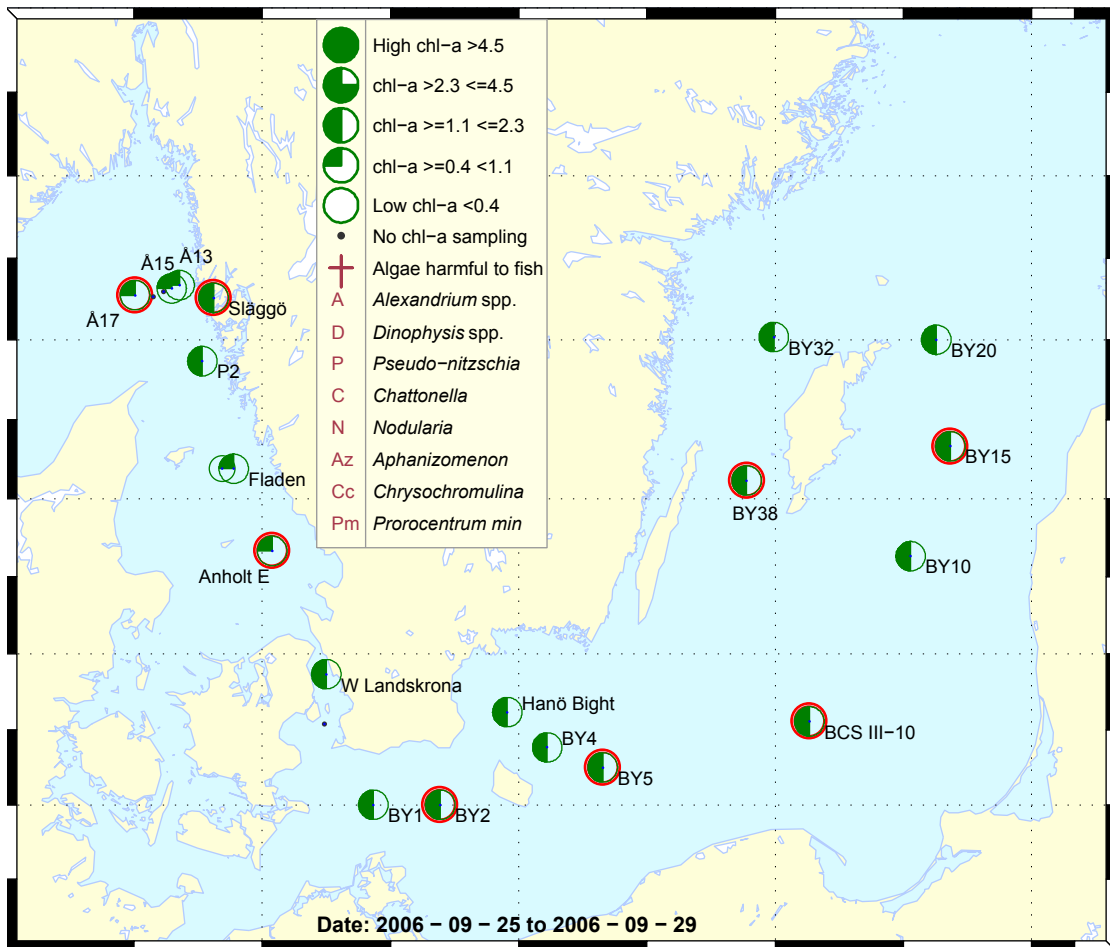


Sammanfattning

I yttre Skagerrak var planktonfloran mycket fattig med ett fåtal arter i låga cellantal. Vid kusten däremot var planktonprovet mera divers, med relativt många arter och dominans av kiselalger. Klorofyllhalterna låg under medel vid samtliga stationer. I Kattegatt var planktonsituationen som kustnära Skagerrak och klorofyll a halterna låg under eller vid medel.

I Östersjön dominerade små flagellater. Vid två stationer observerades en mindre population av *Prorocentrum minimum**. Filamentösa cyanobakterier observerades vid BY 2, BY 15 och BY 38.



Abstract

In the open Skagerrak the plankton flora was very poor, as just a few species were found in low cell numbers. At the coast the flora was richer with a dominance of diatoms. The chlorophyll a concentrations were below average at all stations. In the Kattegat the plankton situation was similar to the one in coastal Skagerrak and the chlorophyll a concentrations were at or below average.

In the Baltic, small flagellated species dominated. At two of the stations a population of *Prorocentrum minimum* was observed. Filamentous cyanobacteria were found at BY 2, BY 15 and BY 38.

Om AlgAware

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

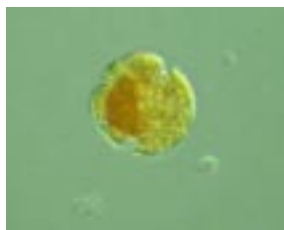
More detailed information on species composition and abundance. * = potentially toxic.

The Skagerrak

Å17 25th of September

A few species in low cell numbers were observed, mostly diatoms.

Släggö 25th of September



Karenia mikimotoi

The diatom *Leptocylindrus minimus* was the most abundant with 760 000 cells/L. *L. danicus* was common, as was *Chaetoceros* spp. As far as toxic algae are concerned, *Pseudo-nitzschia* spp*, *Dinophysis acuta** and *Karenia mikimotoi** were present, all in very low numbers.

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

Selection of observed species	Å17 2006-09-25 cells/L	Släggö 2006-09-25 cells/L	Anholt E 2006-09-26 cells/L
Red=potentially toxic species			
<i>Asterionellopsis glacialis</i>			34 500
<i>Cerataulina pelagica</i>	present	present	122 500
<i>Chaetoceros curvisetus</i>			36 200
<i>Chaetoceros</i> cf. <i>didymus</i>		13 000	
<i>Chaetoceros lacinosus</i>			10 000
<i>Chaetoceros socialis</i>			11 000
<i>Chaetoceros</i> spp.		67 000	
<i>Cylindrotheca closterium</i>	present	present	15 500
<i>Leptocylindrus danicus</i>	present	10 000	141 500
<i>Leptocylindrus minimus</i>	present	764 000	41 400
<i>Proboscia alata</i>		present	present
<i>Pseudo-nitzschia delicatissima</i> -group	present	present	124 000
<i>Pseudo-nitzschia</i> cf. <i>pungens</i>		present	33 000
<i>Pseudo-nitzschia seriata</i> -group		present	
<i>Skeletonema costatum</i>		present	
<i>Thalassiosira anguste-lineata</i>		present	
<i>Ceratium furca</i>		present	present
<i>Ceratium fusus</i>			present
<i>Ceratium macroceros</i>		present	
<i>Ceratium tripos</i>			present
<i>Dinophysis acuminata</i>			present
<i>Dinophysis acuta</i>		present	
<i>Heterocapsa</i> cf. <i>minima</i>	present	present	13800
<i>Karenia mikimotoi</i>		present	
<i>Prorocentrum micans</i>		present	present
<i>Dinobryon balticum</i>		10000	15500
<i>Chrysochromulina</i> sp.	present	present	
Cryptomonadales spp.	32600	84000	19000
<i>Pyramimonas</i> sp.		present	

The Kattegat

Anholt E 26th of September



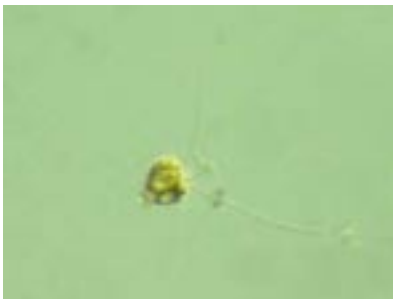
Cerataulina pelagica

Dominance of diatoms was observed from the only visit at the station during this expedition, and *Leptocylindrus danicus*, *Cerataulina pelagica* and *Pseudo-nitzschia* spp.* were the most abundant species. *Heterocapsa* cf. *minima* was the most abundant dinoflagellate.

At West Landskrona, the chlorophyll *a* concentration was normal for this month, whereas the concentrations were below average in the rest of the area.

The Baltic Sea

Arkona Basin BY2 27th of September



Chrysochromulina sp.

A poor plankton flora was observed with a dominance of small species as *Pyramimonas* spp., *Chrysochromulina* spp.* and other flagellates. The cyanobacterium *Aphanizomenon* sp. was common and some diatom species were present in low cell numbers. The chlorophyll *a* concentration was below average.

Bornholm Basin BY5 27th of September

A similar situation was found at BY 5 as at BY 2. Except *Aphanizomenon* sp., which was not present, the same species were observed and the chlorophyll *a* concentration was below average.

The South East Baltic BCS III-10 27th of September

A small population of the dinoflagellate *Prorocentrum minimum** was quantified in addition to the same species as the two stations above. The chlorophyll *a* concentration was at average.

Eastern Gotland Basin BY15 28th of September

The three filamentous cyanobacteria, *Anabaena* sp., *Aphanizomenon* sp. and *Nodularia spumigena** were present in various amounts, *Aphanizomenon* sp. being the most common. *Pyramimonas* sp. was abundant, and *P. minimum** was common. The chlorophyll *a* concentration was below average.



Prorocentrum minimum

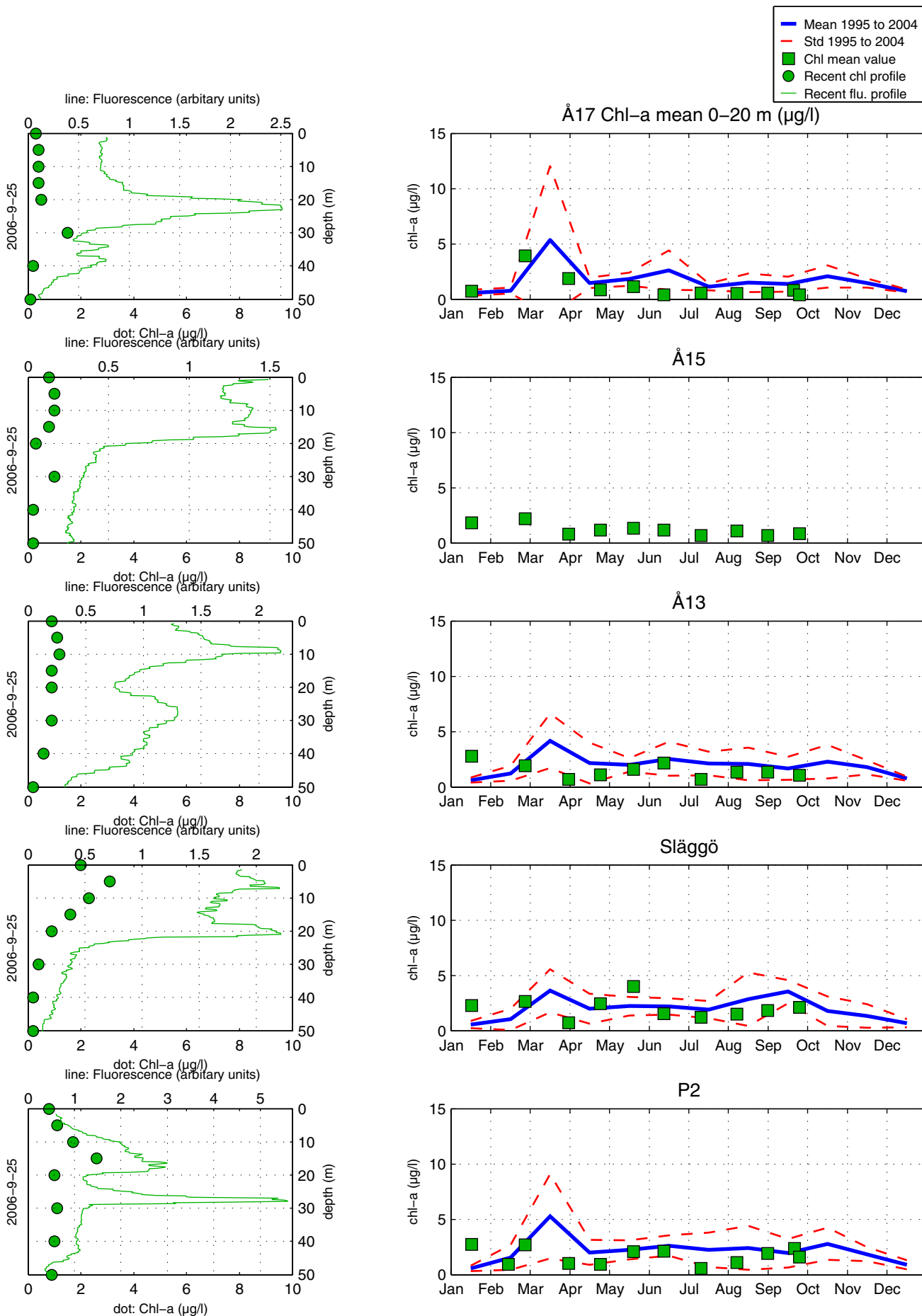
Western Gotland Basin BY38 29th of September

Some filaments of *N. spumigena** were found and *Aphanizomenon* sp. was quite common with about 1 m/L. The diatoms *Chaetoceros impressus* and *C. danicus* were present in low cell numbers, and *Pyramimonas* sp. was abundant. The chlorophyll *a* concentration was below average.

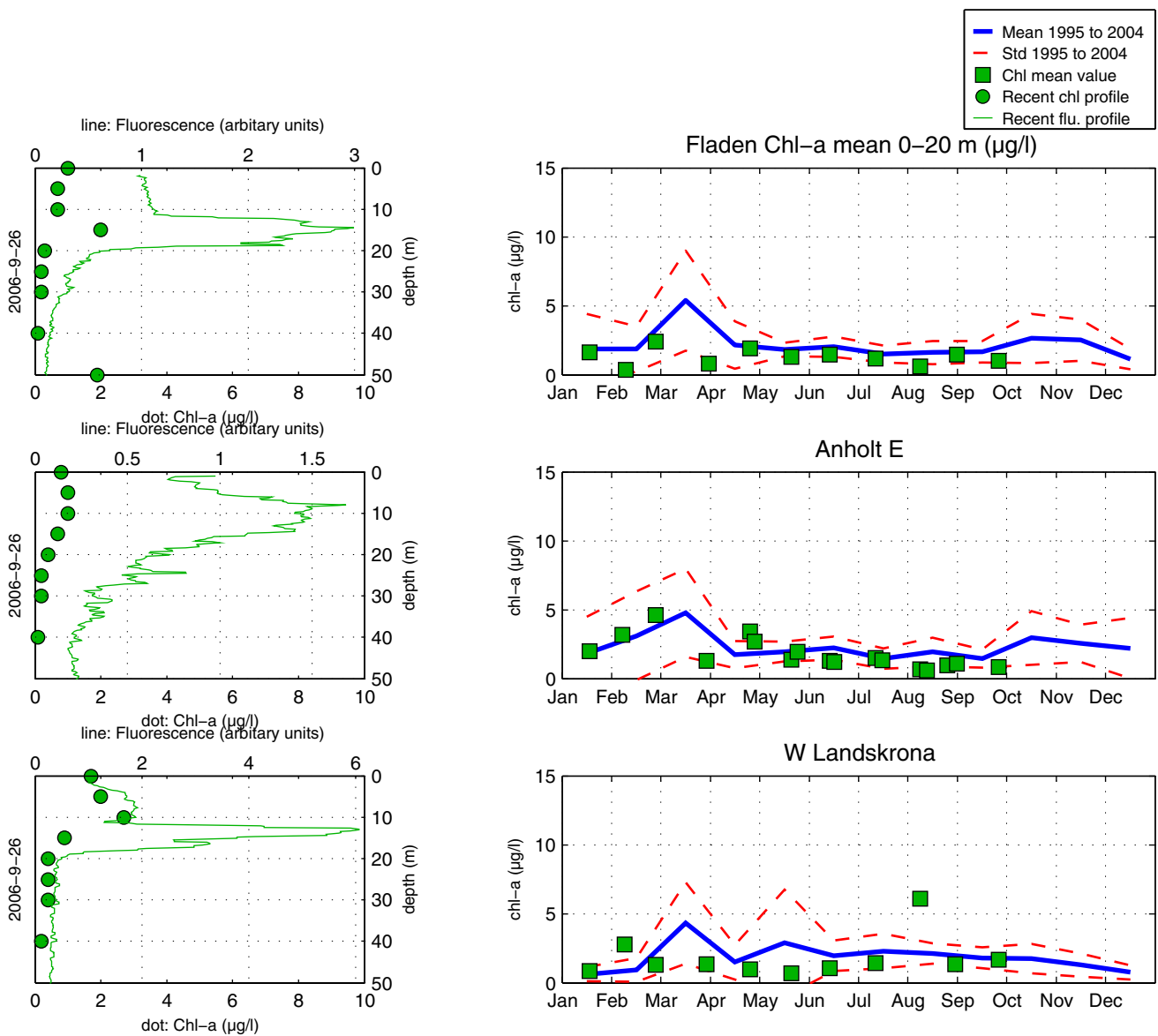
Ann-Turi Skjevik

Selection of observed species	BY2	BY5	BCS III 10	BY15	BY38
Red=potentially toxic species ¹ quantified in m/L	2006-09-27	2006-09-27	2006-09-27	2006-09-28	2006-09-29
	cells/L	cells/L	cells/L	cells/L	cells/L
<i>Apedinella radians</i>	present				present
<i>Chaetoceros impressus</i>	present	present		present	present
<i>Leptocylindrus minimus</i>	present				present
<i>Dinophysis acuminata</i>		present		present	
<i>Dinophysis acuta</i>				present	
<i>Heterocapsa rotundata</i>	present	present	present		12 400
<i>Prorocentrum minimum</i>			11000	17800	3600
<i>Chrysochromulina spp</i>	37 000	present		25000	5300
Cryptomonadales spp	102 000	196000	307000	117000	123 000
<i>Pyramimonas spp</i>	4400	100000	19000	158000	114000
<i>Anabaena sp.</i>				present	
<i>Aphanizomenon sp.</i> ¹	0.9			6	1.1
<i>Nodularia spumigena</i> ¹				0.2	present
<i>Mesodinium rubrum</i>	present	present	present	present	present

The Skagerrak



The Kattegat and the Sound



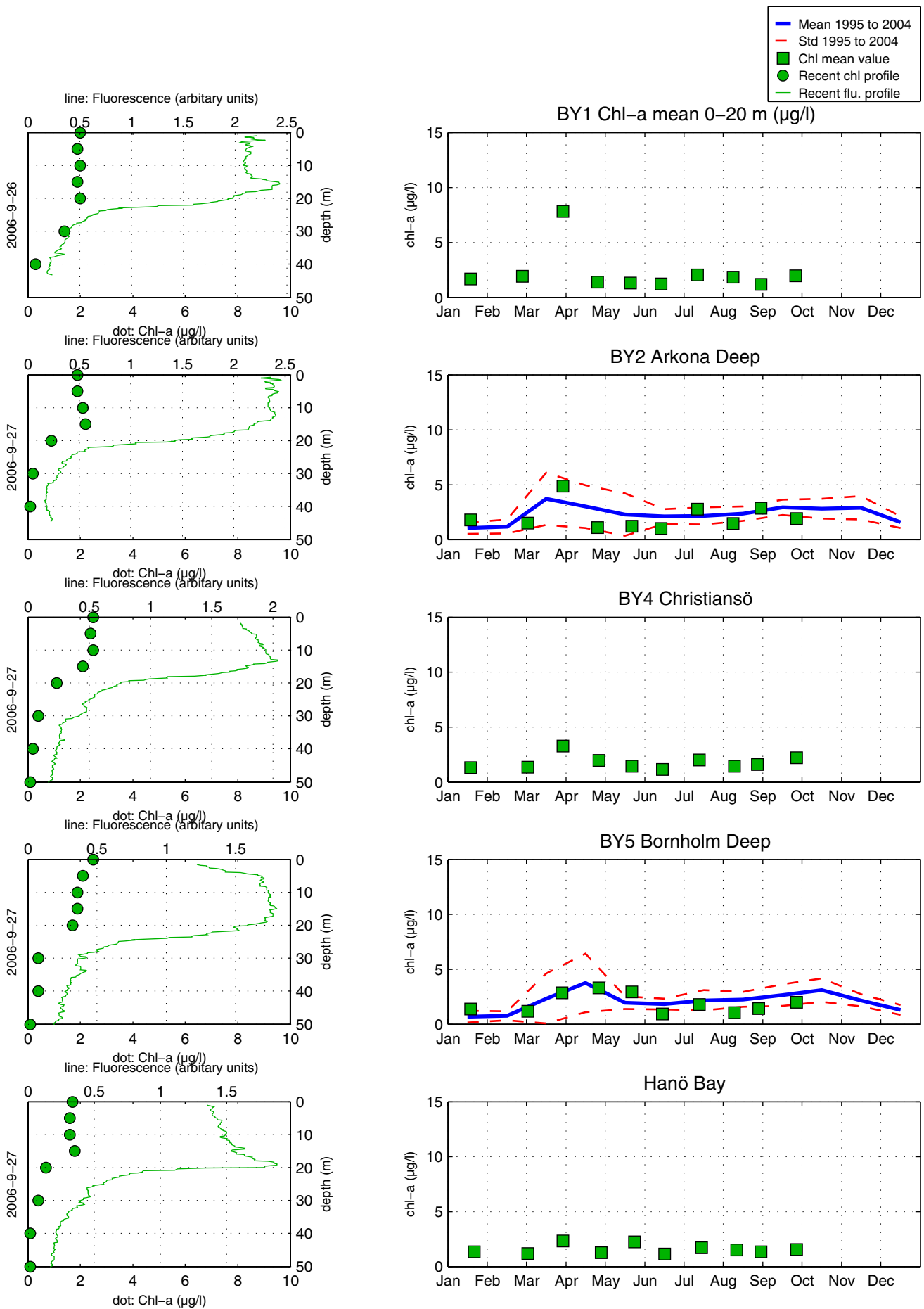
Om klorofylldiagrammen

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.

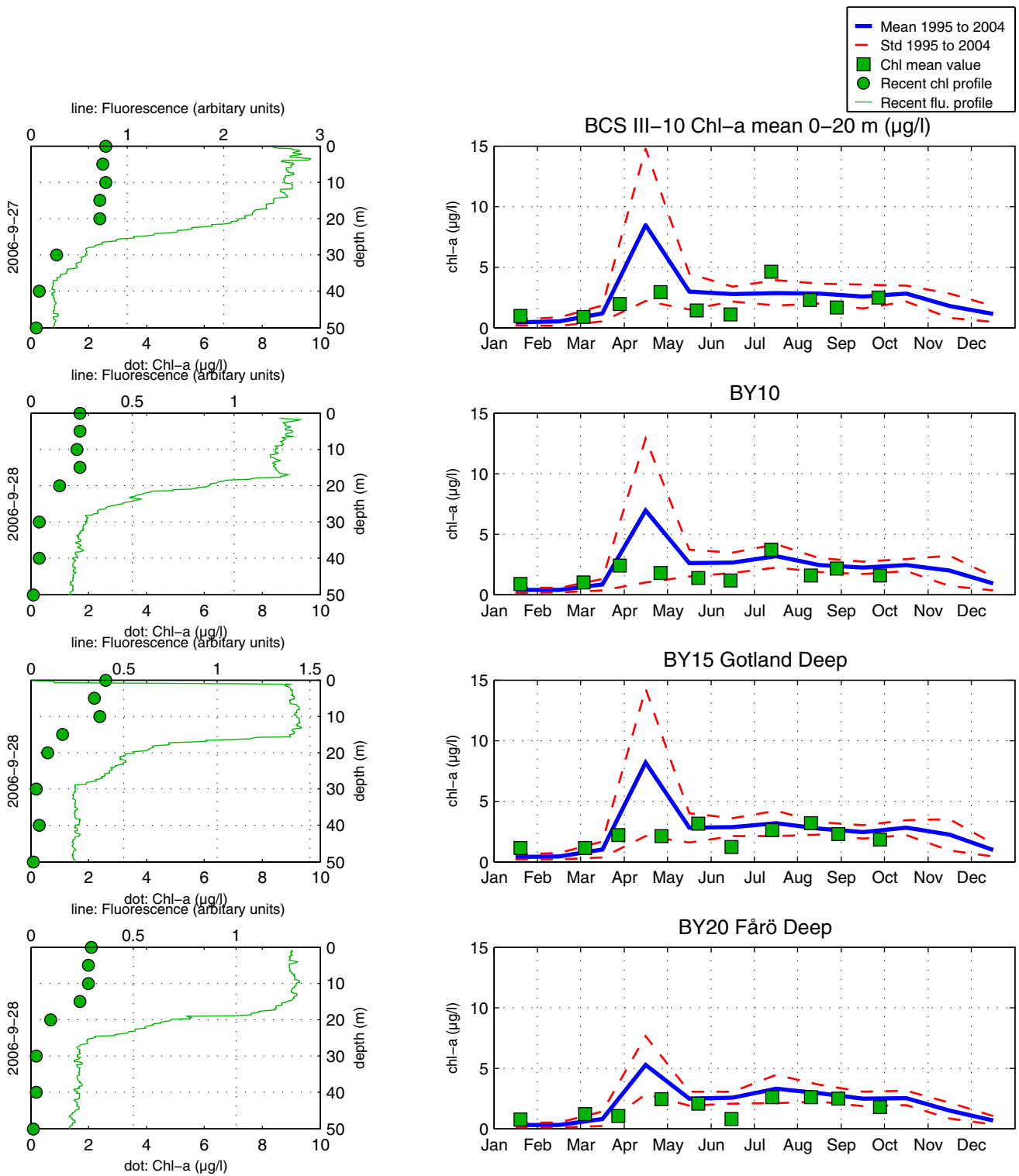
About the chlorophyll graphs

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

