Oceanographic Unit

AlgAware

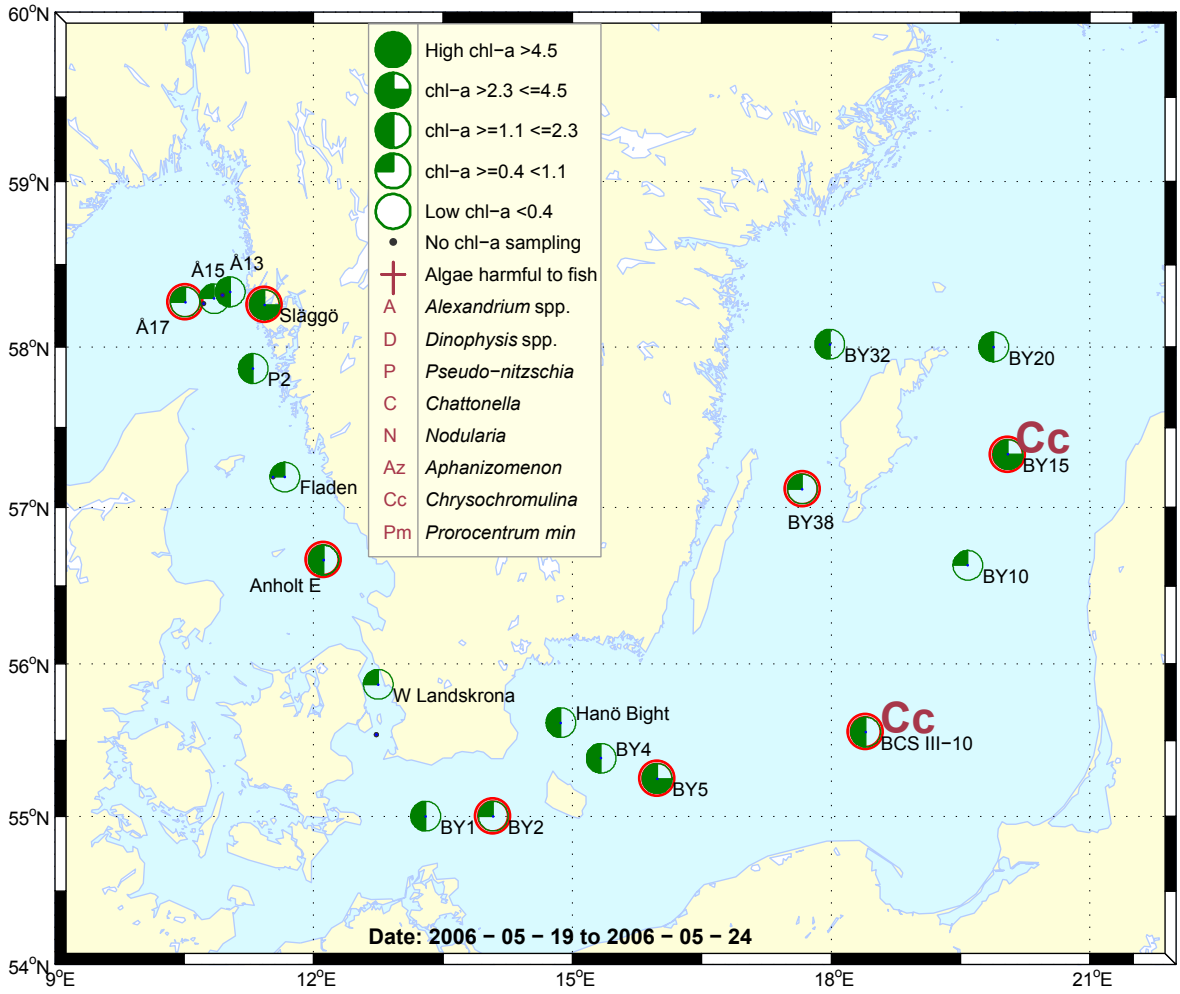
ALGAL SITUATION IN
MARINE WATERS SURROUNDING SWEDEN

No 5, 19– 23 May 2006

Sammanfattning

Kiselalger dominerade planktonfloran i öppna **Skagerrak**, med framför allt *Leptocylindrus danicus*. En annan kiselalg, *Skeletonema costatum* dominerade i provet från Skagerraks kuststation, där klorofyll-halten låg över medel för denna månad. I **Kattegatt** var skillnaden stor mellan de två provtagningstillfällena. Vid det första var provet mycket glest med nästan inga kiselalger. Vid det andra tillfället dominerade kiselalger, med framför allt *S. costatum*. Dinoflagellaten cf. *Karlodinium micrum* var vanlig både i Skagerrak och Kattegatt.

I Östersjön dominerade små arter med och utan flageller. Framför allt var det oidentifierade cyanobakterier i kolonier som dominerade. Både dinoflagellater och kiselalger var fåtaliga.



Abstract

The plankton flora in the open **Skagerrak** was dominated by diatoms, and *Skeletonema costatum* was the most abundant. Another diatom, *Leptocylindrus danicus* dominated in the coastal area of **Skagerrak**. The chlorophyll *a* concentration was above average. The two **Kattegat** sampling occasions differed a lot. At the first occasion the flora was poor and diatoms were practically absent. At the second occasion, diatoms dominated with the most dominant species being *S. costatum*. The dinoflagellate cf. *Karlodinium micrum* was common both in the Skagerrak and the Kattegat areas.

In the Baltic, small flagellated and unflagellated species dominated the plankton flora. Most abundant were small unidentified colonized cyanobacteria of several different species. Both dinoflagellates and diatoms were scarce.

Art / Species	Gift / Toxin	Eventuella symptom
Alexandrium spp.	Paralytic shellfish poisoning (PSP)	**Milda symptom:** Inom 30 minuter: Stickningar eller en känsla av bedövning runt läpparna, som kan spridas 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.
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
Chattonella spp.	Fiskgift	**Låg celltäthet:** Ingen påverkan. **Hög celltäthet:** Fiskens gälar skadas, fisken dör.
Chrysochromulina spp.	Fiskgift	**Låg celltäthet:** Ingen påverkan. **Hög celltäthet:** Fiskens gälar skadas, fisken dör.
Pseudo- nitzschia spp.	Amnesic shellfish poisoning (ASP)	**Milda symptom:** Efter 3-5 timmar: yrsel, illamående, kräkning, diarré, magkramp **Extrema symptom:** Yrsel, hallucinationationer, förvirring, förlust av korttidsminnet, kramper

Tabell: Översikt over potentiellt skadliga alger och det aktuella giftets effekt. (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. DSP = Diarréframkallande skaldjursförgiftning, PSP = Paralyserande skaldjursförgiftning, ASP = Amnesisk skaldjursförgiftning.

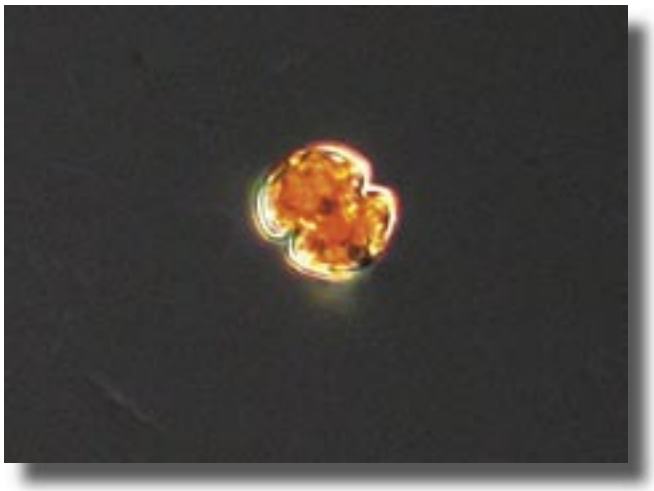
The map on the front page shows weighted mean of Chlorophyll *a*, µg/l (0-20 m) at sampling stations. Presence of harmful algae at stations where species analysis is performed is shown with a symbol. DSP = Diarrhetic Shellfish poisoning, PSP = Paralytic Shellfish poisoning, ASP = Amnesic Shellfish poisoning

Details

The Skagerrak

Å17 19th of May
Diatoms still dominated the plankton flora with the most abundant species being *Leptocylindrus danicus*. A few species of dinoflagellates were observed and the most common was cf. *Karlodinium micrum*. As the cf. implies, the identification is uncertain. The amount of chlorophyll *a* was lower than average this month.

Släggö 19th of May
Chlorophyll *a* concentration was above average, which partly was caused by *Skeletonema costatum*, the most abundant diatom at this station. A relatively big amount of the small flagellate *Pyramimonas* sp. was observed, as well as the dinoflagellate cf. *Karlodinium micrum*.



cf. *Karlodinium micrum*

The Kattegat

Anholt E 20th and 24th of May
Very few diatoms were present in the sample from the earliest date. In fact the sample was extremely poor altogether. Even here, as in the Skagerrak samples, cf. *K. micrum* was common. The potentially toxic dinoflagellate *Dinophysis norvegica** was observed close to its critical limit.

The analysis of the second sample occasion was different. Species wise, the number of diatoms equalled the number of dinoflagellates. Diatoms though were much more abundant with a domination of *S. costatum* and *Cylindrotheca closterium*. Cf. *K. micrum* was still present with approximately the same abundance. The chlorophyll *a* concentration was higher the second occasion.

Selection of observed species	Recommended limit	Å17 2006-05-19 Cells/L	Släggö 2006-05-19 Cells/L	Anholt E 2006-05-20 Cells/L	Anholt E 2006-05-24 Cells/L
Chaetoceros subtilis					present
Cylindrotheca closterium		83000			190000
Leptocylindrus danicus		150000		present	present
Proboscia alata					present
Skeletonema costatum		common	190000		590000
Dinophysis acuminata	900 cells/liter			870	
Dinophysis acuta	300 cells/liter		present		
Dinophysis norvegica	2000 cells/liter	490	1400	1740	present
Phalacroma rotundatum	900 cells/liter		present		
Karlodinium micrum		42000	203000	78000	87000
Peridiniella danica		present	present	30000	present
Protoperidinium brevipes				present	
Pyramimonas sp.		59000	311000	present	28000
Chrysochromulina spp	no recommendation	7000	10000		10000

The Baltic Sea

Arkona Deep BY2 21st of May

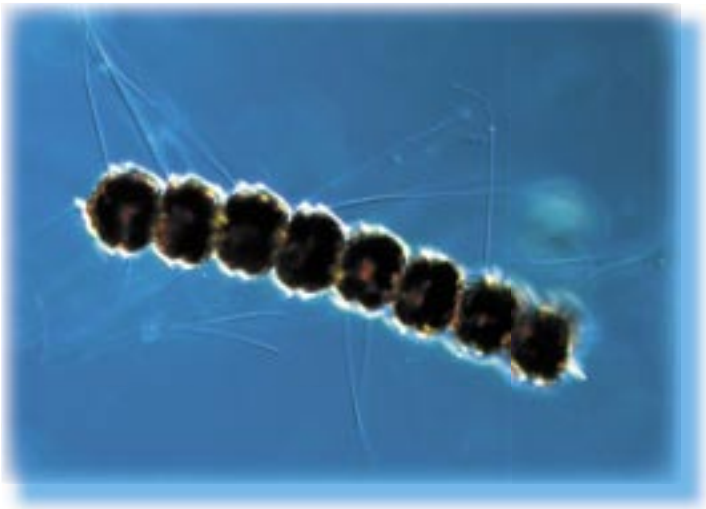
Diatoms and dinoflagellates were almost absent. Instead the sample was dominated by small flagellated and unflagellated species. Unidentified colonized cyanobacteria of several different species, the smallest being 1µm in diameter and the biggest about 5µm were the most abundant. In addition *Chrysochromulina* spp* was common, as were *Dinobryon faculiferum* and *D. balticum*. A few filaments of the cyanobacterium *Aphanizomenon* sp. were observed. Despite of the high abundance of small species the chlorophyll *a* concentration was below average this month.

Bornholm Deep BY5 21st of May

As opposed to the Arkona Deep, the chlorophyll *a* concentration was above average at the Bornholm Deep. Approximately the same species composition was observed, but the cell numbers were higher.

The South East Baltic BCS III-10 21st of May

Small species, as small colonized cyanobacteria and *Chrysochromulina* spp* were the most abundant, but in addition there were a number of dinoflagellates present at this station. Two species of *Dinophysis** were observed, *D. acuta** being close to its critical limit. The chlorophyll *a* concentration was below average.



Peridiniella catenata

Gotland Deep BY15 22nd of May

A similar situation as the previous was a fact at this station, with some more species present, as the dinoflagellate *Peridiniella catenata*. The chlorophyll *a* concentration was close to average.

Karlsö Deep BY38 23rd of May

The flora was somewhat poorer at this station and the chlorophyll *a* concentration was below average. The abundance of small species was high though, and *D. acuta** was close to its critical limit. Two diatom species were present in low abundance.

Ann-Turi Skjevik

Selection of observed species	BY2 2006-05-21 cells/L	BY5 2006-05-21 cells/L	BCS III-10 2006-05-21 cells/L	BY15 2006-05-22 cells/L	BY38 2006-05-23 cells/L
Cerataulina pelagica		present			
Chaetoceros similis	present	present			
Skeletonema costatum	present				present
Dinophysis acuminata			present	392	
Dinophysis acuta			196	present	294
Katodinium glaucum			present		
Peridiniella catenata				present	18000
Protoperidinium bipes	present				
Dinobryon balticum	present	94000	55000	124848	present
Dinobryon faculiferum	present	388000		86700	present
Aphanizomenon sp.	present		present	present	present
Cyanophyceae spp_colony	5.4 million	8 million	2 million	4.2 million	1.4 million
Chrysochromulina spp	28000	10000	70000	70000	27000
Pyramimonas sp.	present		128000	270000	present
Choanoflagellidea spp	present	present	34000	present	present
Oocystis spp	present	present		present	

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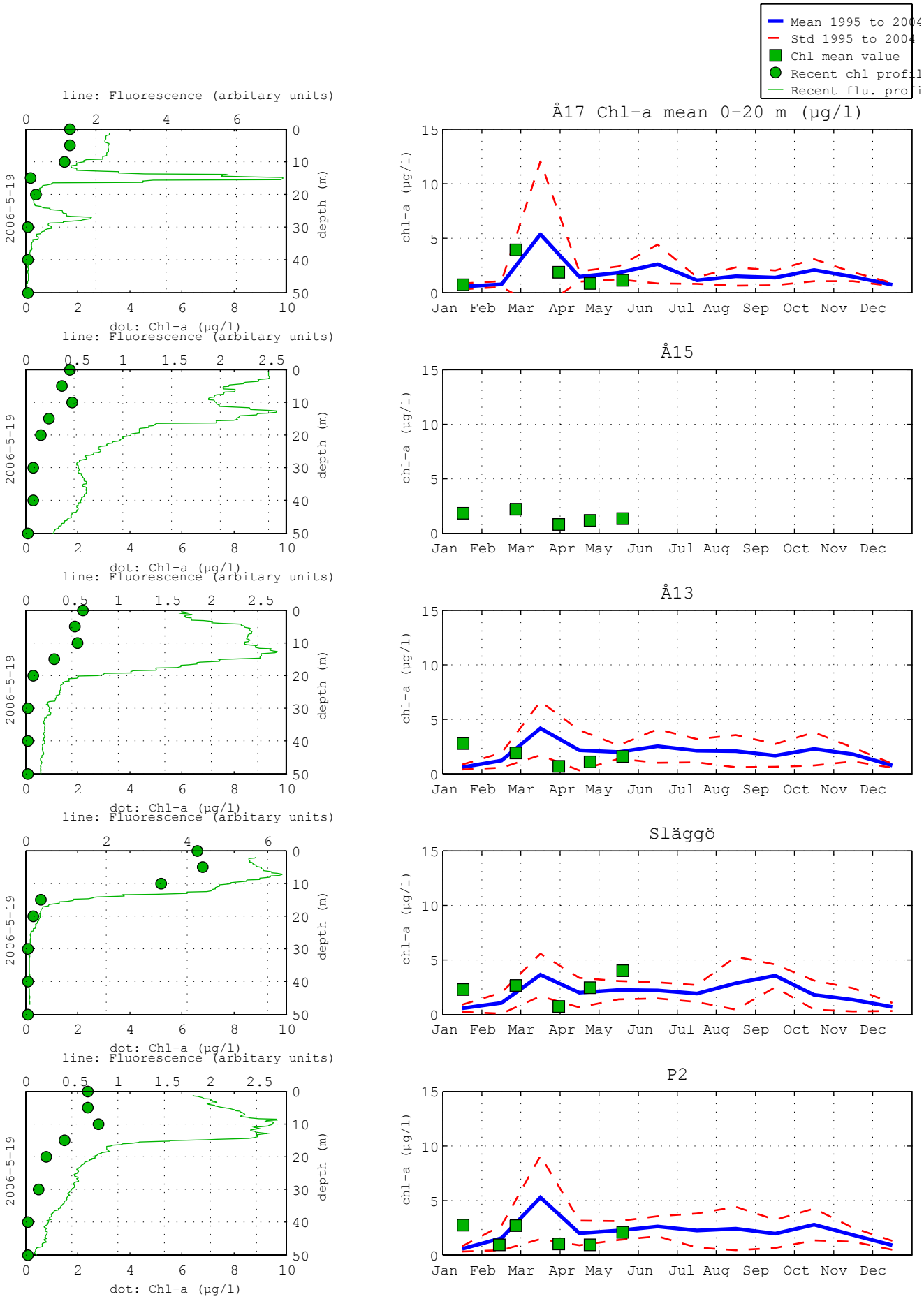
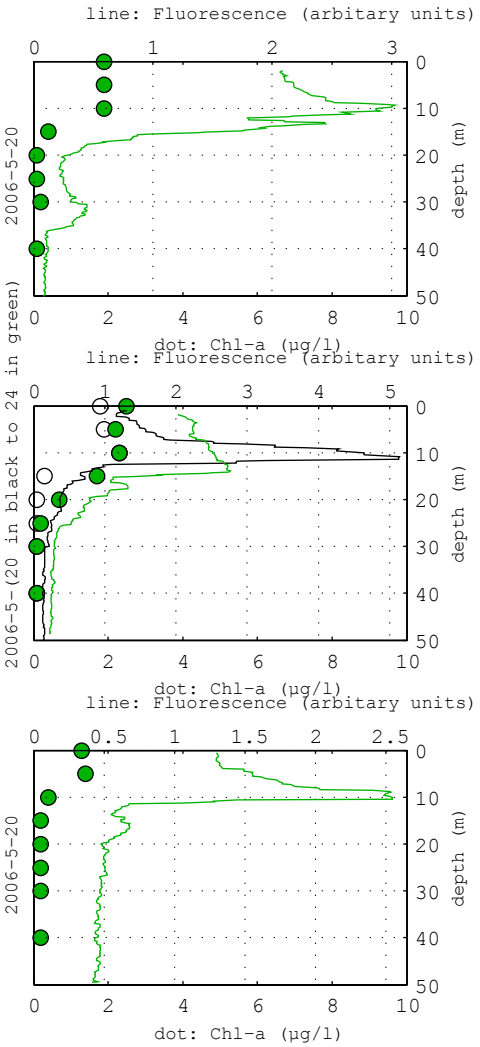
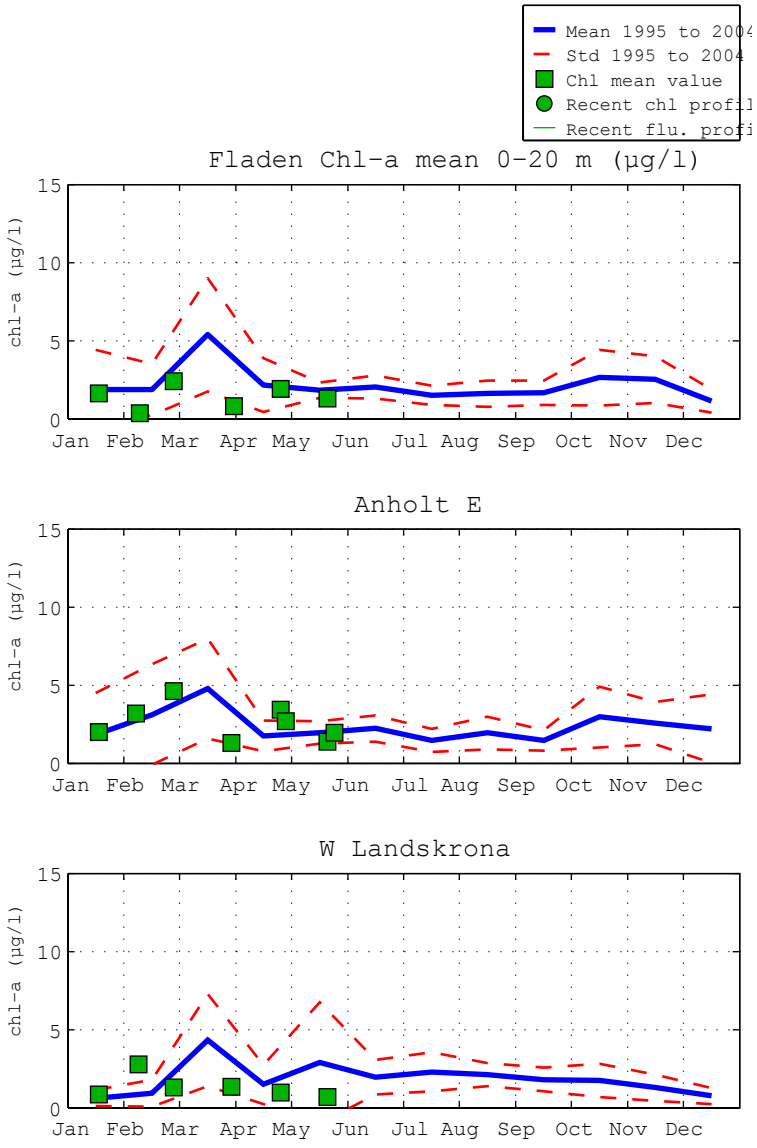
The Skagerrak

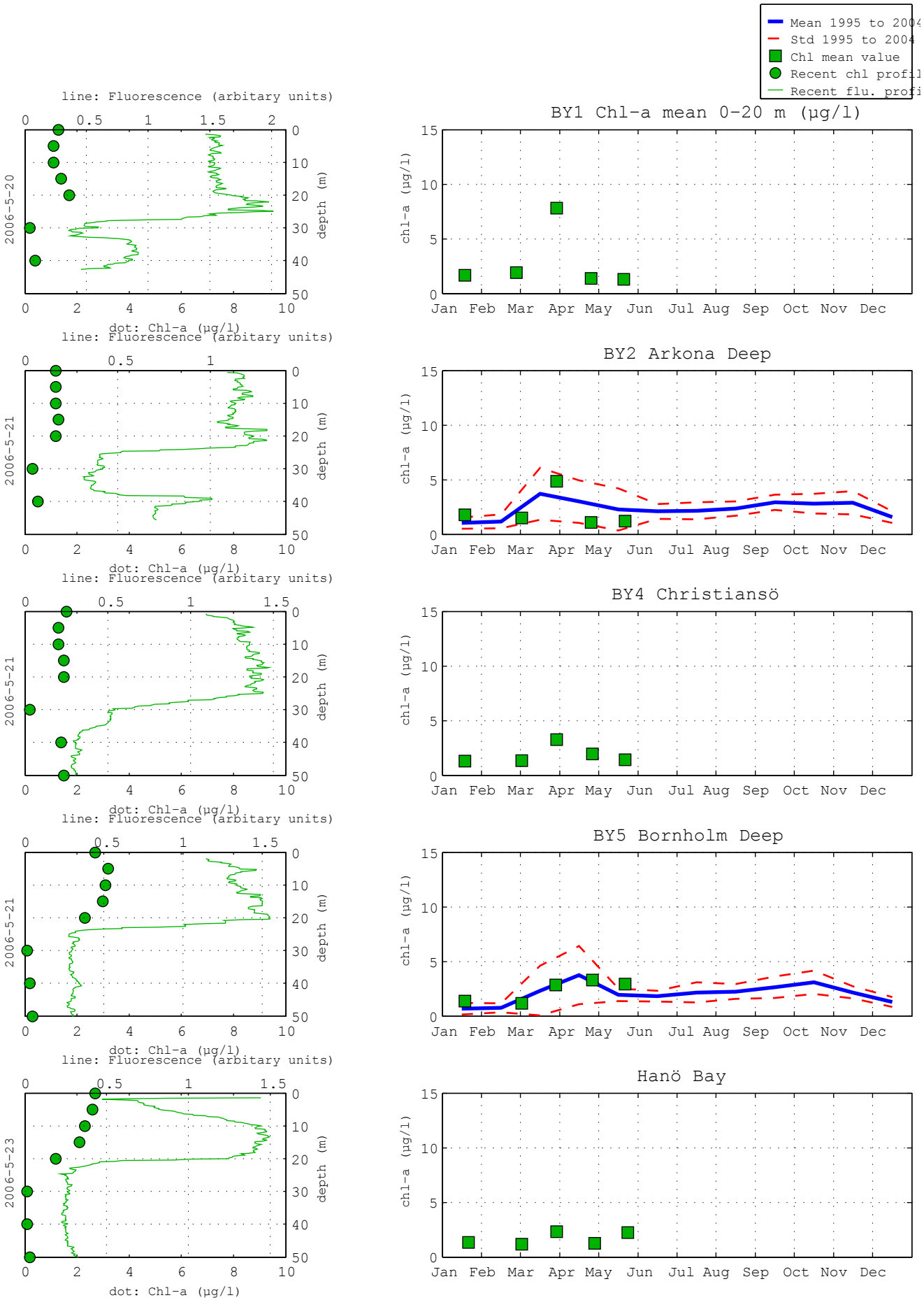


The Kattegat and the Sound

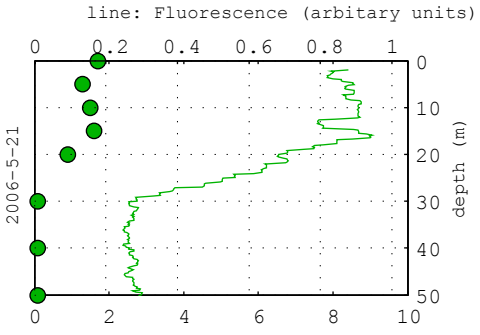


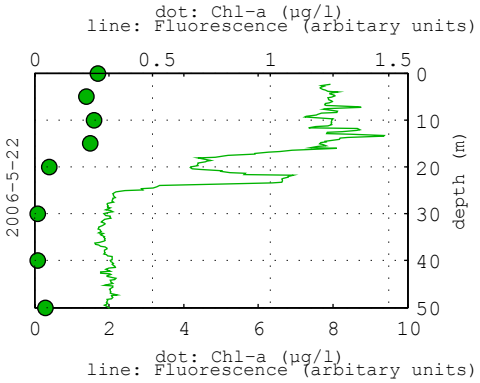


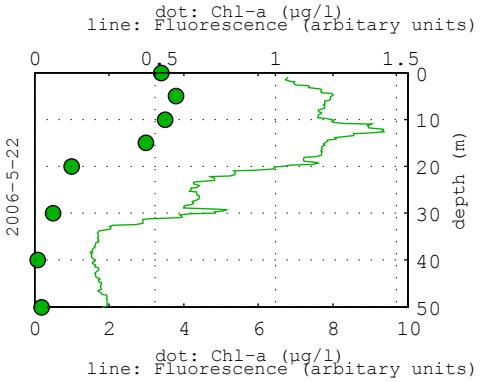
The Southern Baltic

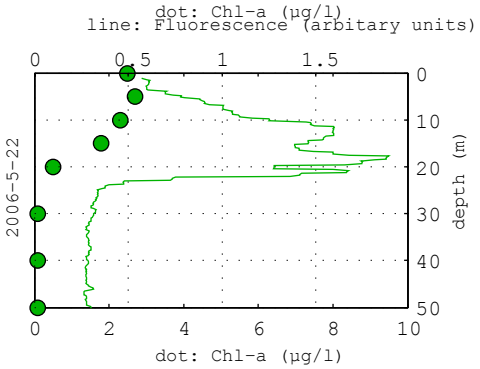


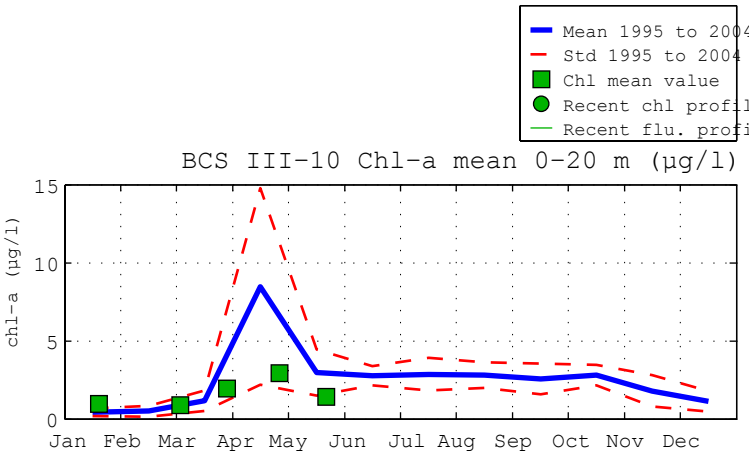
The Eastern Baltic

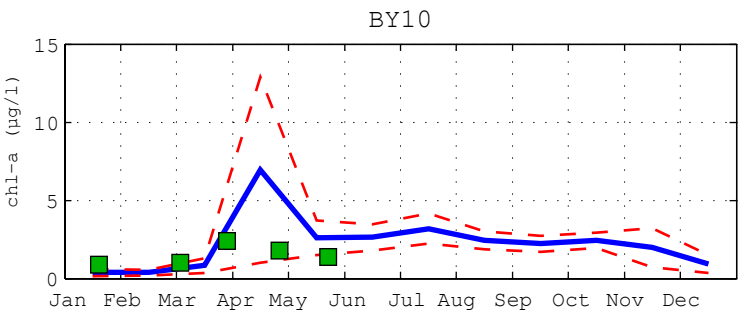


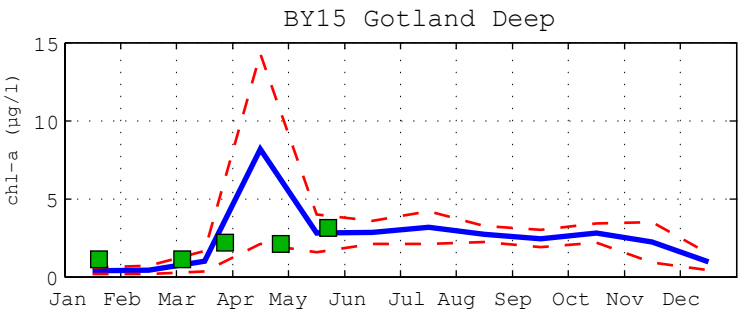


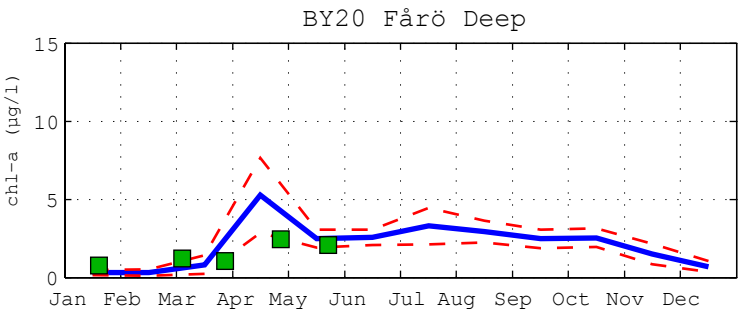












The Western Baltic