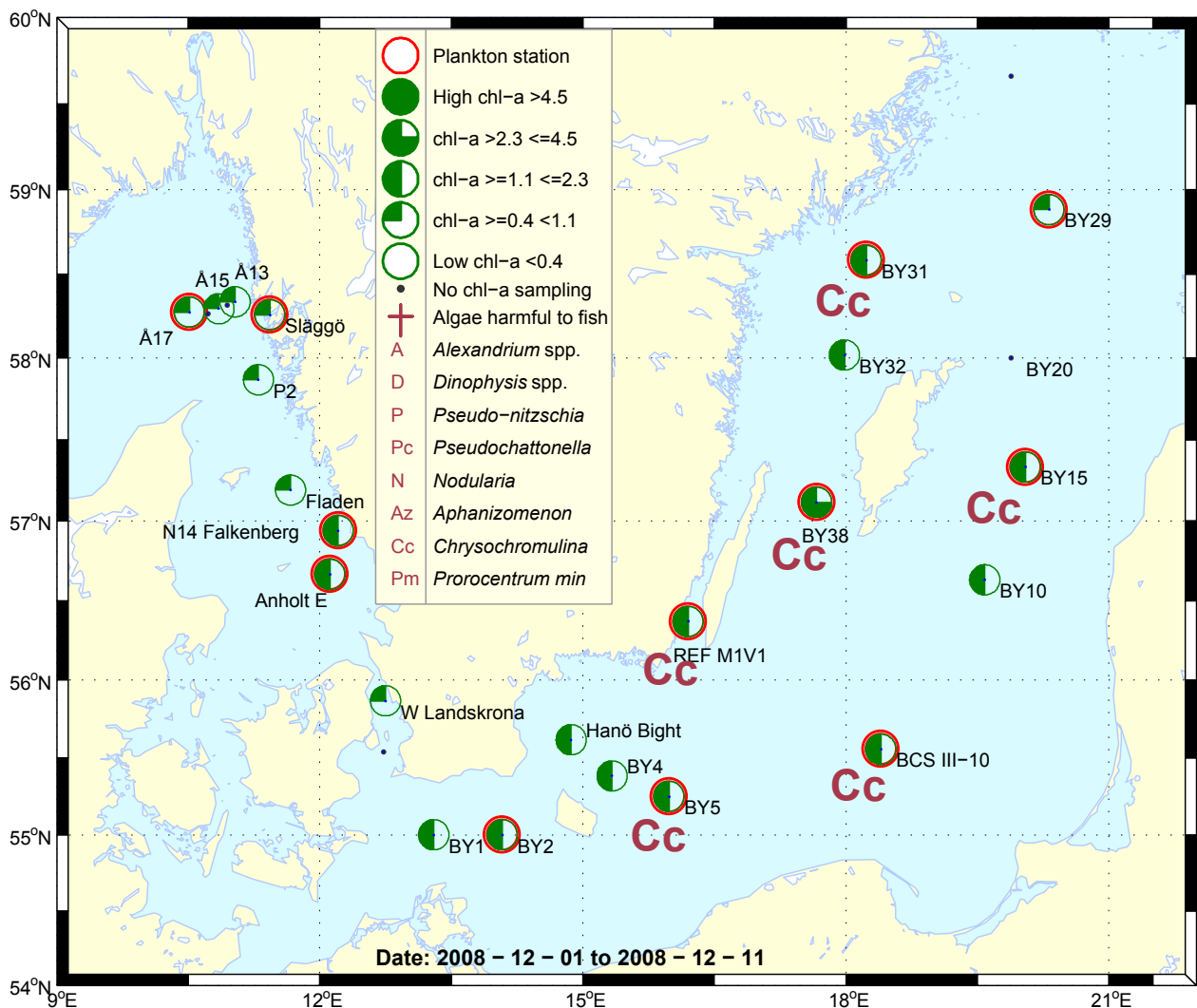


## Sammanfattning

Antalet arter var lågt och cellantalerna var låga i Skagerrak och Kattegatt, vilket också ledde till låga klorofyllhalter. Ett fåtal av prymnesiofyten *Chrysochromulina polylepis*\*, som troligtvis transporterats dit med baltiska strömmen, observerades vid båda Kattegattstationerna och vid kuststationen Släggö i Skagerrak.

I Östersjön återkom artsammansättningen av små dinoflagellater och cryptomonader vid de flesta stationer i olika antal. *Chrysochromulina polylepis*\* observerades vid samtliga stationer, med högst antal celler vid BY38, som var den enda stationen med klorofyllvärden över medel för denna månad.



## Abstract

In the Kattegat and Skagerrak areas, the number of species and number of cells were low, with consequently low chlorophyll *a* values. A few cells of the prymnesiophyte *Chrysochromulina polylepis*\*, probably transported there by the Baltic current, were observed at both stations in the Kattegat and at the Skagerrak coast station Släggö.

In the Baltic, the same species composition of dinoflagellates and cryptomonads was observed at most stations. *Chrysochromulina polylepis*\* was found at all stations, with the highest cell numbers at BY38, which however was the only station with integrated (0-20 m) chlorophyll *a* concentrations above average for this month.

## Om AlgAware

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

## About AlgAware

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

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).

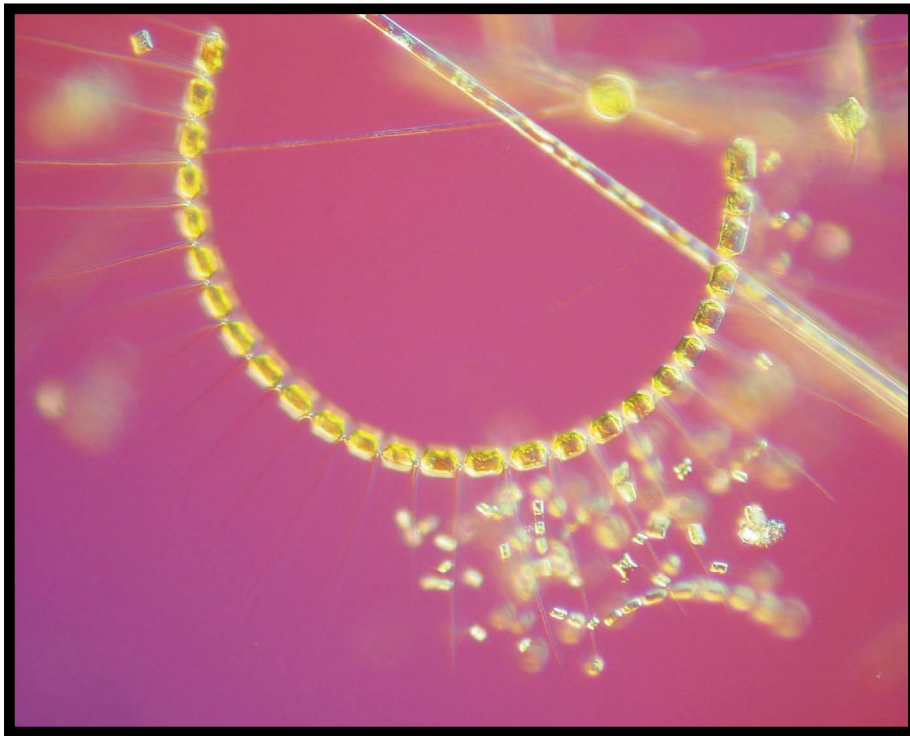
Kartan på framsidan visar viktat medelvärde för klorofyll *a*, µg/l (0-20 m) vid de olika stationerna. Förekomst av skadliga alger vid stationer där arter analyseras markeras med symbol. Då cirkeln är tom innebär detta att stationen inte provtagits.

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. An empty circle indicates that there has been no sampling at that station.

More detailed information on species composition and abundance

No further information is considered necessary this month, because of the low phytoplankton activity. The issues of interest are covered by the abstract, the species lists and the chlorophyll diagrams.

Phytoplankton analysis and text by:  
Ann-Turi Skjevik

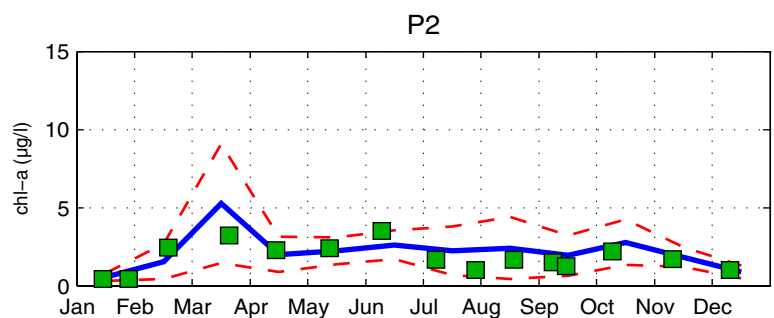
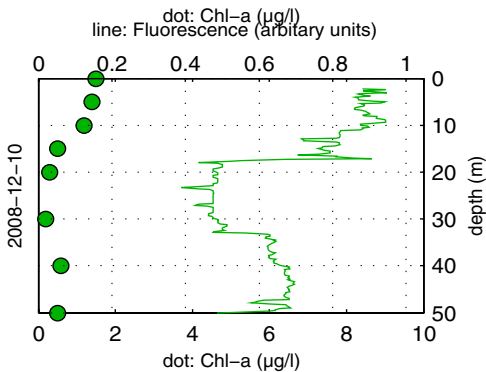
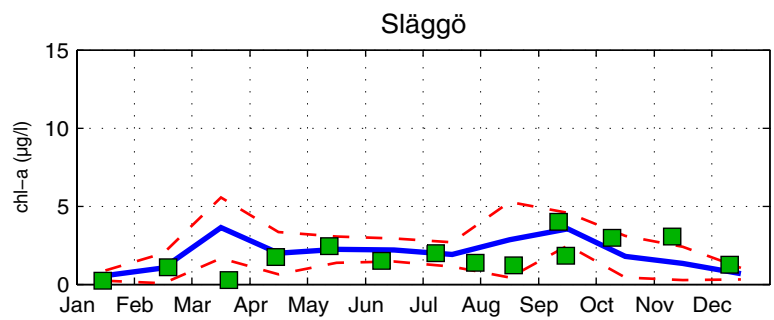
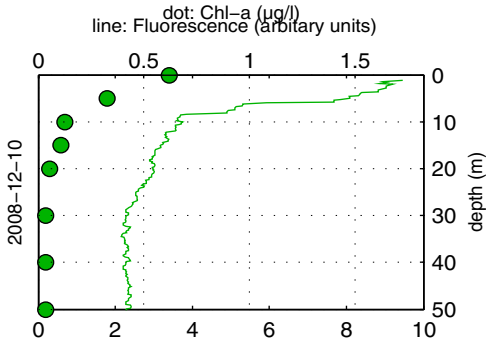
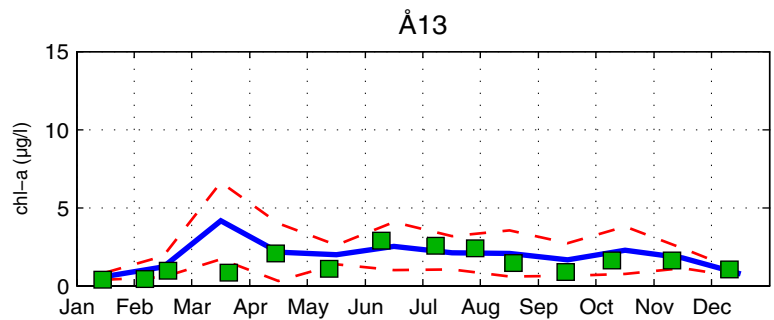
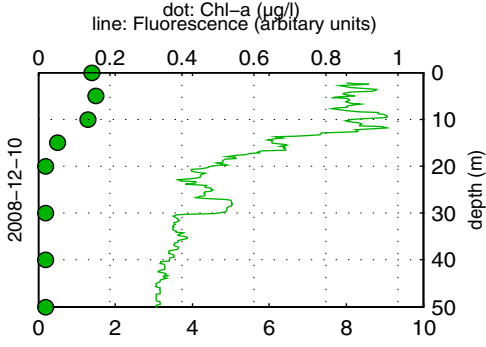
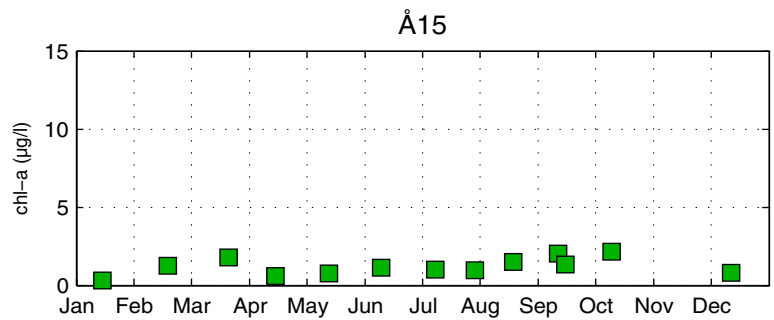
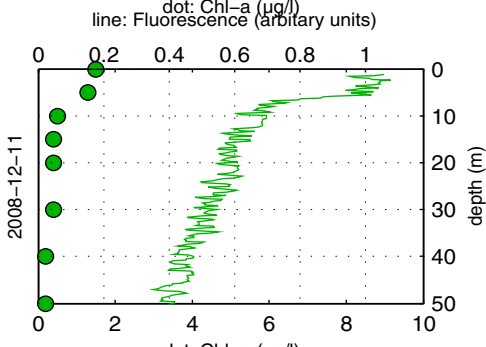
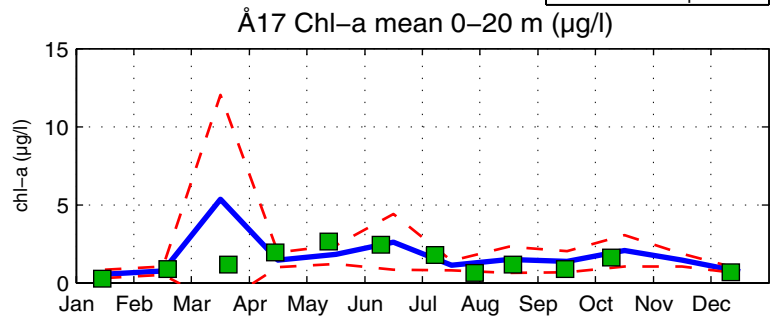
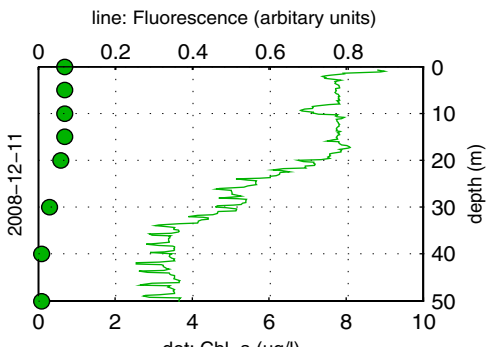
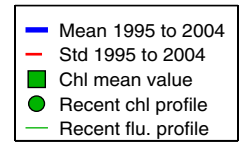


*Chaetoceros curvisetus* amongst others

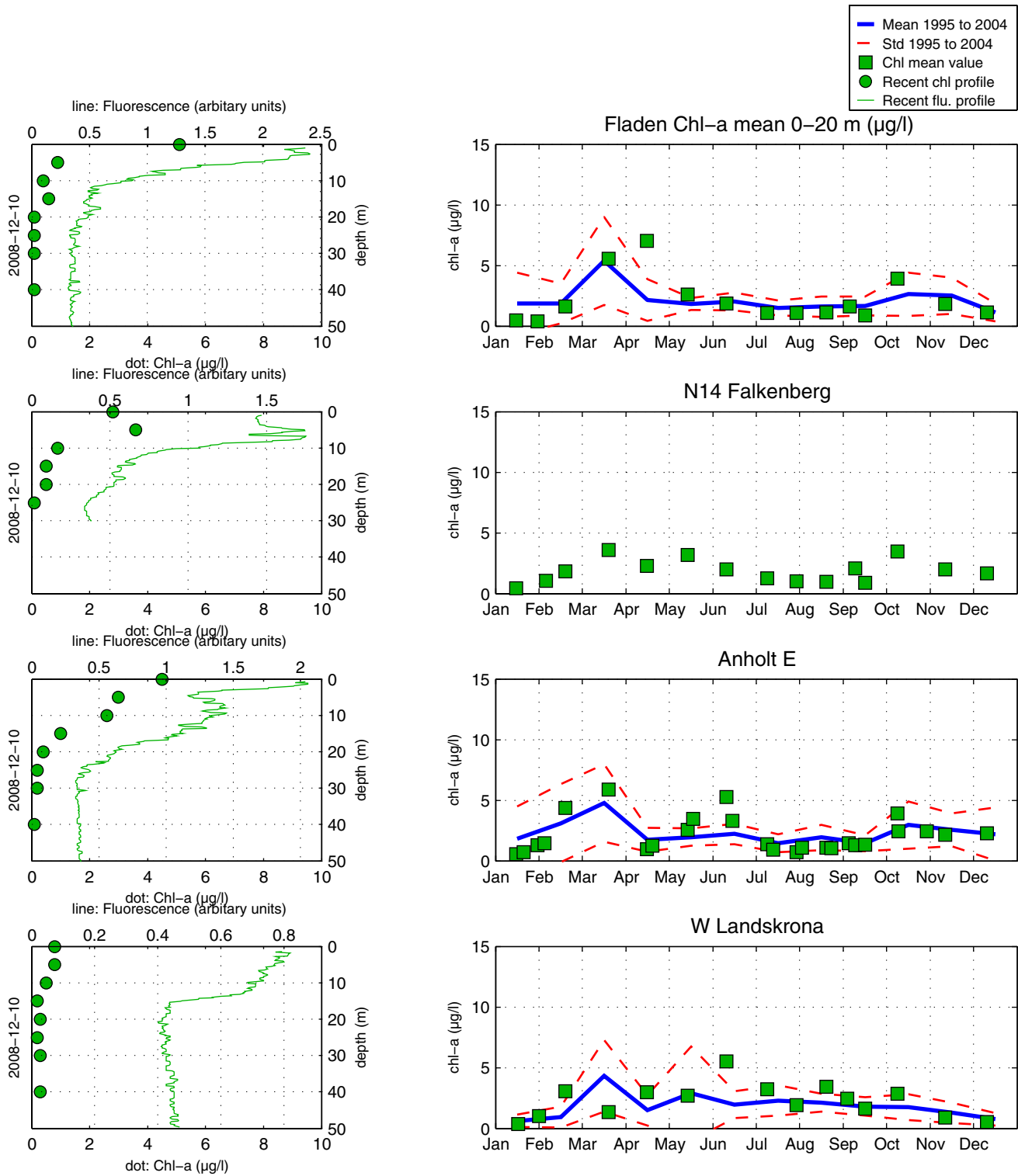
Selection of observed species	Släggö	N14	Anholt E	Å17
Red=potentially toxic species	2008-12-10	2008-12-10	2008-12-10	2008-12-11
	cells/l	cells/l	cells/l	cells/l
<i>Cerataulina pelagica</i>	present			
<i>Chaetoceros pseudocrinitus</i>	present	present	present	
<i>Chaetoceros thronsdensei</i>		present		
<i>Cylindrotheca closterium</i>	present			present
<i>Ditylum brightwellii</i>		present		
<i>Lennoxia faveolata</i>	present	present	present	present
<i>Leptocylindrus danicus</i>		present		present
<i>Pseudo-nitzschia delicatissima</i> -group	present	present	present	present
<i>Pseudo-nitzschia seriata</i> -group		present	present	
<i>Skeletonema costatum</i> complex	present	present		
<i>Thalassiosira anguste-lineata</i>		present		
<i>Thalassiosira rotula</i>		present		
<i>Akashiwo sanguinea</i>	present	present		
<i>Ceratium furca</i>	present			
<i>Ceratium fusus</i>	present			
<i>Ceratium lineatum</i>	present	common	common	
<i>Ceratium tripos</i>	present	present	present	
<i>Dinophysis acuminata</i>	present			
<i>Dinophysis norvegica</i>		present		
<i>Gymnodinium verruculosum</i>		present	present	
<i>Gyrodinium spirale</i>		present	present	
<i>Heterocapsa</i> cf. <i>minima</i>	present			present
<i>Heterocapsa rotundata</i>	present		present	present
<i>Karenia mikimotoi</i>	present			
<i>Katodinium glaucum</i>		present		
<i>Oxytoxum gracile</i>				present
<i>Prorocentrum micans</i>		present	present	
Cryptomonadales spp.	75 000	91 000	72 000	49 000
<i>Pyramimonas</i> spp.	present	present		present
<i>Chrysochromulina polylepis</i>	present	present	present	
<i>Chrysochromulina</i> spp.	present	present	present	present
<i>Heterosigma akashiwo</i>		present	present	
<i>Dictyocha fibula</i>	present			present
<i>Dictyocha speculum</i>	present	present	present	present
<i>Apedinella radians</i>	present			
<i>Pseudopedinella</i> spp.	present	present	present	
<i>Calliakantha longicaudata</i>	present	present	present	present
<i>Calliakantha natans</i>		present	present	
<i>Leucocryptos marina</i>	present	present	present	present
<i>Telonema subtilis</i>	present			present

<b>Selection of observed species</b>	<b>BY2</b>	<b>BY5</b>	<b>BCS III-10</b>	<b>BY15</b>	<b>BY29</b>	<b>BY31</b>	<b>BY38</b>	<b>Ref. M1-V1</b>
	<b>2008-12-09</b>	<b>2008-12-09</b>	<b>2008-12-08</b>	<b>2008-12-08</b>	<b>2008-12-08</b>	<b>2008-12-01</b>	<b>2008-12-01</b>	<b>2008-12-01</b>
<sup>1</sup> quantified in m/l	cells/l	cells/l	cells/l	cells/l	cells/l	cells/l	cells/l	cells/l
<i>Chaetoceros danicus</i>	present						present	present
<i>Chaetoceros impressus</i>	present							
<i>Chaetoceros subtilis</i>	present					present		
<i>Cyclotella choctawhatcheana</i>	present				present		present	present
<i>Ceratium tripos</i>	present							
<i>Cladopyxis claytonii</i>	present							
<i>Dinophysis norvegica</i>					present			
<i>Gymnodinium verruculosum</i>			present					
<i>Heterocapsa</i> spp.	present	present	present	12 000	present	17 000	14 000	13 000
<i>Katodinium glaucum</i>		present					present	present
<i>Chrysochromulina polylepis</i>	present	60 000	37 000	86 000	present	33 000	277 000	48 000
<i>Chrysochromulina</i> spp.		present	present	present	present	present	20 000	present
<i>Cryptomonadales</i> spp.	62 000	19 000	83 000	67 000	present	102 000	46 000	125 000
<i>Pyramimonas</i> spp.	12 000	present	present	14 000	present	15 000	19 000	16 000
<i>Aphanizomenon</i> spp.		common	present	present		present	present	present
<i>Calliantha natans</i>	present	present	present	present			present	present
<i>Leucocryptos marina</i>	present	present	present	present	present	present	present	present
<i>Mesodinium rubrum</i>	present	13 000	20 000	22 000	present	present	14 000	present

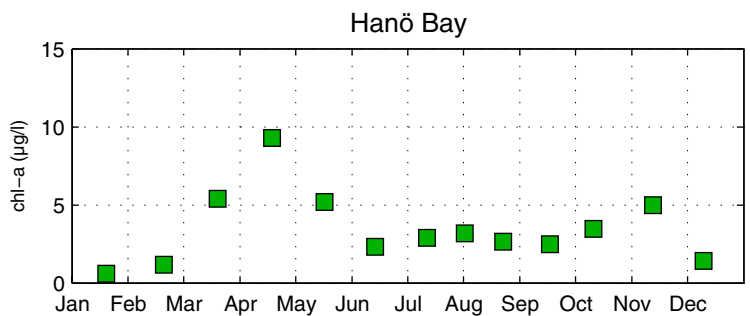
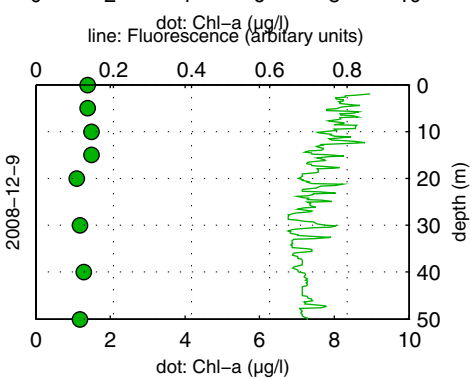
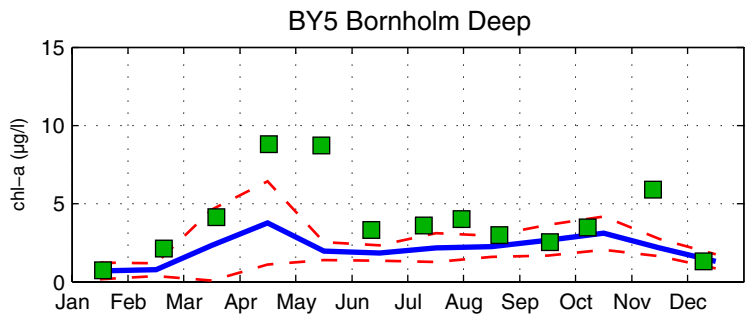
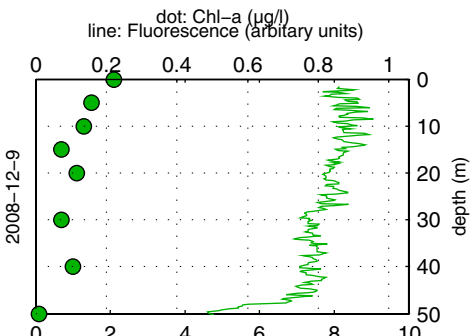
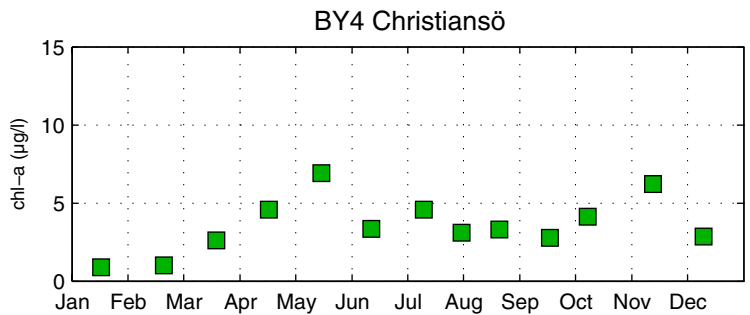
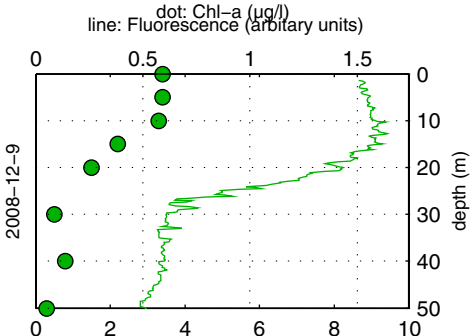
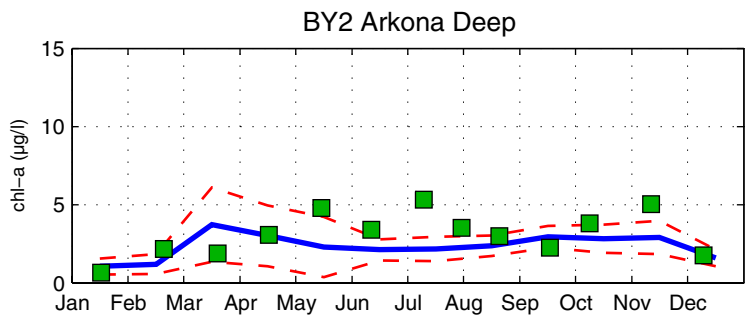
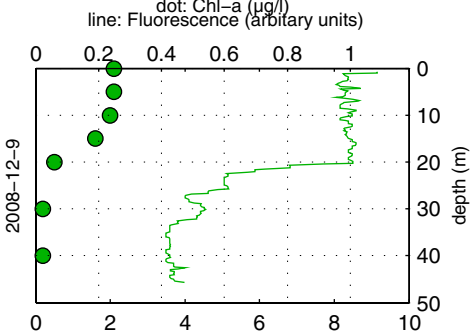
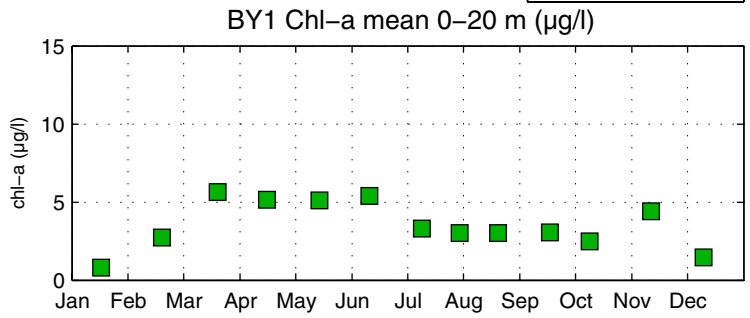
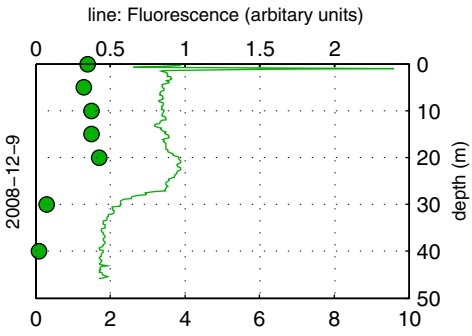
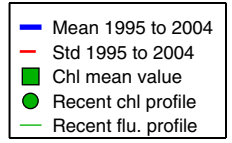
# The Skagerrak



# The Kattegat and the Sound

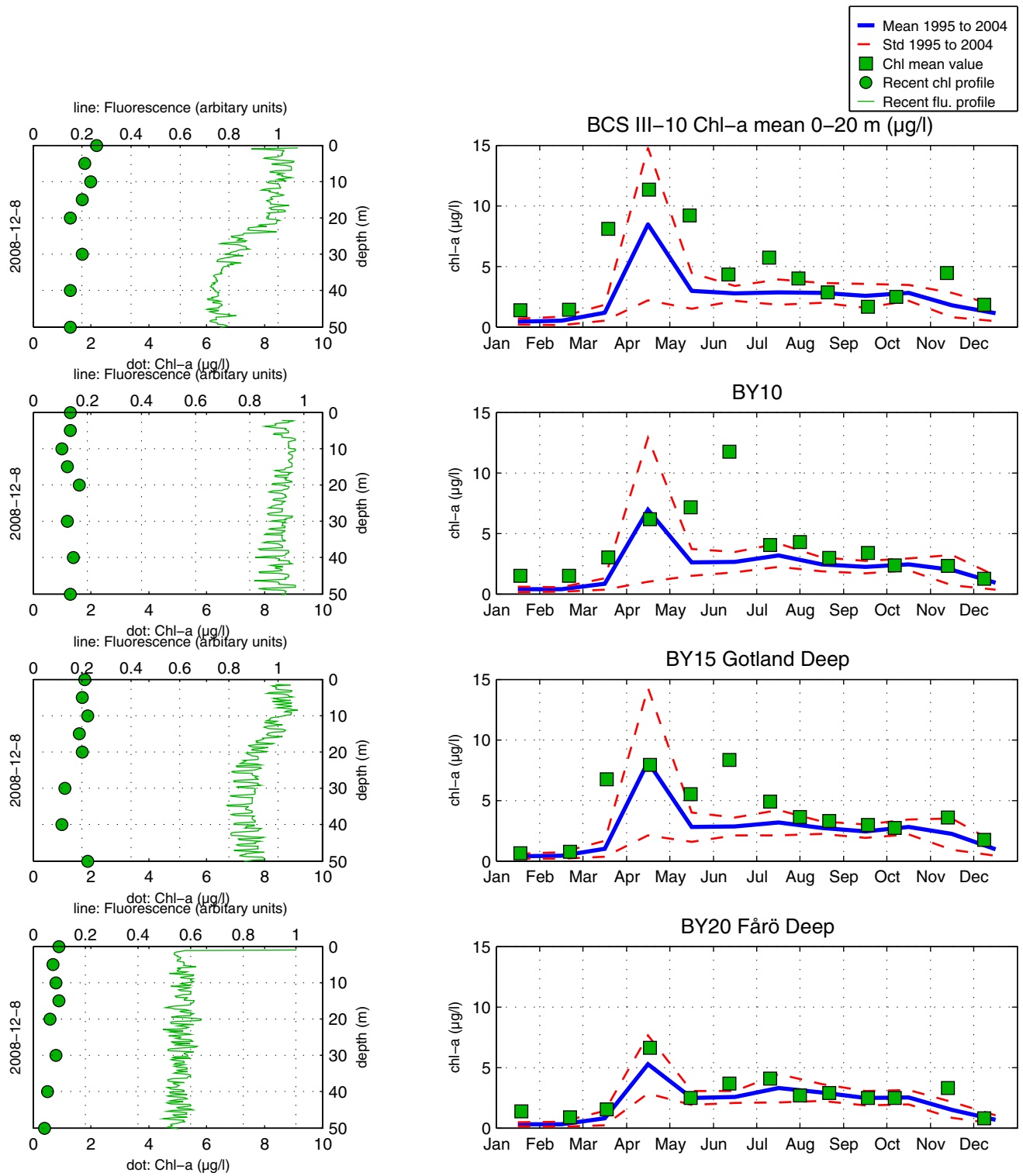


# The Southern Baltic

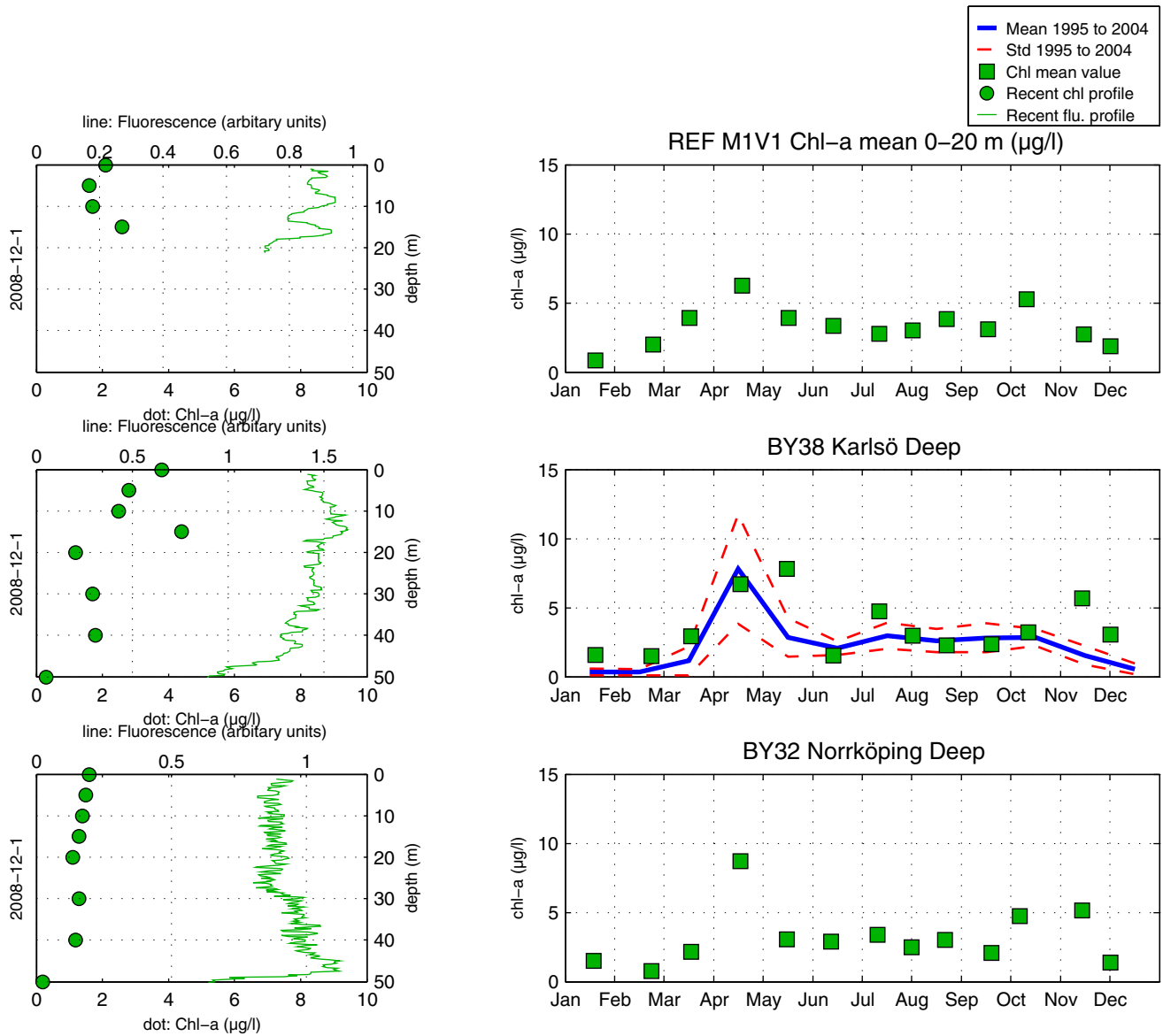




# The Eastern Baltic



# The Western Baltic



## 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 lager 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.

