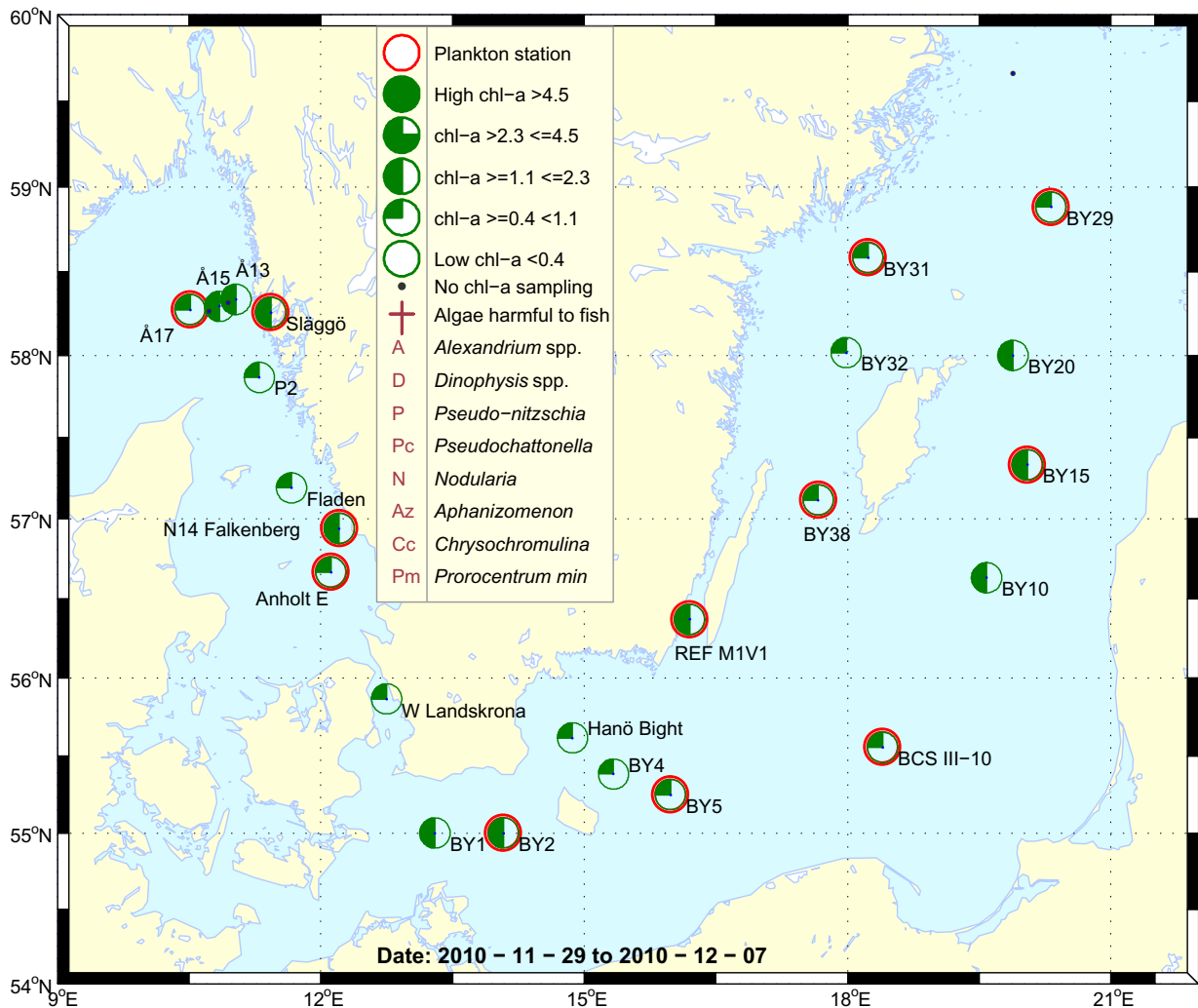


Sammanfattning

Generellt sätt återfanns få celler vid samtliga stationer vilket är normalt för säsongen. I Skagerrak återfanns trots allt relativt många arter men endast ett fåtal individer av varje sort. Kiselalgssläktet *Pseudo-nitzschia** återfanns i höga tätheter vid Skagerraks yttre station (Å17) samt vid båda stationerna i Kattegatt. Små flagellater och då fram för allt cryptomonader återfanns i relativt höga antal vid samtliga västkuststationer.

Även i Östersjön återfanns relativt få celler vid samtliga stationer. Framför allt återfanns även här små flagellater tillhörande klassen cryptomonadales. Vid Karlsödjupet (BY38) samt vid Borholmsdjupet (BY5) återfanns även ett antal individer av släktet *Chrysochromulina** (prymnesiophyceae).



Abstract

Relatively few cells were found at all stations which is normal for the season. A quite diverse community but with few cells of each species was however found in the Skagerrak area. The diatom genus *Pseudo-nitzschia** was found in high abundance at the outer station in Skagerrak (Å17) and at both Kattegat stations. Relatively high abundance of small flagellates above all cryptomonads were found at all stations along the west coast.

Only few cells were also recorded at all stations in the Baltic Sea. Small flagellates mainly belonging to the cryptomonads were also recorded. Several individuals of the genus *Chrysochromulina** (prymnesiophyceae) were observed at the Western Gotland Basin (BY38) and at the Bornholm deep (BY5).

More detailed information on species composition and abundance

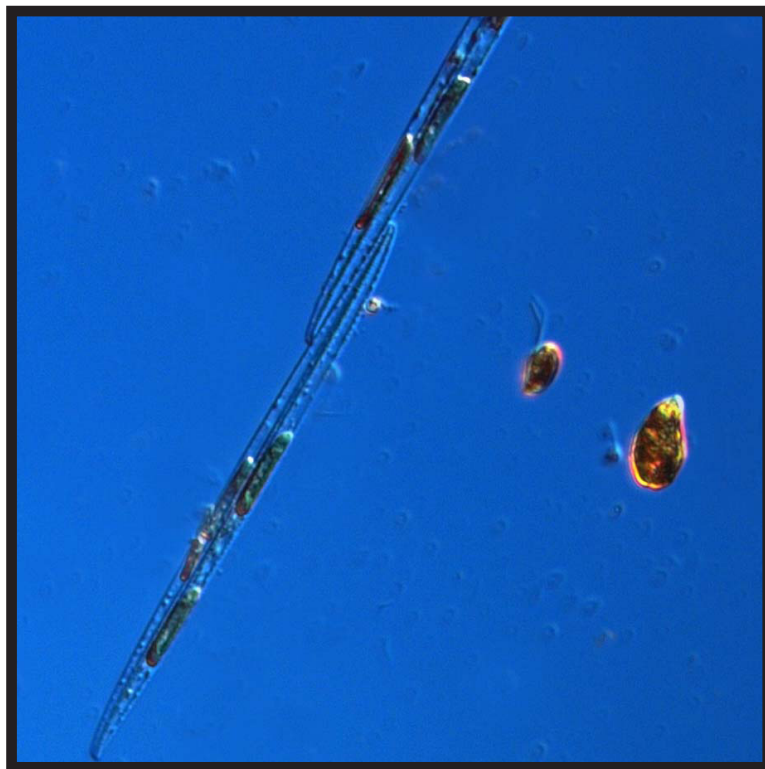
The Skagerrak

Å17 7th of December (open Skagerrak)

The algal community was dominated by small flagellates and the diatom genus *Pseudo-nitzschia** when looking at cellnumbers. Especially *Plagioselmis prolonga* (cryptomonad) was abundant among the flagellates.

Släggö 7th of December (Skagerrak coast)

Small flagellates, especially cryptomonads, dominated at this site and *Plagioselmis prolonga* and the genus *Teleaulax* were found in high cellnumbers.



The chain forming diatom *Pseudo-nitzschia** (left) and cryptomonads were common in the Skagerrak and Kattegat areas.

The Kattegat

N14 Falkenberg and Anholt E 7th of December

The diatom genus *Pseudo-nitzschia** dominated clearly but small flagellates were also quite abundant and both the genus *Teleaulax* and *Plagioselmis prolonga* occurred in relatively high cell numbers.

The Baltic Sea

BY2 (Arkona Deep) 6th of December

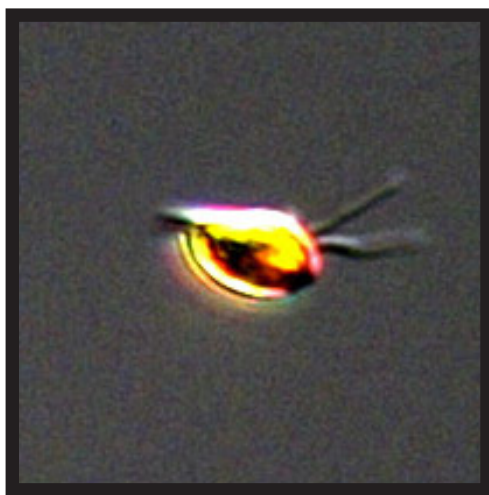
Small flagellates especially cryptomonads such as *Plagioselmis prolonga* and the genus *Teleaulax* dominated at this station. Only few cells of other phytoplankton were found.

BY5 (Bornholm Deep) 6th of December

Small flagellates such as *Plagioselmis prolonga* and the genus *Teleaulax* dominated together with the flagellate genus *Chrysochromulina**. at this station. A couple of cells of *Chrysochromulina polylepis** were also found. Quite high abundance of the heterotrophic choanoflagellate *Calliacantha natans* was also found.

BCSIII-10 (South East Baltic) 5th of December

Only few cells were found. Colony forming cyanobacteria were most abundant together with different species of the genus *Teleaulax*. A couple of cells of the genus *Chrysochromulina** were recorded.



The cryptomonad *Plagioselmis prolonga*

BY15 (Gotland Deep) 4th of December

The flagellate genus *Chrysochromulina** dominated together with the genus *Teleaulax*.

BY31 30th of November

The flagellate *Plagioselmis prolonga* and the flagellate genus *Teleaulax* dominated.

BY38 (Western Gotland Basin) 29th of November

The filamentous cyanobacteria *Aphanizomenon flos-aqua* dominated together with the genus *Teleaulax*. The heterotroph *Calliacantha natans* was also found in high numbers.

Ref M1V1 Kalmar Sound 29th of November

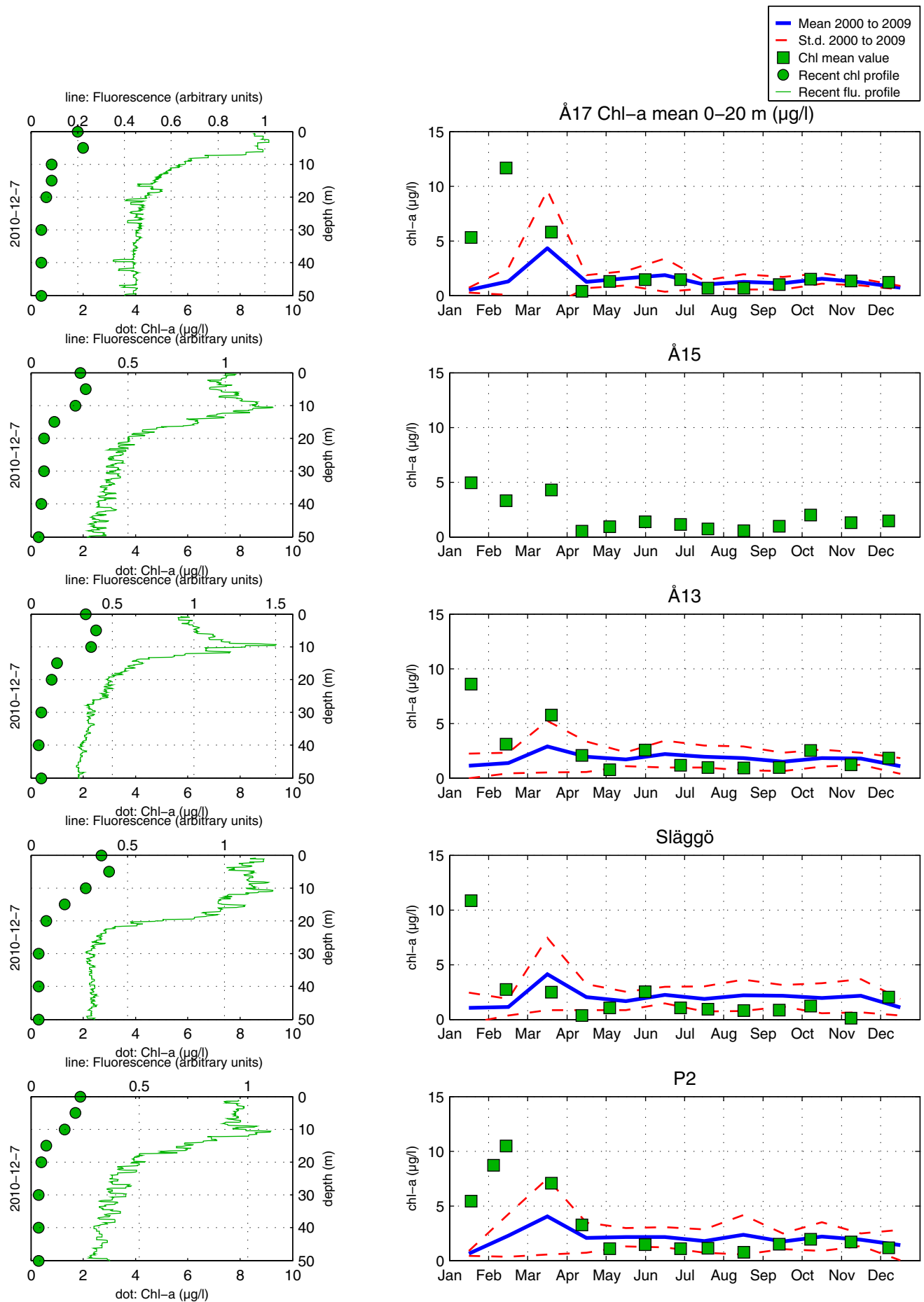
The flagellate genus *Teleaulax* and *Plagioselmis prolonga* dominated.

Phytoplankton analysis and text by:
Marie Johansen

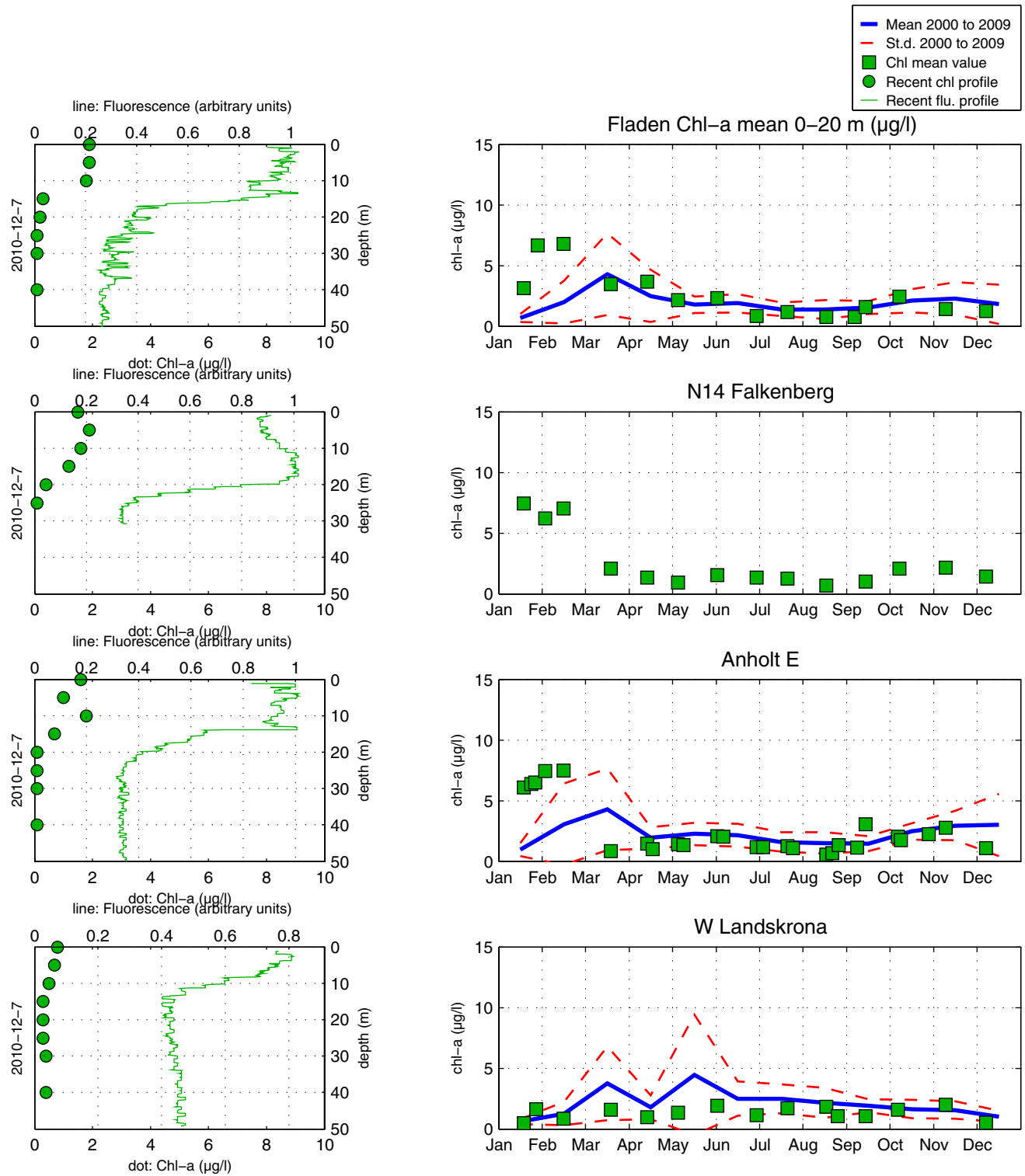
Selection of observed species	Å17	Släggö	N14	Anholt E
Red=potentially toxic species	7/12	7/12	7/12	7/12
	cells/l	cells/l	cells/l	cells/l
<i>Cerataulina pelagica</i>		present		
<i>Chaetoceros tenuissimus</i>	present	present		present
<i>Chaetoceros</i> spp.			present	present
<i>Dactyliosolen fragilissimus</i>		present		
<i>Guinardia delicatula</i>	present	present		
<i>Guinardia flaccida</i>	present	present	present	present
<i>Leptocylindrus danicus</i>		present		
<i>Pseudo-nitzschia</i> spp.	common	present	dominating	common
<i>Pseudosolenia calcar-avis</i>	present	present	present	present
<i>Rhizosolenia hebetata</i> f. <i>semispina</i>	present			
<i>Rhizosolenia setigera</i>	present	present	present	present
<i>Skeletonema marinoi</i>	present	present	present	present
<i>Thalassionema nitzschioides</i>	present			
<i>Thalassiosira angulata</i>	present		present	present
<i>Thalassiosira rotula</i>	present	present	present	present
<i>Thalassiosira</i> spp.			present	present
<i>Akashiwo sanguinea</i>	present	present		
<i>Ceratium furca</i>	present			
<i>Ceratium fusus</i>	present			present
<i>Ceratium lineatum</i>	present	present		present
<i>Ceratium longipes</i>		present		present
<i>Ceratium tripos</i>	present	present	present	present
<i>Dinophysis norvegica</i>		present	present	
<i>Dinophysis acuta</i>	present			
<i>Dinophysis rotundata</i>		present		present
<i>Gyrodinium spirale</i>	present	present		
<i>Katodinium glaucum</i>	present	present		
<i>Protoperidinium</i> spp.	present	present		present
<i>Scripsiella complex</i> spp.	present		present	
<i>Apedinella radians</i>		present		present
<i>Pseudopedinella</i> spp.		present		
<i>Dinobryon faculiferum</i>				present
<i>Pleurochrysis</i> spp.	present	present		present
<i>Chrysochromulina</i> spp.	present	present		present
<i>Pyramimonas</i> spp.			present	present
Cryptomonadales spp.	present	present	present	common
<i>Plagioselmis prolunga</i>	common	common	common	common
<i>Teleaulax acuta</i>	present			present
<i>Teleaulax amphioxeia</i>	present	present	present	present
<i>Teleaulax</i> spp	present	common	commom	common
<i>Dictyocha speculum</i>	present	present		present
<i>Pseudochattonella farcimen</i>			present	
<i>Cyanobacteria spp-filament</i>		present		present
<i>Calliakantha longicaudata</i>	present		present	
<i>Calliakantha natans</i>	present		present	
<i>Leucocryptos marina</i>	present		present	present

Selection of observed species	BY2	BY5	BCS III-10	BY15	BY31	BY38	Ref. M1-V1
Red=potentially toxic species	6/12	6/12	5/12	4/12	30/11	29/11	29/11
	cells/l	cells/l	cells/l	cells/l	cells/l	cells/l	cells/l
<i>Actinocyclus octonarius</i>				present	present		
<i>Chaetoceros danicus</i>	present			present			
<i>Coscinodiscus</i> spp.		present		present	present		
<i>Navicula</i> spp.							present
<i>Skeletonema marinoi</i>							present
<i>Thalassiosira</i> spp.	present		present	present	present		present
<i>Dinophysis acuminata</i>						present	present
<i>Dinophysis norvegica</i>		present	present		present	present	
<i>Dinophysis rotundata</i>		present					
<i>Heterocapsa rotundata</i>							present
<i>Pseudopedinella</i> spp.					present		
<i>Chrysochromulina polylepis</i>		present	present			present	
<i>Chrysochromulina</i> spp.	present	present	present	present		present	present
<i>Cymbomonas</i> spp.					present		
<i>Oocystis solitaria</i> cf				present			
<i>Planctonema lauterbornii</i>	present						
Cryptomonadales spp.	common	present	present	present	present	present	present
<i>Plagioselmis prolunga</i>	common	common	present	present	common	present	common
<i>Telonmema</i> spp.				present	present		
<i>Teleaulax amphioxeia</i>					present		present
<i>Teleaulax</i> spp	common	common	present	common	common	common	
<i>Pyramimonas</i> spp.	present				present	present	present
<i>Eutreptiella</i> spp.	present		present		present	present	
<i>Cyanobacteria</i> spp. colony			present	present		present	
<i>Cyanobacteria</i> spp. filament		present					
<i>Aphanizomenon</i> spp.	present	present				common	
<i>Nodularia spumigena</i>		present				present	
<i>Calliacantha longicaudata</i>					present		present
<i>Calliacantha natans</i>	present	present		present	present	present	present
<i>Katablepharis remigera</i>					present	present	
<i>Leucocryptos marina</i>	present				present		present
<i>Mesodinium rubrum</i>	present	present	present	present	present	present	present
<i>Ebria tripartita</i>		present	present	present	present	present	present

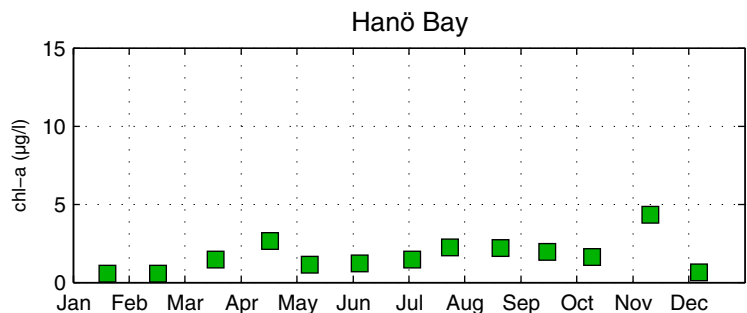
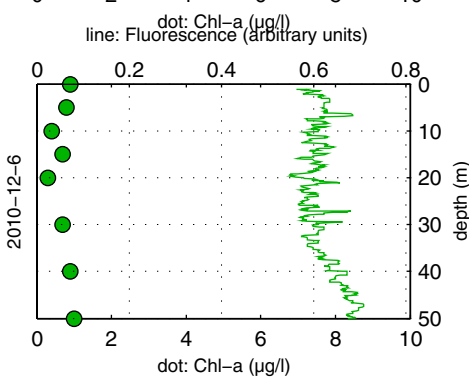
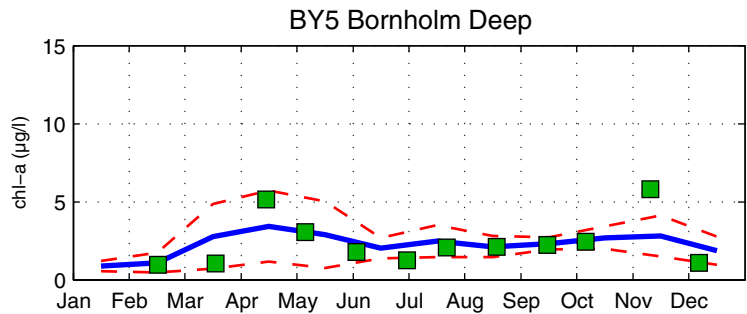
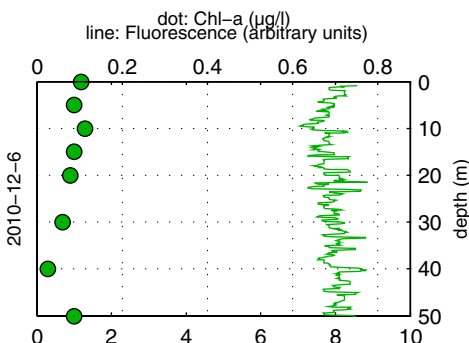
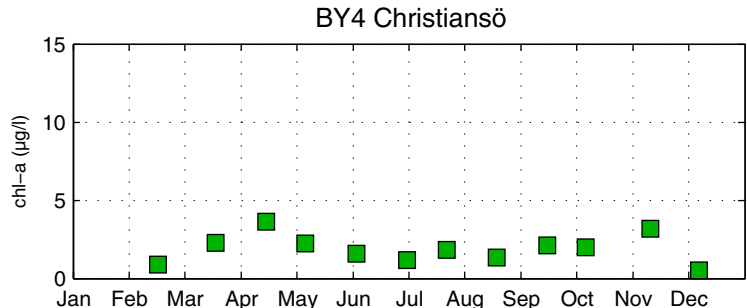
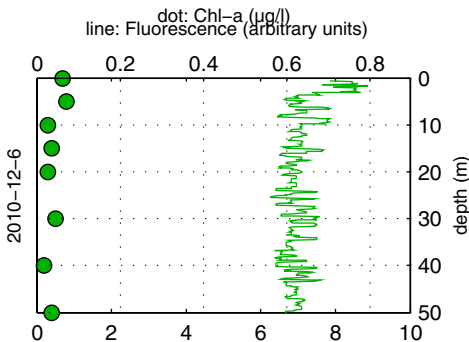
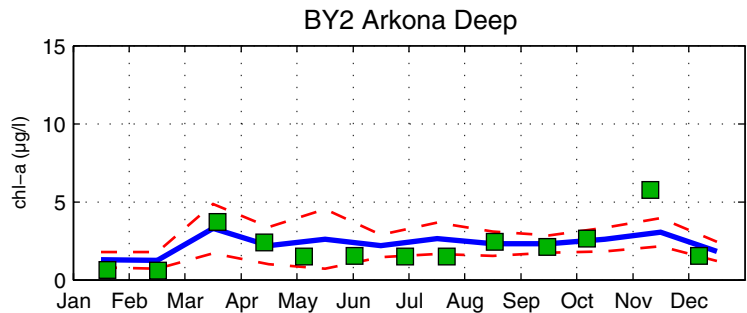
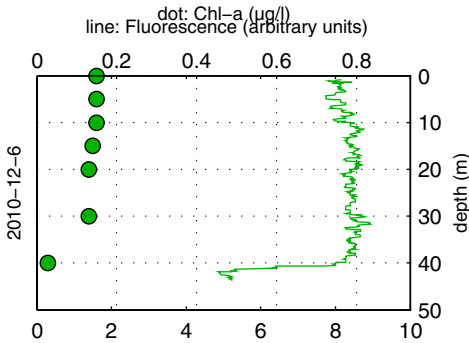
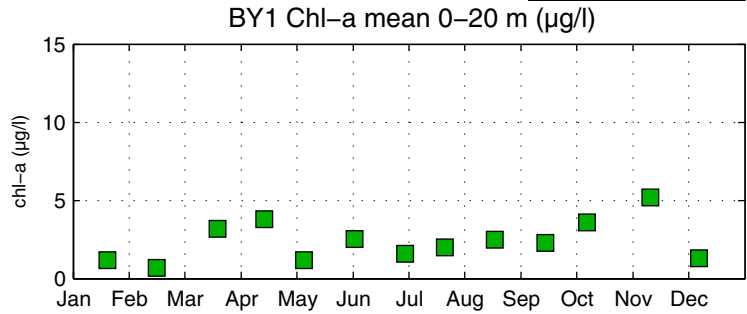
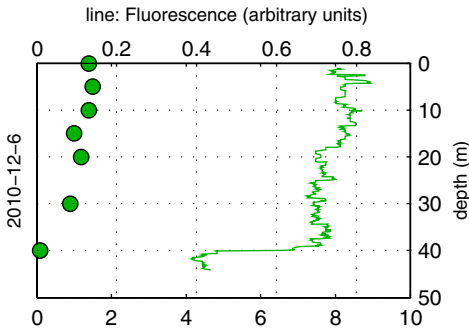
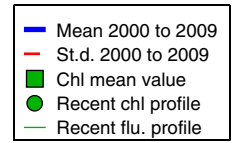
The Skagerrak



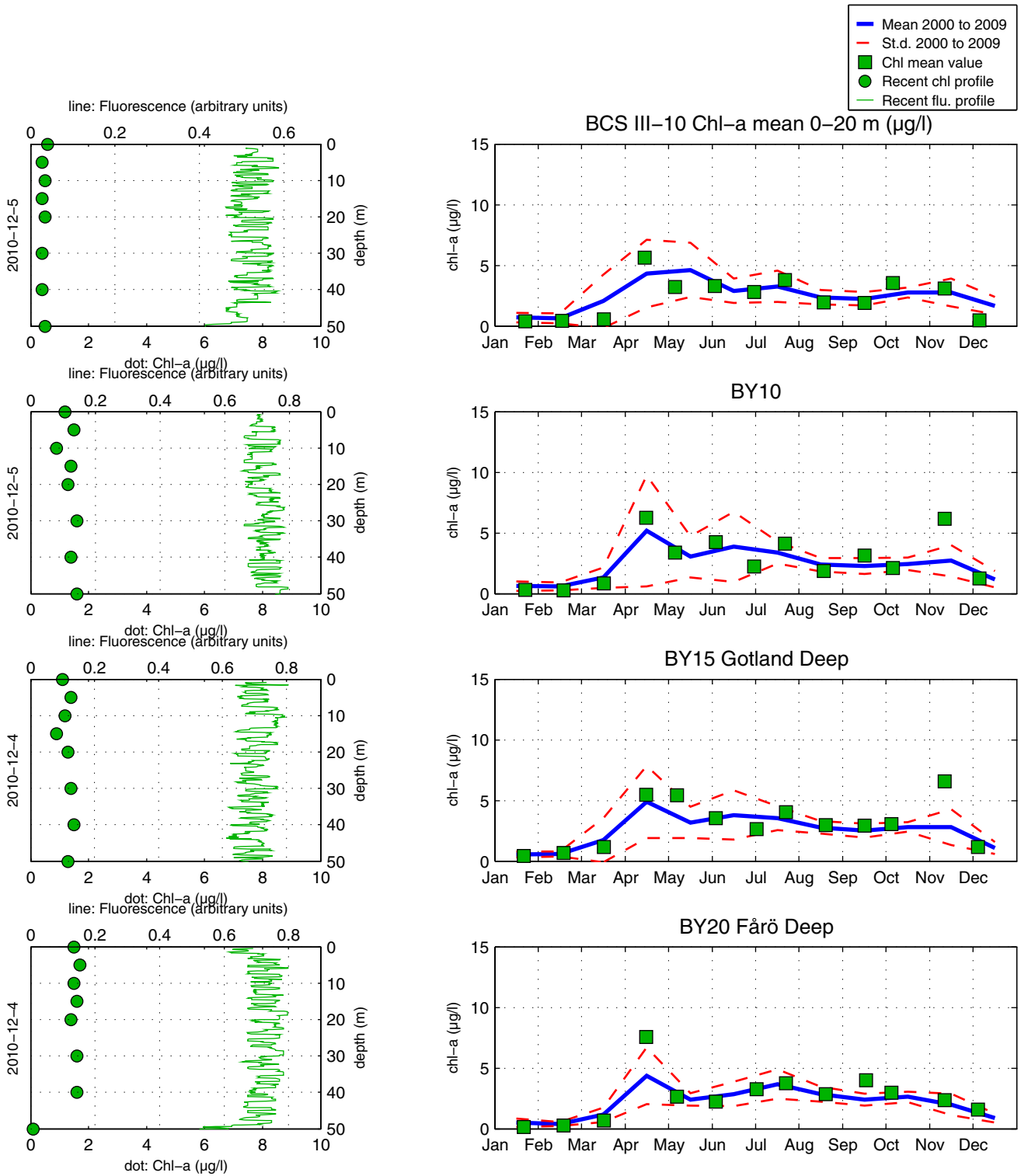
The Kattegat and the Sound



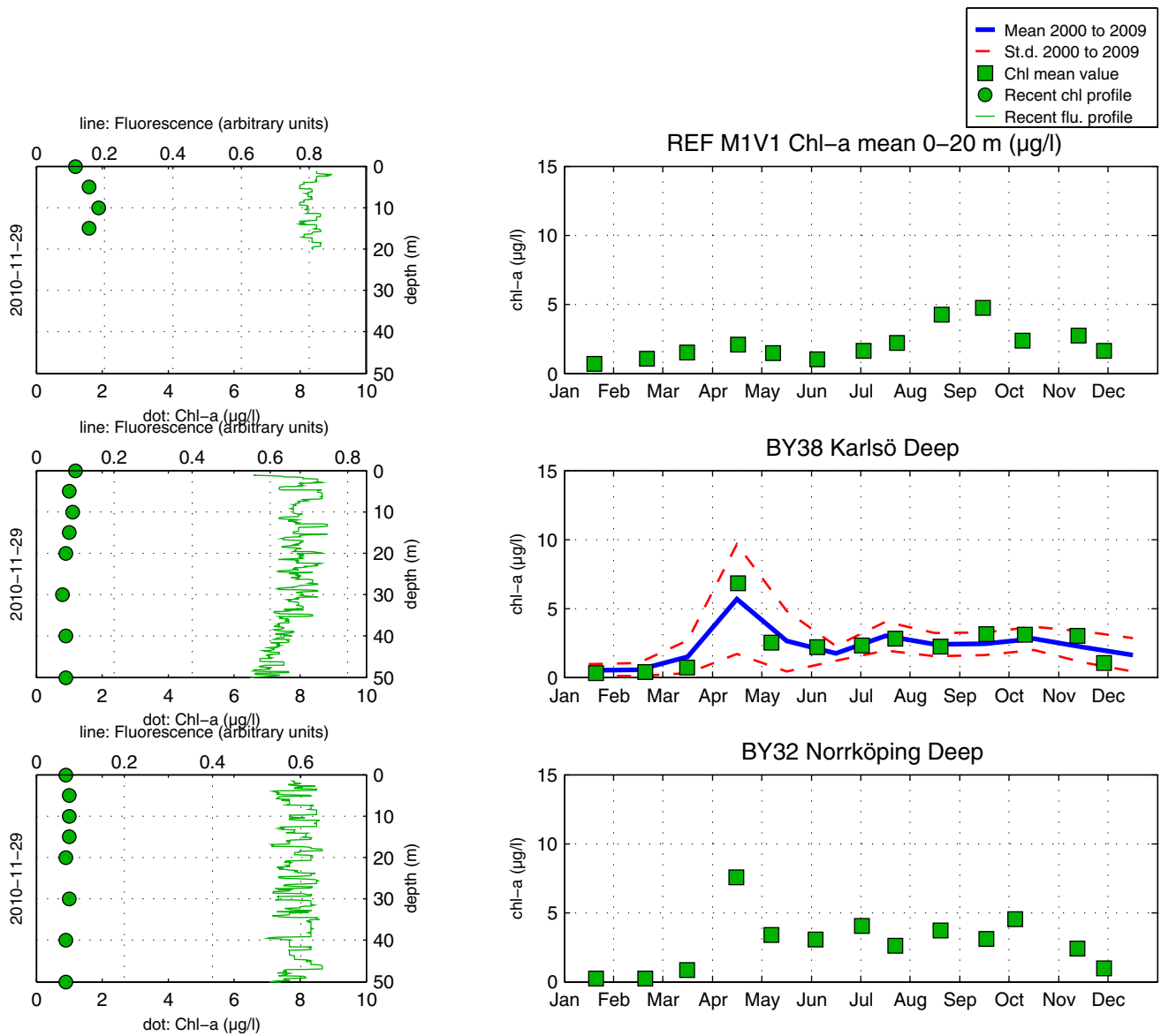
The Southern Baltic



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.

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 algbloomingar finns på 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.

Art / Species	Gift / Toxin	Eventuella symptom	Clinical symptoms
<i>Alexandrium</i> 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; headache, dizziness, nausea, vomiting, diarrhoea. Extreme case 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)	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.
<i>Pseudo-nitzschia</i> spp.	Amnesic shellfish poisoning (ASP)	Milda symptom: Efter 3-5 timmar: yrsel, illamående, kräkningar, diarré, magkramp 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.
<i>Chaetoceros concavicornis</i> / <i>C. convolutus</i>	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.
<i>Pseudochattonella</i> 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. 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.

