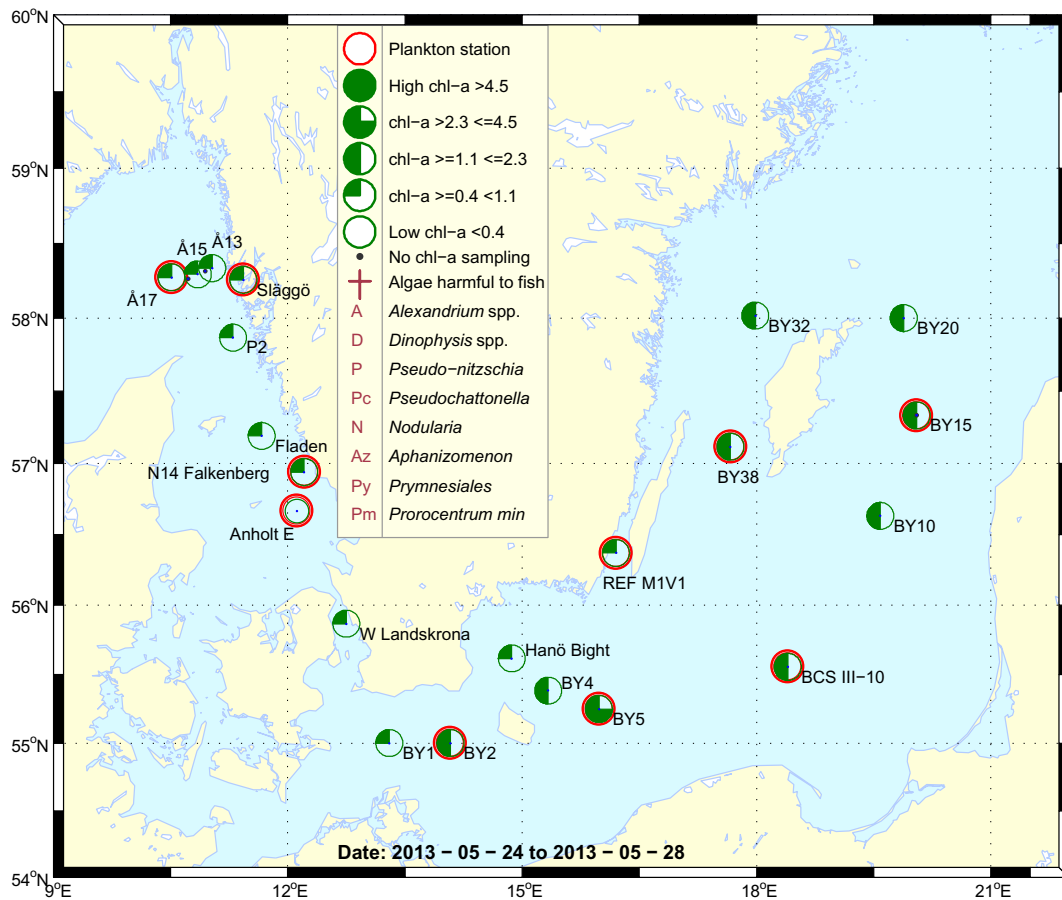


## Sammanfattning

Låga celltätheter återfanns i växtplanktonproverna vid samtliga stationer i Västerhavet. Artdiversiteten var låg och speciellt i proverna tagna i Kattegatt. Små flagellater av olika sorter dominerade överlag. Klorofyll *a* koncentrationerna var mycket låga men inom medelvärdet för månaden på de flesta stationerna.

I Östersjön dominerades växtplanktonsamhället av dinoflagellater, ciliater, Prymnesiales och andra små flagellater. I områdena öster och söder om Gotland dominerade *Dinophysis acuminata*. Söder om Gotland vid Bornholmsbassängen (BY5) var celltätheten mycket hög. Klorofyll *a* koncentrationen var hög vid BY5, men låg vid de övriga stationerna.

Klorofyllfluorescensresultat från ctd saknas även denna gång på grund av formateringsförändringar som inte kan läsas av nuvarande script. Problemet ska lösas så snart som möjligt.



## Abstract

Low cell numbers were found at all stations from the Skagerrak-Kattegat area. The species diversity was low especially in the samples from the Kattegat area. Small flagellates of different sorts were the most common.

The samples were very similar, the phytoplankton diversity was very low. The cell counts were also quite low. The phytoplankton community was dominated by many cryptomonads. The chlorophyll *a* concentrations were low but within average.

The stations in the Baltic Sea were in general dominated by dinoflagellates, ciliates, Prymnesiales and small flagellates. The areas east and south of Gotland were dominated by *Dinophysis acuminata*. The cell density was the highest at BY5, Bornholm Deep, very close to a bloom situation and very low at all other stations, this was also reflected in the chlorophyll *a* concentrations.

The chlorophyll fluorescence results from the ctd is missing because of changes in the files that are not supported by the present script. The problem will be solved as soon as possible.

More detailed information on species composition and abundance

## The Skagerrak

### Å17 (open Skagerrak) 24<sup>th</sup> of May

The total cell counts and species diversity was low. The sample was dominated by small naked dinoflagellates of different sorts. Different species of the genus *Pyramimonas* belonging to the class Prasinophyceae were relatively common.

### Släggö (Skagerrak coast) 24<sup>th</sup> of May

The phytoplankton situation was quite similar to the one at Å17. Different species belonging to the cryptomonads were however more abundant at this station. Diatoms were scarce except for the potentially toxic genus *Pseudo-nitzschia* that was found in moderate cell numbers.

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



The potentially toxic diatom genus *Pseudo-nitzschia* was found in moderate cell numbers at station Släggö.

## The Kattegat

### N14 Falkenberg and Anholt E 25<sup>th</sup> of May

The samples from these two stations were very similar. The phytoplankton diversity was very low. The cell counts were also quite low. The community was at both stations dominated by many cryptomonads.

The chlorophyll *a* concentrations in the Kattegat were low but within average.

## The Baltic Sea

### BY2 Arkona 26<sup>th</sup> of May

*Mesodinium rubrum* and other ciliates dominated at this station. There were also a few unidentified species from the order Peridinales. *Amylax tricantha* was present in small amounts while small flagellates and Prymnesiales were abundant in large amounts.

### BY5 Bornholms Deep 26<sup>th</sup> of May and BCS III-10 and BY15 27<sup>th</sup> of May

These stations were dominated by *Dinophysis acuminata* but *D. norvegica* was also present. *Amylax tricantha*, *Peridiniella catenata* and unidentified species from the order Peridinales were present. Prymnesiales and small flagellates were numerous. The cell density was highest at the Bornholms Deep, very close to a bloom situation and lowest at BY15 east of Gotland.

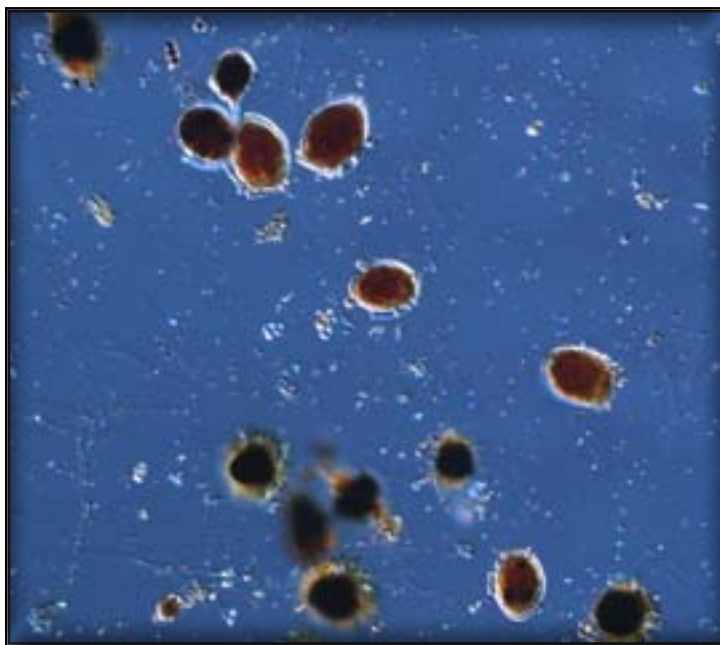
### BY38 28<sup>th</sup> of May

The cell density was low, *Dinophysis acuminata* and *D. norvegica* were the most common. This station was not different from the Baltic Sea stations in general with the presence of *Amylax tricantha*, *Peridiniella catenata* and unidentified species from the order Peridinales.

### Ref M1V1 Kalmar Sound 26<sup>th</sup> of May

The cell density was very low in the Kalmar Sound, the phytoplankton community consisted mainly of the ciliate *Mesodinium rubrum*.

The chlorophyll *a* concentration was the highest at Bornholms Deep (BY5) and very low at all other stations in the Baltic Sea.



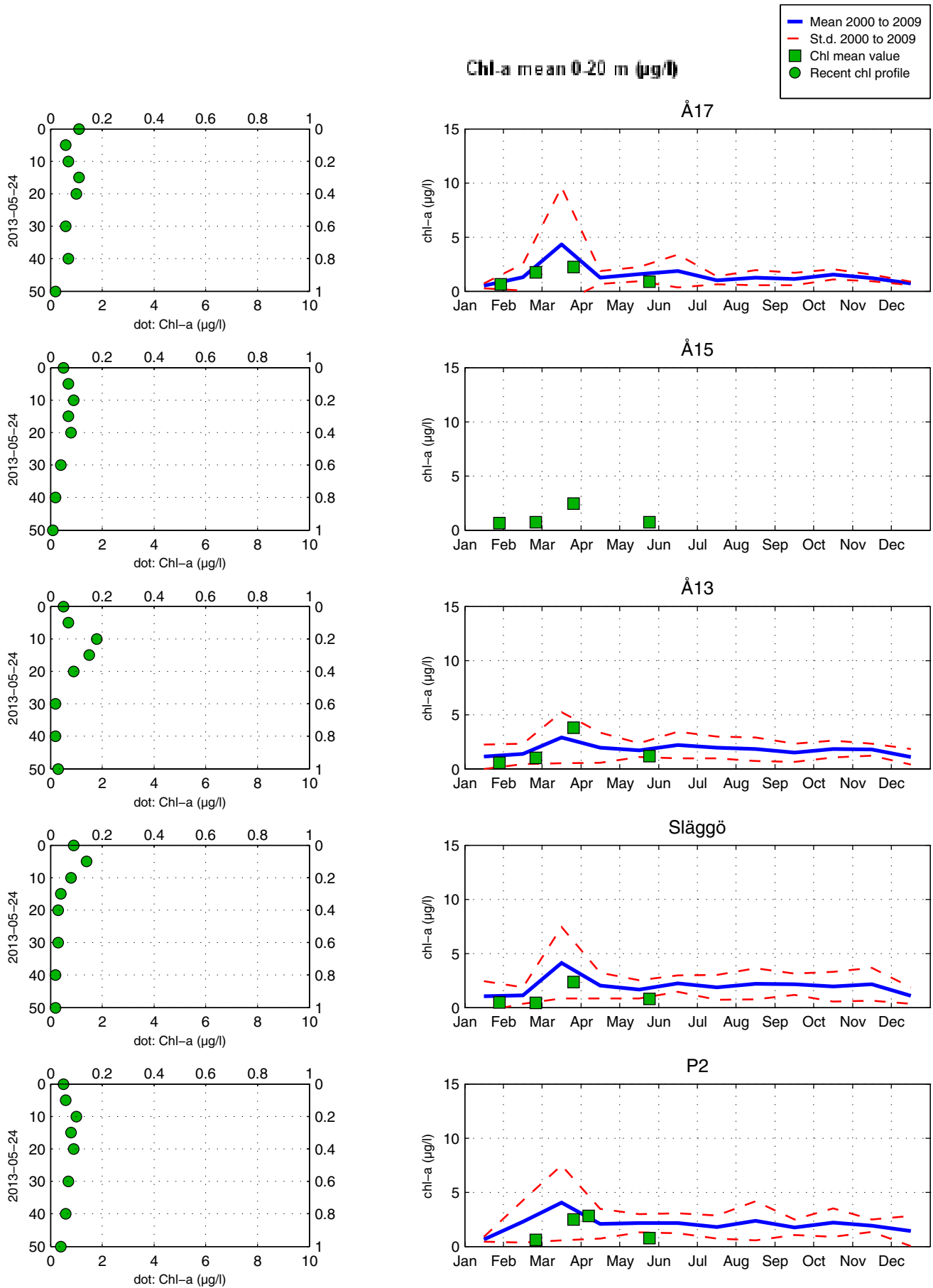
The dinoflagellate *Dinophysis acuminata* was abundant in the areas east and south of Gotland.

Phytoplankton analysis and text by:  
Marie Johansen and Malin Mohlin

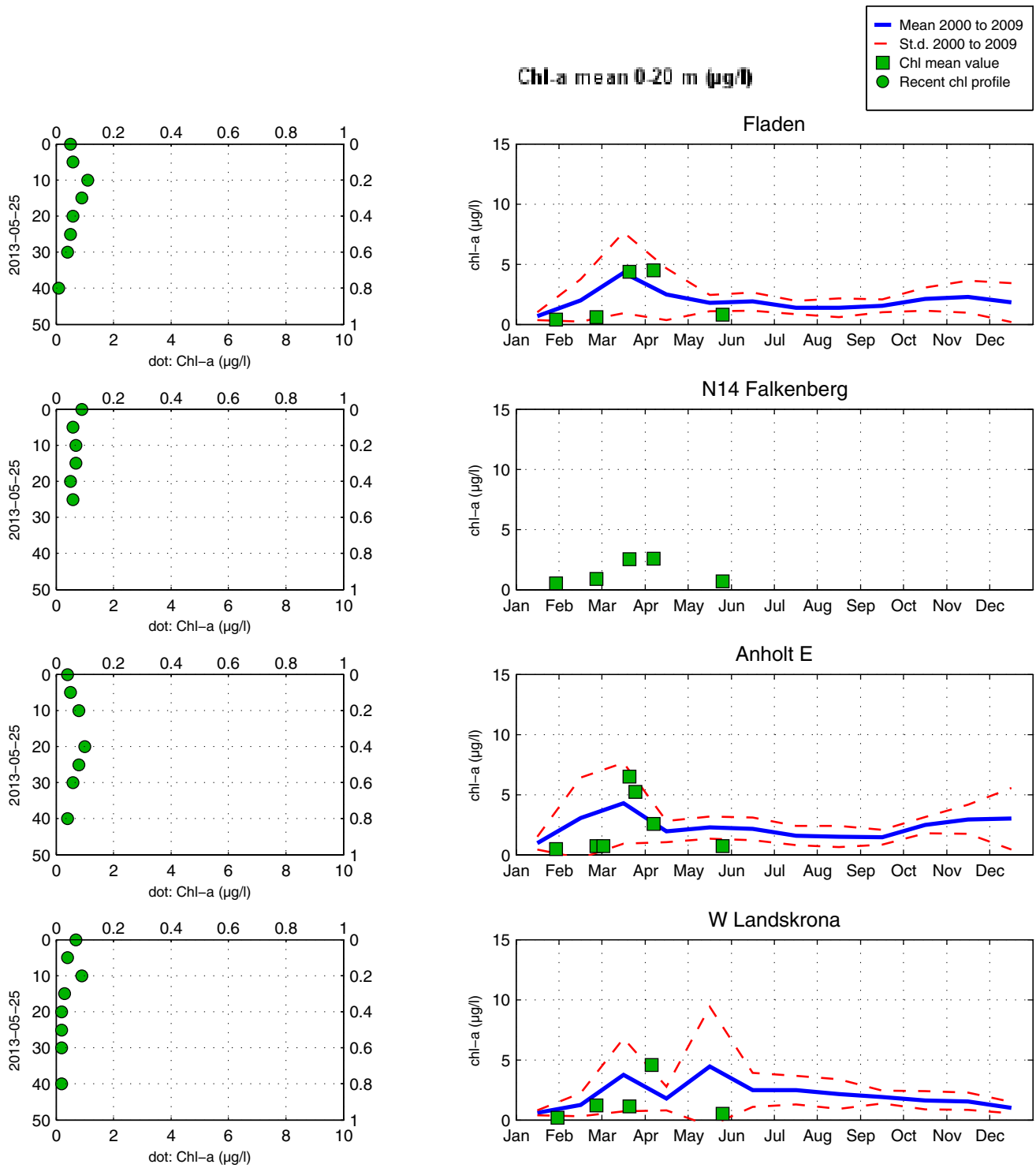
Selection of observed species	Å17	Släggö	N14	Anholt E
Red=potentially toxic species	2013-05-24	2013-05-24	2013-05-25	2013-05-25
Hose 0-10 m	cells/l	cells/l	cells/l	cells/l
<i>Pseudo-nitzschia</i>		present		
<i>Guinardia delicatula</i>		present		
<i>Rhizosolenia imbricata</i>	present			
<i>Ceratium longipes</i>	present	present		
<i>Ceratium tripos</i>	present	present	present	
<i>Gymnodiniales</i> spp	common	present	present	
<i>Katodinium glaucum</i>		present		
<i>Peridinales</i> spp	present			
<i>Protoperidinium bipes</i>	present			
<i>Prymnesiales</i> spp	present	present	present	present
<i>Pyramimonas</i> spp	common	common	present	present
<i>Cryptomonadales</i> spp			common	common
<i>Hemiselmis virescens</i>			present	
<i>Plagioselmis prolunga</i>	present	present	present	present
<i>Teleaulax</i> spp	present	common		present
<i>Pseudopedinella pyriforme</i>		present		present
<i>Leucocryptos marina</i>	present	present		
<i>Ebria tripartita</i>		present		
<i>Telonema subtile</i>		present	present	
<i>Mesodinium rubrum</i>	present	present		
<i>Ciliophora</i> spp	present	present	present	present

Selection of observed species	BY2	BY5	REF M1-V1	BY15	BCS III-10	BY38
Red=potentially toxic species	2013-05-26	2013-05-26	2013-05-26	2013-05-27	2013-05-27	2013-05-28
	cells/l	cells/l	cells/l	cells/l	cells/l	cells/l
<i>Skeletonema marinoi</i>			common			
<i>Thalassiosira baltica</i>			present			
<i>Amylax triacantha</i>	present	common		present	present	present
<i>Dinophysis acuminata</i>	present	very common		common	common	common
<i>Dinophysis norvegica</i>		common		present	present	present
Gymnodiniales	present	present	present			
<i>Katodinium glaucum</i>	present	present				present
Peridinales	present		present			
<i>Peridiniella catenata</i>					present	present
<i>Peridiniella danica</i>		present				present
<i>Eutreptiella gymnastica</i>			present			
<i>Pterosperma</i> spp		common				
<i>Pyramimonas</i> spp	common	present		common		
<i>Planctonema lauterbornii</i>		common		present	present	present
<i>Ebria tripartita</i>		present			present	present
<i>Aphanizomenon flos-aquae</i>	present	common		present	common	present
<i>Aphanocapsa</i> spp	present					
<i>Aphanothece</i> spp	present	present		present	present	
<i>Chroococcales</i> spp					present	
<i>Cyanodictyon</i> spp	present	present		present	present	
<i>Woronichiniaspp</i>	present			present	present	
<i>Woronichinia elorantae</i>	present					
Cryptomonadales	present	present	present	common	present	present
<i>Plagioselmis</i> spp			present		present	present
<i>Teleaulax</i> spp	present		present	common	present	present
<i>Dinobryon</i> spp		present		present	present	present
<i>Dinobryon faculiferum</i>			present			
<b>Prymnesiales</b>	<b>common</b>	<b>present</b>	<b>present</b>	<b>common</b>	<b>common</b>	<b>present</b>
Flagellates	common		present			
Ciliophora	present	present	present			
<i>Mesodinium rubrum</i>	present	common	present	present		present

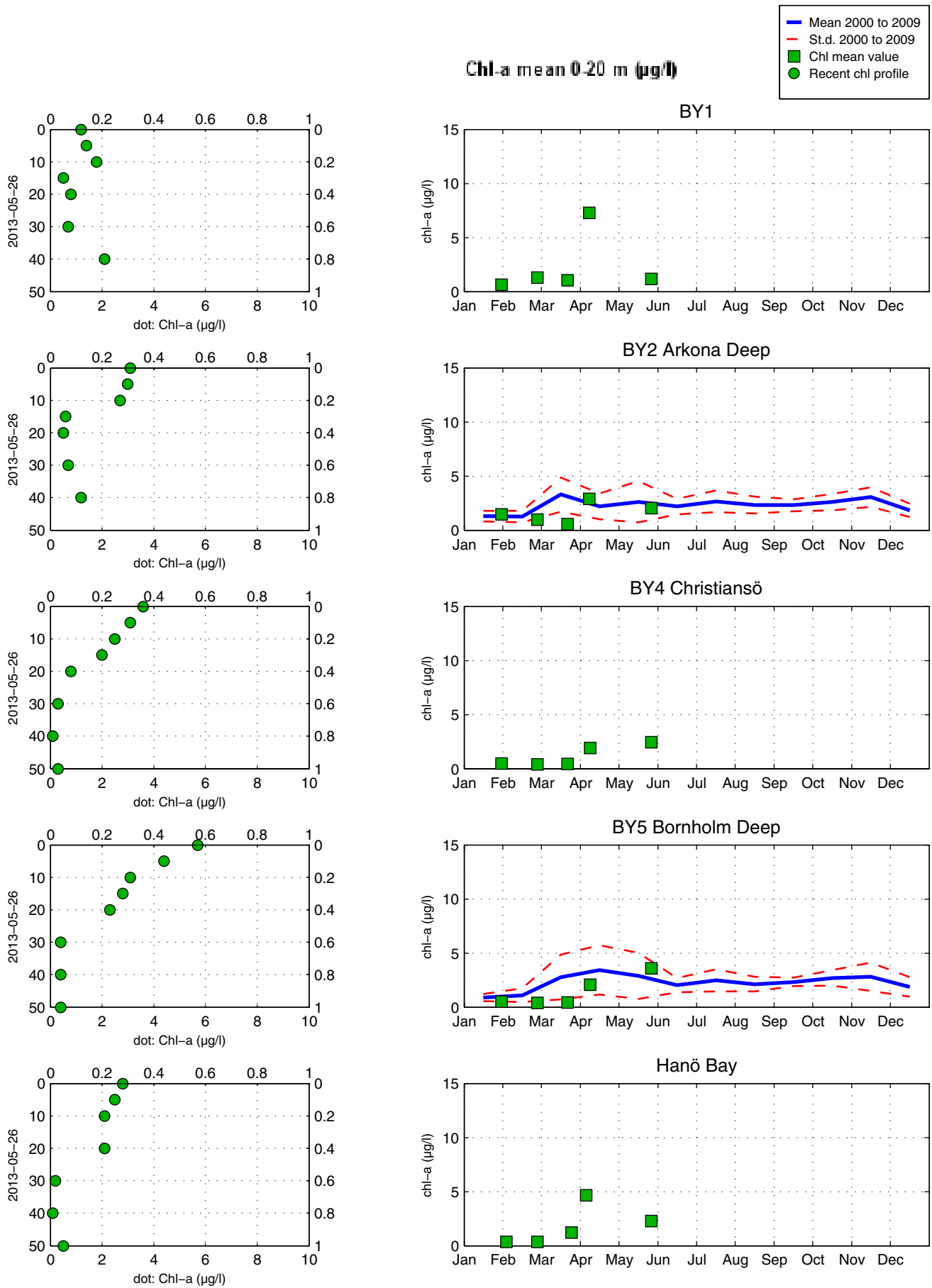
# The Skagerrak



# The Kattegat and the Sound



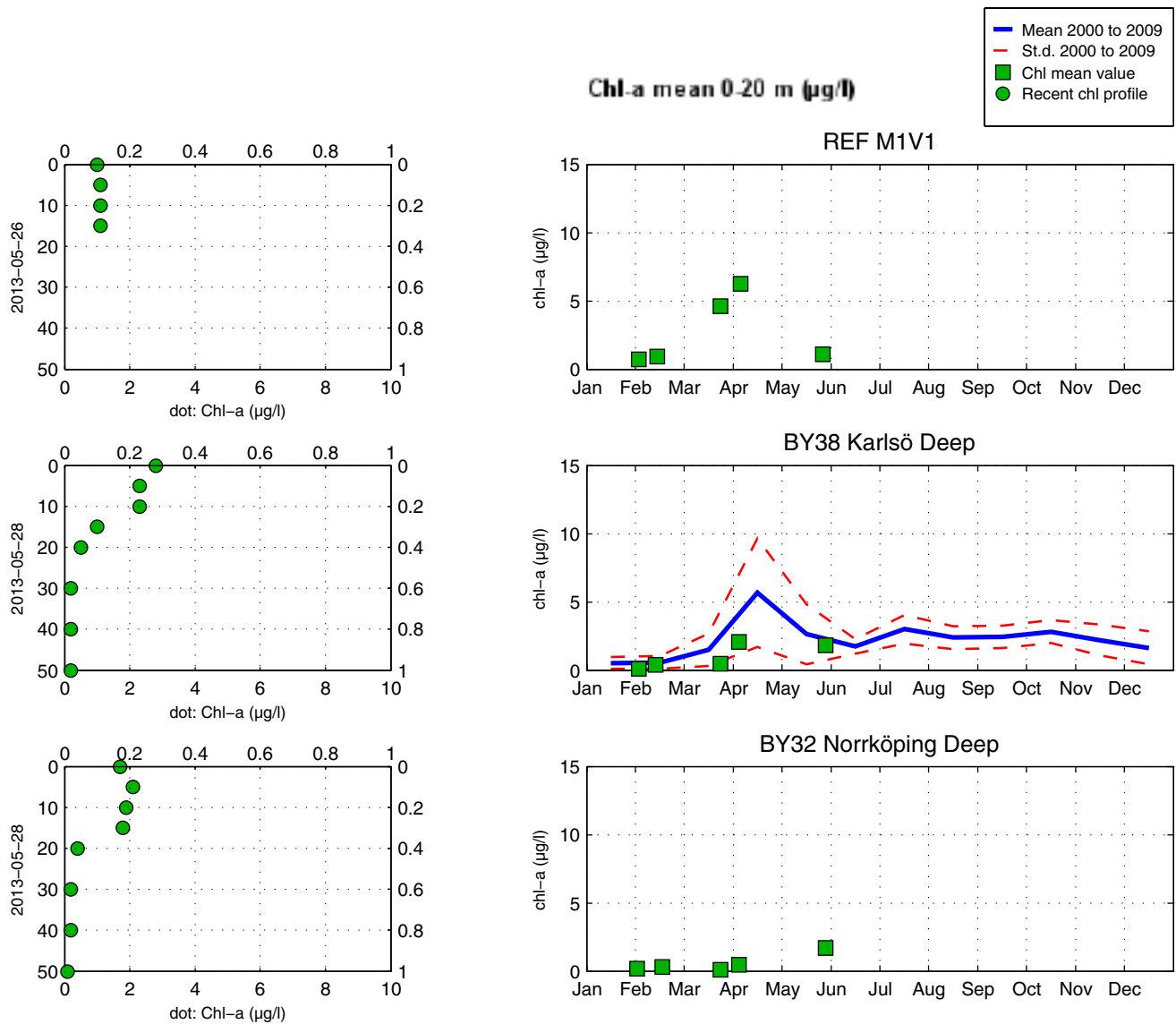
# The Southern Baltic







# 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 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 layers of phytoplankton occurring below the surface.

## Om AlgAware

SMHI genomför ca en gång per månad expeditioner i Östersjön och Västerhavet. Resultat baserade på semikvantitativ mikroskopisk analys av planktonprover samt klorofyllmätningar presenteras kortfattat i denna rapport. Information från SMHI:s satellitövervakning av algbloomningar finns på [www.smhi.se](http://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](http://www.smhi.se).

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.

