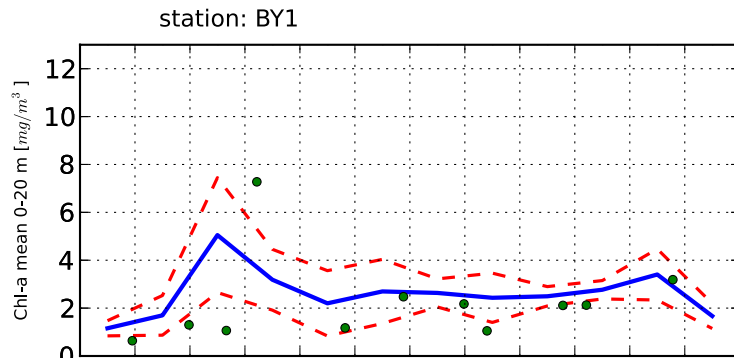
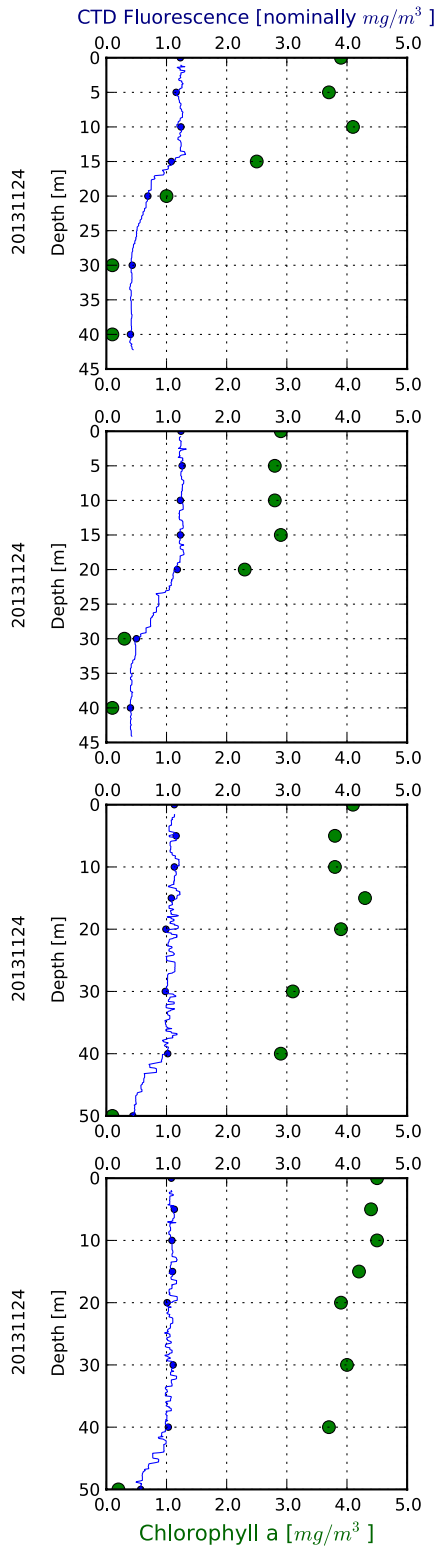
# The Skagerrak



# The Kattegat and The Sound

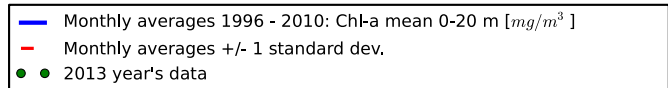
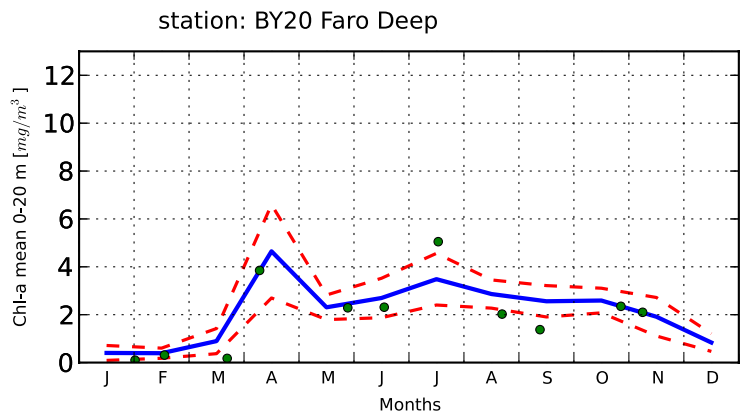
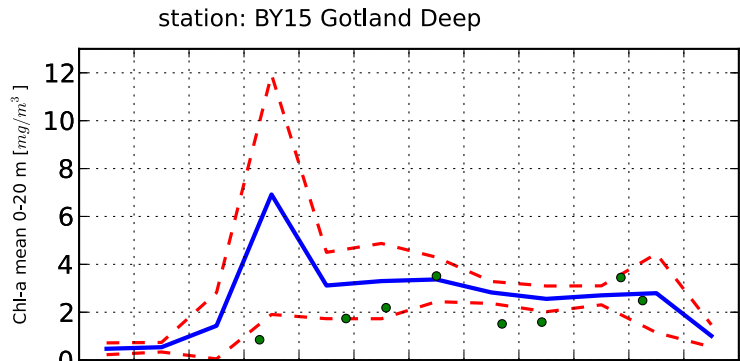
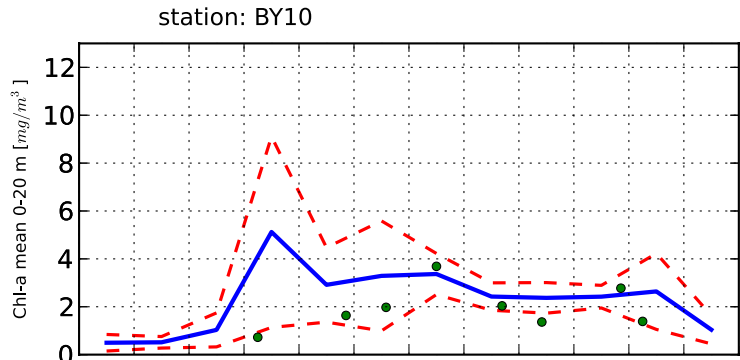
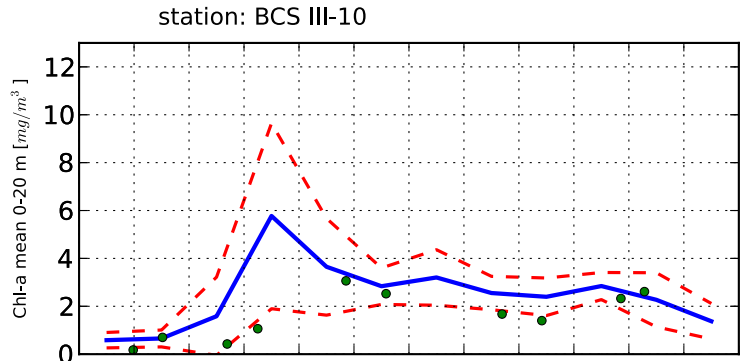
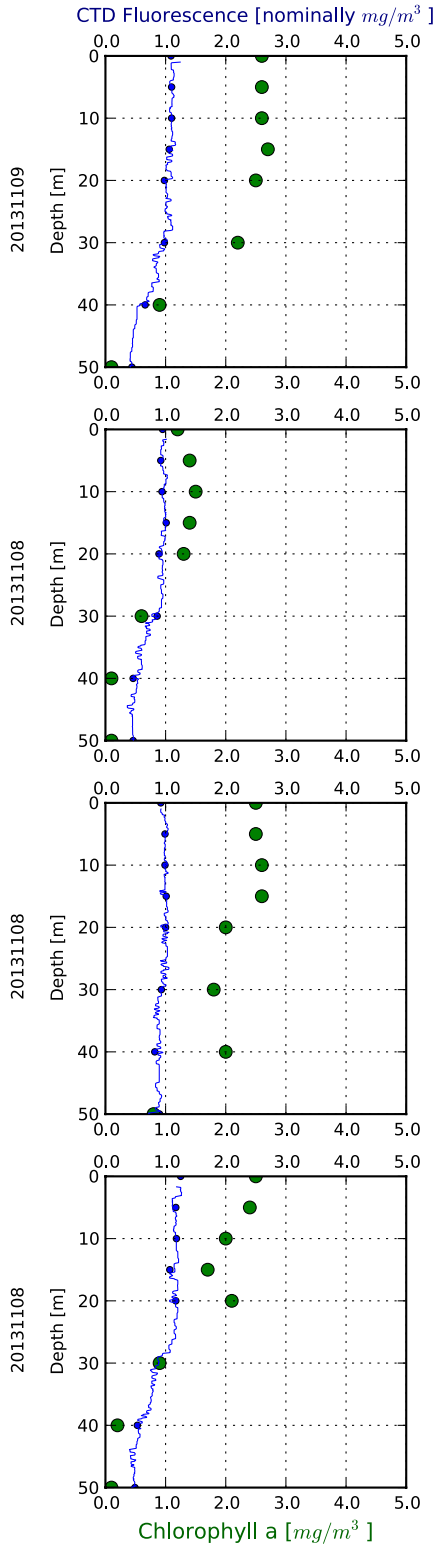


# The Southern Baltic

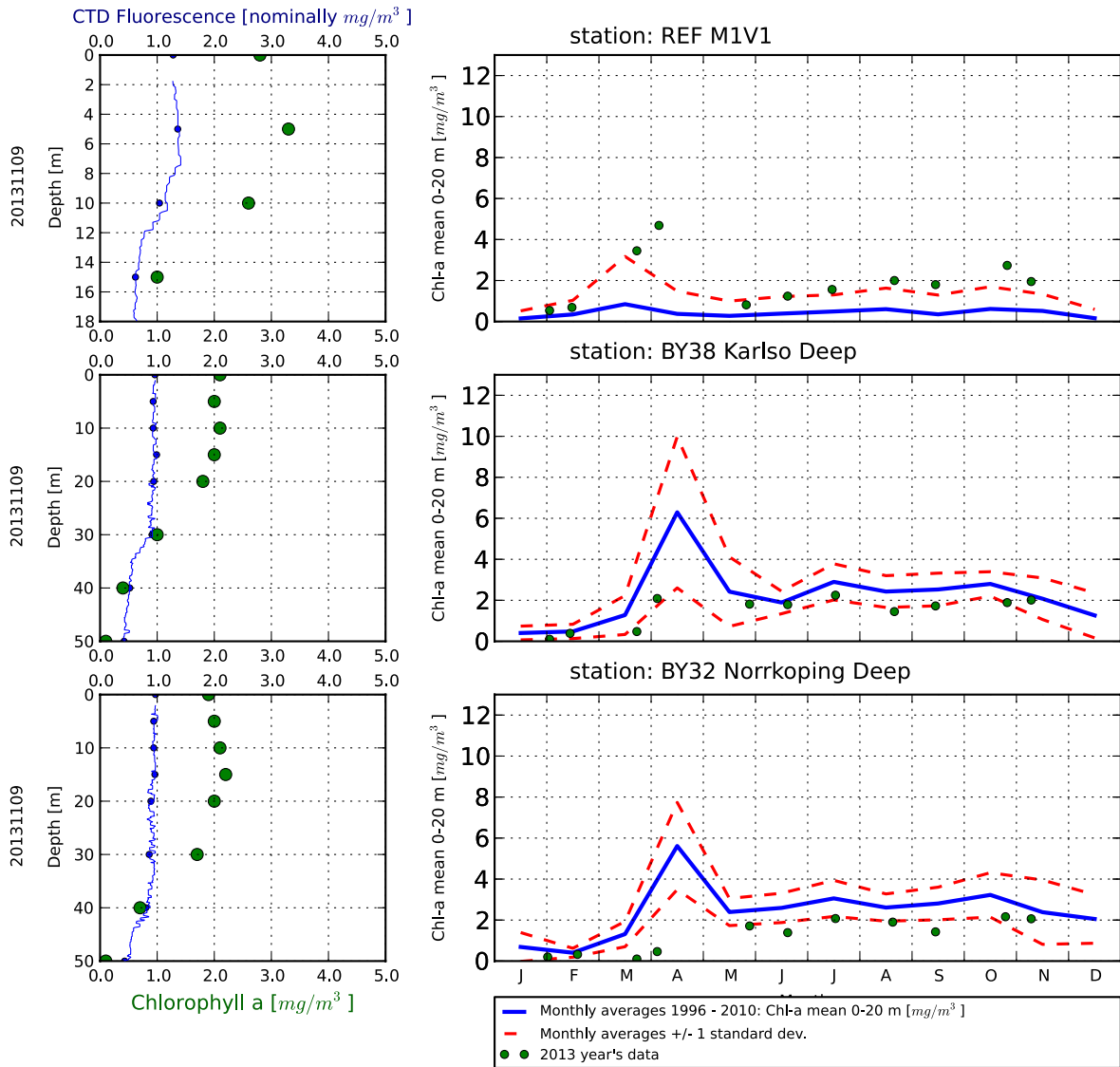




The Eastern Baltic



## 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](http://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](http://www.smhi.se) during the period June-August.

Art / Species	Gift / Toxin	Eventuella symptom	Clinical symptoms
<i>Alexandrium</i> spp.	Paralytic shellfish poisoning (PSP)	<b>Milda symptom:</b> 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 <b>Extrema symptom:</b> 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.	<b>Mild case:</b> 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. <b>Extreme case</b> 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)	<b>Milda symptom:</b> Efter cirka 30 minuter till några timmar: yrsel, illamående, kräkningar, diarré, magont <b>Extrema symptom:</b> Upprepad exponering kan orsaka cancer	<b>Mild case:</b> Within 30 min-a few hours: dizziness, nausea, vomiting, diarrhoea, abdominal pain. <b>Extreme case:</b> Repeated exposure may cause cancer.
<i>Pseudo-nitzschia</i> spp.	Amnesic shellfish poisoning (ASP)	<b>Milda symptom:</b> Efter 3-5 timmar: yrsel, illamående, kräkningar, diarré, magkramp <b>Extrema symptom:</b> Yrsel, hallucinationer, förvirring, förlust av korttidsminnet, kramper	<b>Mild case:</b> Within 3-5 hours: dizziness, nausea, vomiting, diarrhoea, abdominal cramps. <b>Extreme case:</b> dizziness, hallucinations, confusion, loss of memory, cramps.
<i>Chaetoceros concavicornis</i> / <i>C. convolutus</i>	Mechanical damage through hooks on setae	<b>Låg celltäthet:</b> Ingen påverkan. <b>Hög celltäthet:</b> Fiskens gälar skadas, fisken dör.	<b>Low cell numbers:</b> No effect on fish. <b>High cell numbers:</b> Fish death due to gill damage.
<i>Pseudochattonella</i> spp.	Fish toxin	<b>Låg celltäthet:</b> Ingen påverkan. <b>Hög celltäthet:</b> Fiskens gälar skadas, fisken dör.	<b>Low cell numbers:</b> No effect on fish. <b>High cell numbers:</b> 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.

