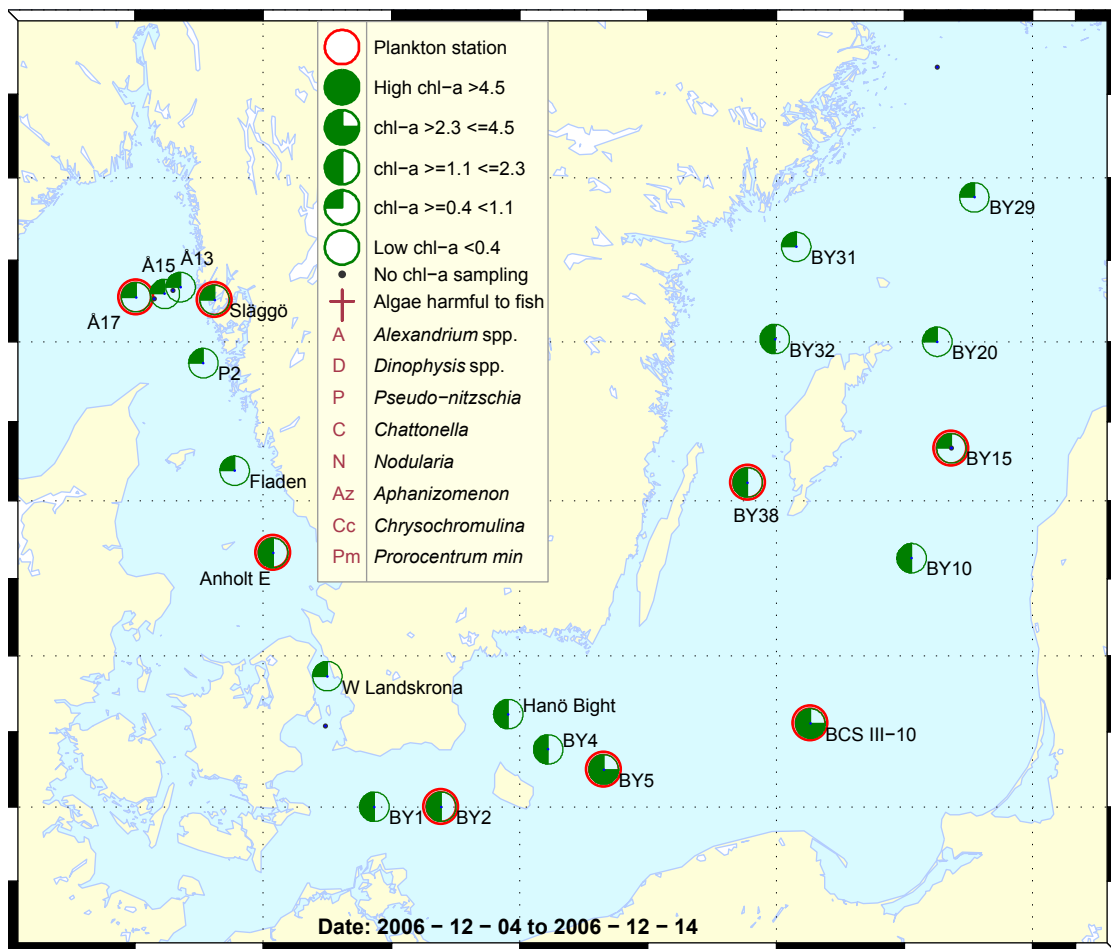


Sammanfattning

En fattig planktonflora med låga cellantal var gemensam nämnare både i Västerhavet och i Östersjön. Situationen var något annorlunda i Kattegatt, där ett antal arter av kiselalger fanns i något förhöjda antal.

I stort sätt var halterna av klorofyll a låga, men vid några stationer i Östersjön var halterna förhöjda. Detta orsakades troligtvis av förekomsten av kiselalgsläktet *Coscinodiscus*' stora celler.



Abstract

It seems as though there will be no autumn or winter bloom this year. The overall picture is a few species of algae in low cell numbers, as well as low chlorophyll a concentrations. In the Kattegat the situation was somewhat different, with some diatoms in quite high cell numbers.

At some Baltic stations the chlorophyll a concentrations were high for the season although the most abundant species were small ones. This was probably caused by the presence of the large diatom genus *Coscinodiscus*.

Om AlgAware

SMHI genomför ca en gång per månad expeditioner med U/F Argos i Östersjön och Västerhavet. Resultat baserade på mikroskopianalys av planktonprover samt klorofyllmätningar presenteras kortfattat i denna rapport. Information från SMHI:s satellitövervakning av algbloomningar finns på www.smhi.se.

About AlgAware

SMHI carries out monthly cruises with R/V Argos in the Baltic and the Kattegat/Skagerrak. Results from 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
<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>Chattonella</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.
<i>Pseudo-nitzschia</i> spp.	Amnesic shellfish poisoning (ASP)	Milda symptom: Efter 3-5 timmar: yrsel, illamående, kräkningar, diarré, magkramper 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.

Översikt av 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).

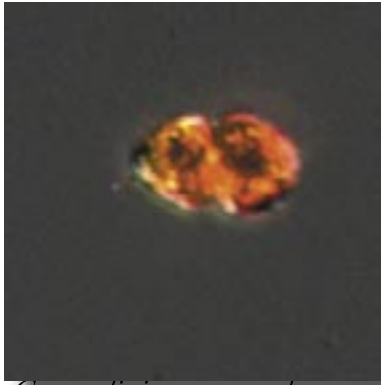
Kartan på framsidan visar viktat medelvärde för klorofyll *a*, µg/l (0-20 m) vid de olika stationerna. Förekomst av skadliga alger vid stationer där arter analyseras markeras med symbol.

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.

More detailed information on species composition and abundance. * = potentially toxic.

The Skagerrak

Å17 14th of December



Gymnodinium verruculosum

A few species in low cell numbers were observed, the most abundant single species being *Gymnodinium verruculosum* with 12 000 cells/L.

Släggö 14th of December

A few more species were observed as compared to Å17. Amongst others, the small solitary diatom *Chaetoceros ceratosporus* was present in low amounts.

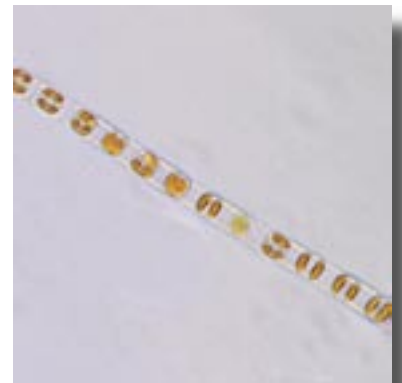
The chlorophyll a concentrations were below average in the whole Skagerrak area.

The Kattegat

Anholt E 13th of December

The plankton flora was richer than both the Skagerrak and the Baltic areas, and was dominated by diatoms. The most abundant diatoms were *Leptocylindrus danicus*, *Skeletonema costatum* and *Pseudo-nitzschia delicatissima*-group*.

At Fladen, the chlorophyll a content was below average, whereas the contents were at average in the rest of the area.



Skeletonema costatum

Selection of observed species	Å17	Släggö	Anholt E
Red=potentially toxic species	2006-12-14	2006-12-14	2006-12-13
	cells/L	cells/L	cells/L
<i>Cerataulina pelagica</i>			present
<i>Chaetoceros ceratosporus</i>		present	
<i>Chaetoceros curvisetus</i>			present
<i>Chaetoceros danicus</i>			present
<i>Cylindrotheca closterium</i>	present		present
<i>Dactyliosolen fragilissimus</i>			present
<i>Ditylum brightwellii</i>			present
<i>Guinardia delicatula</i>			present
<i>Guinardia flaccida</i>		present	present
<i>Leptocylindrus danicus</i>			47 000
<i>Leptocylindrus minimus</i>			24 000
<i>Phaeodactylum tricornutum</i>			present
<i>Proboscia alata</i>			present
<i>Pseudo-nitzschia delicatissima</i> -group	present	present	45 000
<i>Pseudo-nitzschia seriata</i> -group			present
<i>Skeletonema costatum</i>		present	44 000
<i>Thalassiosira anguste-lineata</i>			present
<i>Thalassiosira</i> cf. <i>angulata</i>	present		15 600
<i>Thalassiosira nordenskiöldii</i>			present
<i>Thalassiosira rotula</i>			present
<i>Ceratium lineatum</i>	present		present
<i>Gymnodinium verruculosum</i>	12000	3600	7000
<i>Heterocapsa</i> cf. <i>minima</i>	present		
<i>Karenia mikimotoi</i>	present	present	
<i>Dictyocha speculum</i>	present	present	present
Cryptomonadales spp.	3500	14000	25000
<i>Plagioselmis prolunga</i>	8600	8900	3600
<i>Pyramimonas</i> spp.	present		
<i>Strombidium</i> spp.	present	present	present

The Baltic Sea

Arkona Basin BY2 12th of December



Pyramimonas sp.

The small flagellated genus *Pyramimonas* spp. was the most abundant, followed by the even smaller flagellate *Plagioselmis prolunga*. The chlorophyll *a* concentration was at average.

Bornholm Basin BY5 12th of December

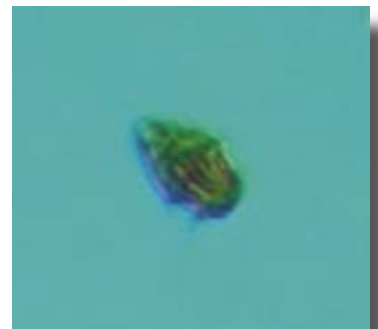
P. prolunga was the most abundant. *Pyramimonas* spp. was present in low numbers, as were some different species of solitary choanoflagellates, such as *Calliacantha longicaudata*. The chlorophyll *a* concentration was far above average, 3.9 µg/L in the surface layer, much of it probably being caused by the large cells of *Coscinodiscus* spp.

The Eastern Baltic 11th and 12th of December

As at BY5, small flagellated species were the most common. A few diatoms and dinoflagellates were observed in very low numbers. The chlorophyll *a* concentration was at or just above average.

Western Baltic 4th of December

Small flagellated species were the most abundant, as in the rest of the Baltic areas. The small thecate dinoflagellate *Heterocapsa rotundata* was the most abundant of the dinoflagellates. Cell numbers were low, although the chlorophyll *a* concentrations were above average.

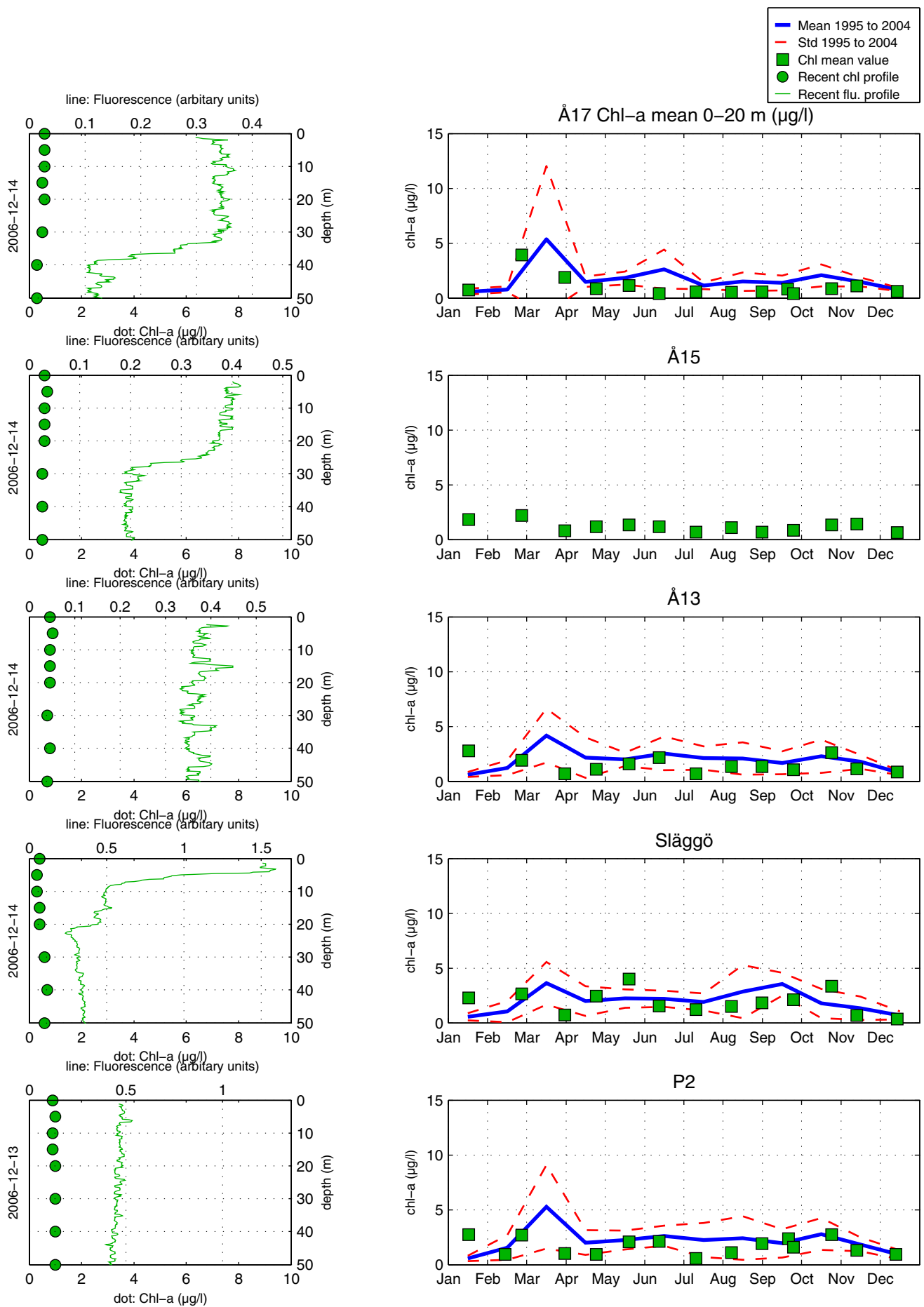


Heterocapsa rotundata

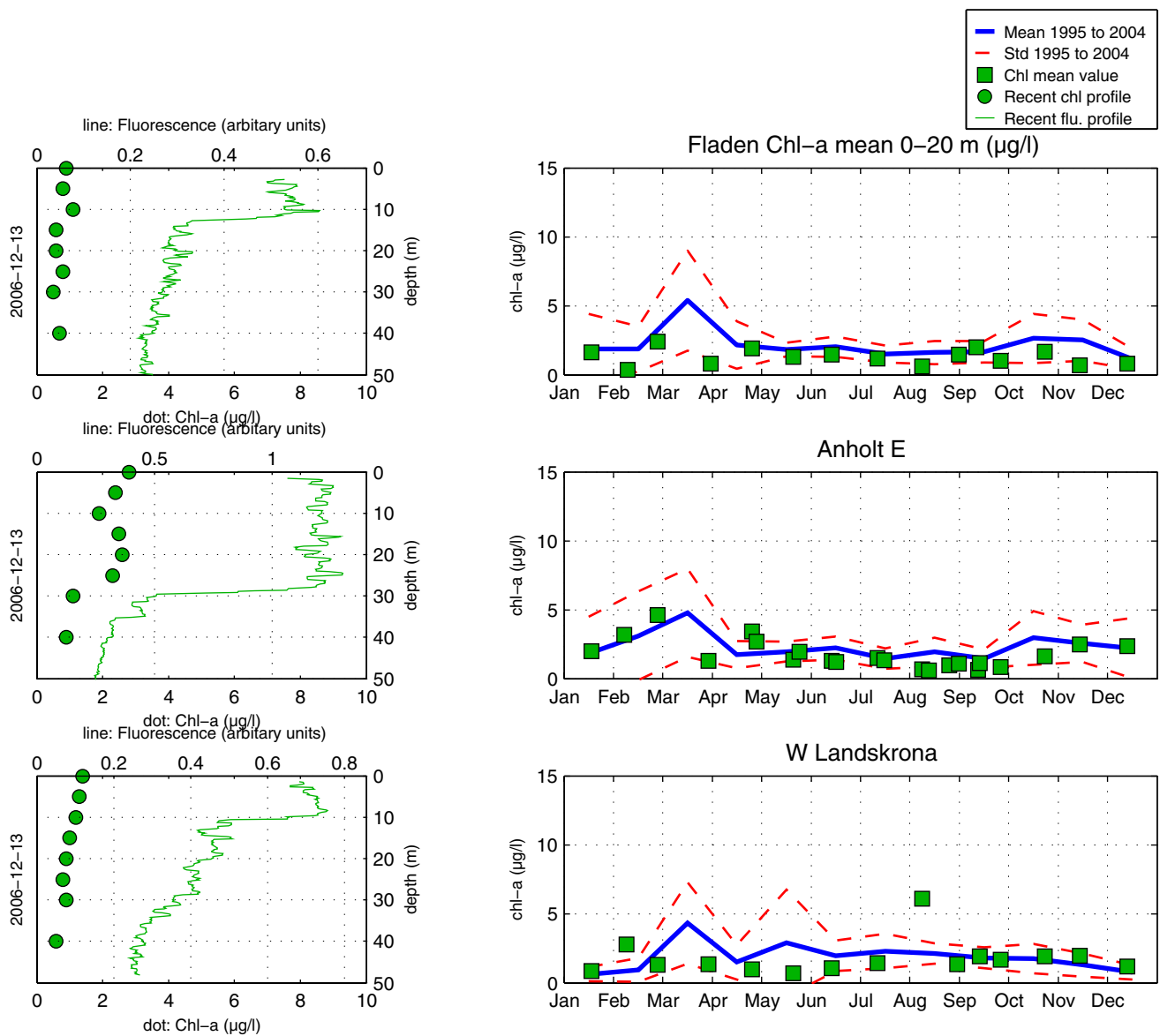
Ann-Turi Skjevik

Selection of observed species	BY2	BY5	BCS III 10	BY15	BY29	BY31	BY38
Red=potentially toxic species	06-12-12	06-12-12	06-12-12	06-12-11	06-12-12	06-12-04	06-12-04
¹ quantified in m/L	cells/L	cells/L	cells/L	cells/L	cells/L	cells/L	cells/L
<i>Cerataulina pelagica</i>	present						
<i>Chaetoceros danicus</i>	present		present			present	
<i>Chaetoceros impressus</i>		present					
<i>Chaetoceros socialis</i>					present		
<i>Coscinodiscus</i> spp.		5 000	2 000				3 600
<i>Cylindrotheca closterium</i>	present						
<i>Pseudo-nitzschia delicatissima</i> -group				present		present	
<i>Skeletonema costatum</i>	present				present	present	
<i>Heterocapsa rotundata</i>				3 500		10 600	
<i>Katodinium glaucum</i>	present		present			present	present
<i>Prorocentrum minimum</i>							present
<i>Chrysochromulina</i> spp				present		present	
<i>Cryptomonadales</i> spp	37 000	50 000	18 000	28 300	14 000	30 000	48 500
<i>Plagioselmis prolunga</i>	30 000	30 000	25 000	26 500	present	23 000	7 000
<i>Teleulax amphioxeia</i>	present			present	present		present
<i>Pyramimonas</i> spp	32 000	5 300	8 900	10 600	present	present	
<i>Aphanizomenon</i> sp. ¹					0.2		
<i>Mesodinium rubrum</i>	present	present	present	present	present	present	present
<i>Strombidium</i> spp	present	present	present	present	present	present	present
Choanoflagellates spp		present	present	present	present	present	present

The Skagerrak



The Kattegat and the Sound



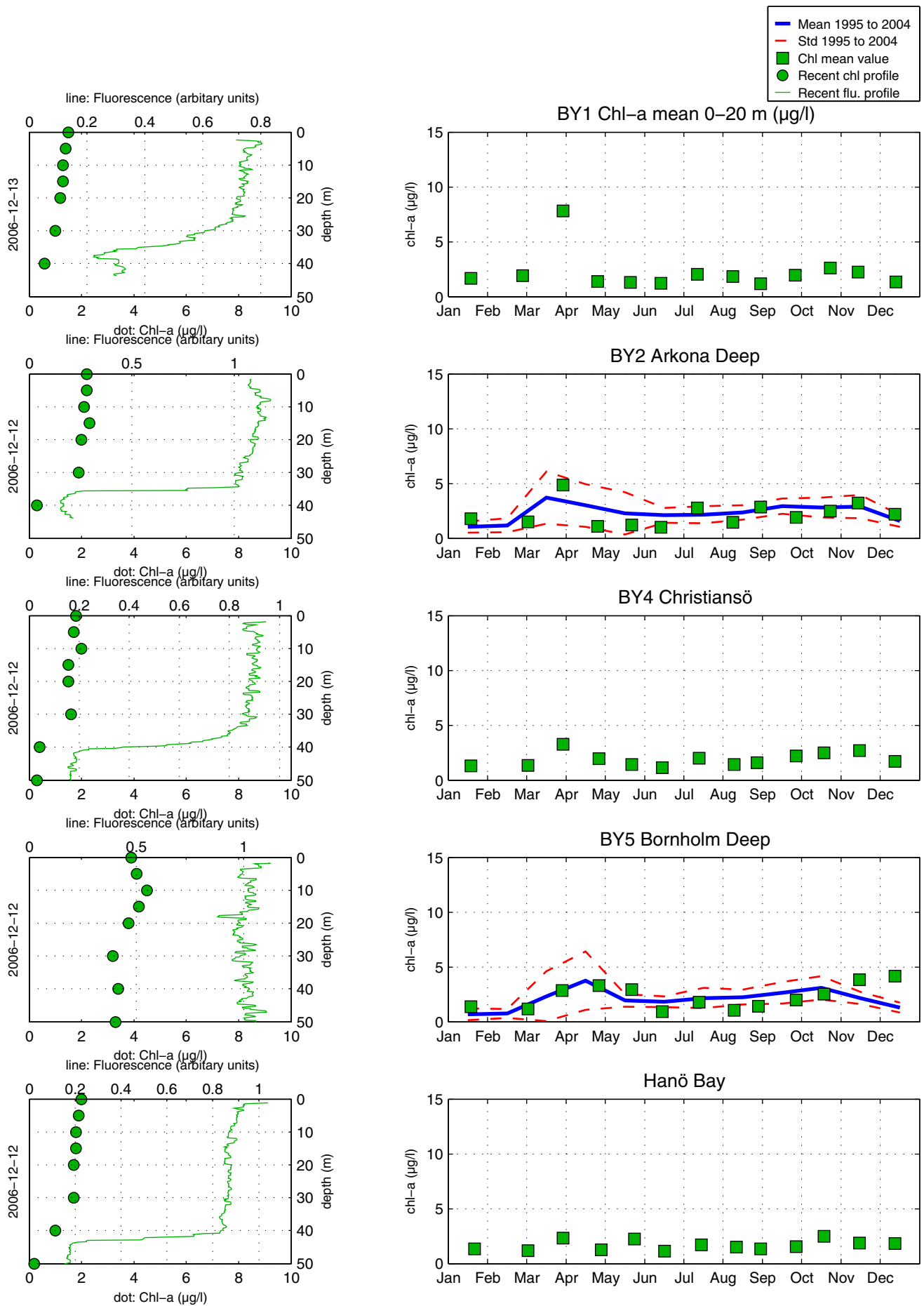
Om klorofylldiagrammen

Klorofyll *a* är ett mått på mängden växtplankton. Prover tas från ett antal djup från U/F Argos. 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 alger av växtplankton observeras.

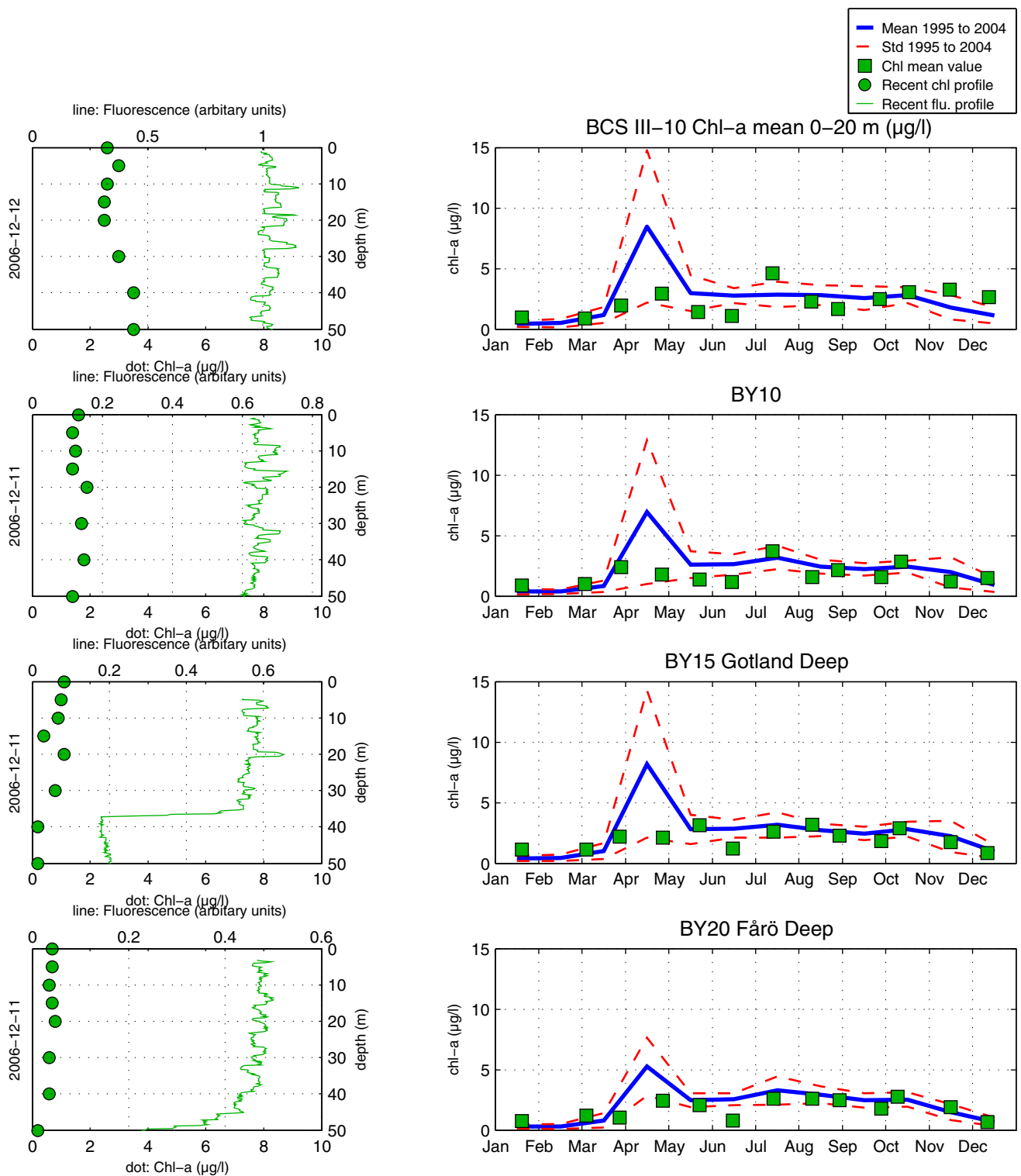
About the chlorophyll graphs

Chlorophyll *a* is sampled from several depths from the R/V Argos. 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.

The Southern Baltic



The Eastern Baltic



The Western Baltic

