SMHI

Oceanographic Unit

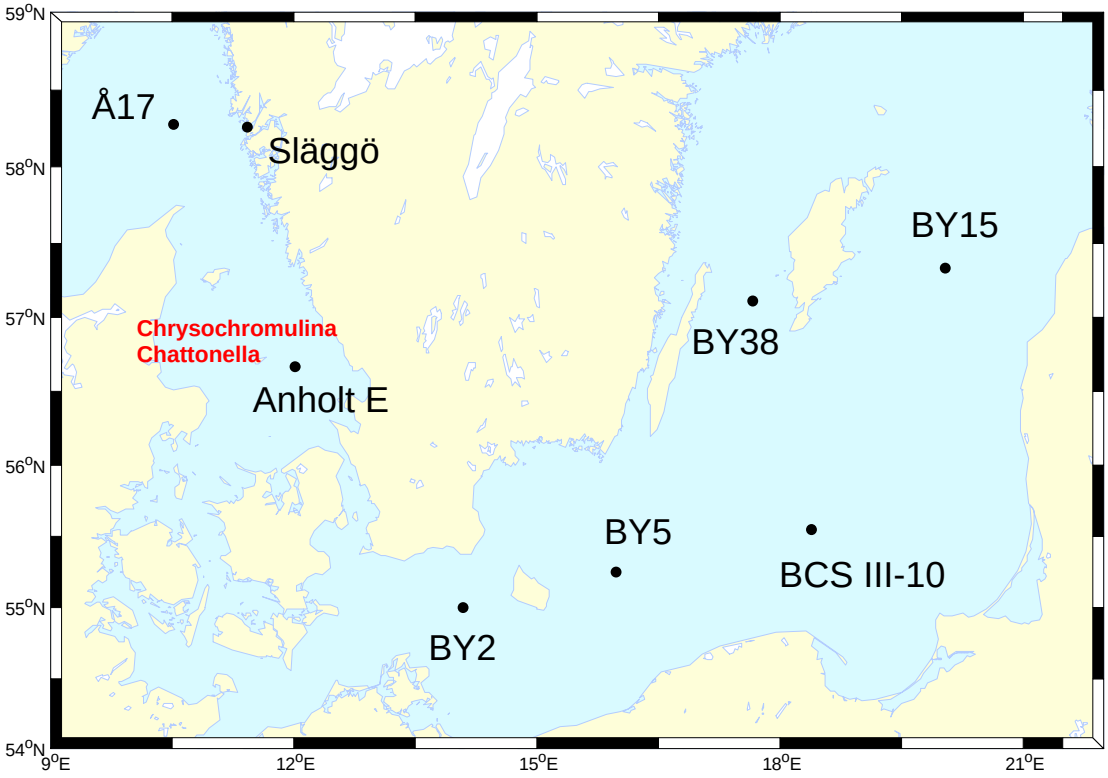
AlgAware

No 3, 27– 30 March 2006

ALGAL SITUATION IN MARINE WATERS SURROUNDING SWEDEN

I öppna **Skagerrak** var vårblomning i slutskedet, men fortfarande fanns ganska rikligt med diatoméer framför allt av *Skeletonema costatum* och släktet *Chaetoceros*. Dinoflagellaten *Peridiniella danica* dominerade, liksom i **Skagerraks** kustområde. Vid kuststationen påträffades små mängder av *Alexandrium tamarense** och *Dinophysis norvegica**. I **Kattegatt** fanns också bara rester av vårblomningen, och även här dominerade *Peridiniella danica*. *Chattonella* cf. *verruculosa** förekom med ca. 25 000 celler per liter.

I södra **Östersjön** pågick vårblomningen med rikligt av diatoméer. Längre öster- och norrut var vårblomningen i ett inledande stadium.



Potential toxicity

Alexandrium spp. Paralytic shellfish poisoning (PSP)

Dinophysis spp. Diarrhetic shellfish poisoning (DSP)

Pseudo-nitzschia spp. Amnesic shellfish poisoning (ASP)

Chrysochromulina spp. Fishkill

Chattonella spp. Fishkill

Nodularia spumgena hepatotoxin (e.g. toxic to the liver)

In the open **Skagerrak** the spring bloom was ending, but there were still a lot of diatoms, *Skeletonema costatum* and the genus *Chaetoceros* being most common. The dinoflagellate *Peridiniella danica* was the dominant species, just as in the coastal area of the **Skagerrak**. At the coastal station small amounts of *Alexandrium tamarense** and *Dinophysis norvegica** were seen. In the **Kattegat** there were also sign of the declined spring bloom, and also here *Peridiniella danica* dominated. *Chattonella* cf. *verruculosa** was present with about 25 000 celler per liter.

In the south **Baltic** the spring bloom, rich in diatoms, was going on. Further to the east and north the spring bloom was developing.

DETAILS

Based on quantitative samples 0-10 m depth and net samples *POTENTIALLY HARMFUL SPECIES

SKAGERRAK

Å17 30 March

The spring bloom was in a terminating stage, but still with a lot of diatom species. Heterotrophic dinoflagellates, especially *Peridiniella danica*, were common. Single cells of the *Alexandrium ostenfeldii** and *Dinophysis norvegica** were present. Chlorophyll *a* was about 1 µg/L in at 0-10 m depth and peaked at 15-20 m with 3-4 µg/L.

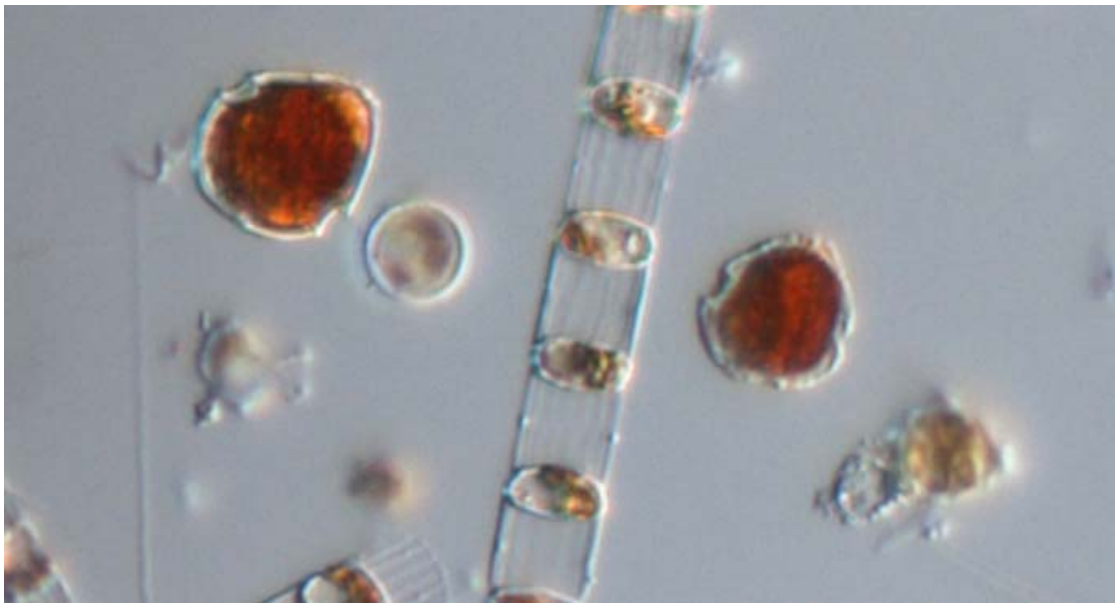
Släggö 30 March

The situation at Släggö was similar to Å17, but the amount of dinoflagellates was larger. *Peridiniella danica*, dominated with about 100 000 cells/L and *Alexandrium tamarense** and *Dinophysis norvegica** were present in low numbers. Chlorophyll *a* was 0.7-0.8 µg/L in the upper 20 meters.

KATTEGAT

Anholt E 29 March

The spring bloom had terminated and the post spring bloom phase with increasing amounts of flagellates had begun. The dominant species was *Peridiniella danica* with 250 000 cells/L, followed by *Chrysochromulina* spp. with 100 000 and *Chattonella* cf. *verruculosa** with 20 000 cells/L. Chlorophyll *a* was 1.2-2.6 µg/L in the upper 20 meters.



Peridiniella danica and *Skeletonema costatum*

Selection of observed species	Recommended limit	Å17 2006-03-30 cells/L	Släggö 2006-03-30 cells/L	Anholt E 2006-03-29 cells/L
Chaetoceros affinis		present		
Chaetoceros ceratosporus			common	common
Chaetoceros contortus		present	present	
Chaetoceros curvisetus		present		
Chaetoceros debilis		present	present	
Chaetoceros diadema			present	
Chaetoceros impressus				present
Chaetoceros laciniosus			present	
Chaetoceros similis		present	present	common
Chaetoceros socialis		present	common	present
Chaetoceros teres		present		
Guinardia flaccida				present
Leptocylindrus danicus		common		
Leptocylindrus minimus				present
Proboscia alata		present	present	present
Pseudo-nitzschia delicatissima-group	1 million cells/liter	present	present	
Pseudo-nitzschia seriata-group	1 million cells/liter	present		
Rhizosolenia hebetata		present	present	
Rhizosolenia setigera			present	present
Skeletonema costatum		common	common	common
Thalassionema nitzschioides			present	present
Thalassiosira angulata		common		
Thalassiosira nordenskioeldii		present	present	
Alexandrium ostenfeldii	300 cells/liter	present		
Alexandrium tamarense	300 cells/liter		present	
Ceratium lineatum				present
Ceratium longipes		present		
Ceratium tripos		present		present
Dinophysis acuminata	900 cells/liter		100	
Dinophysis norvegica	2000 cells/liter	200	300	100
Gyrodinium spirale		present	common	present
Peridiniella danica		20 000	100 000	250 000
Protoperidinium crassipes	no recommendation			100
Protoperidinium depressum		present	present	present
Protoperidinium pellucidum			present	present
Scrippsiella trochoidea		common	present	present
Dinobryon balticum			present	present
Eutreptiella spp.			common	common
Chrysochromulina spp.	no recommendation		common	100 000
Chattonella cf. verruculosa	no recommendation			20 000
Mesodinium rubrum		present	present	common
Chlorophyll *a* 0-10 m	**µg / L**	**1.0**	**0.8**	**1.7**

BALTIC SEA

Arkona basin BY2 29 March

The spring bloom was going on with a dominance of the diatoms *Chaetoceros wighamii*, *Thalassiosira levanderi* and *Skeletonema costatum*. There were also other diatoms present, all characteristic of the Baltic spring bloom. Dinoflagellates were few and only single filaments of cyanobacteria were seen in the net sample. Chlorophyll *a* was about 5 µg/L in the upper 40 meters.

Bornholm basin BY5 28 March

The spring bloom was in an initial stage, where *Chaetoceros wighamii*, *Chaetoceros holsaticus* and *Skeletonema costatum* had started to increase in cell density. Chlorophyll *a* was about 3 µg/L in the upper 10 meters.

South East Baltic BCS III-10 28 March

Although the spring bloom had started, judging from chlorophyll and nutrient concentrations there were small amounts of phytoplankton in the analysed samples. Chlorophyll *a* was about 2 µg/L in the upper 10 meters.

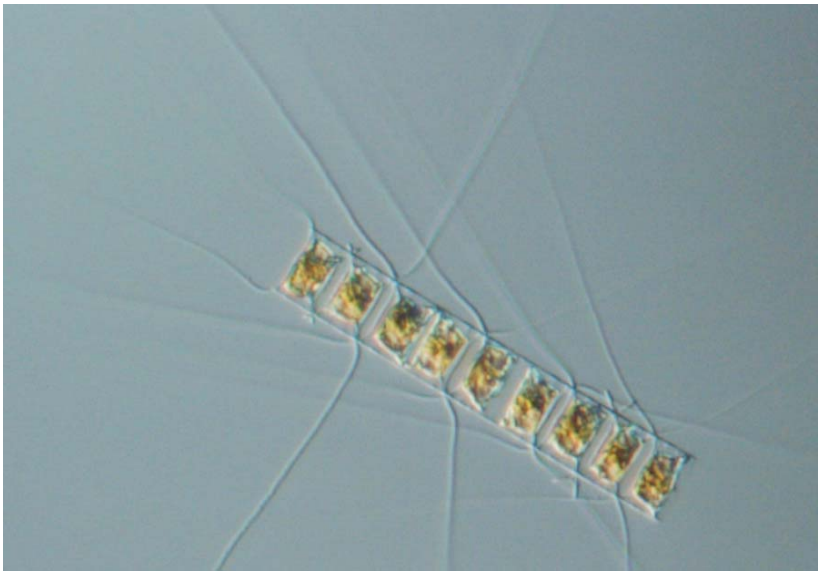
Eastern Gotland basin BY15 28 March

The spring bloom had developed further at this station, but was still far from the peak. The typical spring species *Chaetoceros wighamii* and *Chaetoceros holsaticus* were present and *Skeletonema costatum* was developing into a larger population. The typical spring dinoflagellate of the Baltic, *Peridiniella catenata*, occurred with several chains. Chlorophyll *a* was about 2 µg/L in the upper 10 meters.

Western Gotland basin BY38 4 March

There were some signs of the spring bloom, like the presence of Thalassiosira baltica, but in general the plankton flora showed a late winter situation. Chlorophyll *a* was about 1.7 µg/L in the upper 10 meters.

Selection of observed species	BY2 2006-03-29 cells/L	BY5 2006-03-28 cells/L	BCS III 10 2006-03-28 cells/L	BY15 2006-03-28 cells/L	BY38 2006-03-27 cells/L
Achnanthes taeniata	present			present	present
Chaetoceros ceratosporus	common	present	common		
Chaetoceros danicus	present			present	
Chaetoceros holsaticus	common	30 000			
Chaetoceros impressus				present	present
Chaetoceros wighamii	300 000	20 000		present	
Melosira arctica	present	present		present	
Skeletonema costatum	50 000	20 000	present	40 000	
Thalassiosira baltica	present	present		present	present
Thalassiosira levanderi	100 000	common		common	
Dinophysis acuminata					200
Heterocapsa rotundata		common	present	present	
Peridiniella catenata	present	present		present	
Eutreptiella spp.	common		present		
Chrysochromulina spp.	present		present		
Aphanizomenon sp.	present	present		present	present
Mesodinium rubrum	present	common	common	present	present
Chlorophyll *a* 0-10 m µg / L	**5.0**	**3.0**	**2.0**	**2.1**	**1.7**



Chaetoceros wighamii

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