

Sammanfattning

I denna förkortade rapport visas endast resultaten från analyserna av växtplanktonprover. Rapporten kommer dock kompletteras i början av nästa vecka med resultat från klorofyll *a* analyserna.

I Skagerrak präglades växtplanktonsamhället vid den yttre stationen Å17 av låg diversitet medans den inre stationen Släggö generellt hade en högre diversitet. Små flagellatbärande arter som cryptomonader och släktet *Chrysochromulina* * dominerade på båda stationerna.

I Kattegatt var diversiteten relativt hög vid den yttre stationen N14 och vid den senare provtagningen vid den inre stationen Anholt A. Vid den första provtagningen vid Anholt E återfanns dock en ganska låg artrikedom. Små flagellater dominerade även här vid samtliga tillfällen och då fram för allt *Chrysochromulina* *.

Även vid samtliga stationer i Östersjön dominerade små flagellater och i flesta fall var det även här släktet *Chrysochromulina* * som dominerade i antal. De iakttaga sjök av filamentösa cyanobakterier som noterades från båten kunde endast vid station BY2 i den södra delen av östersjön bekräftas i ytprov där relativt höga antal av fram för allt *Aphanizomenon flos-aqua* återfanns i högre tätheter.

För att följa utvecklingen av ytansamlingar av cyanobakterier med hjälp av SMHIs tolkningar samt högupplösta satellitbilder, gå in på: <http://www.smhi.se/vadret/hav-och-kust/algsituationen-1.11383>

Abstract

This report only comprises results from analysis of phytoplankton. An extended version containing results from chlorophyll *a* measurements will be available in the beginning of next week.

A quite scarce community was found at the outer station Å17 in the Skagerrak area while the inner station Släggö presented a quite diverse community. Small flagellated species such as cryptomonads and the genus *Chrysochromulina* * dominated at both stations.

The diversity was quite high in the Kattegat area at the outer station N14 and at the later sampling occasion at the more inner site Anholt E. The first sampling occasion at Anholt E presented on the contrary a quite low phytoplankton diversity. Small flagellates dominated the phytoplankton community on all occasions.

The phytoplankton community at all sampling stations in the Baltic Sea were dominated by small flagellates and at most stations by the genus *Chrysochromulina* *. The discolouring of the water that was observed from the boat could only be confirmed from one of the extra watersamples that was taken at the surface. High abundance of *Aphanizomenon flos-aqua* in surface water could thereby be confirmed at the southern station BY2.

To follow the surface accumulations of cyanobacteria in the Baltic Sea by satellite interpretations and high resolution images: <http://www.smhi.se/en/Weather/Sweden-weather/the-algae-situation-1.11631>

The Skagerrak

Å17 7th of August (open Skagerrak)

The diversity was quite low and dominated by small flagellates with quite high abundance of the prymnesiophyte genus *Chrysochromulina** together with different species of cryptomonads. Several species of ciliates were also found in relatively high abundance.

Släggö 6th of August (Skagerrak coast)

The species diversity was relatively high but many species were only found in low abundance. Small flagellates were most common and especially the genus *Chrysochromulina* * was found in high abundance. Different cryptomonadales were also common.

Kattegat

N14 Falkenberg 1th of August

A quite diverse community was found. The flagellate genus *chrysochromulina* * was still found in highest cellnumbers but other small flagellates such as different cryptomonads and the chrysophyte genus *Dinobryon* were also common. Quite a few larger flagellates belonging to the dinoflagellates were also present.

Anholt E 1th and 6th of August

The plankton community was more divers on the first occasion compared to the second sampling occasion. The genus *Chrysochromulina* * was most common on both occasions but other small flagellates were also present in high amounts. Larger cells of the dinoflagellate group gymnodiniales were also present. Quite a few chains of the chlorophyte *Planctonema lauterbornii* were present on both occasions.

The Baltic

BY2 2nd of August and BY5 3rd of August

Small flagellated species dominated in cell numbers especially the genus *Pyramimonas* belonging to the prasinophytes, the genus *Chrysochromulina** and different cryptomonadales. Some filamentous cyanobacteria were also present and dominated by *Aphanizomenon flos-aqua*. A surface sample was collected at both station and indicated that at least filamentous cyanobacteria were confined to the surface at BY2.

BCS III-10 3rd of August

Small flagellates dominated in numbers and the genus *Pyramimonas* was most abundant closely followed by the genus *Chrysochromulina**. Filamentous cyanobacteria were also present but in moderate levels and consisted of mainly *Aphanizomenon flos-aqua* but also a few long filaments of *Nodularia spumigena**.

BY15 3rd of August and BY38 4th of August

Small colony forming cyanobacteria dominated at both station. The chain forming chlorophyte *Planctonema lauterbornii* was also found in quite high numbers. Quite a few cyanobacteria

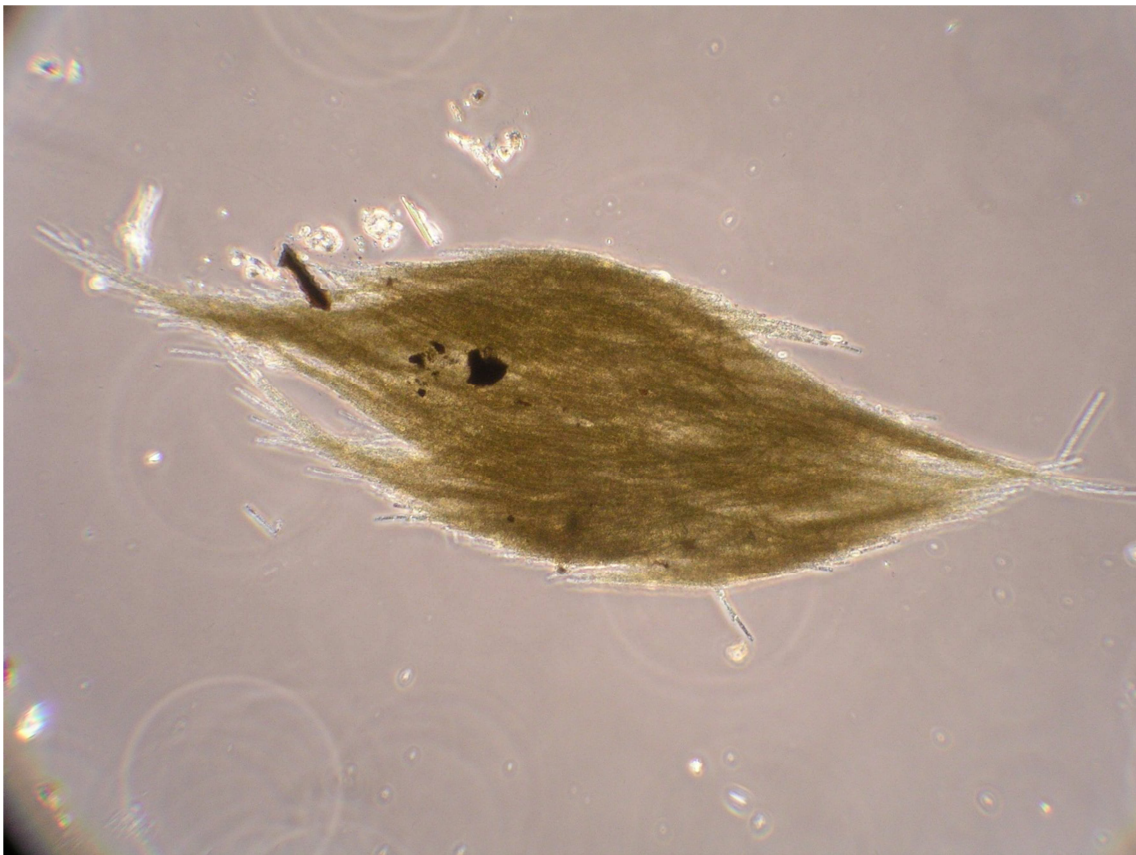
filaments were also present and the species *Aphanizomenon flos-aqua* was most common and secondly *Nodularia spumigena*.

Ref M1-V1 5th of August

Small flagellated species predominantly the genus *Chrysochromulina** dominated in numbers but the genus *Pyramimonas* was also found in high numbers. Quite a lot of different colony forming cyanobacteria were also present. The amount of filamentous cyanobacteria was much less at this station and *Aphanizomenon flos-aqua* was mainly found.

Surface aggregations of cyanobacteria filaments in high amounts to discolour the water were seen along most of the route in the southern part of the Baltic and also north of Gotland. The surface aggregations were especially intense at the south western parts and the south eastern parts around stations BY2, BCS III-10 and BY10. The filaments at the sampling stations consisted mainly of *Aphanizomenon flos-aqua* and *Nodularia spumigena* was only recorded in higher amounts at BY15 which is located east of Gotland. Of the three extra surface samples collected along the route only BY2 could confirm the observed discolouring of the waters.

For more specific species composition see page 4 and 5.



The most common species of filamentous cyanobacteria during this sampling occasion was *Aphanizomenon flos-aqua*.

Selection of observed species	Å17	Släggö	N14	Anholt E	Anholt E
Red=potentially toxic species	2011-08-07	2011-08-06	2011-08-01	2011-08-01	2011-08-06
	cells/l	cells/l	cells/l	cells/l	cells/l
<i>Ceratulina pelagica</i>		present	present	present	present
<i>Chaetoceros curvisetus</i>			present		
<i>Chaetoceros danicus</i>			present		
<i>Chaetoceros laciniosus</i>		present		present	
<i>Chaetoceros</i> spp.		present		present	present
<i>Cyclotella choctawhatcheana</i>			present	present	
<i>Cylindrotheca closterium</i>		present	present	present	
<i>Dactyliosolen fragilissimus</i>		present	present	present	present
<i>Guinardia delicatula</i>		present			
<i>Leptocylindrus danicus</i>	present	present	present	present	
<i>Leptocylindrus minimus</i>	present	present	present		
<i>Licmophora</i> spp.		present			
<i>Proboscia alata</i>	present	present	present	present	present
<i>Pseudonitzschia seriata</i> group			present		
<i>Pseudosolenia calcar-avis</i>		present	present		present
<i>Skeletonema marinoi</i>			present		
<i>Striatella</i> spp.		present			
<i>Thalassionema nitzschioides</i>			present		present
<i>Alexandrium pseudogonyaulax</i>			present	present	
<i>Alexandrium</i> spp.				present	
<i>Amphidinium crassum</i>		present		present	present
<i>Ceratium furca</i>					present
<i>Ceratium fusus</i>	present	present	present	present	present
<i>Ceratium tripos</i>		present	present	present	
<i>Dinophysis acuminata</i>		present		present	
<i>Dinophysis norvegica</i>		present			
<i>Dinophysis rotundata</i>		present		present	
Gymnodiniales	common	present	common	common	common
<i>Heterocapsa rotundata</i>	present	present		common	present
<i>Heterocapsa triquetra</i>		present			
<i>Karlodinium faculiferum</i>		present			
<i>Katodinium glaucum</i>	present	present			
<i>Lingulodinium polyedrum</i>		present	present	present	
<i>Peridiniella danica</i>		present	present		
<i>Prorocentrum micans</i>	present	present	present	present	present
<i>Prorocentrum minimum</i>		present	present	present	
<i>Protoceratium reticulatum</i>				present	
<i>Protoperdinium</i> spp.			present	present	
<i>Chrysochromulina</i> spp.	very common	very common	very common	very common	very common
Cryptomonadales spp	common	common	common	common	common
<i>Hemiselmis virescens</i>			present		
<i>Plagioselmis prolunga</i>	common	common	common	common	common
<i>Teleaulax</i> spp.		present			
<i>Dinobryon balticum</i>	common				
<i>Dinobryon faculiferum</i>			present		present
<i>Dinobryon</i> spp.	common	present	common		common
<i>Planctonema lauterbornii</i>		present	present	common	common
Chlorodendrales			present	present	
<i>Oocystis</i> spp.					present
<i>Pyramimonas</i> spp.	common	common	present	present	common
Cyanobacteria colony forming		present	present	common	common
<i>Anabaena</i> spp.			present	present	present
<i>Leucocryptos marina</i>			present		
Ciliophora	present	present	present	present	present
<i>Mesodinium rubrum</i>		present			

Selection of observed species	BY2	BY5	BCS III-10	BY15	BY38	Ref. M1-V1
Red=potentially toxic species	2011-08-02	2011-08-03	2011-08-03	2011-08-03	2011-08-04	2011-08-04
	cells/l	cells/l	cells/l	cells/l	cells/l	cells/l
<i>Actinocyclus</i> spp.	present	present			present	present
<i>Chaetoceros danicus</i>	present	present	present			
<i>Chaetoceros impressus</i>	present					
<i>Cyclotella choctawhatcheana</i>						present
<i>Cylindrotheca closterium</i>		present				
<i>Skeletonema marinoi</i>						present
<i>Thalassiosira</i> spp.						present
<i>Cladopyxis claytonii</i>					present	
Gymnodiniales	common	present	present	present	common	present
<i>Katodinium glaucum</i>	present			present		
<i>Peridiniella danica</i>				present		
<i>Protoperidinium</i> spp.					present	
Cryptomonadales spp.	common	present	common	common	common	common
<i>Hemiselmis virescens</i>		present	present		present	present
<i>Plagioselmis prolunga</i>	common	common	common	common	common	common
<i>Teleaulax</i> spp.		present	present			
<i>Dinobryon</i> spp.				present	present	
<i>Chrysochromulina</i> spp	very common	very common	very common	very common	very common	very common
<i>Pyramimonas</i> spp.	very common	very common	very common	present	common	common
Cyanobacteria colony forming	common		common	very common	very common	very common
<i>Anabaena</i> spp				present	present	present
<i>Aphanizomenon flos-aqua</i>	present	present	present	common	present	present
<i>Nodularia spumigena</i>			present	present	present	present
<i>Eutreptiella gymnastica</i>			present			
<i>Eutreptiella</i> spp.	present					
<i>Oocystis</i> spp.				present		
<i>Planctonema lauterbornii</i>				common	common	
Choanoflagellidea	present				present	present
<i>Katablepharis remigera</i>	present	present		present	present	present
<i>Leucocryptus marina</i>				present	present	present
<i>Ebria tripartita</i>						present
<i>Ciliophora</i>	present	present	present	present	present	present
<i>Helicostomella</i>					present	
<i>Mesodinium rubrum</i>	present	present	present	present		present

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; andningsvägrigheter; 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, kramp	Mild case: Within 3-5 hours: dizziness, nausea, vomiting, diarrhoea, abdominal cramps. Extreme case: dizziness, hallucinations, confusion, loss of memory, cramps.
<i>Chatoceros 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.