SMHI
Oceanographic Unit
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AlgAware
ALGAL SITUATION IN
MARINE WATERS SURROUNDING SWEDEN

Sammanfattning

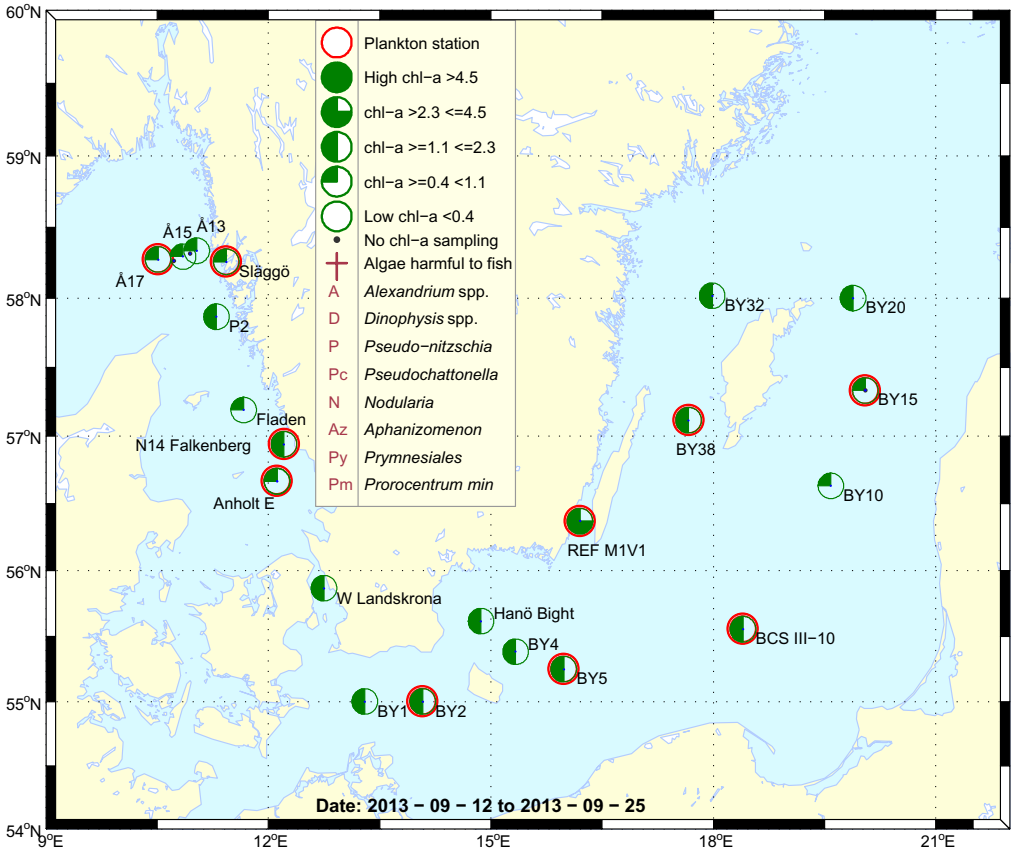
Rapporten innehåller resultat från två utsjöexpeditioner i september.

En mindre kiselalgsblomning var pågående vid Skagerrakskusten och i Kattegattområdet under den andra av de två expeditionerna. I yttre Skagerrak var planktonfloran fattig med få och små arter i låga cellantal.

De integrerade klorofyll *a*-värdena var normala för månaden.

I Östersjön var växtplanktonsituationen mycket lugn. Den filamentösa cyanobakterien *Aphanizomenon flos-aquae* var vanligt förekommande vid alla stationer förutom vid BY2. I övrigt dominerade små flagellförsedda arter.

De integrerade klorofyll *a*-värdena var något låga i östra Egentliga Östersjön, och i övrigt normala för månaden.



Abstract

This report presents the results from two September cruises.

A small diatom bloom was proceeding at the Skagerrak coast and in the Kattegat area during the second cruise. In open Skagerrak, the plankton flora was scarce with a few small species in low cell numbers.

The integrated chlorophyll *a* concentrations were within average for this month.

The phytoplankton situation was very calm in the Baltic. The filamentous cyanobacterium *Aphanizomenon flos-aquae* was common at all stations except at BY2. Small flagellated species dominated the samples.

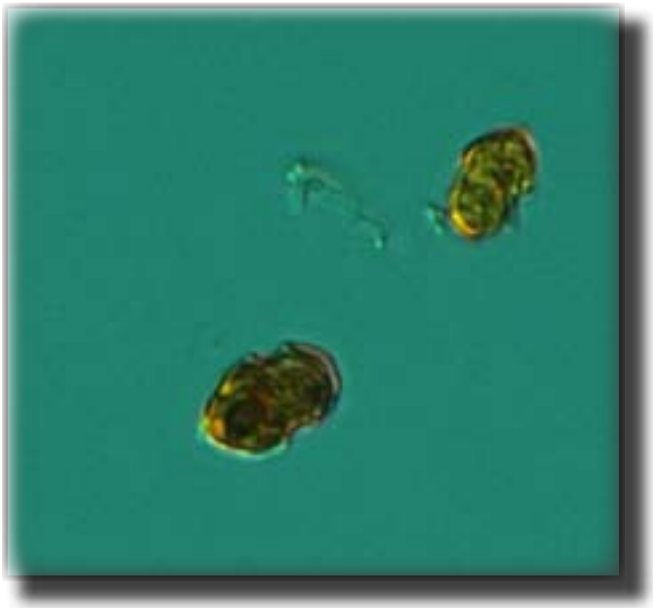
The integrated chlorophyll *a* concentrations were low in the Eastern Baltic Proper, and within average for this month at all other stations.

More detailed information on species composition and abundance

The Skagerrak

Å17 22nd of September
The phytoplankton diversity was very low. The potentially toxic dinoflagellate *Azadinium* sp. was present.

Släggö 22nd of September
A small diatom bloom was observed, dominated by *Asterionellopsis glacialis* and *Chaetoceros* species. The potentially toxic dinoflagellate *Azadinium* sp. was present.



The dinoflagellate *Azadinium* sp. was present in the Skagerrak samples.

The diatom *Asterionellopsis glacialis* was common at N14 and at Släggö.

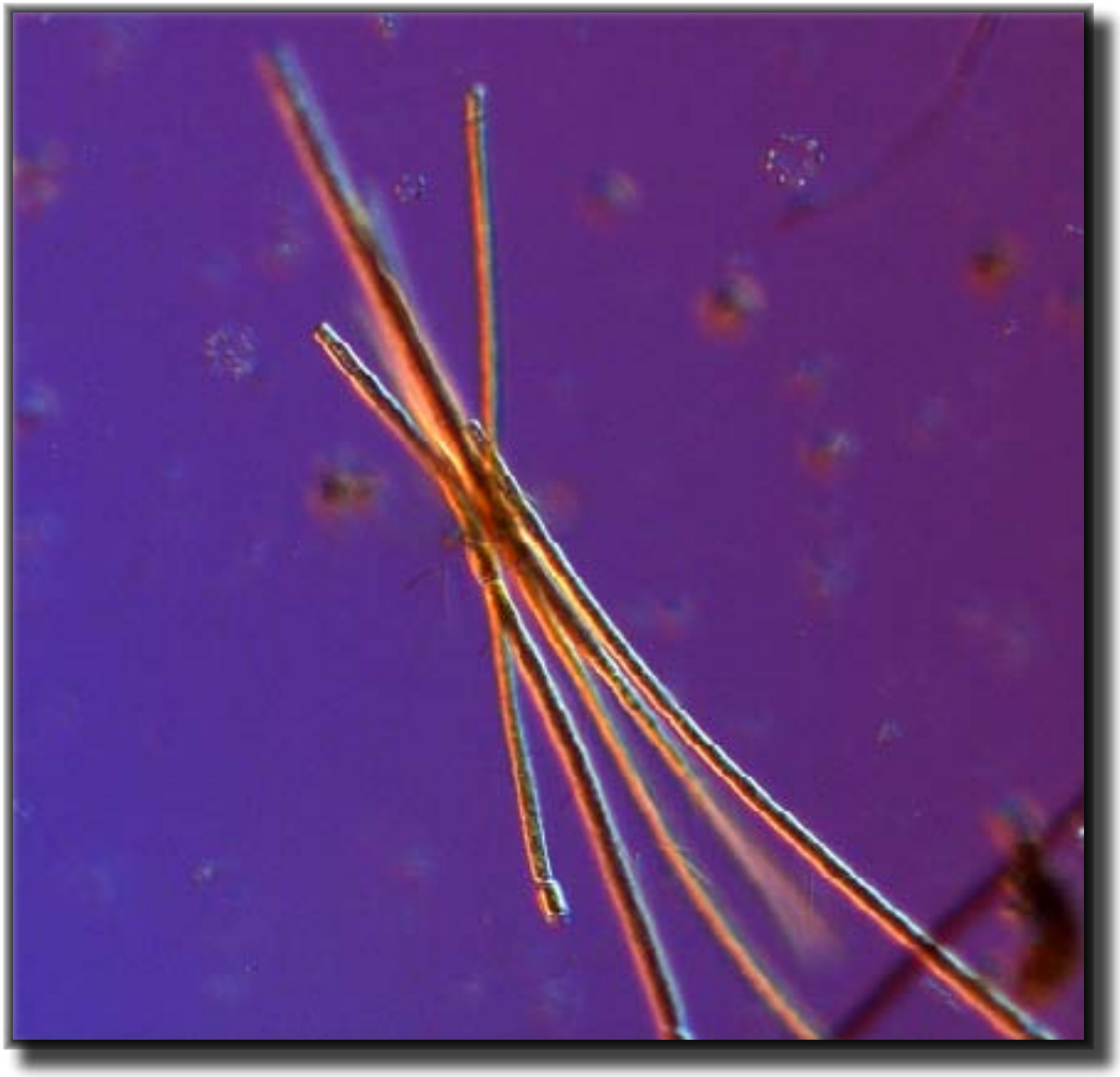
The Kattegat

N14 Falkenberg 23rd of September
Pseudo-nitzschia spp. was the most common diatom in this rather diverse sample. The dinoflagellate *Ceratium lineatum* was common.

Anholt E 23rd and 25th of September
The phytoplankton samples were rather species rich although the cell counts were mostly low. *Prorocentrum micans* and *Ceratium lineatum* were the most common dinoflagellates. Small flagellated species were abundant.

The Baltic Sea

The phytoplankton situation was very calm in the samples from the Baltic stations. The filamentous cyanobacterium *Aphanizomenon flos-aquae* was common at all stations except at BY2. Small flagellated species dominated the samples.



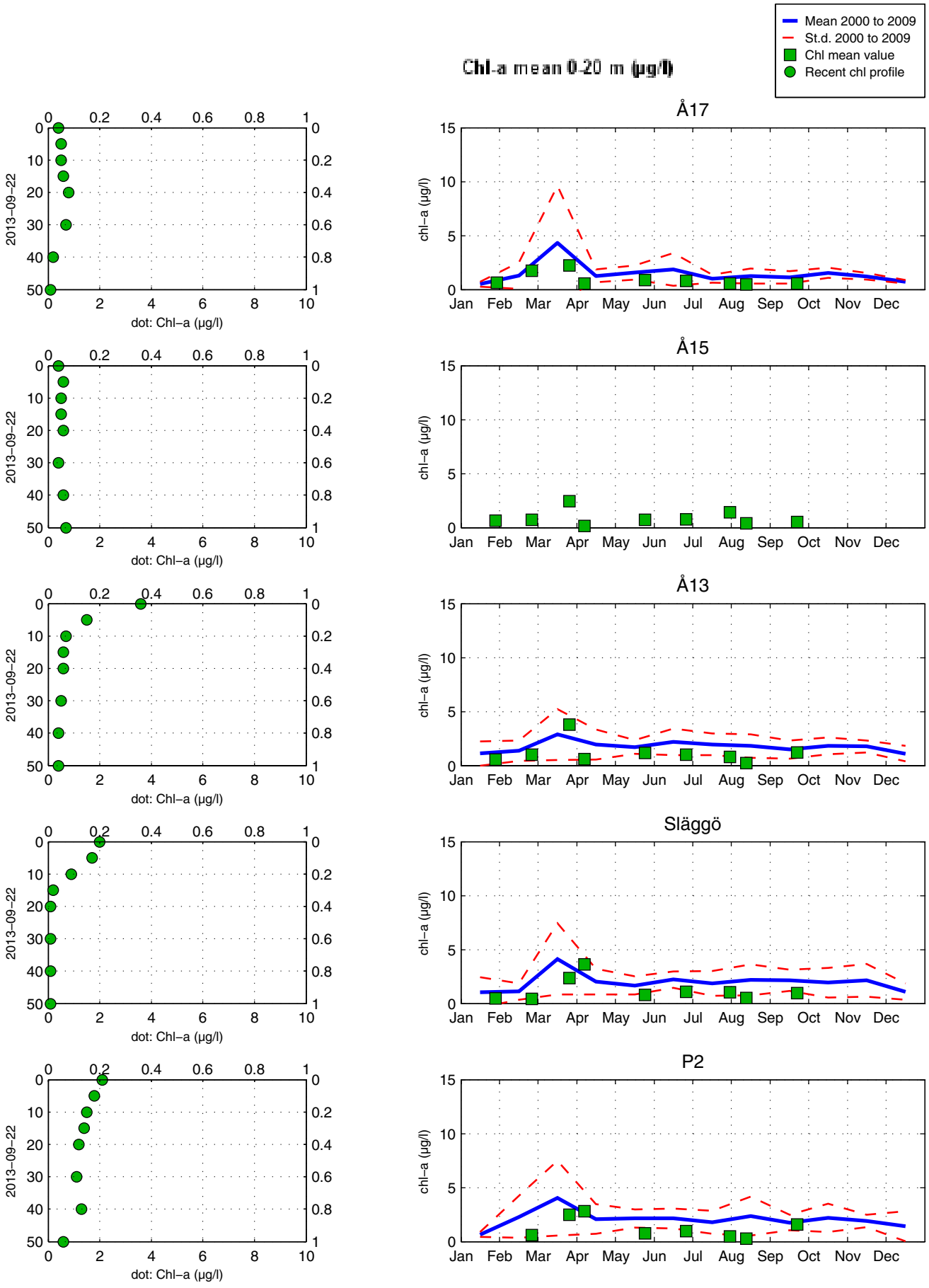
The filamentous cyanobacterium *Aphanizomenon flos-aquae* was still common in the September samples.

Phytoplankton analysis and text by:
Ann-Turi Skjevik

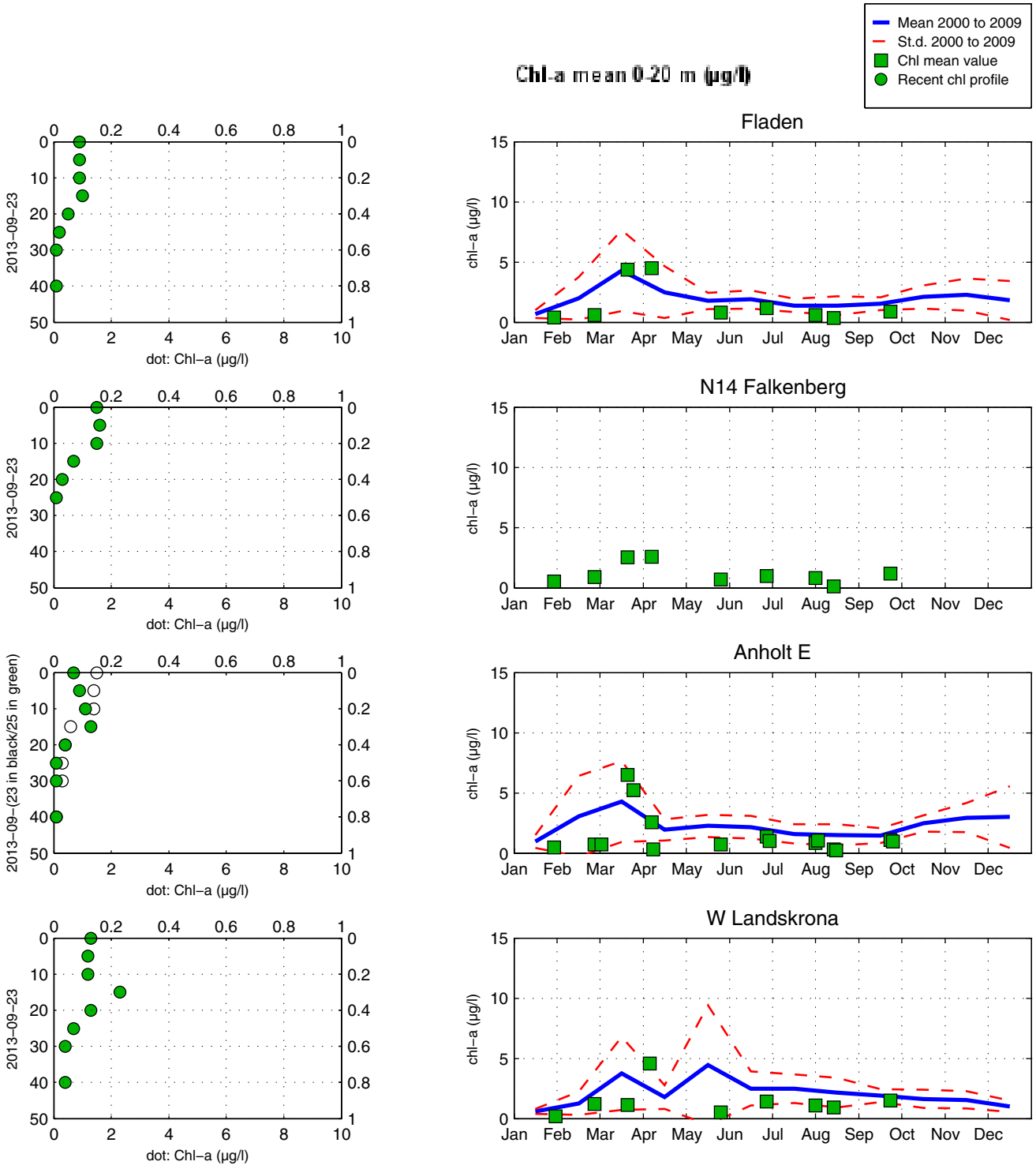
Selection of observed species	Å17	Släggö	N14	Anholt E	Anholt E
Red=potentially toxic species	22/9	22/9	23/9	23/9	25/9
Hose 0-10 m	cells/l	cells/l	cells/l	cells/l	cells/l
Asterionellopsis glacialis		common	present		
Attheya septentrionalis				present	
Chaetoceros affinis		present	present	present	present
Chaetoceros brevis			present		present
Chaetoceros contortus		present			
Chaetoceros curvisetus				present	present
Chaetoceros danicus		present			present
Chaetoceros didymus		present			
Chaetoceros laciniosus			present	present	
Chaetoceros socialis		present	present	present	
Chaetoceros subtilis				present	present
Cylindrotheca closterium		present			
Dactyliosolen fragilissimus		present		present	
Ditylum brightwellii		present	present	present	
Guinardia delicatula			present		present
Guinardia flaccida		present			
Leptocylindrus danicus		present	present		
Licmophora spp.			present	present	
Leptocylindrus minimus		present	present		
Nitzschia longissima	present	present	present	present	
Phaeodactylum tricornutum				present	
Proboscia alata		present	present		present
Pseudo-nitzschia spp	present	present	common	present	present
Skeletonema marinoi	present	present	present	present	present
Azadinium spp	present	present			
Amphidinium sphenoides	present				
Ceratium furca		present			
Ceratium fusus		present		present	present
Ceratium lineatum		present	common	common	common
Ceratium tripos		present	present	present	present
Dinophysis acuminata			present	present	present
Dinophysis norvegica			present		present
Gonyaulax spp		present	present		
Gyrodinium flagellare	present	present	present	present	present
Heterocapsa spp	present	present		present	present
Katodinium glaucum			present		
Lingulodinium polyedrum		present			present
Prorocentrum micans		present	present	common	present
Protoperidinium steinii				present	
Protoperidinium spp			present	present	present
Torodinium robustum	present				
Prymnesiales spp	common	present	common	common	common
Dictyocha speculum		present			present
Pseudopedinella pyriforme	present				present
Pyramimonas spp	present	present		present	present
Cryptomonadales spp	common	common	common	common	common
Craspedophyceae		present	present	present	present
Commation sp.			present		
Ebria tripartita		present	present	present	present
Leucocryptos marina	present	present	present		
Mesodinium rubrum		present	present		present
Tiarina fusus				present	
Ciliophora spp	common	present	common	present	present

Selection of observed species	BY2	BY5	REF M1V1	BY15	BCS III-10	BY38
Red=potentially toxic species	24/9	24/9	14/9	13/9	13/9	14/9
	cells/l	cells/l	cells/l	cells/l	cells/l	cells/l
Chaetoceros danicus	present				present	
Chaetoceros impressus	present		present		present	common
Cyclotella choctawhatcheana	present			present		
Dinophysis acuminata	present	present	present			
Dinophysis norvegica			present			
Gymnodinium verruculosum					present	
Heterocapsa rotundata		present				present
Heterocapsa triquetra			common	present		
Heterocapsa spp		present				present
Prorocentrum minimum	present		present	present		
Eutreptiella spp						present
Pterosperma spp					present	
Pyramimonas spp	present	present	common	present	present	common
Anabaena spp			present			
Aphanizomenon flos-aquae		common	common	common	present	common
Nodularia spumigena			present			
Cryptomonadales	common	present	common	common	common	common
Craspedophyceae	present	present	present			
Ebria tripartita	present			present	present	
Leucocryptos marina		present				
Prymnesiales	present	present	common	common	common	common
Helicostomella subulata			present	present	common	common
Mesodinium rubrum	present	present			present	present
Ciliophora	common	common	common	present	common	present

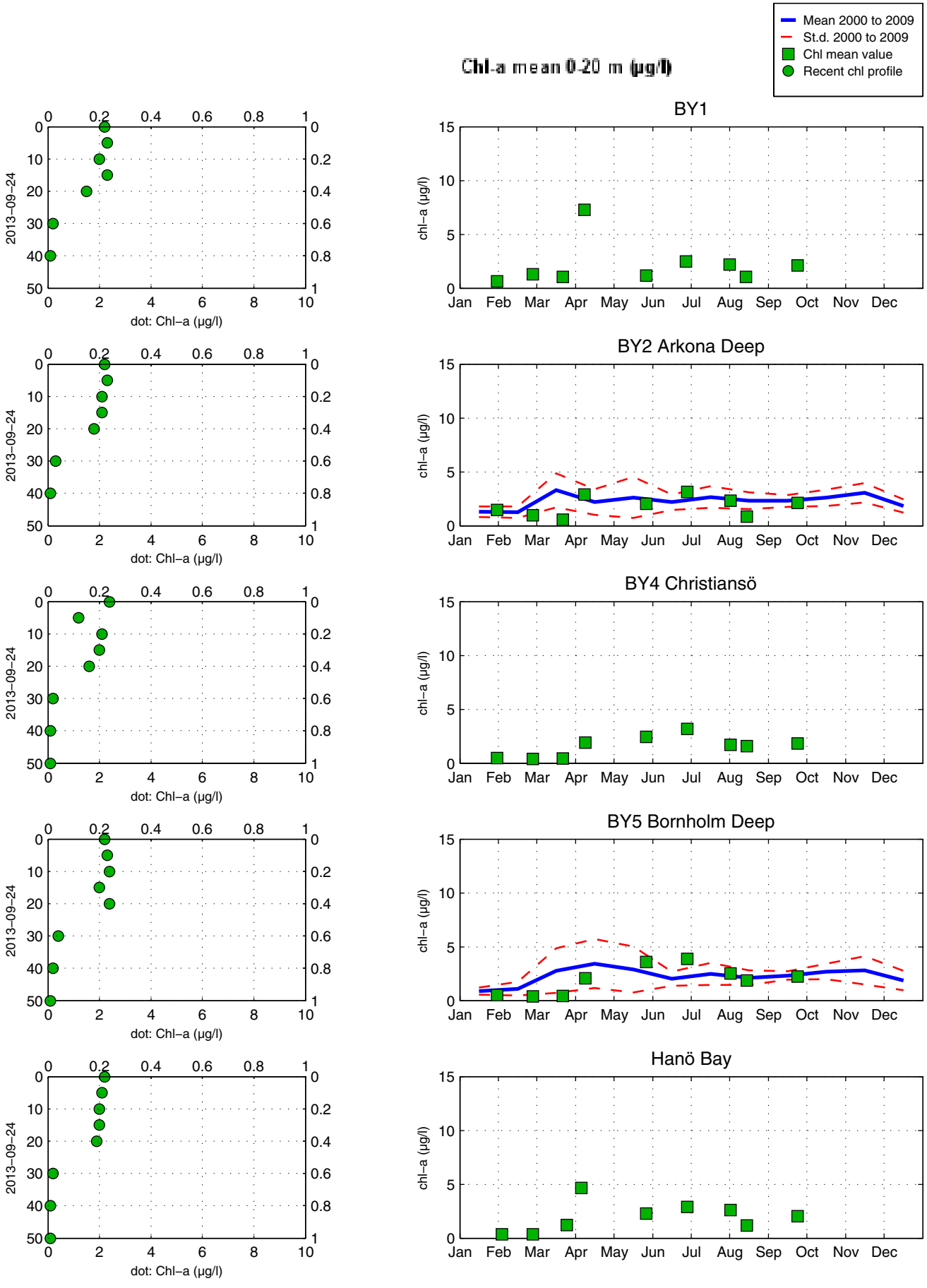
The Skagerrak



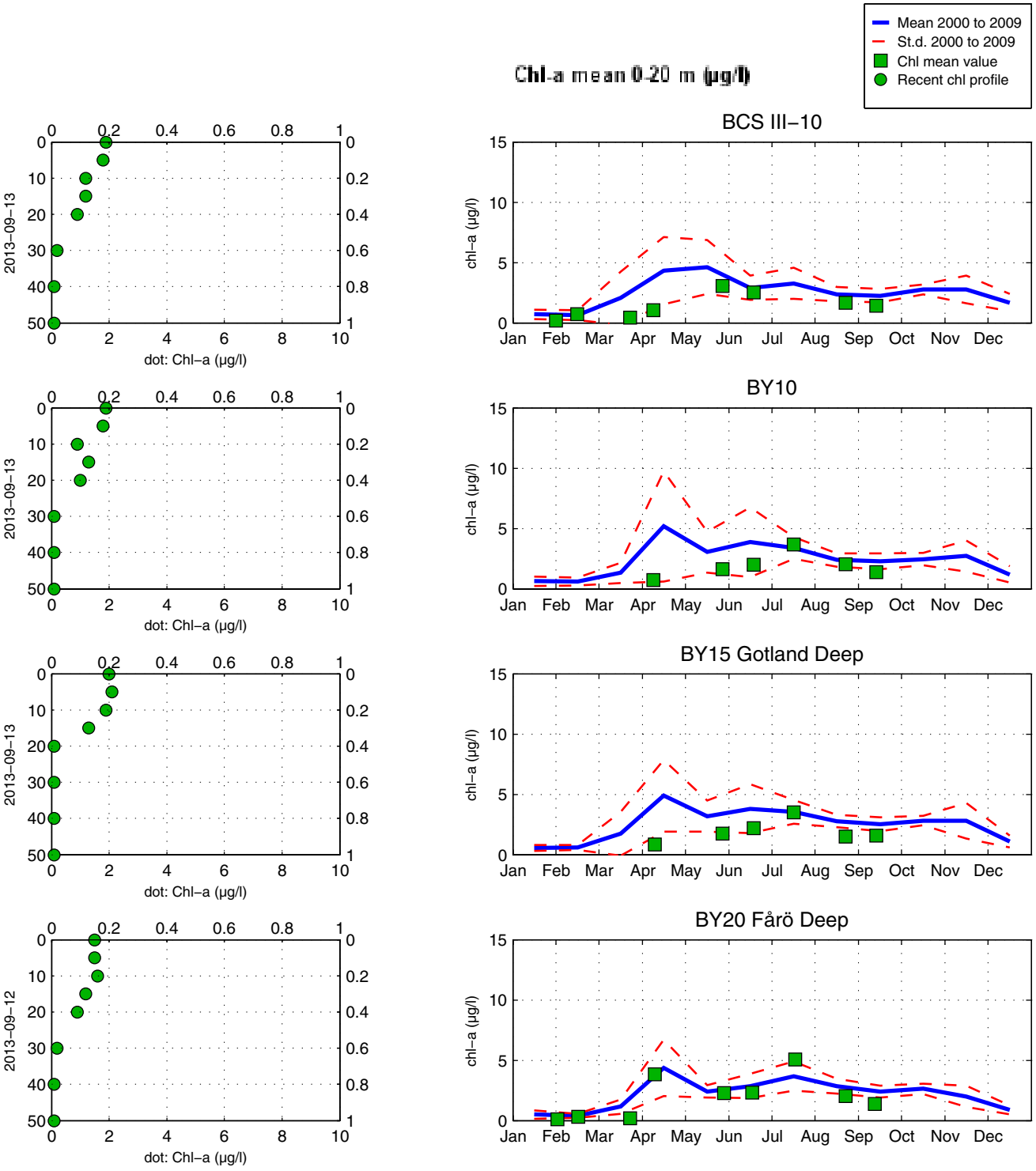
The Kattegat and the Sound

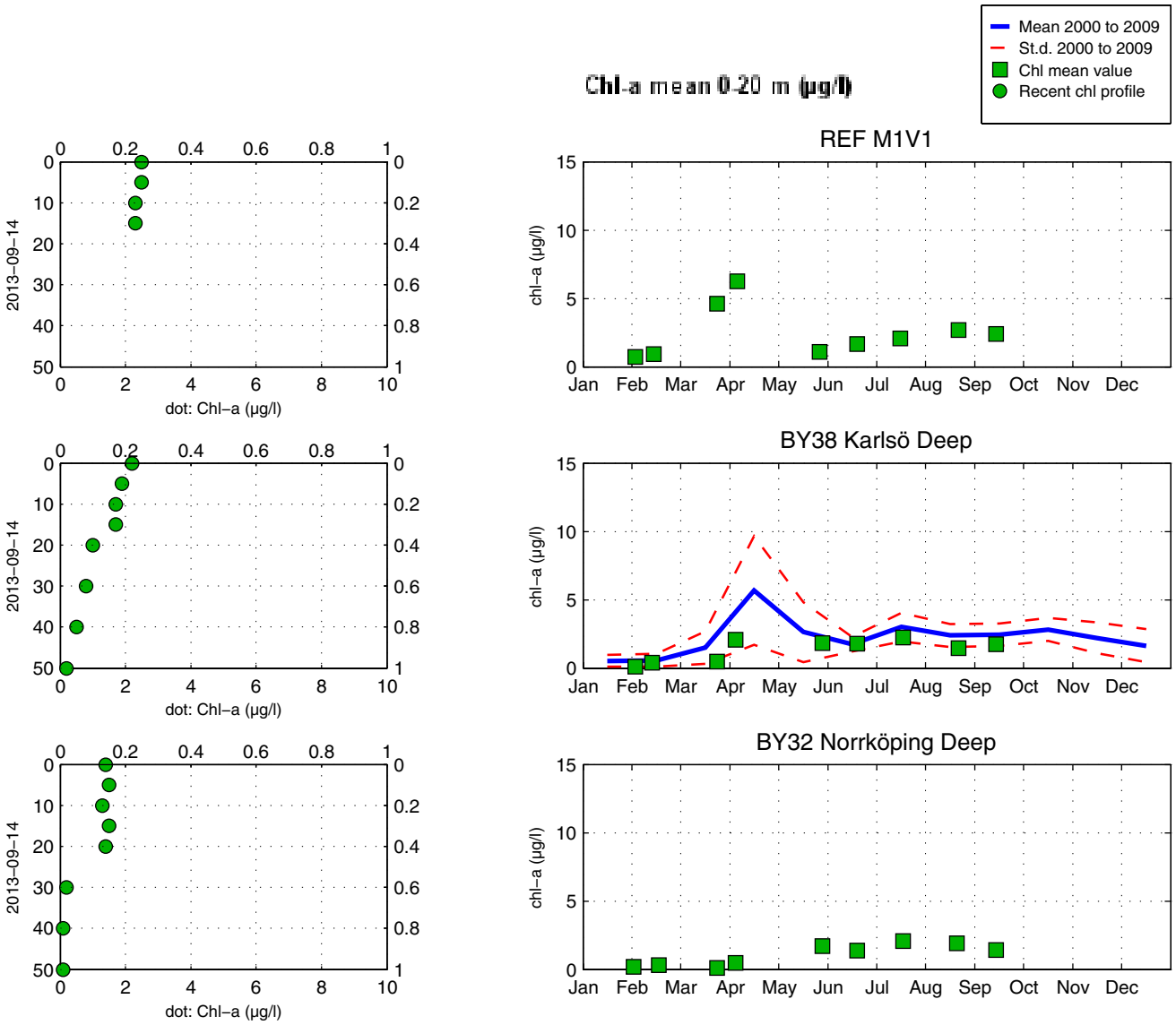


The Southern Baltic



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 is 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 layes 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 SMHI:s satellitövervakning av algblomningar finns på www.smhi.se.

About AlgAware

The 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 SMHI:s satellite monitoring of algal blooms is found on www.smhi.se.

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.