SMHI
Oceanographic Unit
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AlgAware
ALGAL SITUATION IN
MARINE WATERS SURROUNDING SWEDEN

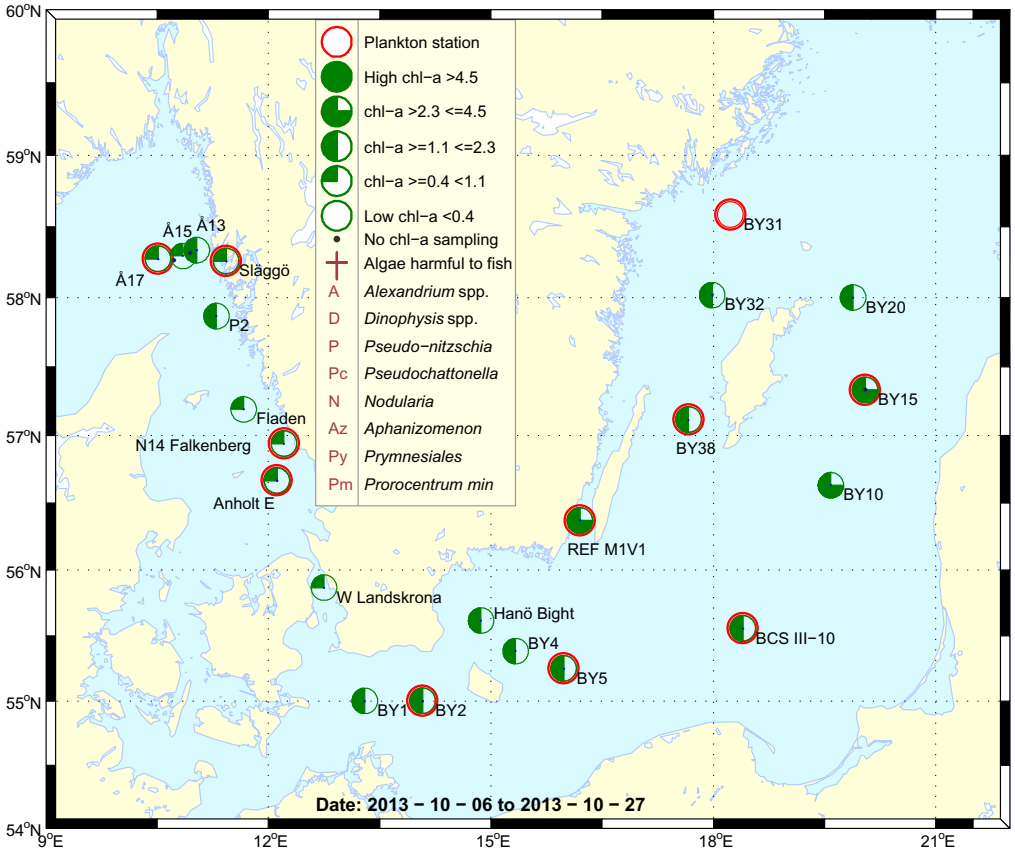
Sammanfattning

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

Artantal och cellantal av växtplankton var mycket låga i Skagerrak och Kattegatt. De integrerade klorofyll *a*-värdena låg inom medel vid samtliga stationer.

Även i Östersjön var växtplanktonfloran på sparlåga, förutom vid REF M1V1 i Kalmar sund där en blomning av kiselalgen *Skeletonema marinoi* pågick. Samtliga integrerade klorofyll *a*-värden låg inom medel.

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



Abstract

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

The number of species and cell numbers were very low in the Skagerrak and the Kattegat. The integrated chlorophyll *a* concentrations were within average at all stations.

The phytoplankton flora was scarce in the Baltic. The exception was at REF M1V1 in the Kalmar Sound where a bloom of the diatom *Skeletonema marinoi* was observed. All integrated chlorophyll *a* concentrations were within average.

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

The dinoflagellate *Ceratium tripos* was common in the Kattegat samples.

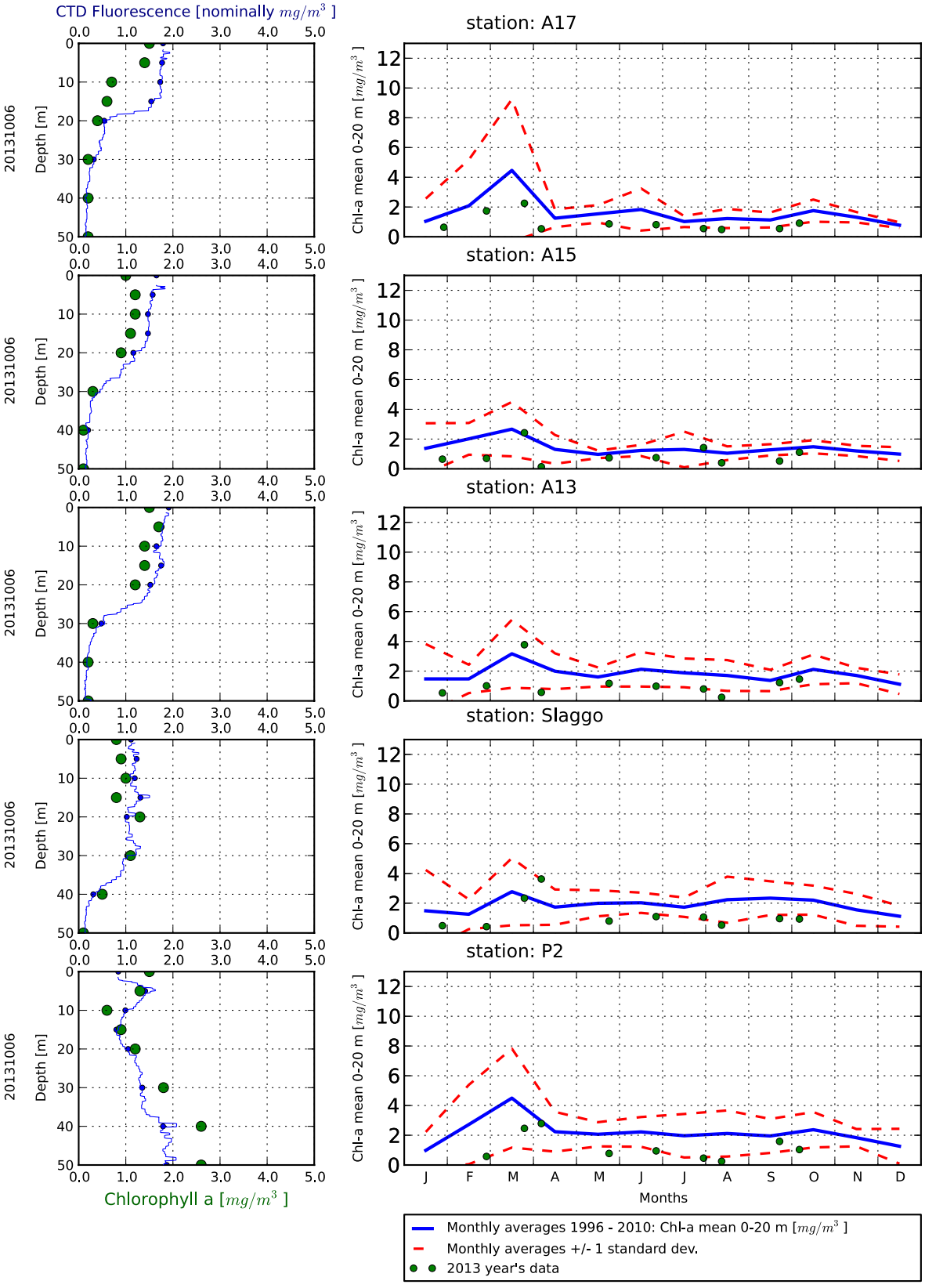
The diatom *Pseudo-nitzschia* spp. was common at Anholt E.

The diatom *Skeletonema marinoi* was abundant at REF M1V1.

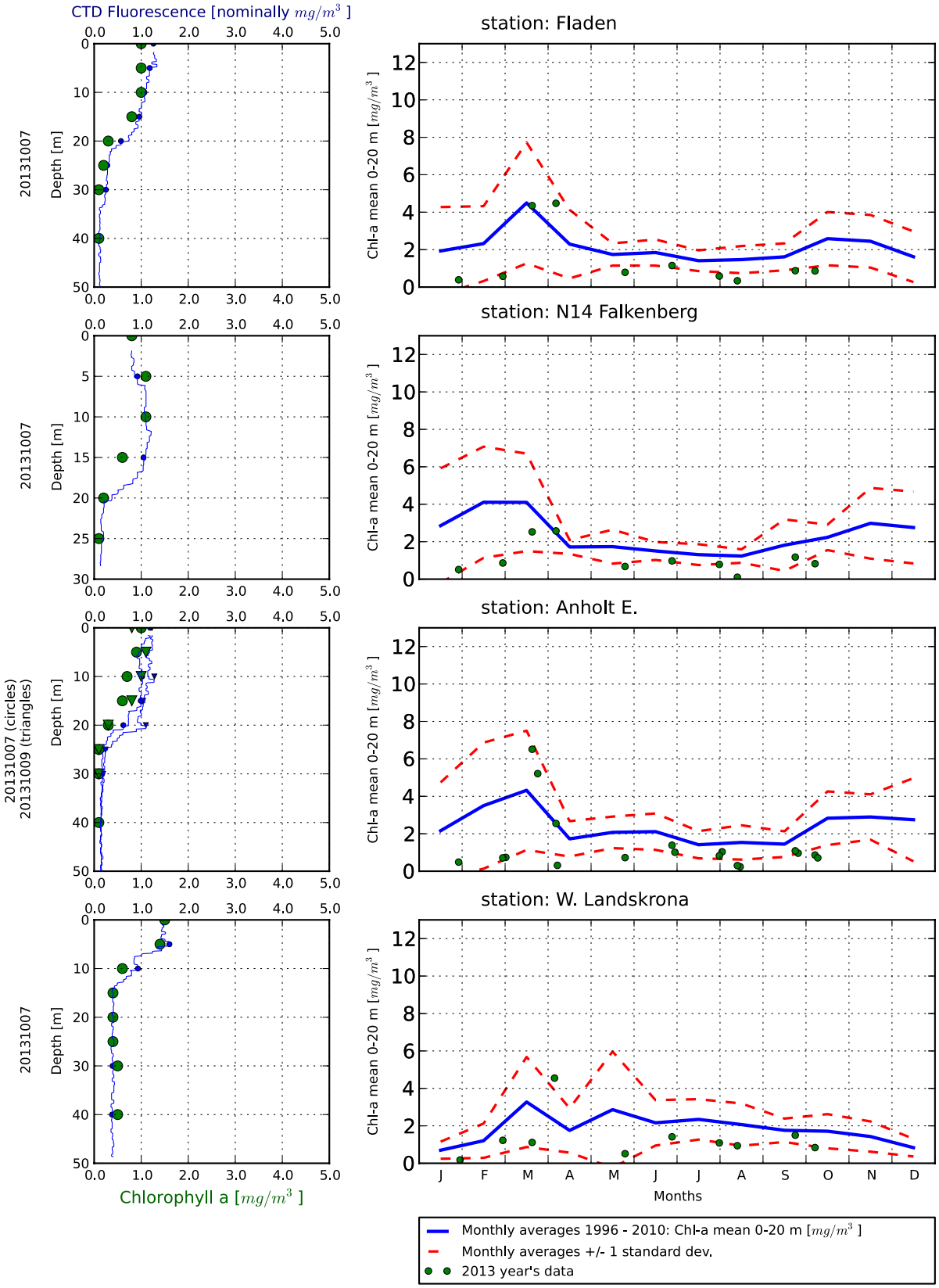
Selection of observed species	Å17	Släggö	N14	Anholt E	Anholt E
Red=potentially toxic species	6/10	6/10	7/10	7/10	9/10
Hose 0-10 m	presence	presence	presence	presence	presence
Asterionellopsis glacialis		present			
Chaetoceros affinis				present	present
Chaetoceros curvisetus		present			present
Chaetoceros danicus					present
Chaetoceros socialis		present	present		present
Chaetoceros wighamii				present	present
Cylindrotheca closterium	present	present		present	
Dactyliosolen fragilissimus		present			
Ditylum brightwellii				present	present
Guinardia delicatula					present
Lennoxia faveolata	present				
Leptocylindrus danicus		present			
Proboscia alata		present	present	present	present
Pseudo-nitzschia spp		present		present	common
Skeletonema marinoi	present				present
Thalassionema nitzschioides					present
Azadinium spp	present	present			
Amphidinium acutissimum	present				
Ceratium furca		present	present		
Ceratium fusus			present	present	present
Ceratium lineatum	present		present	common	present
Ceratium longipes			present	present	present
Ceratium tripos		present	common	common	common
Dinophysis acuminata			present	present	
Dinophysis norvegica			present	present	present
Gyrodinium flagellare		present			
Katodinium glaucum			present		
Lingulodinium polyedrum				present	
Pronoctiluca pelagica	present				
Prorocentrum micans		present	present	present	present
Prorocentrum minimum		present			present
Protoperidinium spp			present	present	present
Prymnesiales spp	present	present	present	present	present
Dictyocha speculum			present	present	present
Pseudopedinella spp	present				
Pyramimonas spp	present		present		
Cryptomonadales spp	common	common	present	common	common
Craspedophyceae	present	present	present		
Commation spp			present		
Leucocryptos marina	present	present			
Helicostomella subulata			present	present	present
Mesodinium rubrum				present	
Tiarina fusus				present	present
Ciliophora spp	present	present	present	present	present

Selection of observed species	BY2	BY5	REF M1-V1	BY15	BCS III-10	BY38
Red=potentially toxic species	8/10	8/10	26/10	27/10	27/10	26/10
	presence	presence	presence	presence	presence	presence
Asterionellopsis glacialis			present			
Chaetoceros danicus		present	present			present
Chaetoceros impressus		present		present	present	
Coscinodiscus centralis			present	common	present	present
Coscinodiscus spp	present	common				
Cyclotella choctawhatcheana	present		present			present
Skeletonema marinoi	present		very common		present	
Rhizosolenia setigera	present					
Ceratium tripos	present					
Dinophysis acuminata			present	present	present	
Dinophysis norvegica			present	present		
Gymnodiniales						present
Heterocapsa rotundata			common	present	present	present
Heterocapsa spp			present			present
Prorocentrum micans	present					
Prorocentrum minimum	present		common		present	
Protoperidinium spp	present				present	
Dinobryon balticum	present					
Planctonema lauterbornii					present	
Pseudopedinella spp						present
Eutreptiella spp				present	present	present
Pterosperma spp					present	present
Pyramimonas spp	present	present	present	present		present
Aphanizomenon flos-aquae		common		present		common
Woronichinia spp				common	present	common
Pico cyanobacteria colonies				common		
Cryptomonadales	common	very common	common	very common	very common	very common
Calliacantha natans			present	present		present
Craspedophyceae	present	present	present			
Ebria tripartita	present	present	present	present	present	
Prymnesiales	present	present	present	present		
Helicostomella subulata	present		present	present		present
Mesodinium rubrum		present	present	common	present	present
Ciliophora	present	common	common	common	common	common

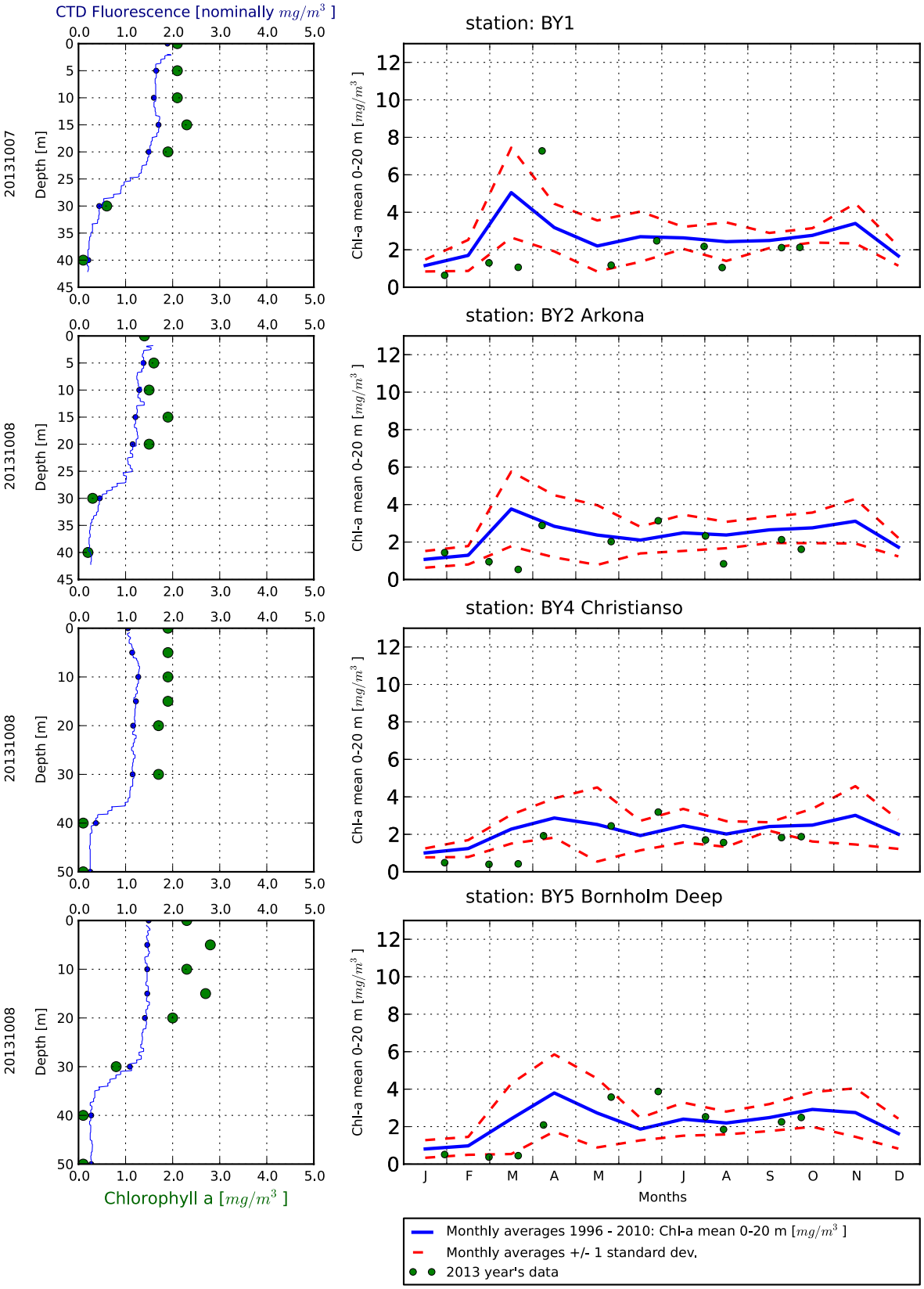
The Skagerrak



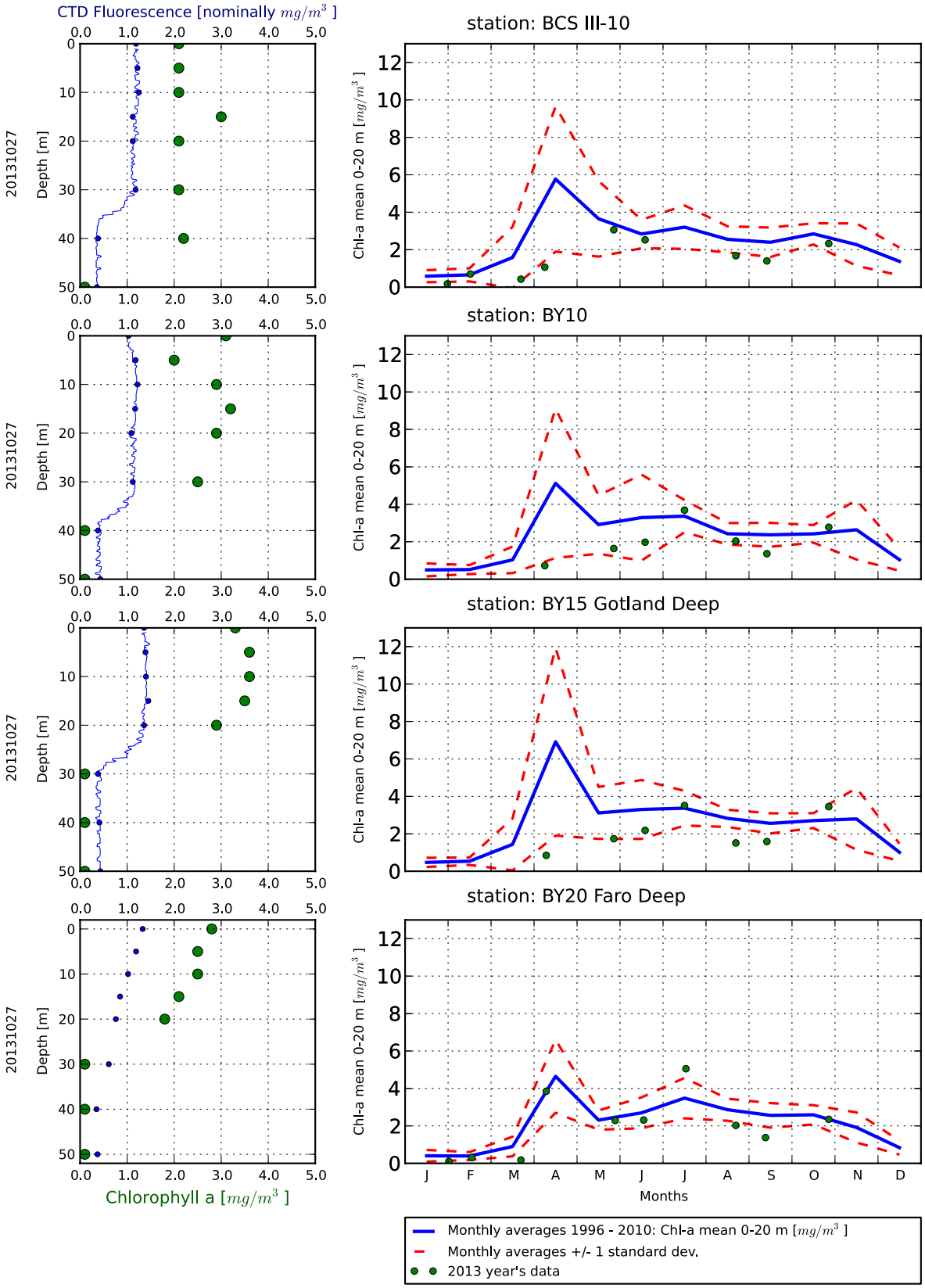
The Kattegat and the Sound

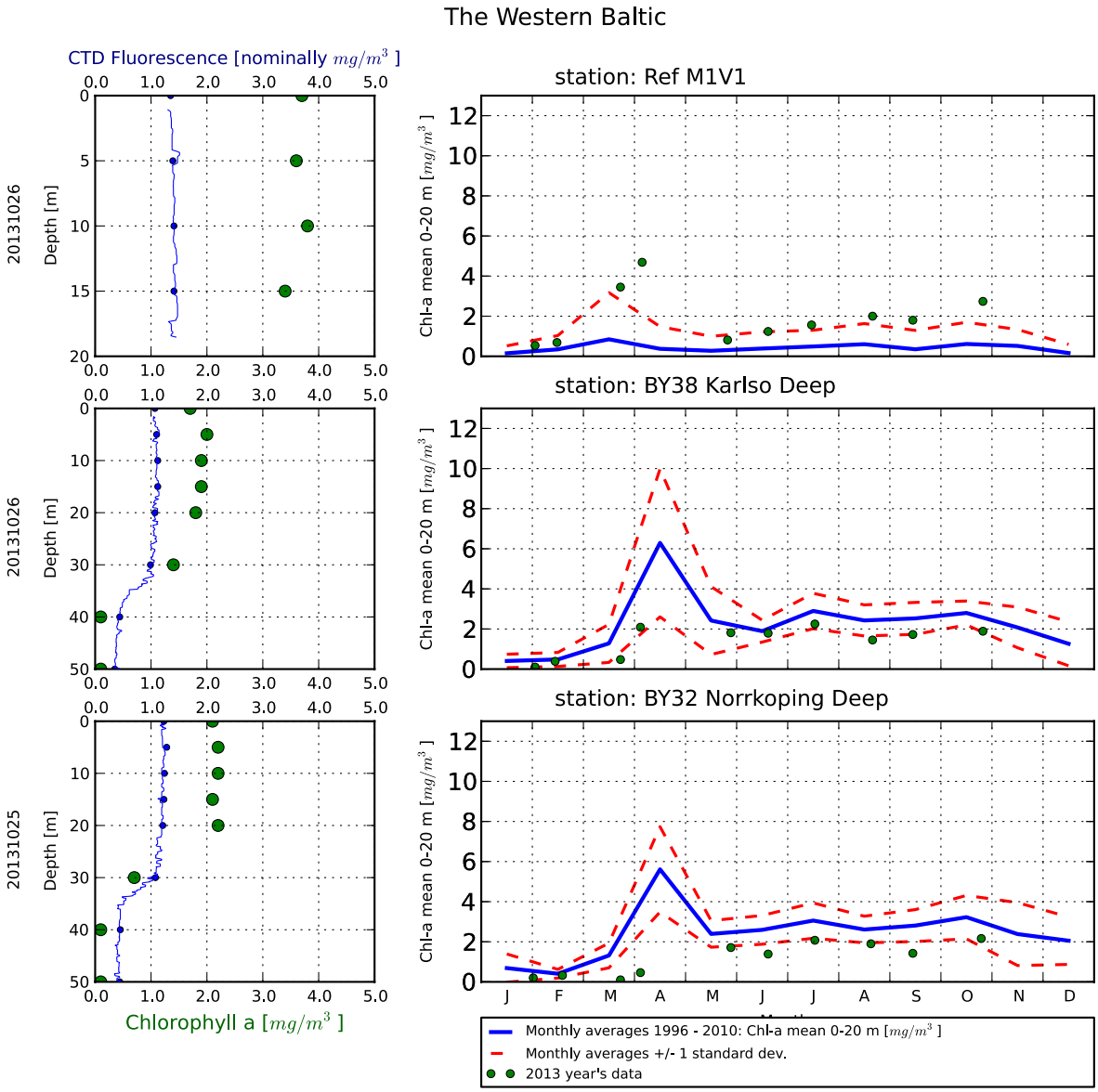


The Southern Baltic



The Eastern 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 occuring 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
Alexandrium 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; headake, dizziness, nausea, vomiting, diarrhoea. **Extreme case** Muscular paralysis; pronounced respiratory difficulty; choking sensation; death trough respiratory paralysis may occur within 2-24 hours after ingestion.
Dinophysis spp.	Diarrehetic 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.
Pseudo- niztschia spp.	Amnesic shellfish poisoning (ASP)	**Milda symptom:** Efter 3-5 timmar: yrsel, illamående, kräkningar, diarré, magkramper **Extrema symptom:** Yrsel, hallucinationationer, 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.
Chaetoceros concavicornis/ C.convolutus	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.
Pseudochattonella 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.