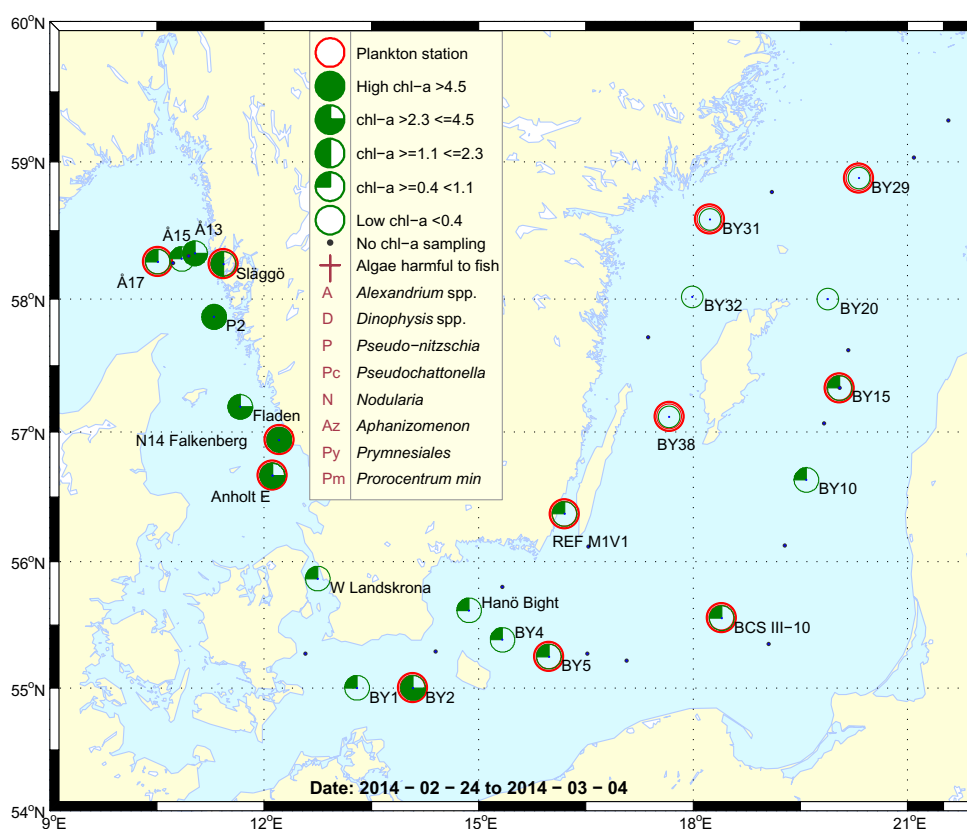


Sammanfattning

Rapporten innehåller resultat från utsjöresan i månadsskiftet mellan februari och mars.

Generellt sett så var artantal och cellantal låga i Östersjön och vid de flesta stationerna i Skagerrak och Kattegatt. Den största artdiversiteten återfanns vid BY2 och N14 där vårbloomingen var i full gång. *Skeletonema marinoi* dominerade vid BY2 i Östersjön. I Kattegatts vårblooming dominerade *Skeletonema marinoi*, *Detonula confervacea*, *Coscinodiscus concinnus* och olika arter från släktet *Thalassiosira*. De integrerade klorofyll *a*-värdena låg högre än normalt för månaden vid station BY2 i södra Östersjön, N14 i Kattegatt och P2 och Släggö i Skagerrak.

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

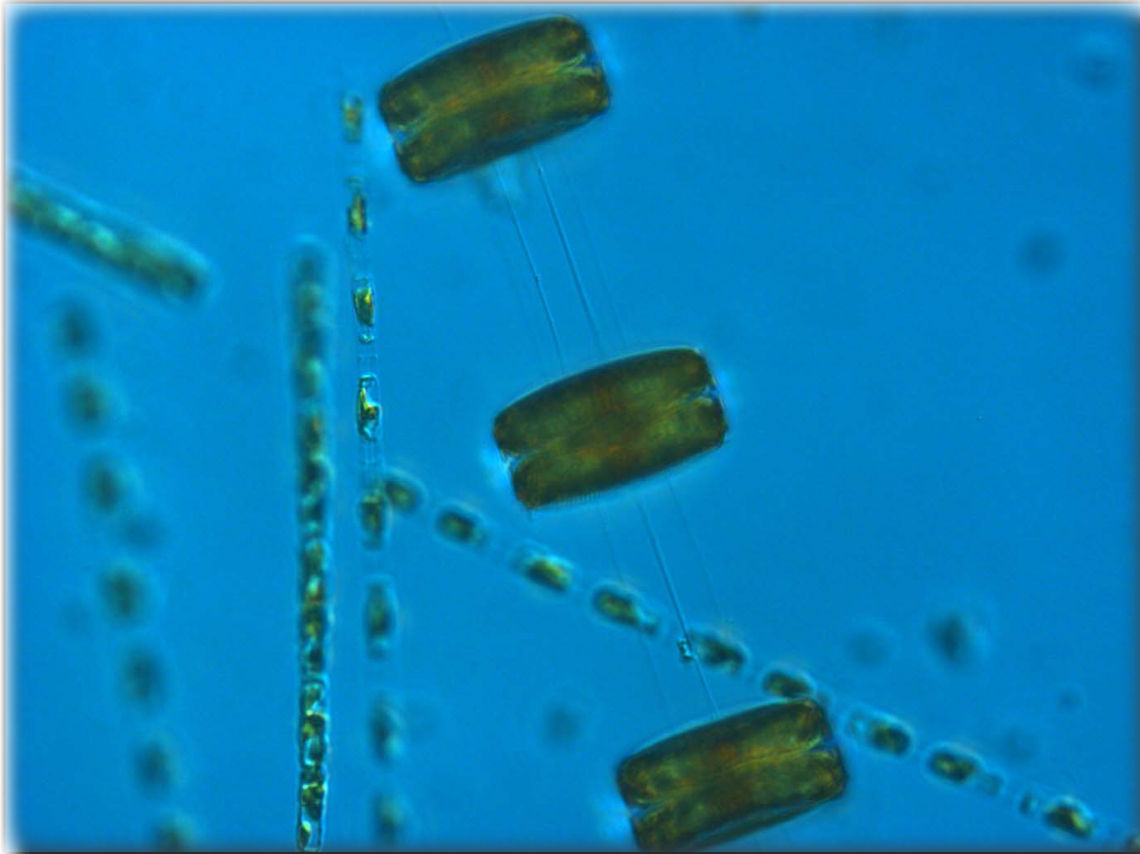


Abstract

This report presents the results from the cruise from the end of February to the beginning of March.

The species diversity and cell concentrations were low in the Baltic Sea and at the majority of the stations visited in the Skagerrak and the Kattegat. The most species rich samples were found at BY2 and N14 where there was a spring bloom. *Skeletonema marinoi* was dominating at BY2 in the Baltic Sea. The spring bloom in the Kattegat was dominated by *Skeletonema marinoi*, *Detonula confervacea*, *Coscinodiscus concinnus* and a few species from the genus *Thalassiosira*. The integrated chlorophyll *a* concentrations were above normal for this month at station BY2 in the Southern Baltic, at N14 in the Kattegat and at P2 and Släggö in the Skagerrak.

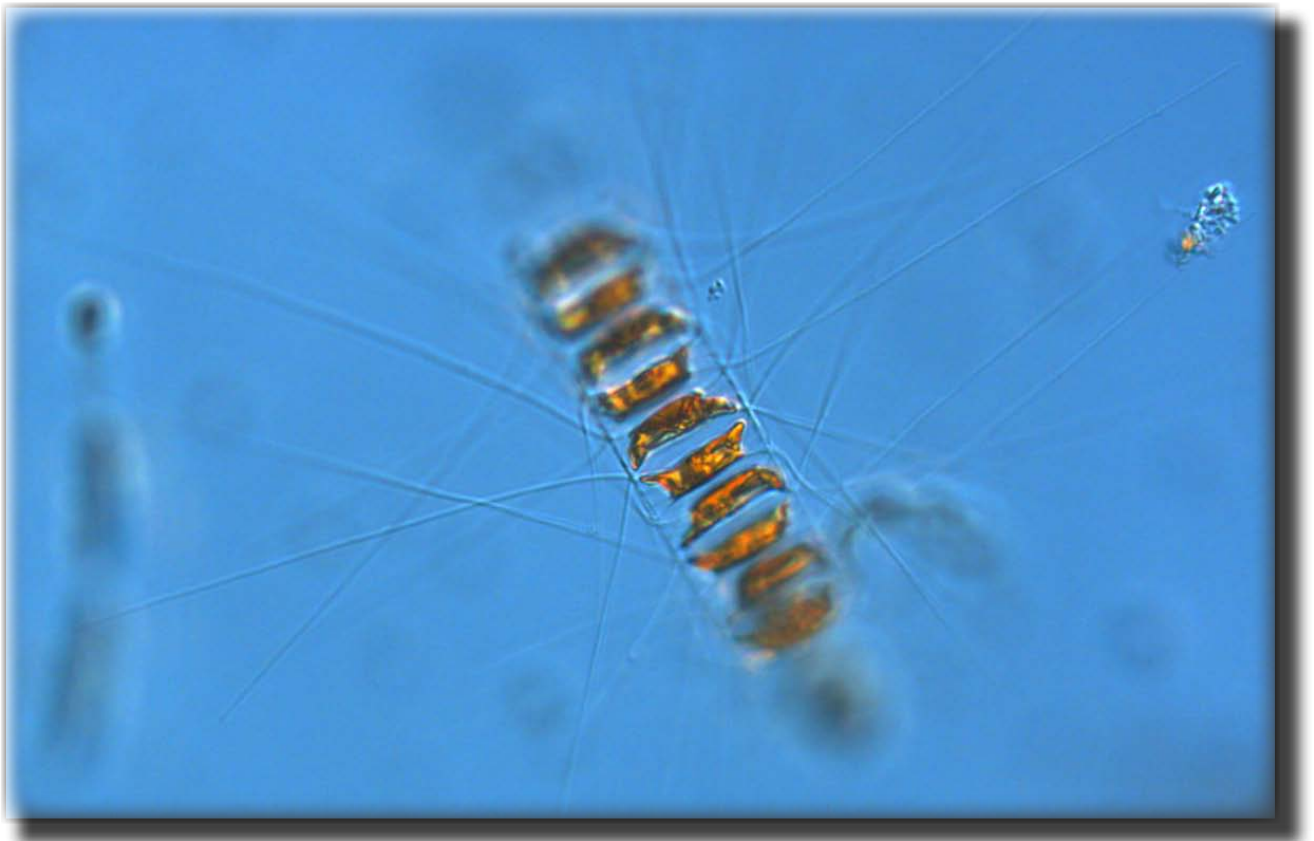
No more detailed information will be presented in this report, only a species list and chlorophyll diagrams.



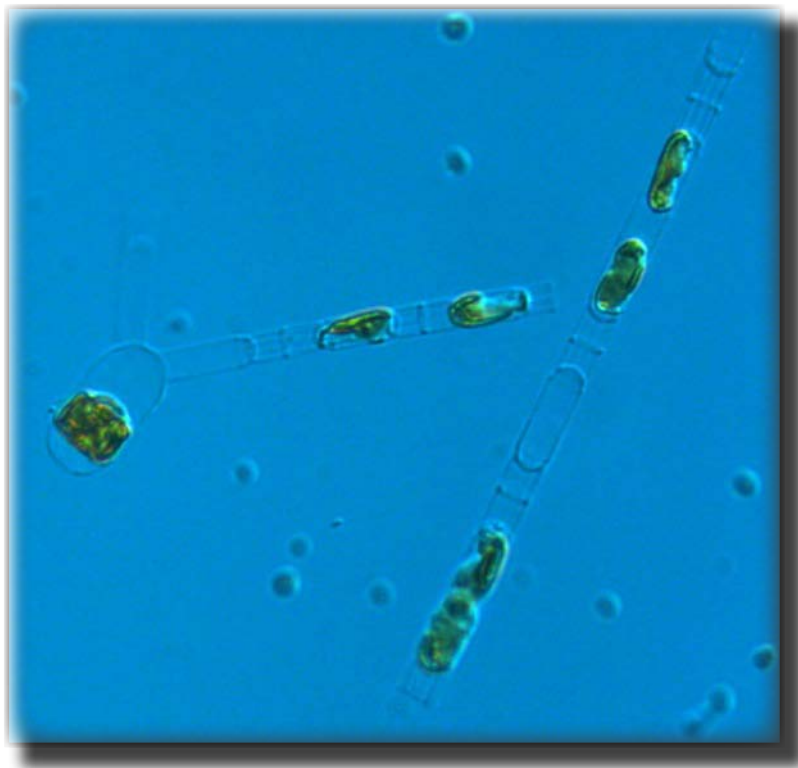
The diatom *Thalassiosira anguste-lineata* was present at N14 in the Kattegat.



The diatom *Thalassiosira nordenskiöldii* was present at Släggö in the Skagerrak.



The diatom *Chaetoceros wighamii* was present at BY2 in the Southern Baltic.



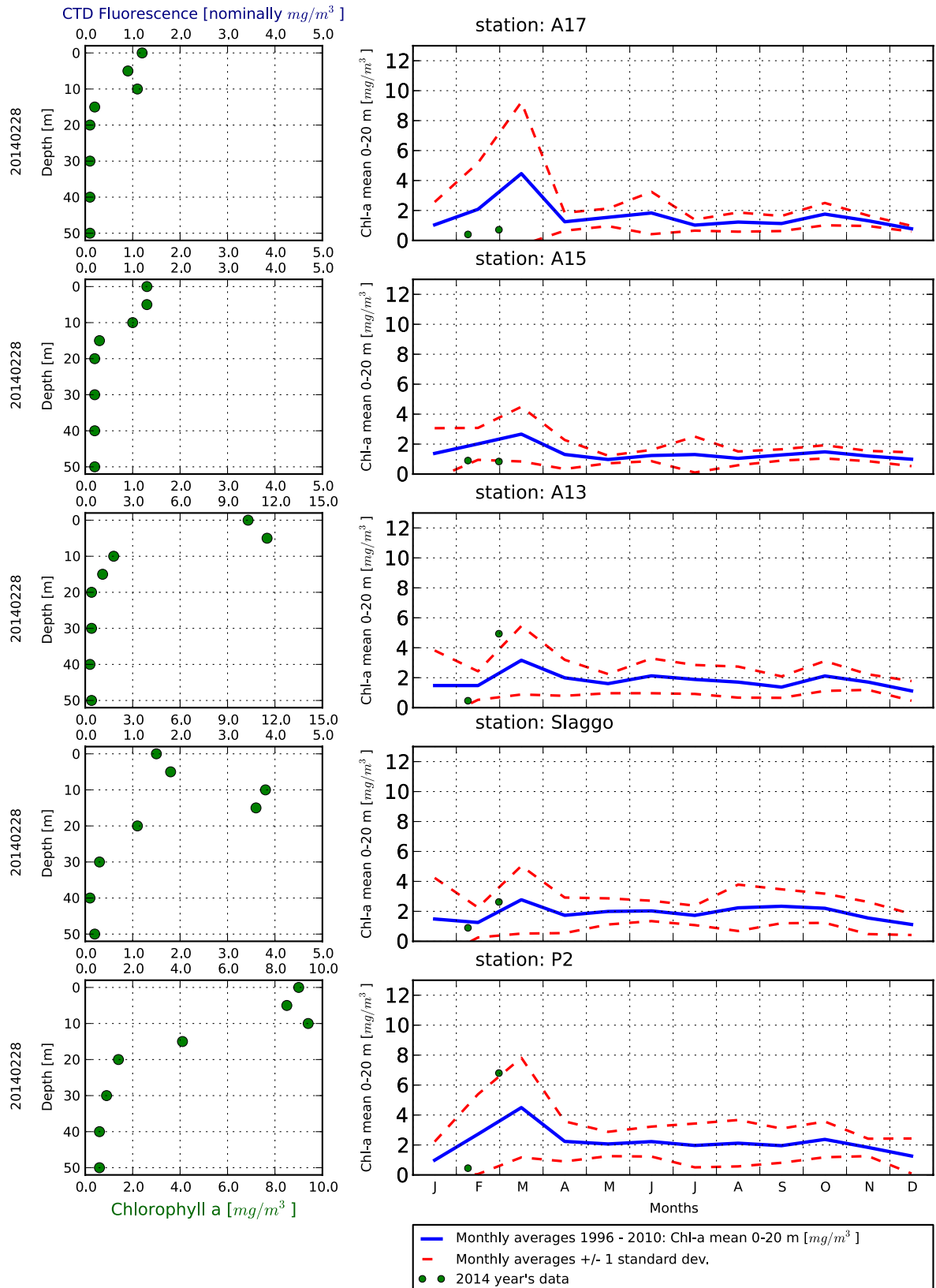
This *Skeletonema marinoi* cyst like cell was found at N14 in the Kattegat.

Phytoplankton photos, analysis and text by:
Malin Mohlin

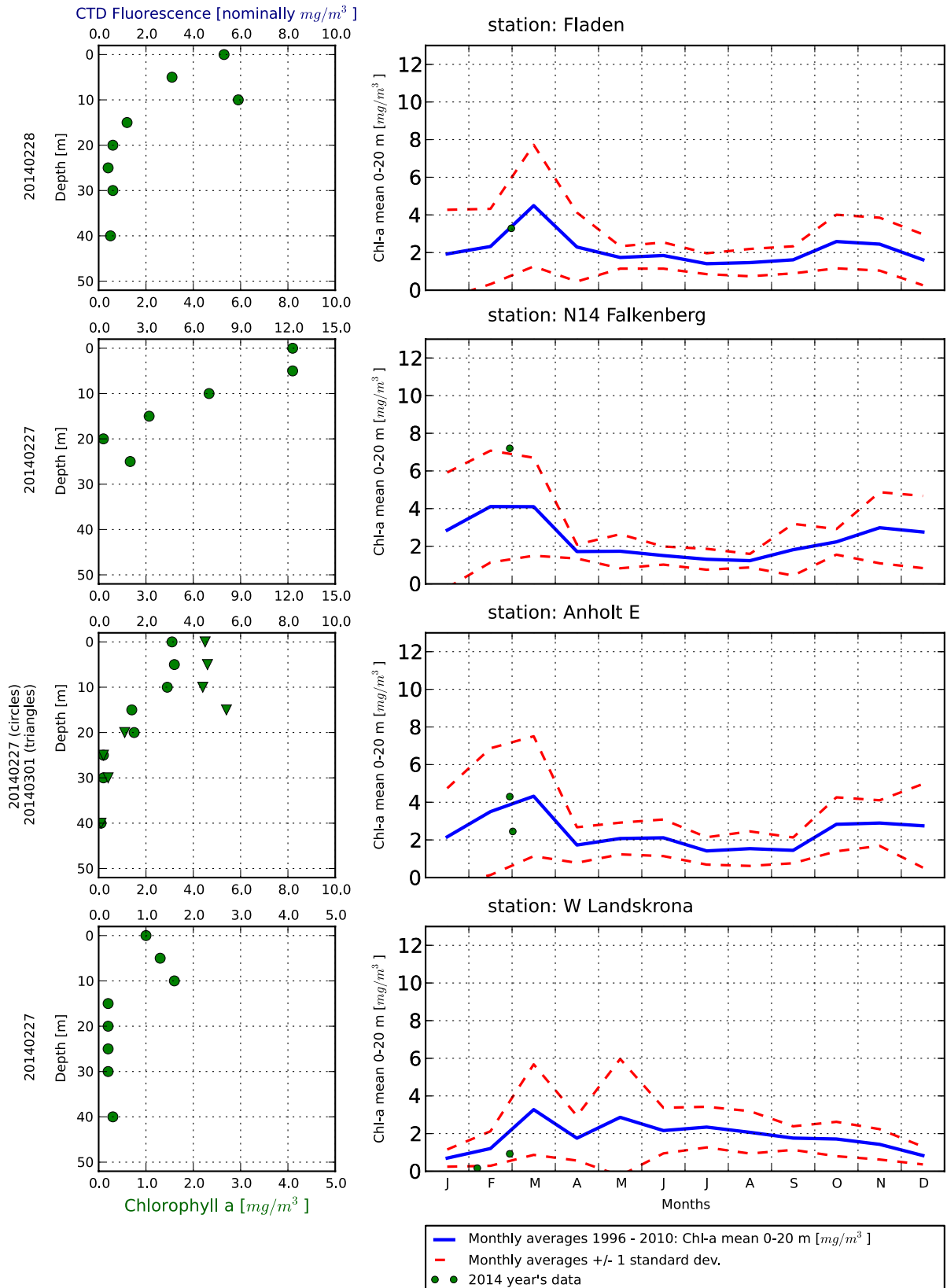
Selection of observed species	Anholt E	Anholt E	Släggö	Å17	N14 Falkenberg
Red=potentially toxic species	2014-02-27	2014-03-01	2014-02-28	2014-02-28	2014-02-27
Hose 0-10 m	presence	presence	presence	presence	presence
<i>Chaetoceros curvisetus</i>	present				
<i>Chaetoceros debilis</i>		present	present		
<i>Chaetoceros diadema</i>		present			
<i>Chaetoceros laciniosus</i>	present				
<i>Chaetoceros socialis</i>	present				present
<i>Chaetoceros</i> spp	present	present	present		present
<i>Chaetoceros subtilis</i> var. <i>subtilis</i>		present			
<i>Coscinodiscus concinnus</i>	present	present	present	present	present
<i>Detonula confervacea</i>			present		common
Pennales			present		present
<i>Rhizosolenia setigera</i>	present	present	present		present
<i>Skeletonema marinoi</i>	present	present	present		very common
<i>Thalassiosira angulata</i>			present		present
<i>Thalassiosira anguste-lineata</i>			present		present
<i>Thalassiosira minima</i>			present		present
<i>Thalassiosira nordenskioeldii</i>			present		
<i>Thalassiosira</i> spp					present
<i>Azadinium</i> spp					present
<i>Ceratium fusus</i>			present		
<i>Ceratium longipes</i>					present
<i>Ceratium tripos</i>	present		present		
<i>Cochlodinium</i> spp	present				present
<i>Dinophysis acuminata</i>	present		present		present
<i>Dinophysis norvegica</i>		present			present
Gymnodiniales	present	present	present	present	present
<i>Gyrodinium</i> spp		present	present		
<i>Heterocapsa</i> spp	present				present
Peridinales	present				
<i>Protoperidinium bipes</i>					present
<i>Pyramimonas</i> spp		present	present		present
<i>Dictyocha speculum</i>	present		present		
<i>Eutreptiella braarudii</i>	present				
<i>Eutreptiella</i> spp					present
<i>Heterosigma</i> spp	present				
Cryptomonadales	present	present	present	present	common
<i>Plagioselmis</i> spp		present	present	present	
<i>Teleaulax</i> spp	common	common	common	present	common
Ciliophora	present	present	present	present	present
<i>Mesodinium rubrum</i>	present	present	present	present	
Unidentified flagellated eukaryots	present	present	present	present	present
Unicell	present		present		

Selection of observed species	BY2 Arkona	BY5 Bornholmsdj	REF M1-V1	BY15 Gotlandsdj	BCS III-10	BY38 Karlsödj	BY29	BY31 Landsortsdj
Red=potentially toxic species	2014-03-02	2014-03-02	2014-02-26	2014-03-04	2014-03-03	2014-02-26	2014-02-25	2014-02-25
	presence	presence	presence	presence	presence	presence	presence	presence
Chaetoceros impressus		present						
Chaetoceros spp		present						
Chaetoceros wighamii	present							
Coscinodiscus concinnus		present						
Coscinodiscus granii								present
Skeletonema marinoi	common	present	present			present		
Thalassiosira levanderi	present							
Thalassiosira spp	present		present					
Dinophysis acuminata						present		present
Gymnodinales	present		present			present		present
Gyrodinium spirale							present	
Gyrodinium spp								
Heterocapsa rotundata	present		present					present
Peridinales	present					present	present	
Peridiniella catenata	present			present				
Peridiniella danica	present							
Protoperidinium spp	present							
Pterosperma spp								present
Pyramimonas spp			present			present		present
Aphanocapsa spp				present				
Aphanothece spp	present			present				
Woronichinia spp	present		present					
Pymnesiales		present			present		present	
Oocystis borei						present		
Cryptomonadales		present	present	common	common	present	present	present
Plagioselmis spp	present	common		present	common			
Teleaulax spp	common	present	present	common	present	present	present	present
Ciliophora	present	present	present	present	present	present	present	present
Mesodinium rubrum	present	present	present	present	present	present	present	present
Unidentified flagellated eukaryots	common	common	present		common			present
Unicell		common					common	

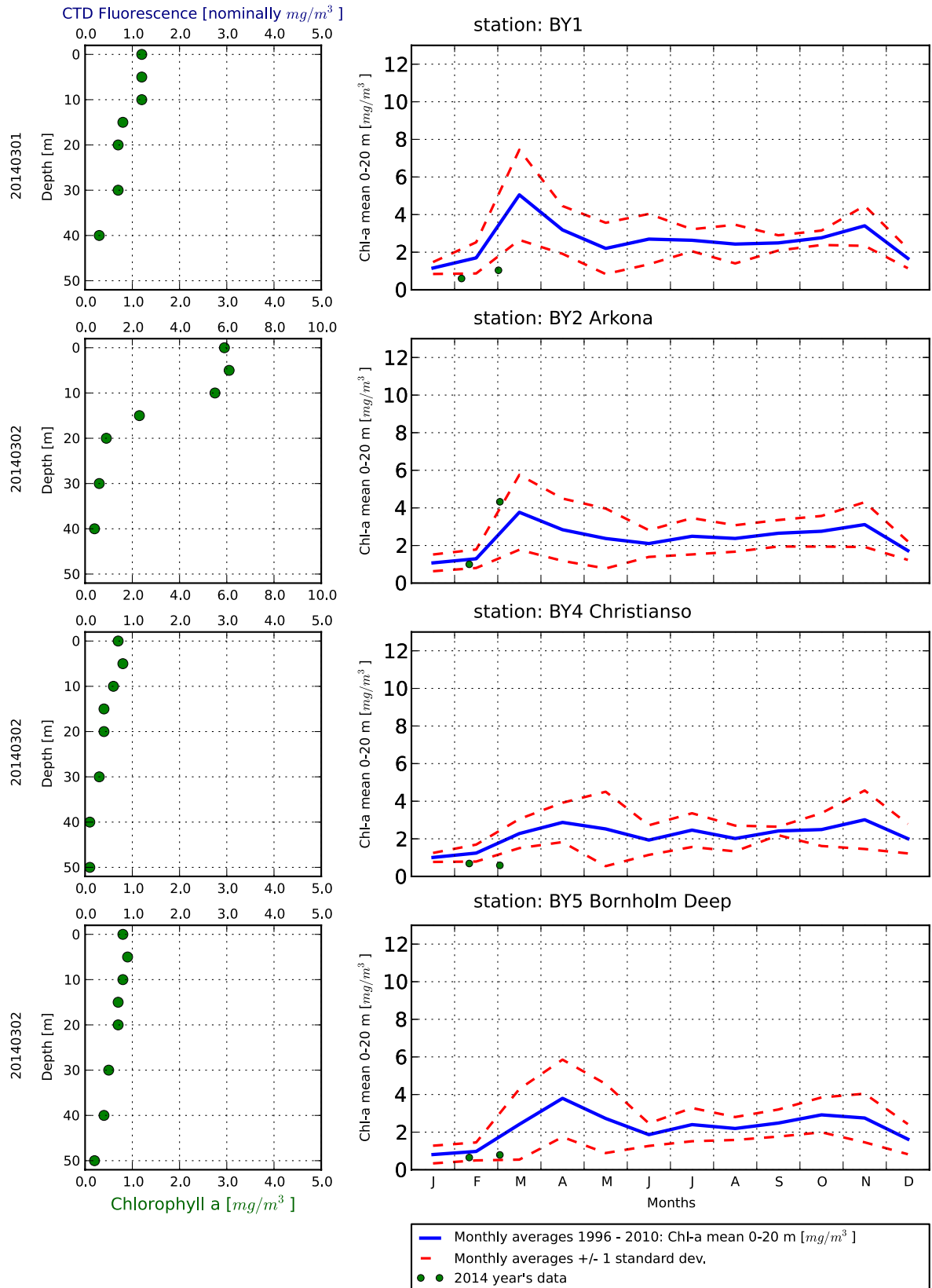
The Skagerrak



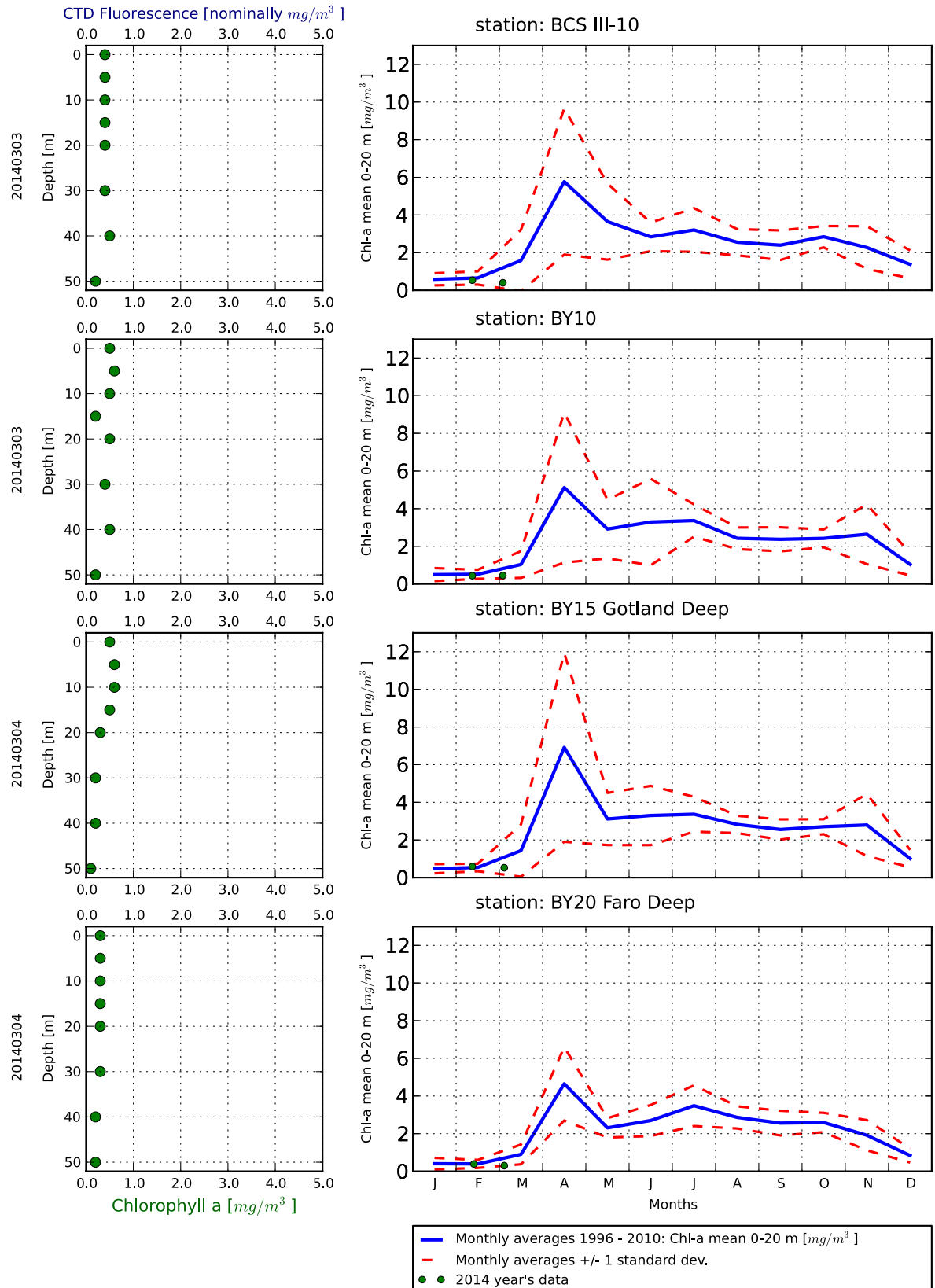
The Kattegat and The Sound



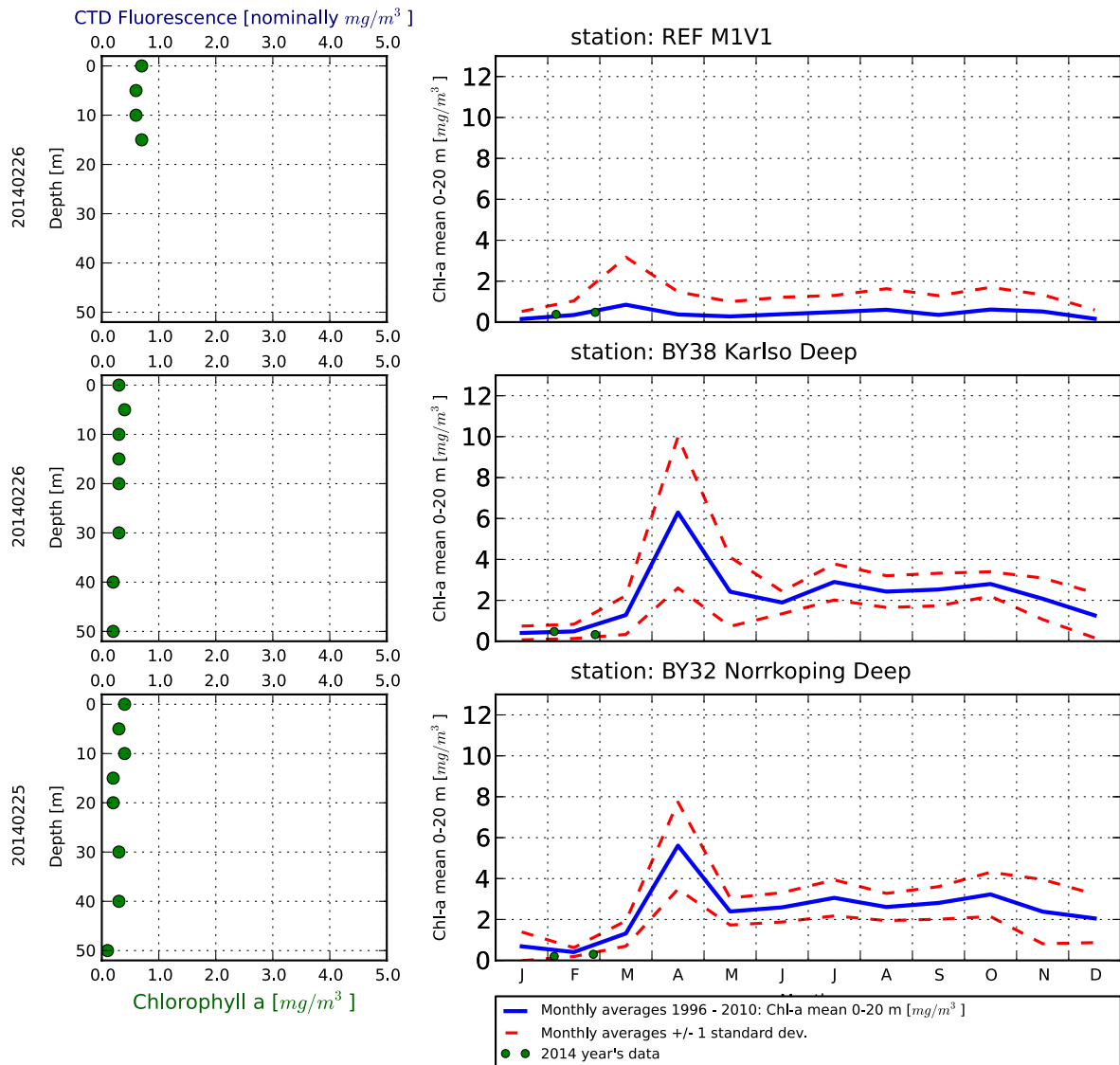
The Southern Baltic



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.

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.

