SMHI
Oceanographic Unit
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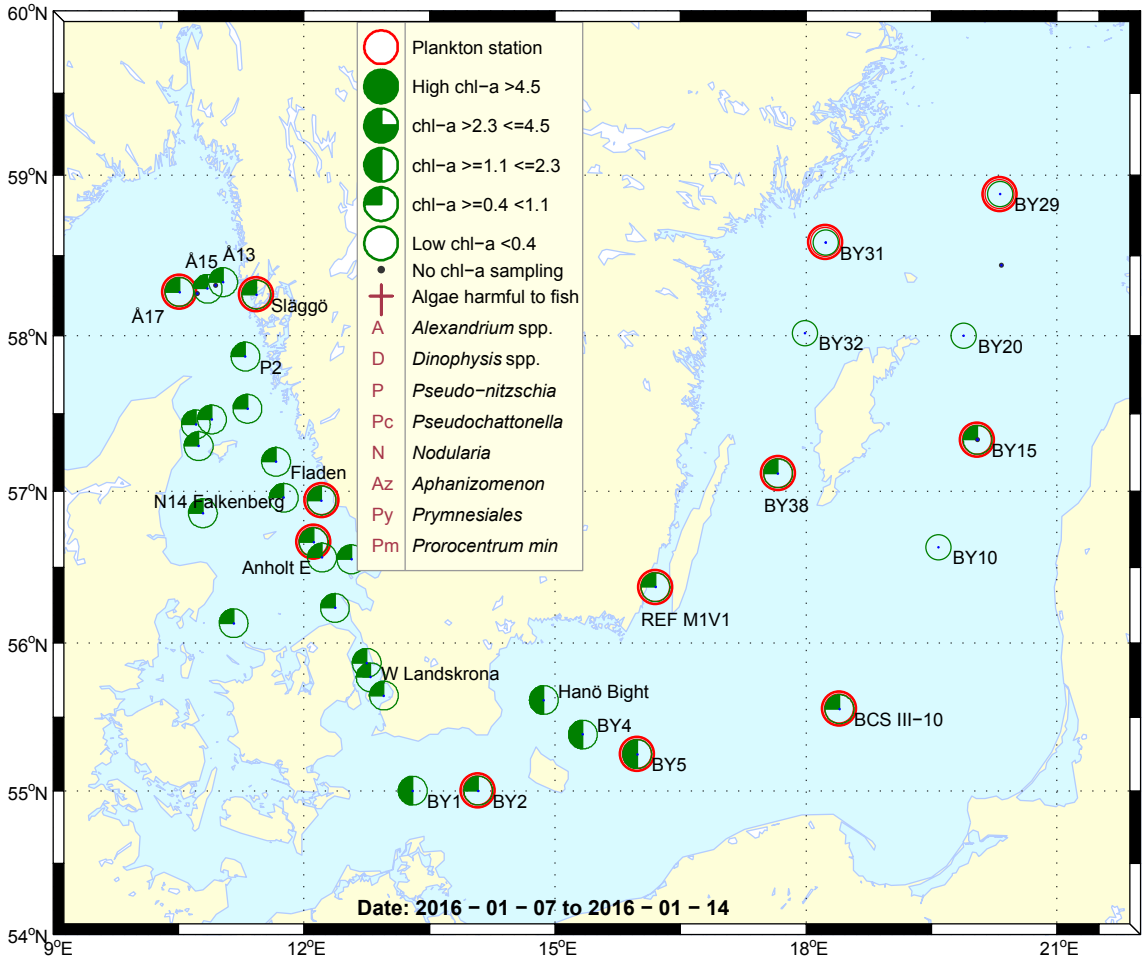
AlgAware

ALGAL SITUATION IN MARINE WATERS SURROUNDING SWEDEN

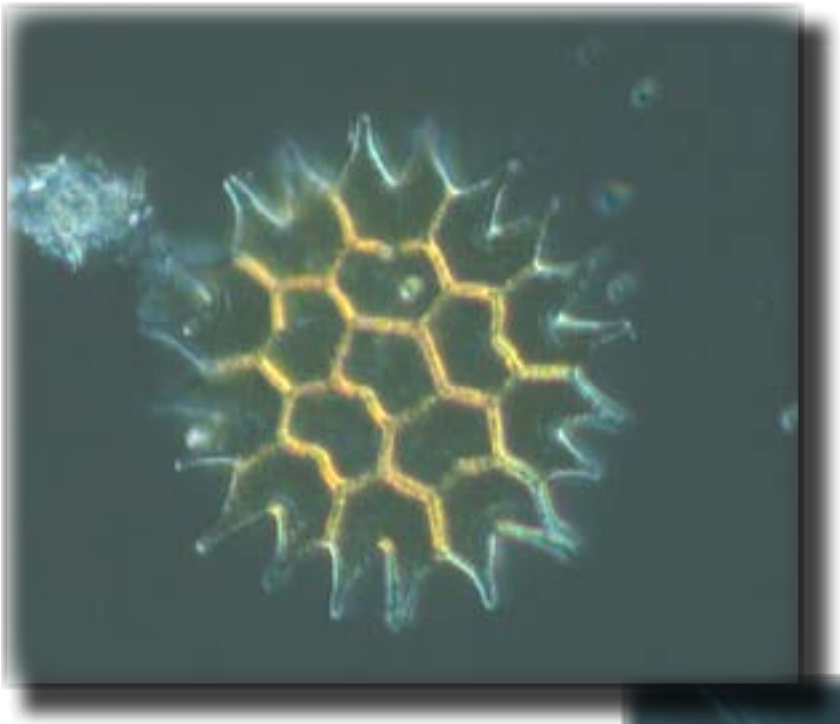
Sammanfattning
Samtliga växtplanktonprov, från Skagerrak, Kattegatt och Östersjön var mycket glesa. Artantalen och cellantalen var mycket låga.

Inga växtplanktondetaljer presenteras utöver detta, enbart artlistor och klorofylldiagram.

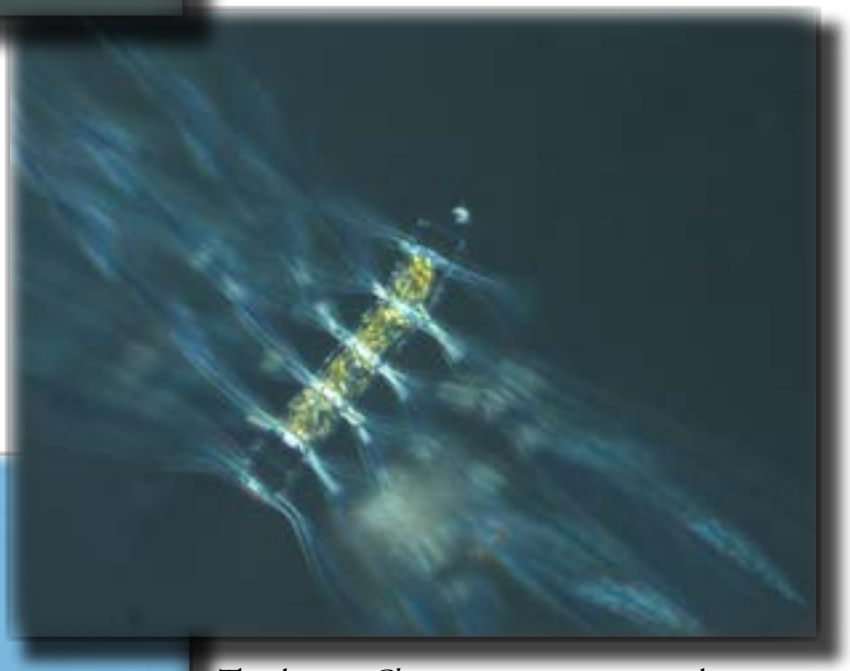


Abstract
All phytoplankton samples from the Skagerrak, the Kattegat and the Baltic Sea had low species diversities. All of the cell counts were low.

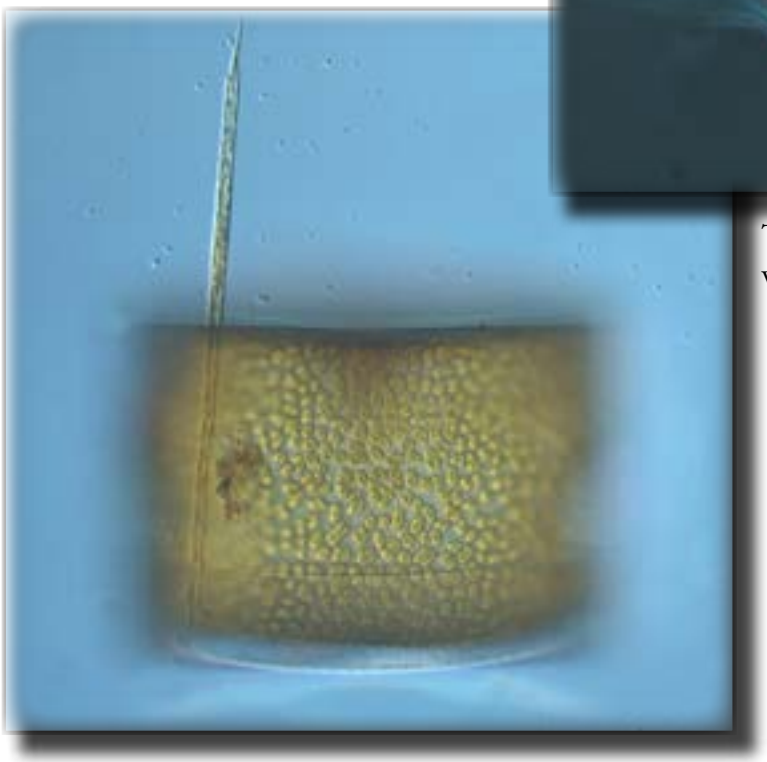
No further detailed phytoplankton information will be presented in this report, only species lists and the chlorophyll diagrams.



Pediastrum sp. was found at BCSIII-10.



The diatom *Chaetoceros impressus* was observed at BY15.



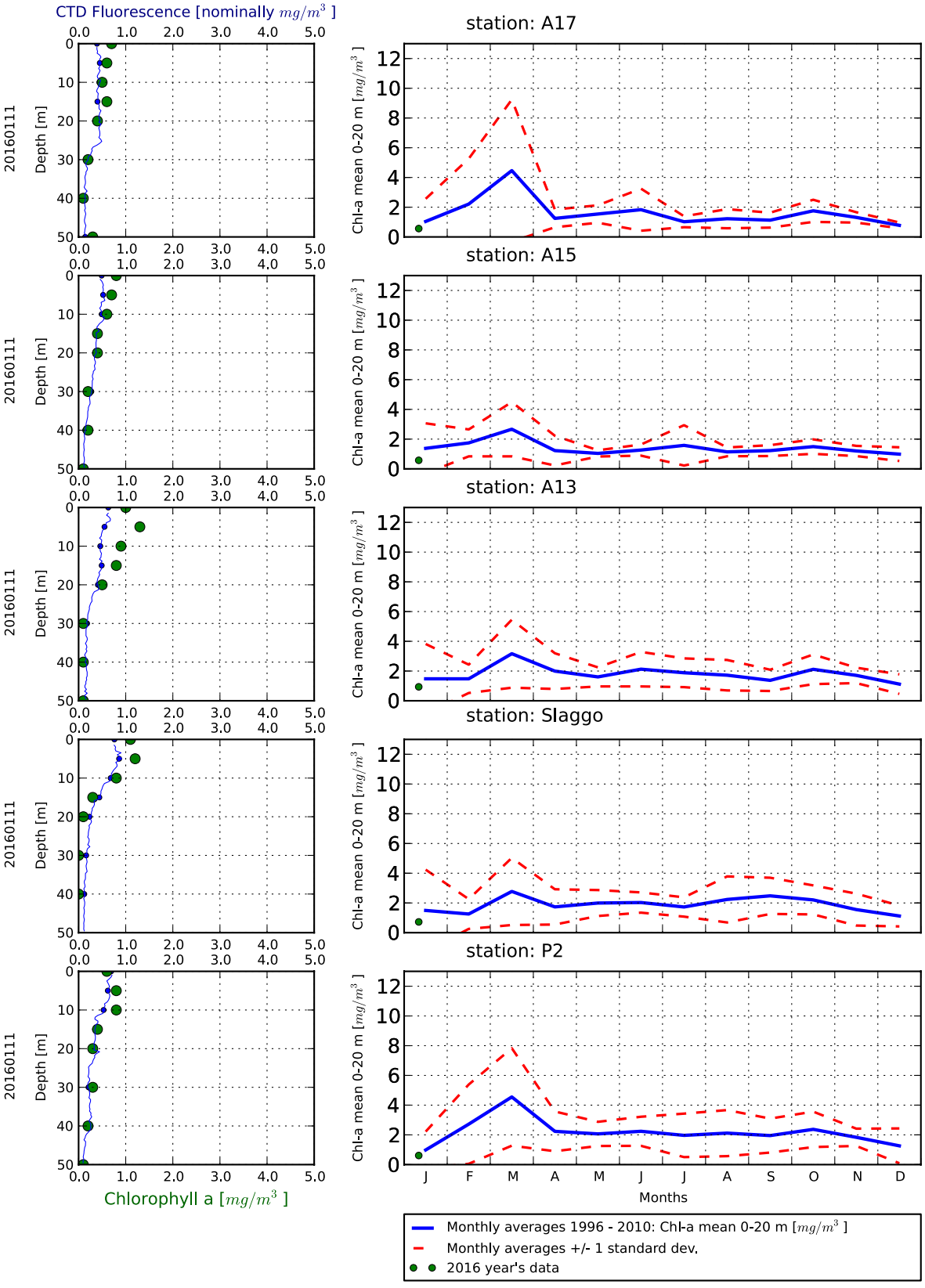
The diatoms *Coscinodiscus wailesii* and *Proboscia alata* were present at Släggö.

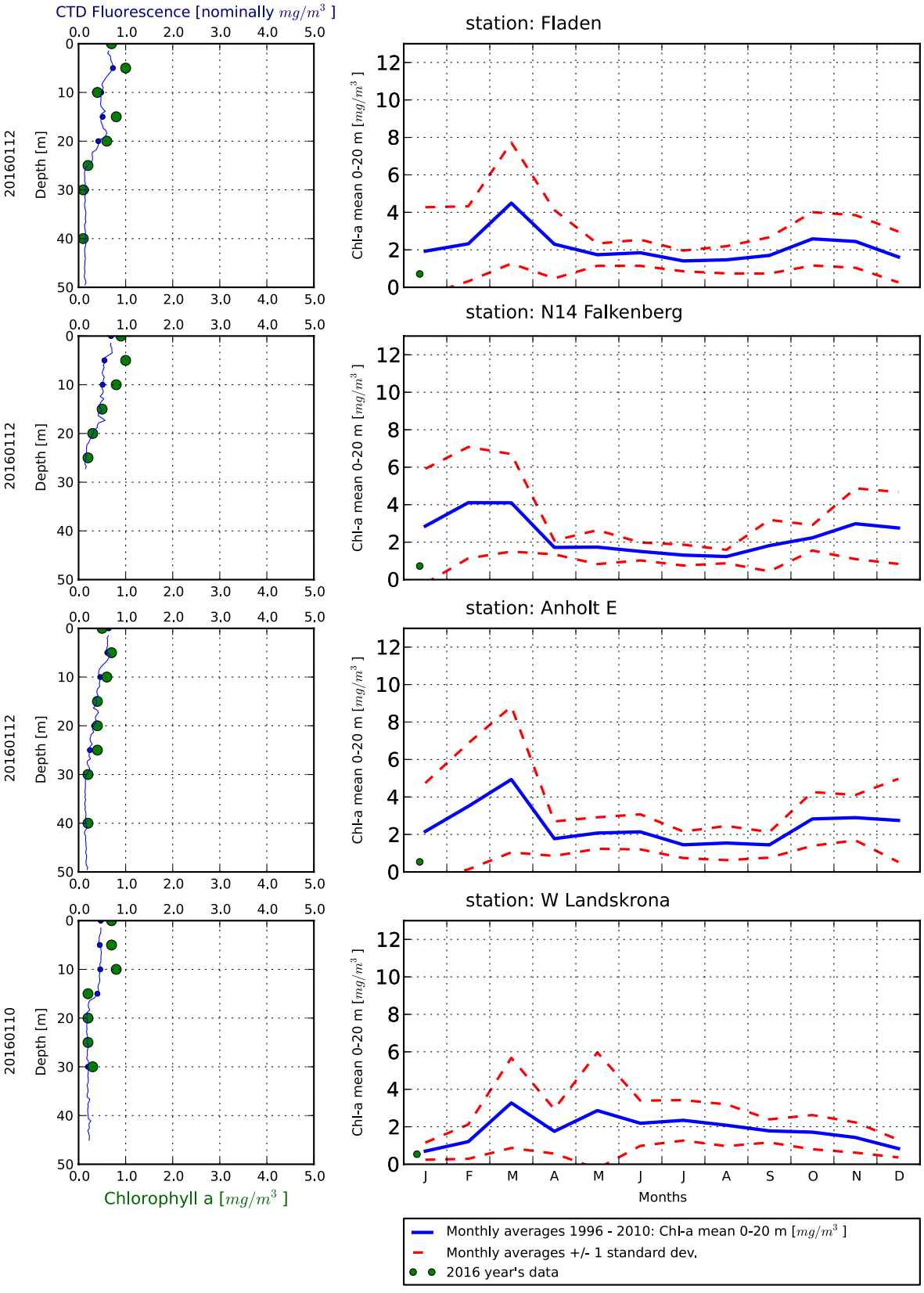
Phytoplankton analysis and text by:
Ann-Turi Skjevik

Selection of observed species	Å17	Släggö	N14	Anholt E
Red=potentially toxic species	11/1	11/1	12/1	12/1
Hose 0-10 m	presence	presence	presence	presence
Chaetoceros danicus		present		
Chaetoceros pseudocrinitus	present	present		
Chaetoceros similis		present		
Chaetoceros spp			present	
Chaetoceros throndsenii				present
Coscinodiscophyceae	present			
Coscinodiscus wailesii		present		
Cylindrotheca closterium		present	present	
Guinardia delicatula		present		present
Navicula transitans	present			
Nitzschia longissima		present		present
Proboscia alata	present	present	present	present
Pseudo-nitzschia spp	present	present	present	
Skeletonema marinoi	present	present	present	present
Thalassiosira anguste-lineata	present			
Thalassiosira spp		present		present
Ceratium furca	present			
Ceratium horridum	present			
Ceratium lineatum	present	common	common	present
Ceratium longipes		present		
Ceratium tripos	present	present	present	
Dinophysis acuminata		present		
Gymnodiniales			present	present
Gymnodinium verruculosum		present		
Gyrodinium flagellare	present			
Peridiniales		present		
Protoperidinium depressum		present		
Dictyocha fibula		present		
Dictyocha speculum	present	present		
Cryptomonadales		present	common	present
Leucocryptos marina				present
Heterosigma akashiwo		present		
Eutreptiella spp			present	
Emiliania huxleyi	present	present	present	present
Pterosperma spp	present			
Stenosemella spp		present		
Strombidium spp		present		
Ciliophora	present	present		present

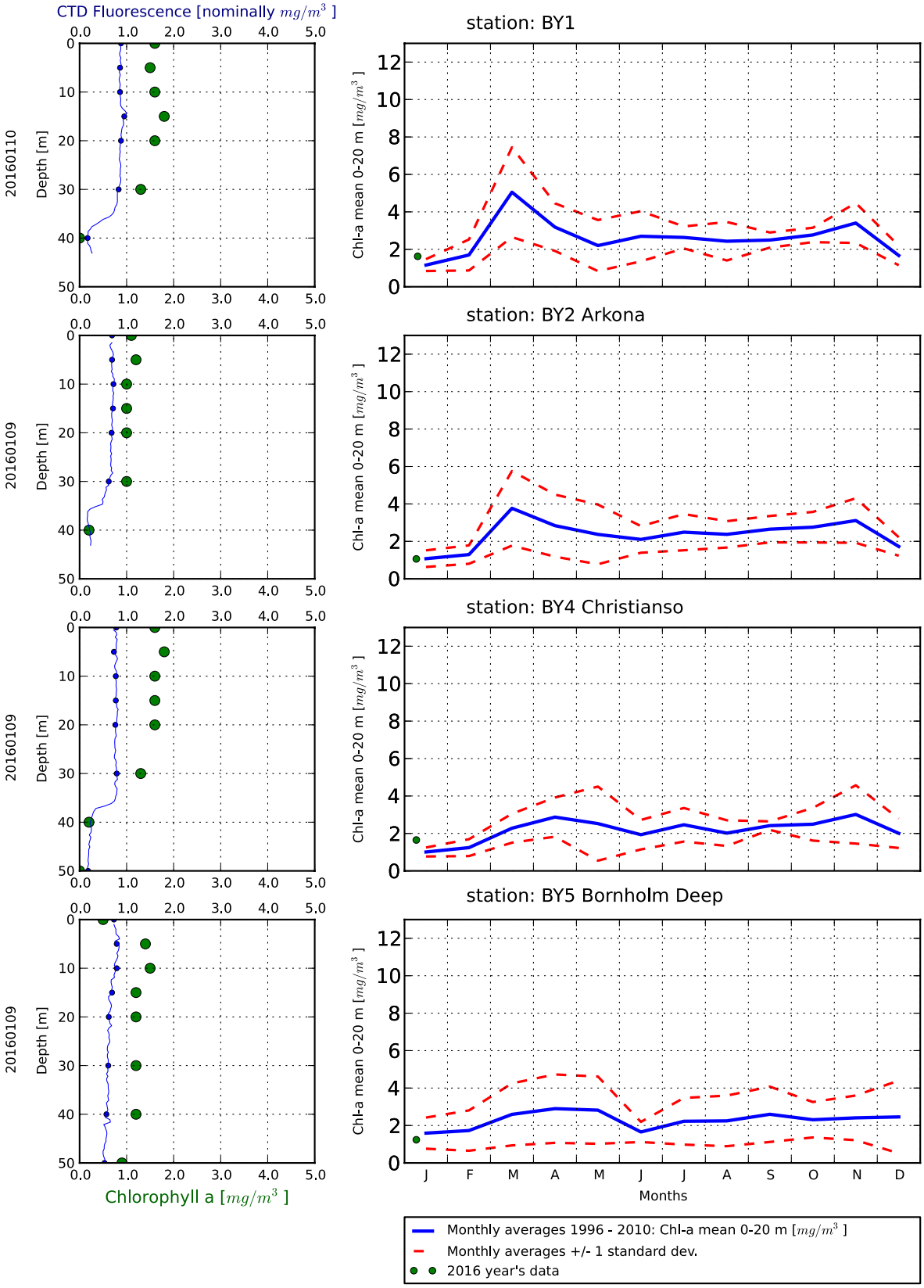
Selection of observed species	BY2	BY5	BCS III-10	BY15	REF M1V1	BY29	BY31	BY38
Red=potentially toxic species	9/1	9/1	9/1	8/1	13/1	14/1	14/1	14/1
Hose 0-10 m	presence	presence	presence	presence	presence	presence	presence	presence
Coscinodiscophyceae	common	present	present	present		present		present
Skeletonema marinoi					present		present	
Chaetoceros spp						present		
Chaetoceros danicus	present	present	present	present		present	present	present
Chaetoceros impressus			present	present			present	present
Chaetoceros throndsenii		present					present	
Dinophysis acuminata				present		present		
Dinophysis norvegica				present		present		
Gymnodiniales			present	present	present	present	present	present
Heterocapsa rotundata		present						
Heterocapsa triquetra					present			
Katodinium glaucum			present	present				
Peridiniales						present		
Protoperidinium spp						present		
Aphanocapsa spp		present						
Aphanothece paralleliformis				present				
Merismopedia spp		present						
Woronichinia spp	present		common	common	present	present	present	present
Lemmermanniella spp		present		present			present	
Pediastrum spp			present					
Pseudopedinella spp							present	
Pterosperma spp	present	present	present	present	present			present
Cryptomonadales	common	common	present	present	present	common	present	
Oocystis spp		present				present	present	
Planctonema lauterbornii			present	present		present		
Calliacantha longicaudata						present		
Calliacantha natans						present		
Mesodinium rubrum	present	present	present	present	present	present		present
Ciliophora	present	common	present	present	present	present		present

The Skagerrak

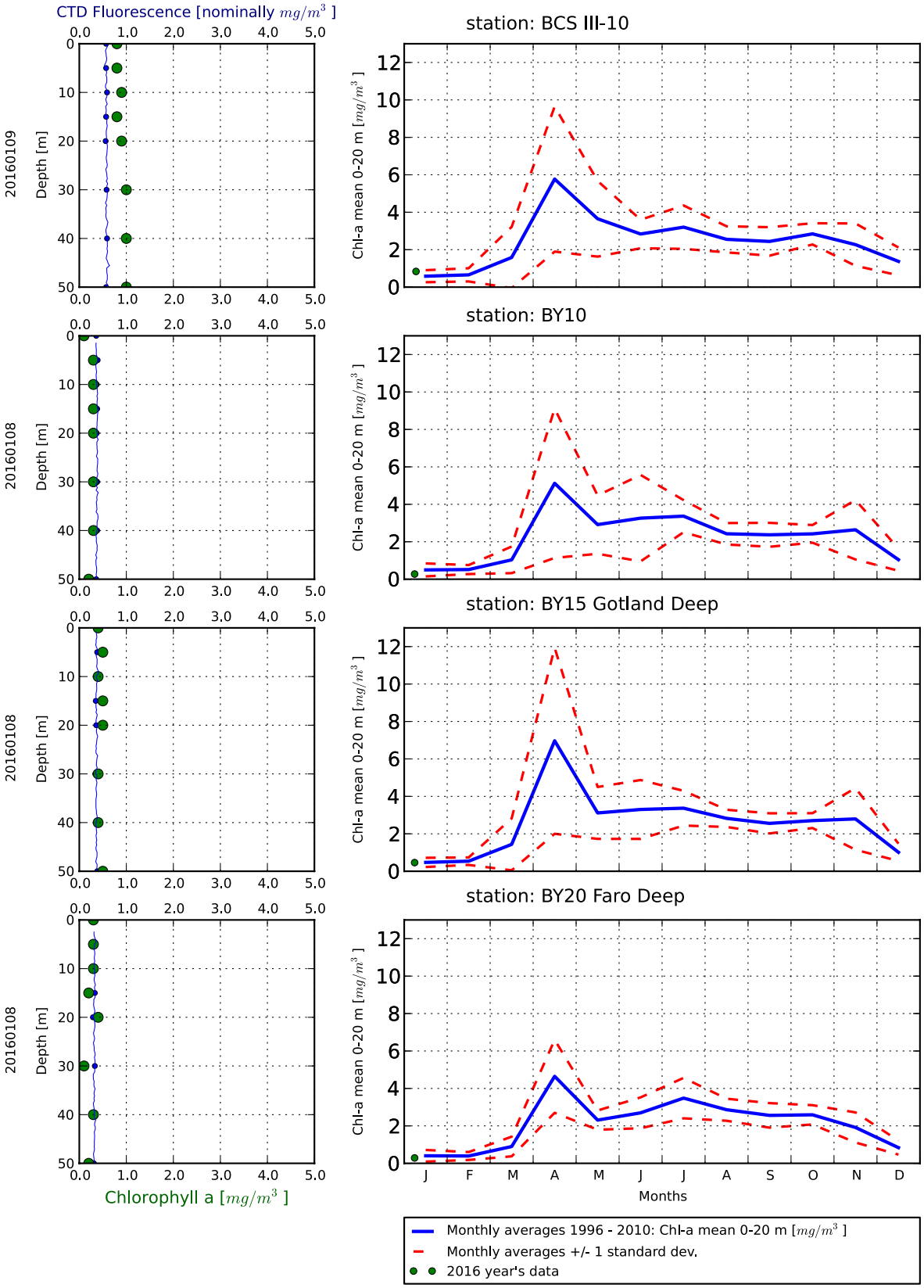


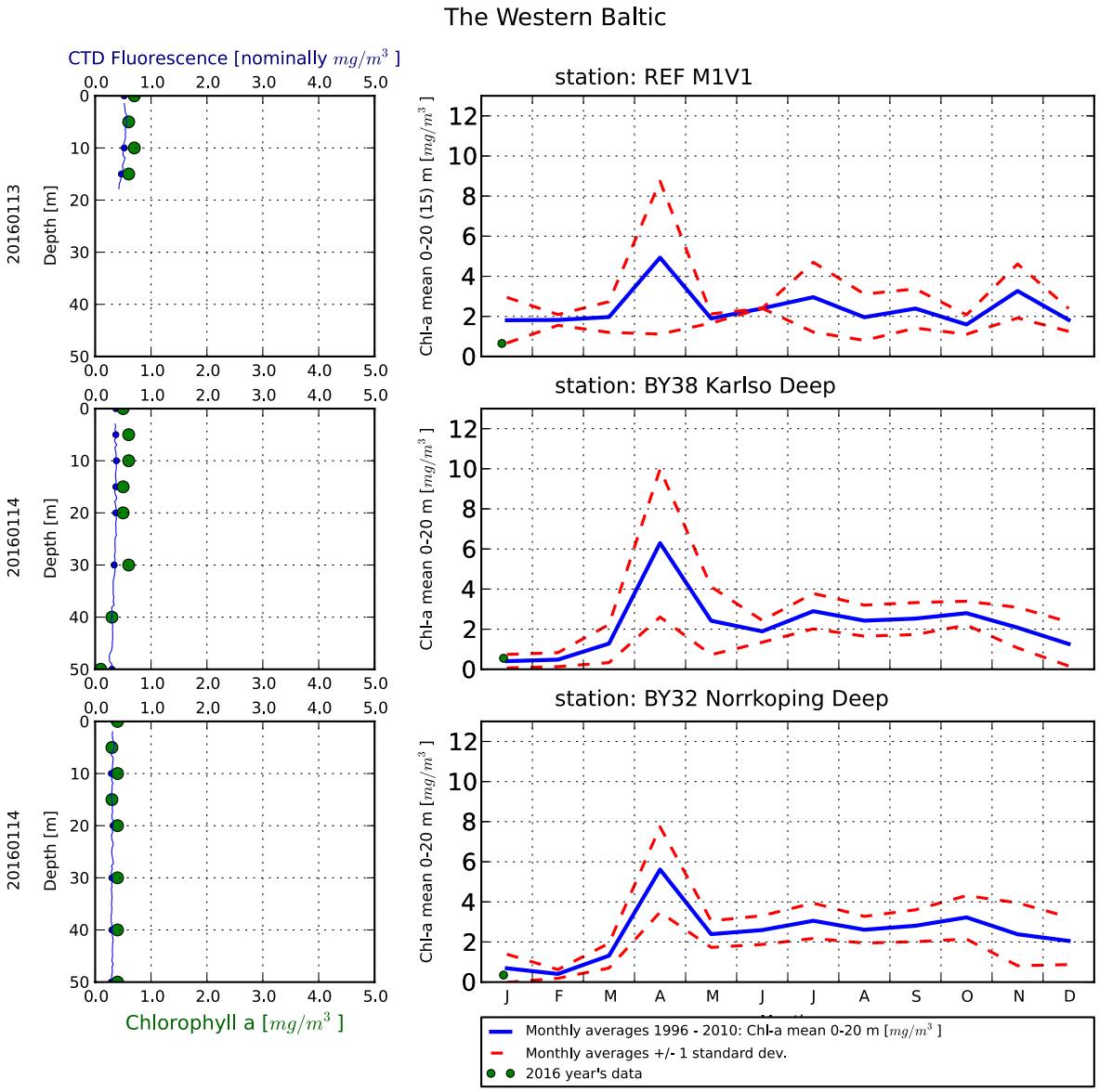

CTD Fluorescence [nominally mg/m^3]
20160112
20160112
20160112
20160110
Depth [m]
Chlorophyll a [mg/m^3]
station: Fladen
station: N14 Falkenberg
station: Anholt E
station: W Landskrona
Chl-a mean 0-20 m [mg/m^3]
J F M A M J J A S O N D
Months
Monthly averages 1996 - 2010: Chl-a mean 0-20 m [mg/m^3]
Monthly averages +/- 1 standard dev.
2016 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, 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.
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.