SMHI
Oceanographic Unit
No 1, January 2015

AlgAware
ALGAL SITUATION IN MARINE WATERS SURROUNDING SWEDEN

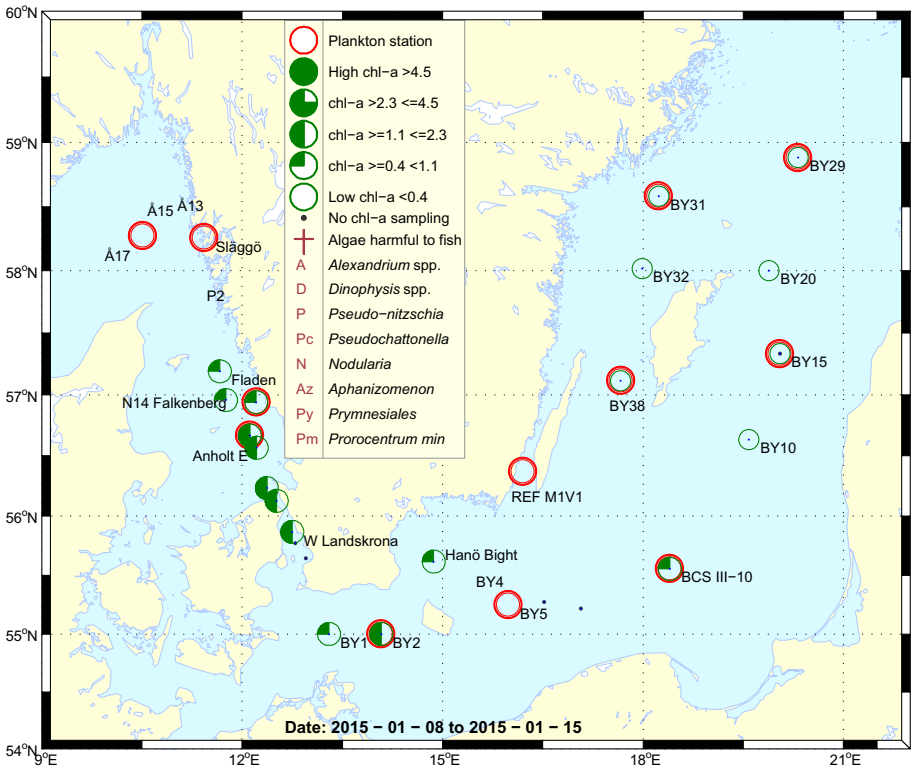
Sammanfattning

Vårens kiselalgsblomning hade startat vid den södra Kattegattstationen Anholt E. Stormen Egon hindrade provtagning i Skagerrak under denna expedition och flertalet stationer i Östersjön fick strykas av samma orsak.

I Östersjön var både artdiversiteten och celltätheten mycket låg vid alla besökta stationer.

De integrerade (0-10 m) klorofyll *a* värdena låg inom det normala för denna månad i de besökta havsområdena.

Fluorometern på ctdn var på service så inga fluorescensdata är med i klorofylldiagrammen på s 6 - 9.



Abstract

The diatom spring bloom had started at the southern Kattegat station, Anholt E. Due to the storm Egon, the January cruise could not visit the Skagerrak area this month, as well as several stations in the Baltic.

The species diversities and cell densities were very low in the Baltic Sea.

The integrated (0-10 m) chlorophyll *a* concentrations were normal for this month.

The ctd fluorometer was being serviced why there are no fluorescence data in the chlorophyll diagrams on p. 6 - 9.

More detailed information on species composition and abundance

The Skagerrak

Å17 (open Skagerrak) and Släggö (Skagerrak coast)
Due to the storm Egon the area was not visited at all during the expedition.

The Kattegat

Anholt E 12th of January
The diatom spring bloom had started at Anholt E. Diatoms dominated the phytoplankton community, *Skeletonema marinoi* and the potentially toxic genus *Pseudo-nitzschia* spp were very common and numerous.

The integrated (0-10 m) chlorophyll *a* concentrations were normal in the Kattegat for this month.

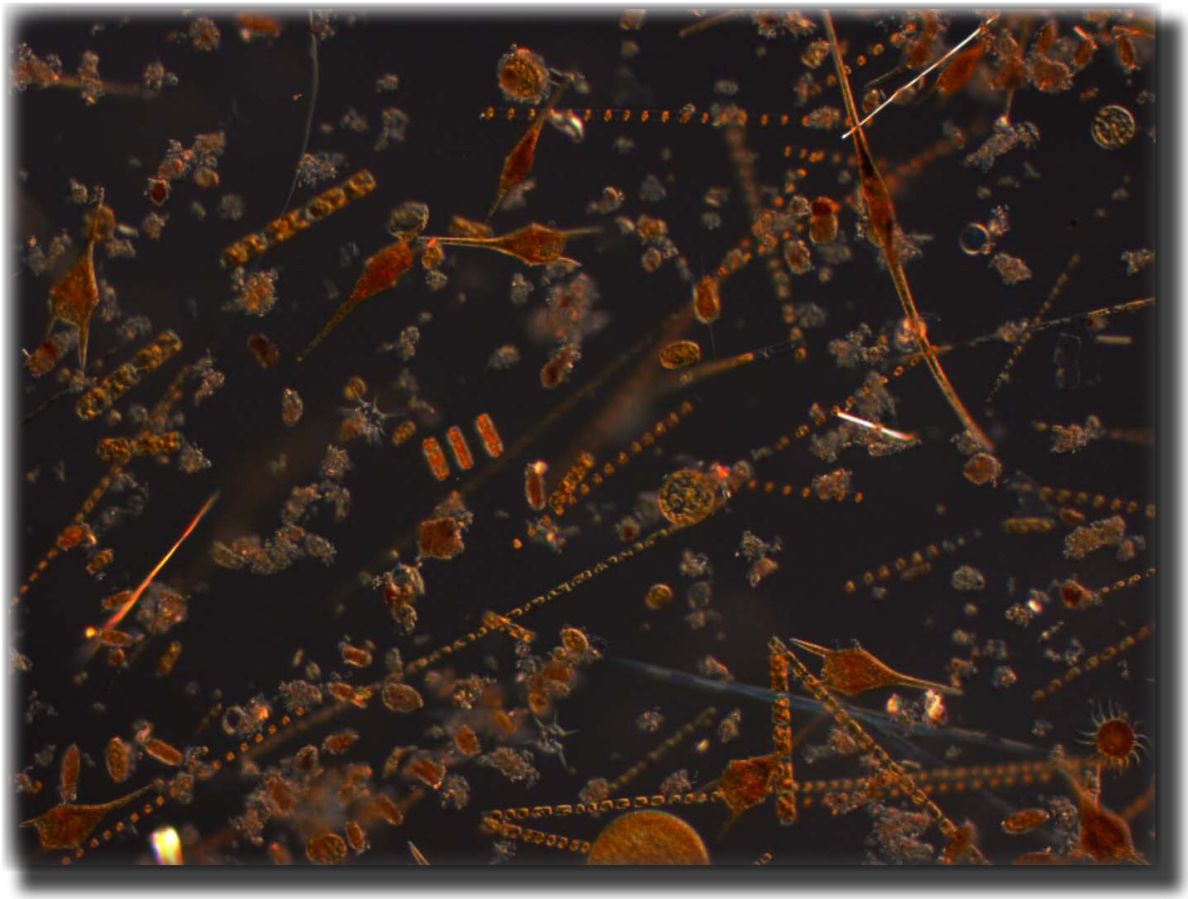


Fig.1 The spring bloom had already started in the southern part of the Kattegat area at the time of the January cruise.

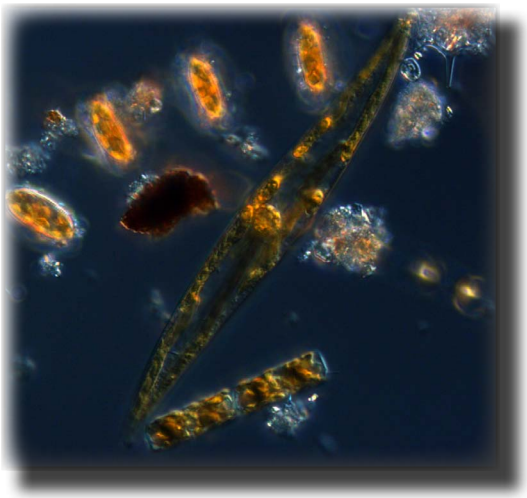


Fig.2. The beautiful phytobenthic diatom cf. *Gyrosigma* sp. visited the pelagic part of the station Anholt E.

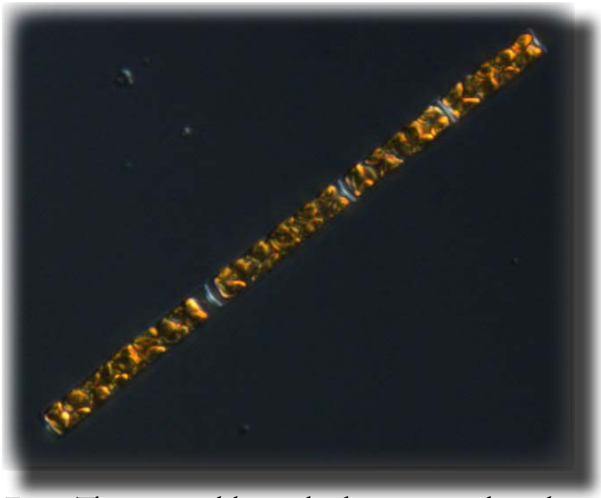


Fig.3 The spring bloom had not started in the northern part of the Kattegat and the diatom species L*eptocylindrus danicus* was rather alone in the sample from N14.

The Baltic Sea

The species diversity and cell densities were very low in the Baltic Sea. There were only a few cells of each of the species registered in Table 2.

The integrated (0-10 m) chlorophyll *a* concentrations were normal in the Baltic Sea for this month.

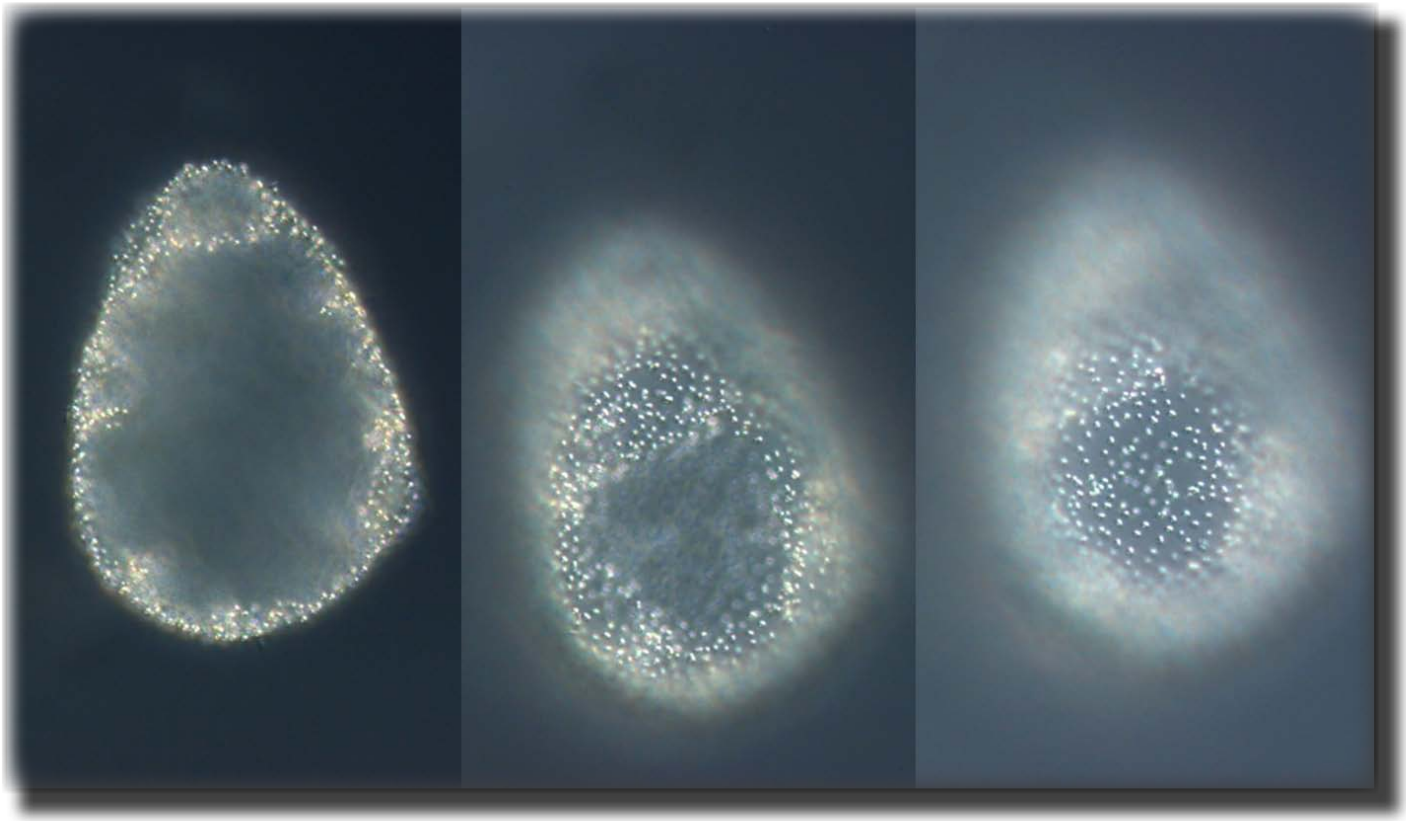
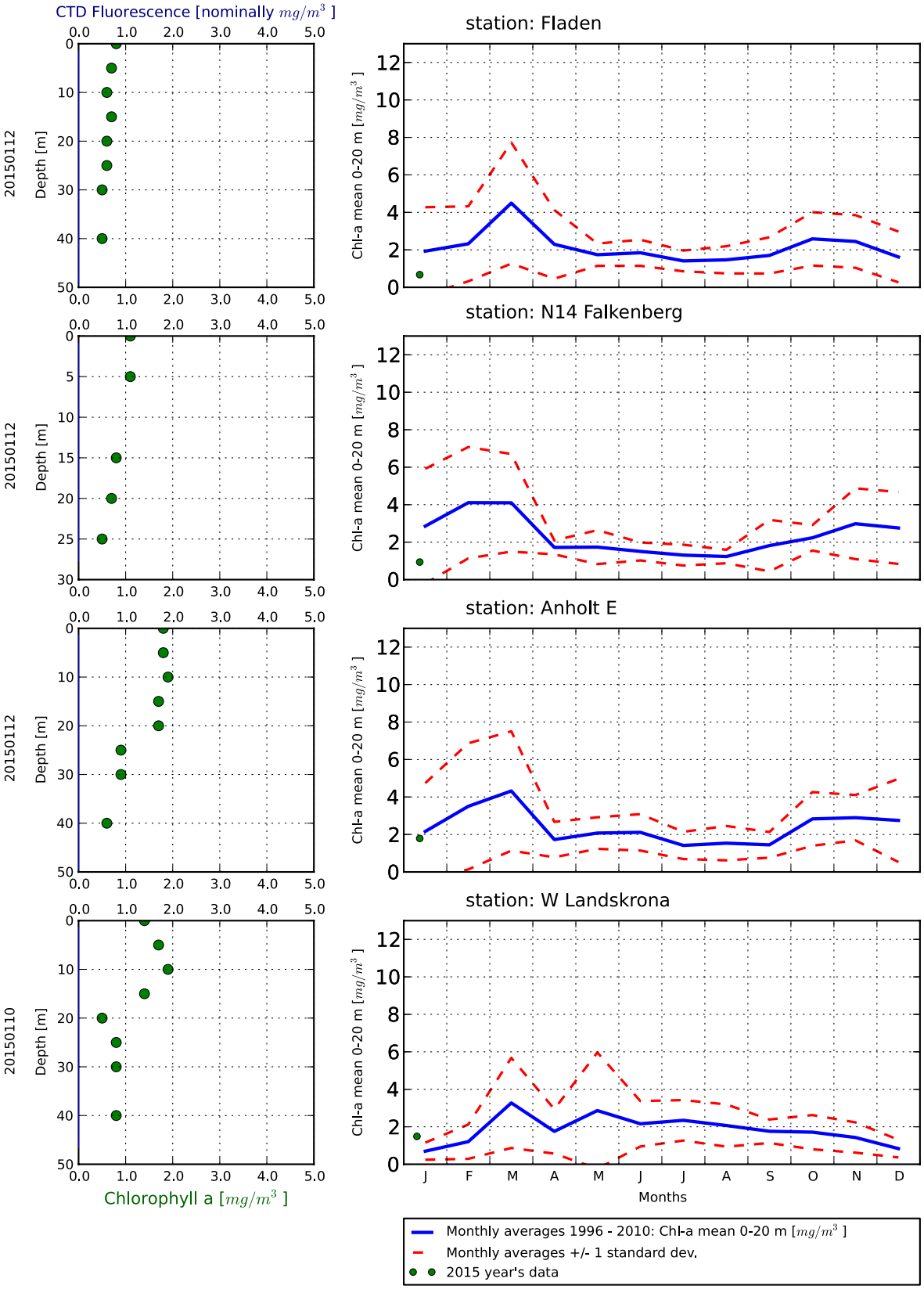


Fig.4 Very few cells were found in the Baltic Sea. This cyanobacterial colony, cf. *Aphanocapsa* sp., was found in BCSIII, the South East Baltic Sea.

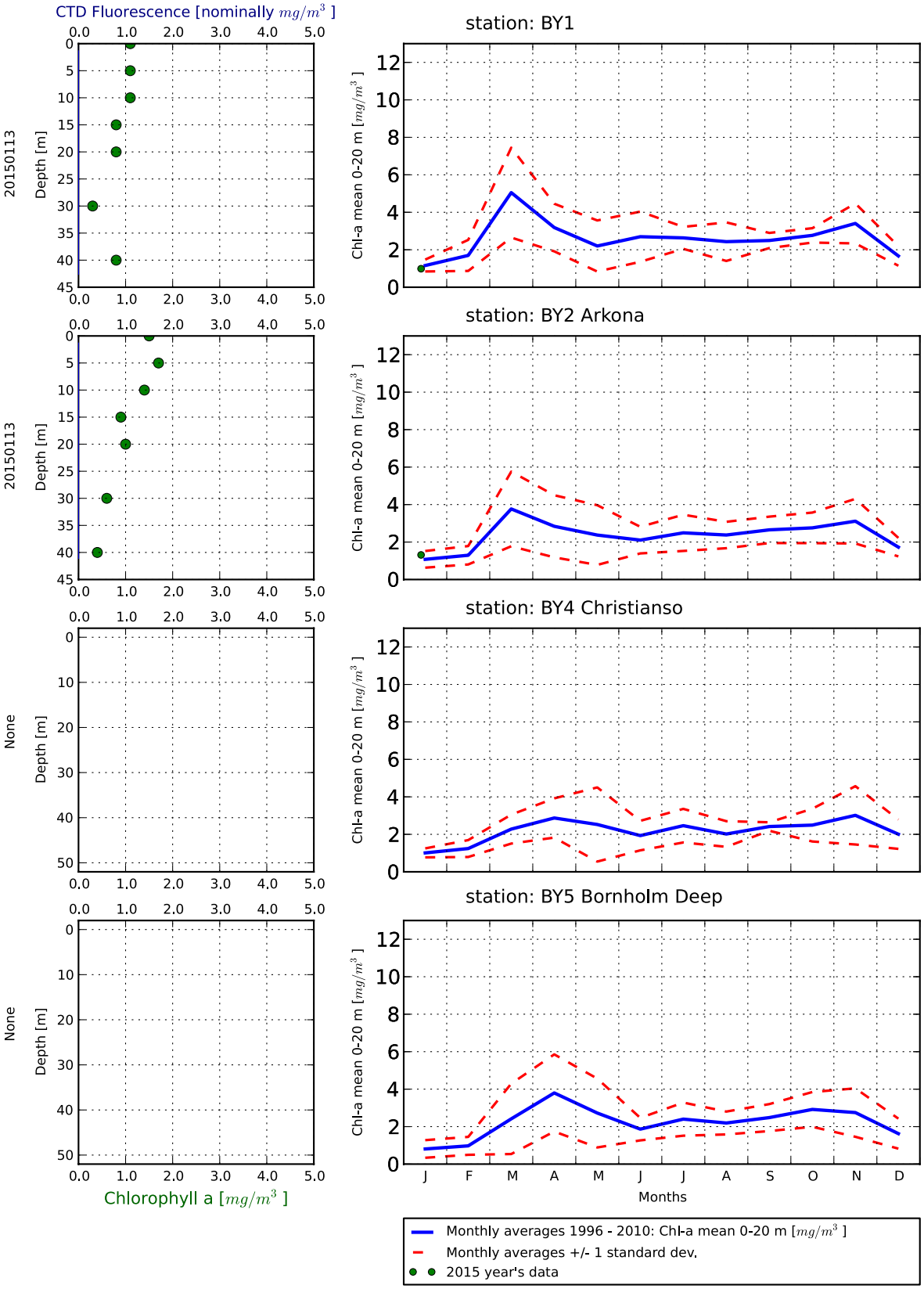
Phytoplankton analysis and text by:
Malin Mohlin

Selection of observed species	Anholt E	N14 Falkenberg
Red=potentially toxic species	12/1	12/1
Hose 0-10 m	presence	presence
Cerataulina pelagica		present
Chaetoceros danicus		present
Coscinodiscus centralis	present	
Coscinodiscus radiatus	present	
Ditylum brightwellii	common	
Eucampia zodiacus	common	
Guinardia delicatula	common	
Nitzschia longissima		present
Proboscia alata	common	present
Pseudo-nitzschia spp	very common	present
Pseudosolenia calcar-avis	present	
Skeletonema marinoi	very common	common
Thalassiosira spp	common	present
Thalassiosira angulata	common	common
Thalassiosira anguste-lineata	common	
Thalassiosira punctigera	present	
Ceratium furca	common	
Ceratium fusus	common	present
Ceratium lineatum	common	present
Ceratium longipes	common	
Ceratium tripos	common	present
Dinophysis norvegica	present	
Gyrodinium spp	present	
Polykrikos schwartzii	present	
Protoperidinium spp	present	
Protoperidinium bipes	present	
Dictyocha fibula	common	
Dictyocha speculum	common	
Woronichinia spp		present

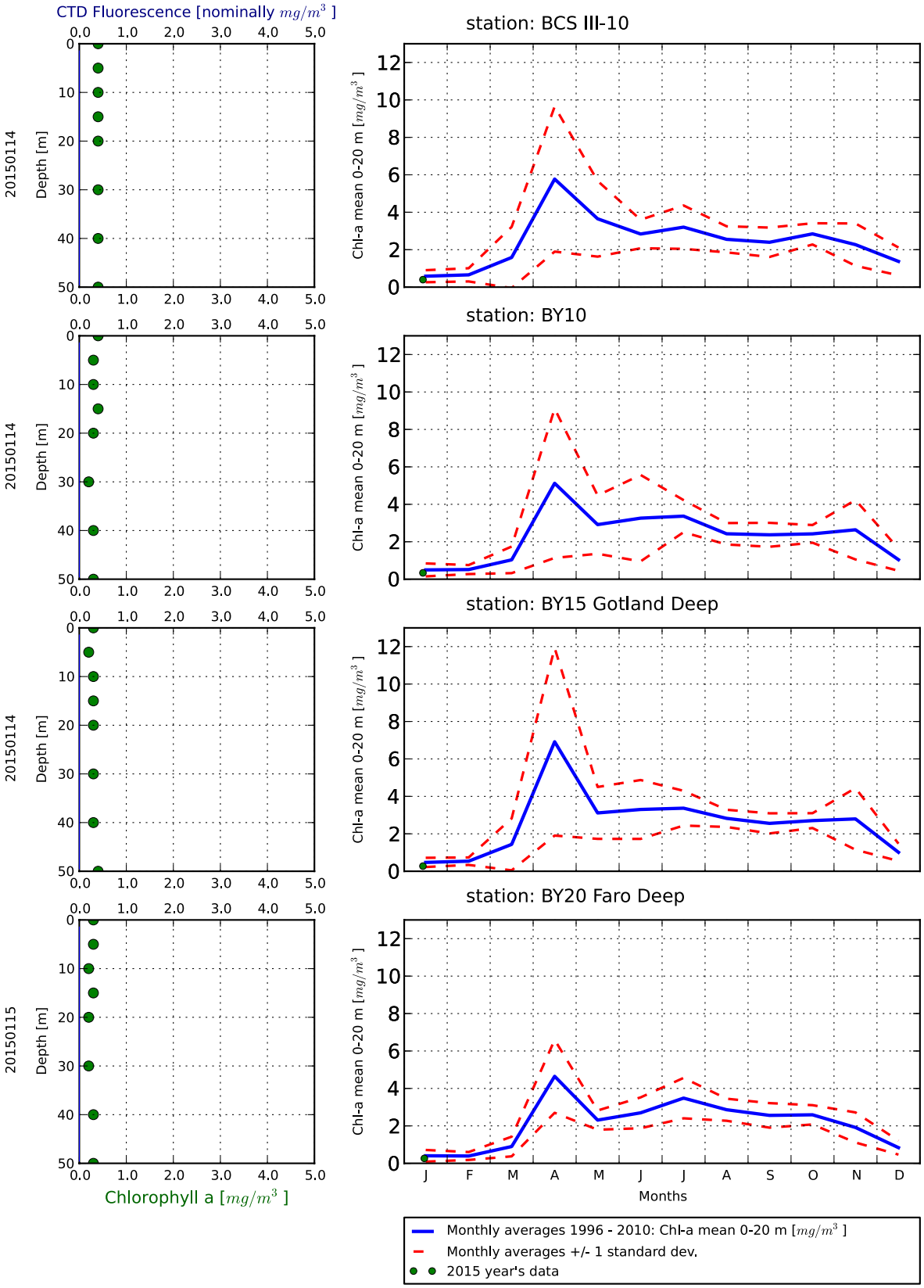
Selection of observed species	**BCS III-10**	**BY2**	**BY15**	**BY31**	**BY38**
Red=potentially toxic species	**13/1**	**13/1**	**14/1**	**8/1**	**9/1**
Hose 0-10 m	**presence**	**presence**	**presence**	**presence**	**presence**
Chaetoceros spp					present
Chaetoceros danicus	present	present	present	present	
Nitzschia longissima		present			
Skeletonema marinoi		present			present
Dinophysis acuminata			present	present	present
Dinophysis norvegica				present	present
Gymnodiniales			present	present	present
Gyrodinium spp			present		
Protoperidinium spp				present	
Aphanocapsa spp	present				
Woronichinia spp				present	present
Oocystis spp				present	
Pachysphaera spp			present		
Planctonema lauterbornii				present	present
Craspedophyceae				present	
Ebria tripartita				present	present
Cryptomonadales			present	present	present
Ciliophora			present		

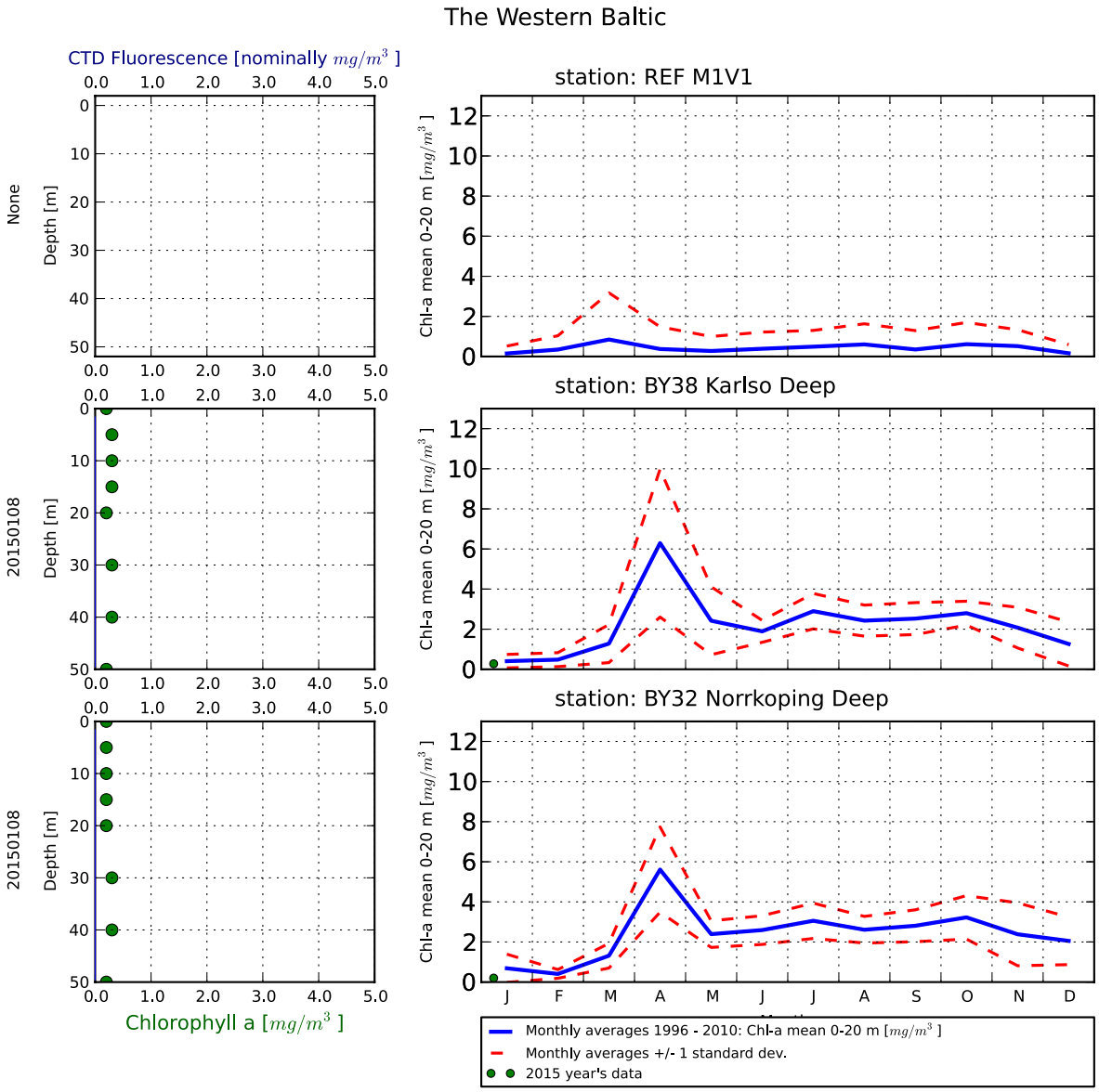

CTD Fluorescence [nominally mg/m^3]
20150112
20150112
20150112
20150110
Depth [m]
Chlorophyll a [mg/m^3]
station: Fladen
station: N14 Falkenberg
station: Anholt E
station: W Landskrona
Chl-a mean 0-20 m [mg/m^3]
J F M A M J J A S O N D
Months
Monthly averages 1996 - 2010: Chl-a mean 0-20 m [mg/m^3]
Monthly averages +/- 1 standard dev.
2015 year's data

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 are 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 occuring below the surface.

Om AlgAware

SMHI genomför månatliga expeditioner i Östersjön och Västerhavet. Resultat baserade på semikvantitativ mikroskopanalys av planktonprover samt klorofyllmätningar presenteras kortfattat i denna rapport. Information från SMHIs satellitövervakning av algblomningar finns under perioden juni-augusti på www.smhi.se.

About AlgAware

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 SMHIs satellite monitoring of algal blooms is found on www.smhi.se during the period June-August.

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.