SMHI
Oceanographic Unit
No 1, 28 Jan – 4 Feb 2013

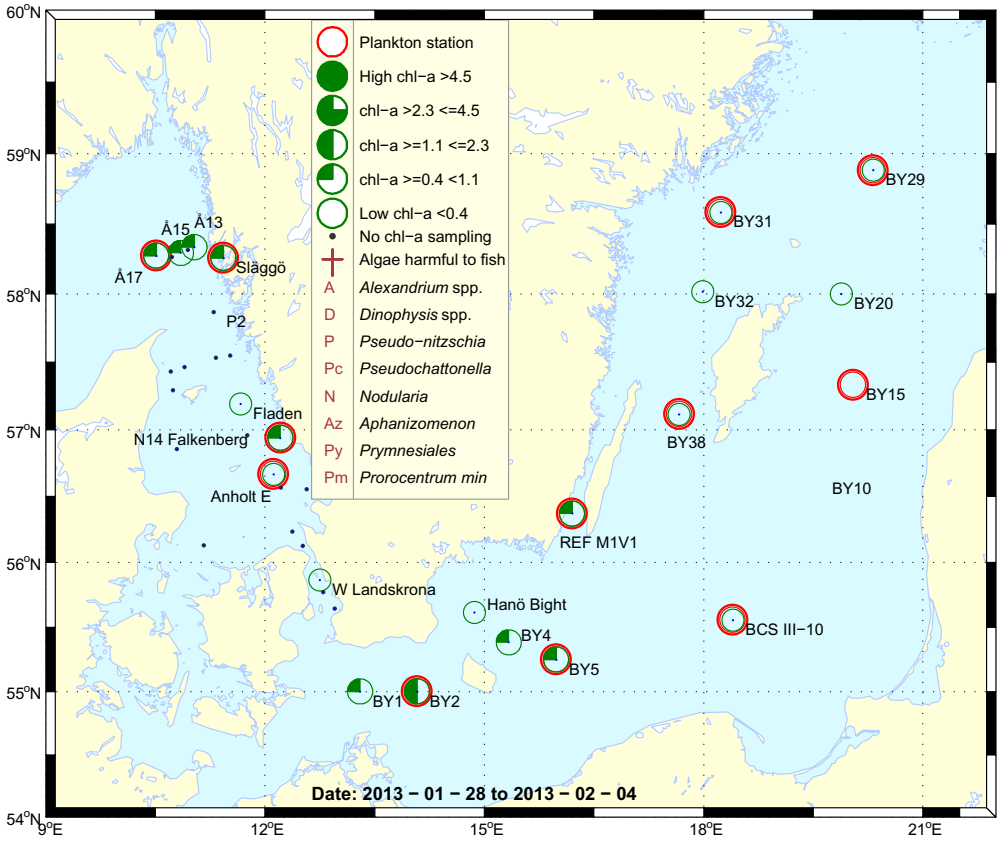
AlgAware
ALGAL SITUATION IN
MARINE WATERS SURROUNDING SWEDEN

**Sammanfattning**
Det var låga cellkoncentrationer vid alla i provtagningsstationer i både Västerhavet och Östersjön. Artdiversiteten var betydligt högre i Västerhavet än i Östersjön. Artdiversitet var högre bland dinoflagellater jämfört med kiselalger, men det verkar som om kiselalgsblomningen trots detta kan vara på gång.

*Skeletonema marinoi* var vanligt förekommande väster om Ölands södra udde (REF M1-W1). I övrigt var det framförallt cryptomonader och *Mesodinium rubrum* som dominerade på alla stationer i Östersjön.

De integrerade (0-20 m) klorofyll *a* värdena var inom det normala för månaden i alla provtagningsområden.

Rapporten är en förkortad version på grund av brist på händelser i växtplanktonvärlden.

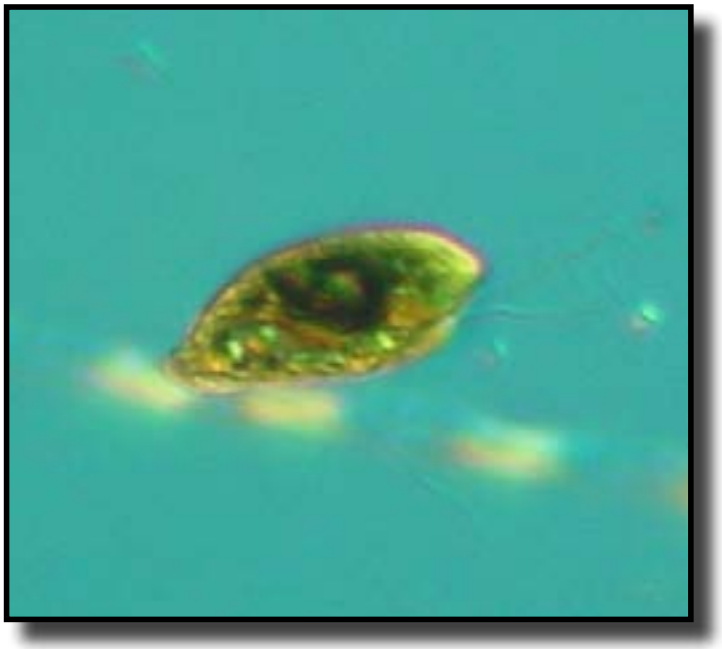



**Abstract**
The cell concentrations were low in all sampling stations at the Swedish West coast and in the Baltic Sea. The species diversity was higher in the Kattegat and Skagerrak areas than in the Baltic Sea. The species diversity was highest among the dinoflagellates although it seems like the diatom spring bloom could start very soon.

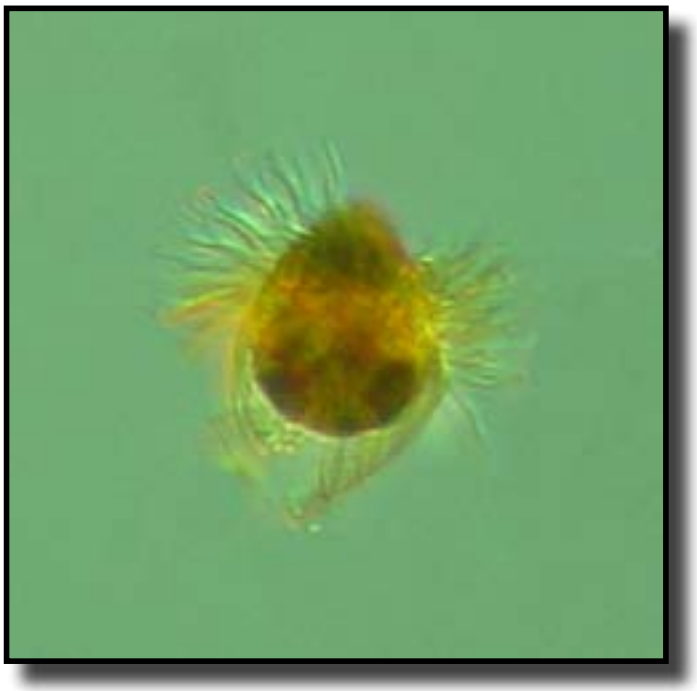
*Skeletonema marinoi* was common southwest of Öland (REF M1-W1) and Cryptomonads and *Mesodinium rubrum* dominated at all sampling stations in the Baltic Sea.

The integrated (0-20 m) chlorophyll *a* concentrations were within average for this month in all sampling areas.

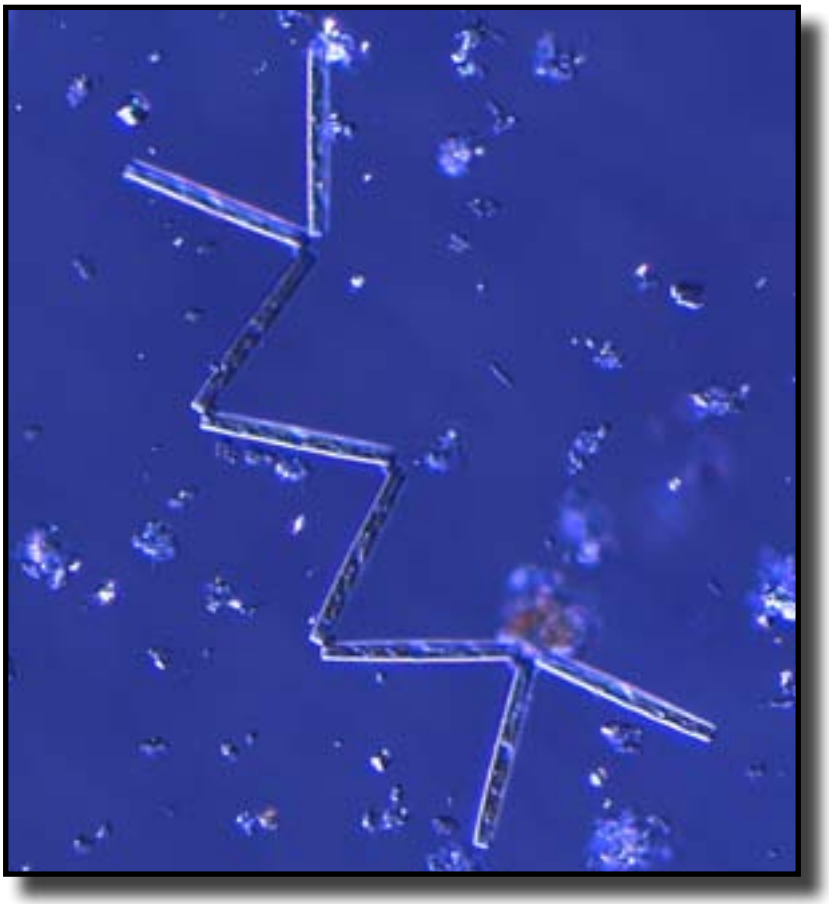
This report is a shortened version because of lack of events in the phytoplankton world.



Cryptomonads dominated in the samples from the Baltic phytoplankton stations, photo: Ann-Turi Skjevik.



The ciliate *Mesodinium rubrum* was one of few common species in the Baltic Sea samples, photo: Ann-Turi Skjevik.



The diatom *Thalassionema nitzschioides* was found in the Kattegat samples, photo: Ann-Turi Skjevik.

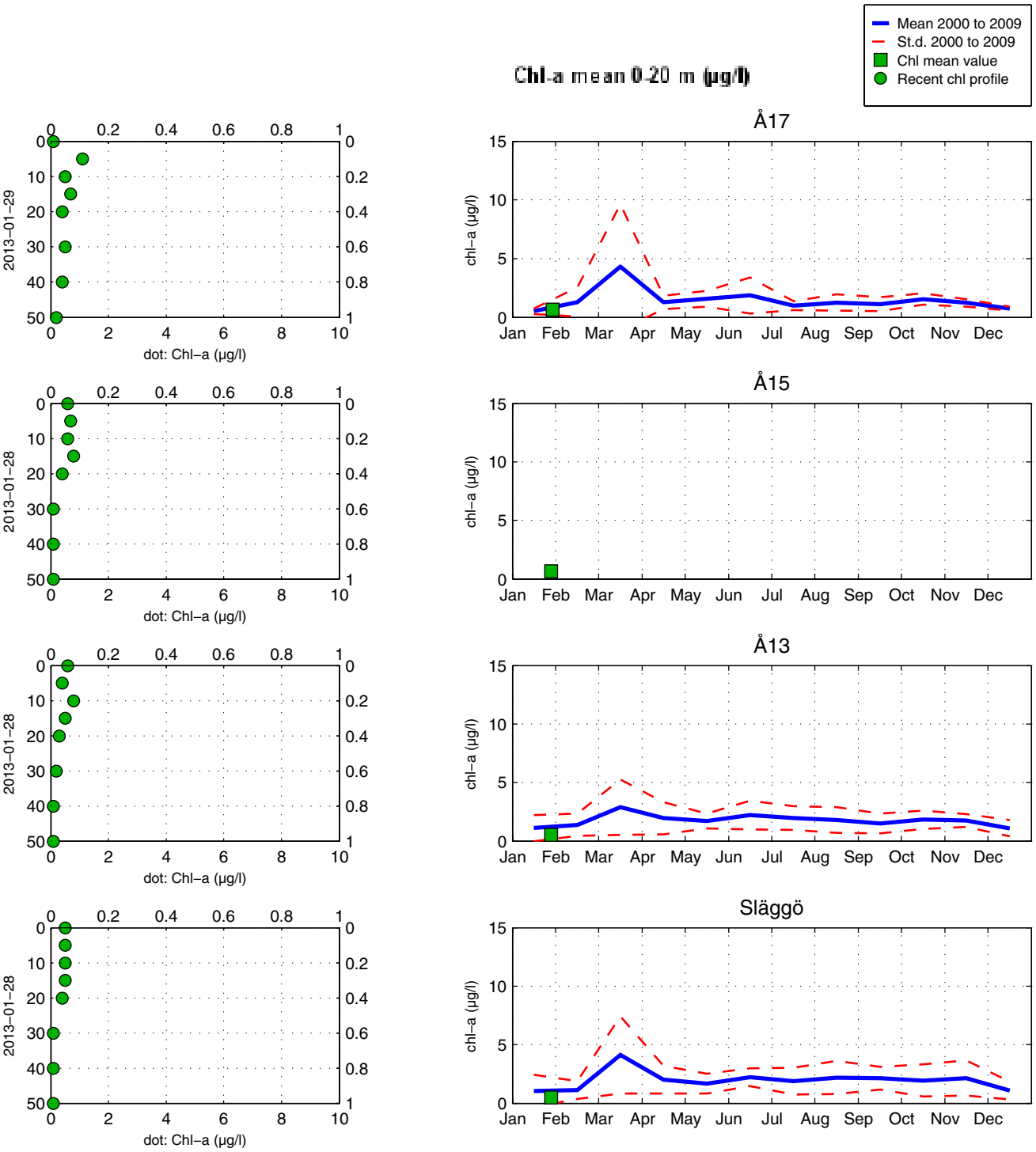
The dinoflagellate *Ceratium tripos*, photo: Marie Johansen.

Phytoplankton analysis and text by:
Malin Mohlin and Marie Johansen

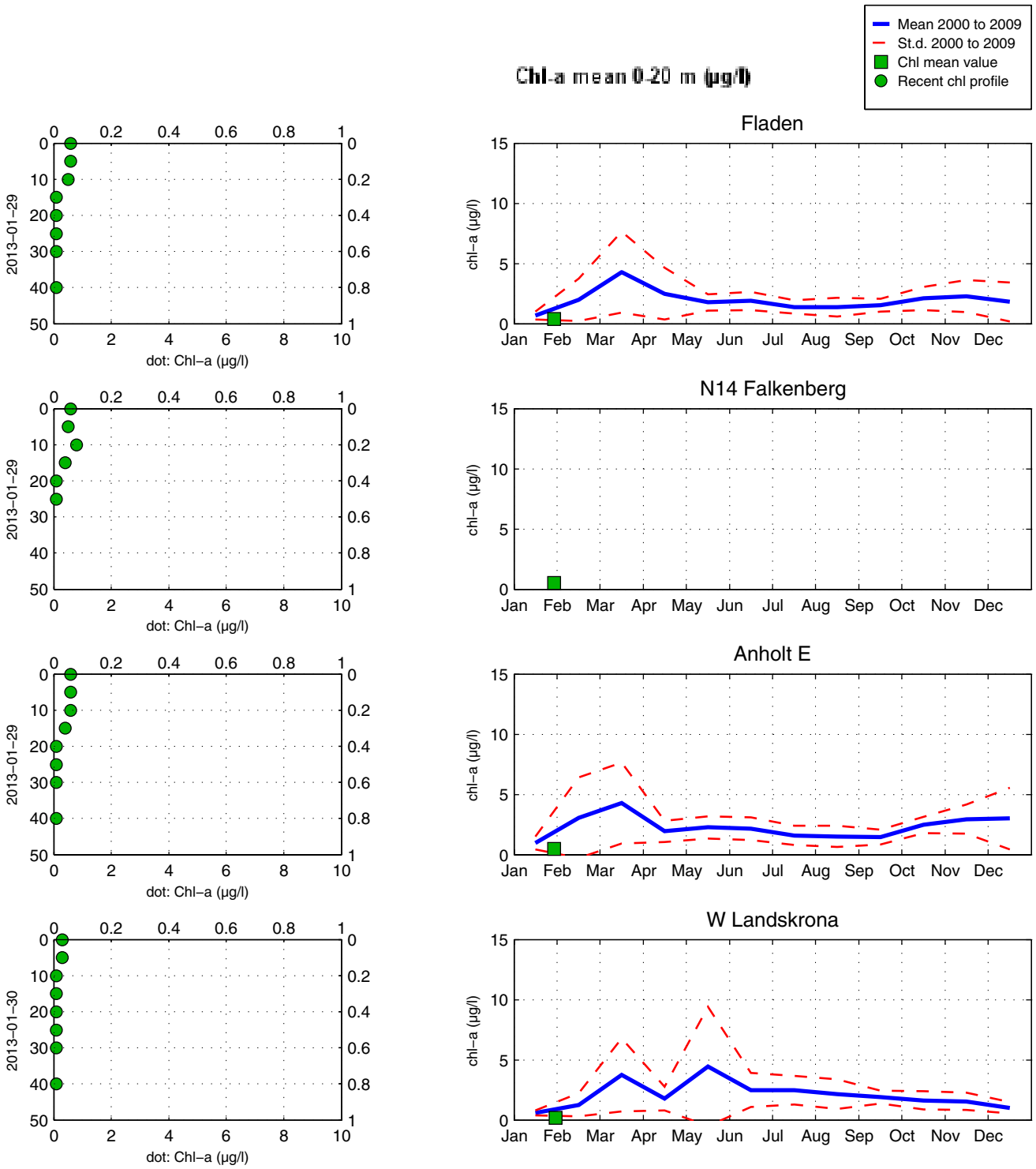
| Selection of observed species | Anholt E | N14 Falkenberg | Släggö | Å17 |
|---|---|---|---|---|
| Red=potentially toxic species | 29/1 | 29/1 | 28/1 | 29/1 |
| Hose 0-10 m | cells/l | cells/l | cells/l | cells/l |
| *Navicula* spp | | | present | present |
| *Skeletonema marinoi* | present | present | present | |
| *Thalassionema nitzschioides* | present | present | present | present |
| *Thalassiosira*spp | | | present | present |
| *Thalassiosira angulata* | | | present | |
| *Thalassiosira anguste-lineata* | present | | | |
| *Thalassiosira* cf. *angulata* | | | | present |
| *Thalassiosira minima* | present | | | |
| *Ceratium furca* | | | present | |
| *Ceratium fusus* | present | | present | |
| *Ceratium lineatum* | | present | | present |
| *Ceratium longipes* | present | | present | |
| *Ceratium tripos* | present | present | present | present |
| *Dinophysis norvegica* | present | | | |
| Gymnodiniales | present | present | | present |
| *Gyrodinium spirale* | | | present | |
| *Heterocapsa*spp | present | present | present | |
| *Heterocapsa rotundata* | | | | present |
| *Katodinium glaucum* | | | present | present |
| Peridiniales | | | | present |
| Cryptomonadales | present | present | present | present |
| *Plagioselmis*spp | present | | | |
| *Plagioselmis prolonga* | | present | present | present |
| *Teleaulax* spp | present | present | present | present |
| *Dictyocha speculum* | present | | | present |
| Prymnesiophyceae | | present | present | |
| *Telonema* spp | present | | | present |
| *Telonema subtile* | | present | | |
| Ciliophora | present | present | present | present |
| *Mesodinium rubrum* | present | | present | |
| *Pyramimonas* | present | | | |
| Flagellates | present | | | |

| Selection of observed species | BCS III-10 | BY2 Arkona | BY5 Bornholmsdj | BY15 Gotlandsdj | BY29 | BY29 | BY39 | REF M1-V1 |
|---|---|---|---|---|---|---|---|---|
| Red=potentially toxic species | 31/1 | 30/1 | 30/1 | 31/1 | 1/2 | 1/2 | 2/2 | 2/2 |
| Hose 0-10 m | Cells/l | Cells/l | cells/l | cells/l | cells/l | cells/l | cells/l | cells/l |
| *Chaetoceros*spp | | present | | | | | | |
| Centrales | present | | present | | | present | present | |
| *Skeletonema marinoi* | | | | | present | present | | common |
| *Thalassiosira*spp | present | | | | | | | |
| *Dinophysis acuminata* | | | | | present | | | |
| Gymnodiniales | present | present | present | | | present | | present |
| *Gyrodinium spirale* | | | | | | | present | |
| *Heterocapsa*spp | present | present | present | | | | | |
| *Protoperidinium*spp | present | | | | present | present | present | |
| *Aphanizomenon flos-aquae* | | | | | present | | | |
| cf. *Aphanothece* spp | | | present | | | | | |
| *Cyanodictyon* spp | | | present | | | | | |
| *Woronichinia elorantae* | present | | | | | | | |
| *Woronichinia*spp | | present | | | present | | | |
| Cryptomonadales | common | common | common | common | common | common | common | common |
| *Plagioselmis*spp | present | present | | present | present | present | | present |
| *Teleaulax*spp | present | present | present | present | present | present | present | present |
| *Dictyocha speculum* | present | | | | | | | |
| *Ebria tripartita* | | | | | | present | | |
| *Pyramimonas*spp | present | present | | | | | | |
| *Oocystis* spp | | | present | | | | | |
| Flagellates | present | present | | present | present | present | present | present |
| Ciliophora | present | present | present | | present | present | present | present |
| *Mesodinium rubrum* | common | common | common | common | common | common | common | common |

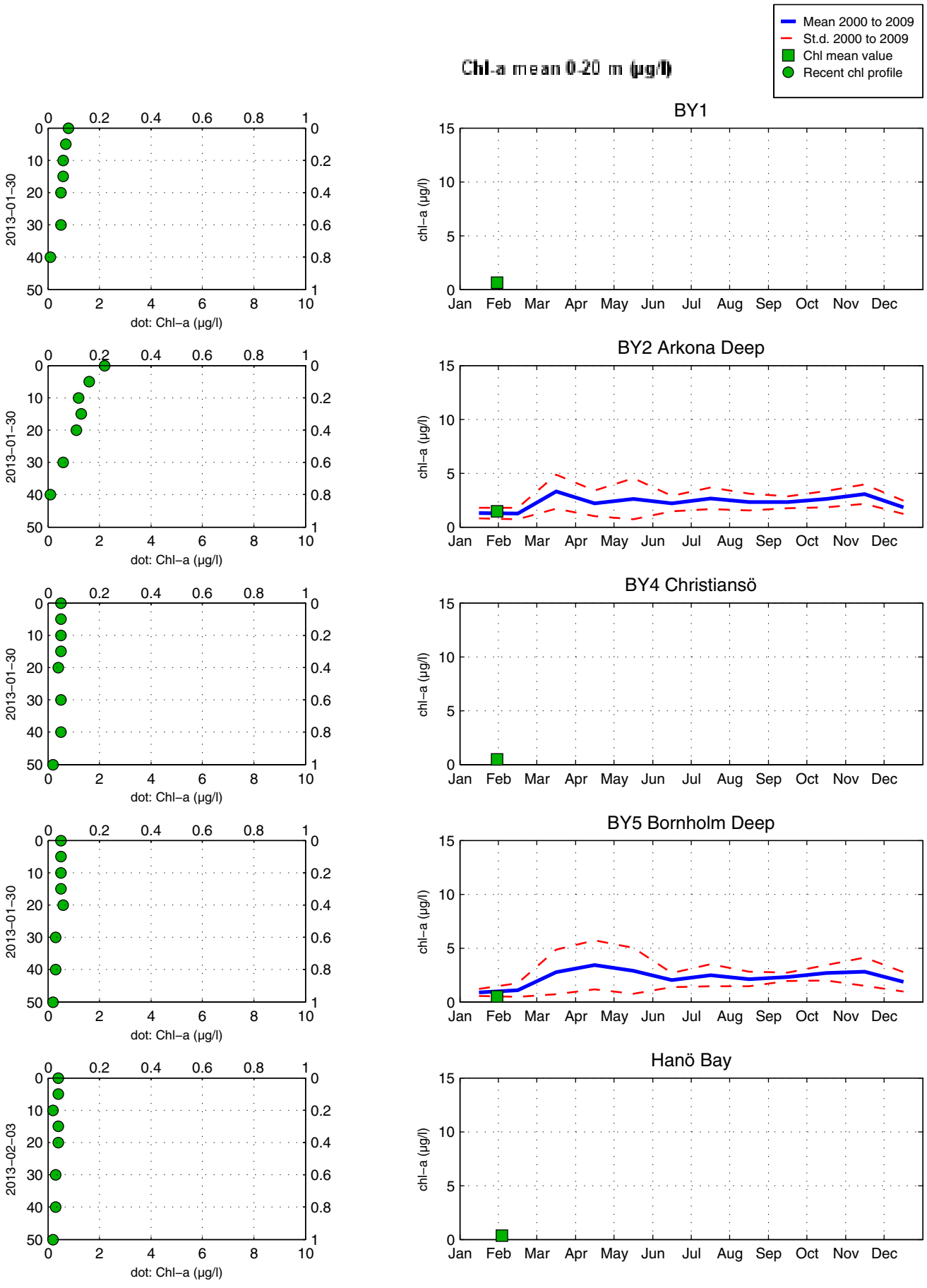
# The Skagerrak



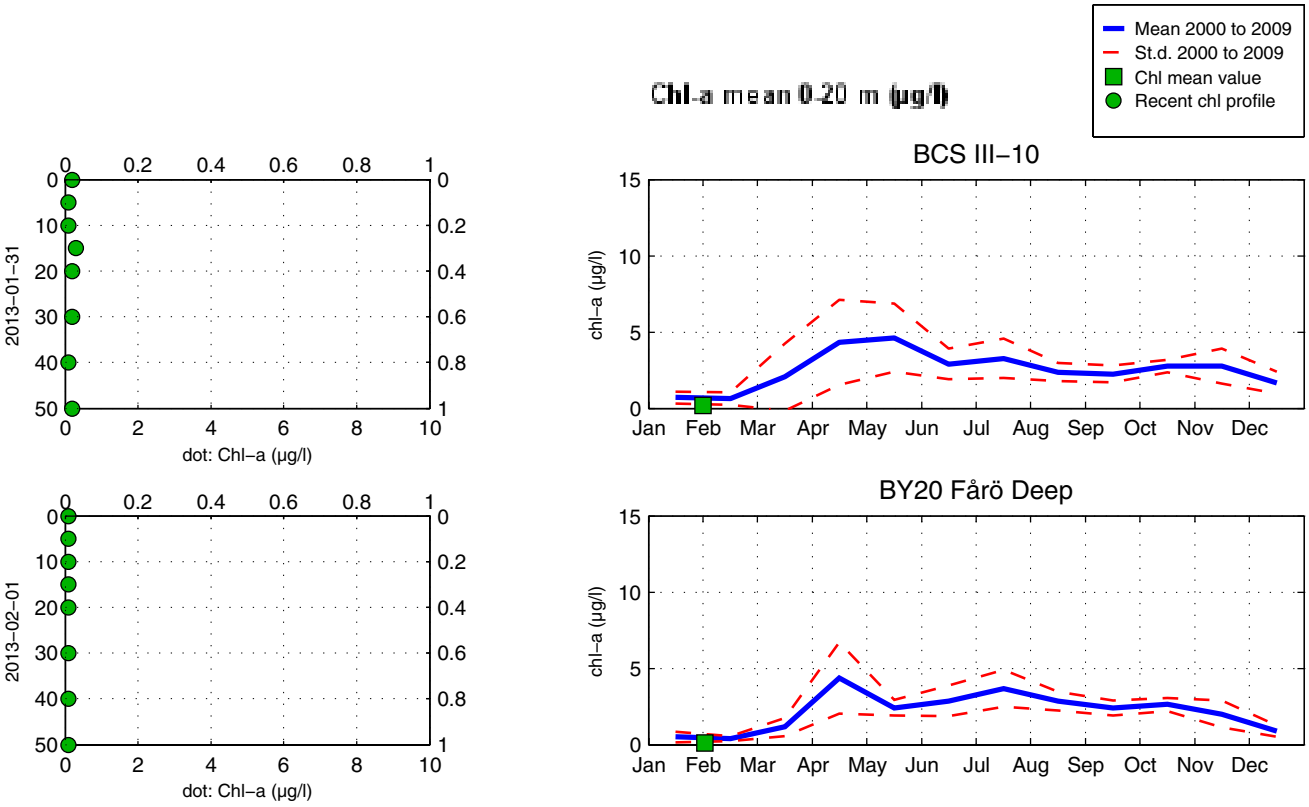
# The Kattegat and the Sound

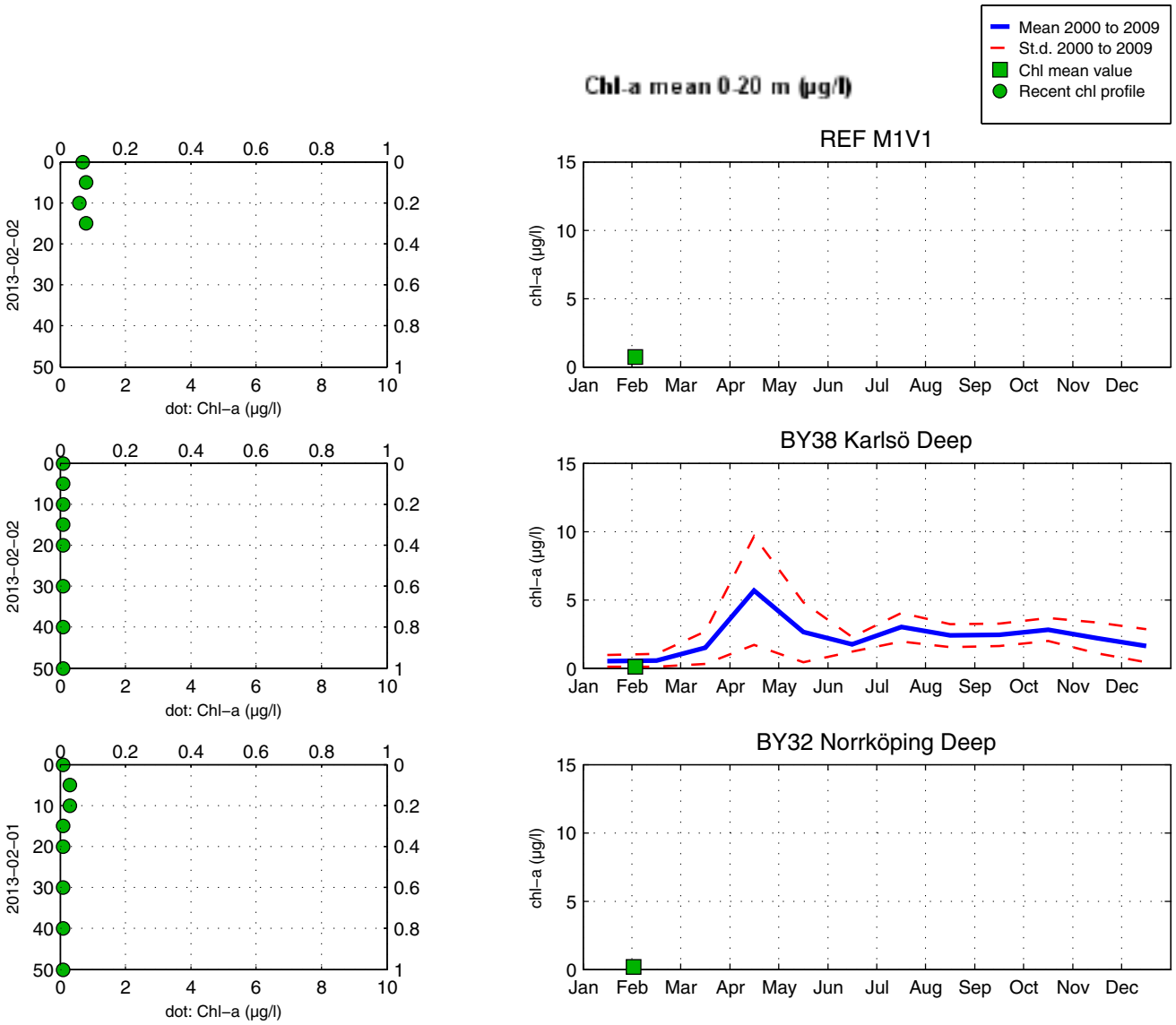


# The Southern Baltic



# The Eastern 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 layes of phytoplankton occuring below the surface.

## Om AlgAware

SMHI genomför ca en gång per månad expeditioner i Östersjön och Västerhavet. Resultat baserade på semikvantitativ mikroskopanalys av planktonprover samt klorofyllmätningar presenteras kortfattat i denna rapport. Information från SMHI:s satellitövervakning av algblomningar finns på 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.

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| Art / Species | Gift / Toxin | Eventuella symptom | Clinical symptoms |
|---|---|---|---|
| *Alexandrium* 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; headake, dizziness, nausea, vomiting, diarrhoea. **Extreme case** Muscular paralysis; pronounced respiratory difficulty; choking sensation; death trough respiratory paralysis may occur within 2-24 hours after ingestion. |
| *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 | **Mild case:** Within 30 min-a few hours: dizziness, nausea, vomiting, diarrhoea, abdominal pain. **Extreme case:** Repeated exposure may cause cancer. |
| *Pseudo- niztschia* spp. | Amnesic shellfish poisoning (ASP) | **Milda symptom:** Efter 3-5 timmar: yrsel, illamående, kräkningar, diarré, magkramper **Extrema symptom:** Yrsel, hallucinationationer, 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. |
| *Chaetoceros concavicornis/ C.convolutus* | Mechanical damage through hooks on setae | **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. |
| *Pseudochattonella* 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. |

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.