

The Swedish West coast and the southern Baltic Sea

The AlgAware report No 6 is divided in PART 1 and PART 2 because the expedition in June was divided in two cruises. This report present phytoplankton analyses from the southern Baltic Sea and the Swedish West coast.

The Skagerrak

Å17 (open Skagerrak) 26th of June

The species diversity was low. Small flagellates of different sorts were most common such as cells belonging to prymnesiophyceae. The Coccolithophore *Emiliana huxleyi* was also found in small amounts.

Släggö (Skagerrak coast) 26th of June

The species diversity was quite high at this station. Mainly small cells were found in the sample. The dominating group was diatoms where for exemple *Chaetoceros socialis* was found in high cell numbers. Small flagellates belonging to the cryptomonadales were also common.

The Kattegat

N14 Falkenberg and Anholt E 27th of June and Anholt E 29th of june

The diatom *Dactyliosolen fragilissimus* dominated at both stations with over 200 000 cells per litre. Some cells of the diatom *Skeletonema marinoi* was also found at both stations but in lower cell numbers.

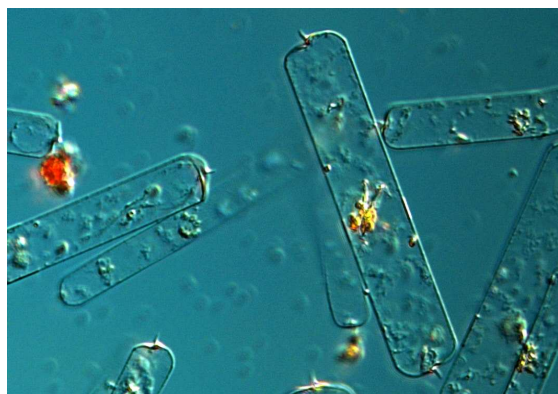


Fig.1. The diatom *Dactyliosolen fragilissimus* was common in the Kattegat. This species is commonly found along the Swedish west coast during summer.

The Southern Baltic Sea

BY2 Arkona and BY5 28th of June

Quite high cell numbers of larger species were found in the southern part of the Baltic Sea. Small amounts of the filamentous cyanobacteria *Aphanizomenon flos-aquae* were found at both stations. The diatoms *Chaetoceros impressus* and *C. danicus* were also common. Small colony forming cyanobacteria of different genus was also found in quite high cell numbers.



Fig.2. Small amounts of the filamentous cyanobacteria *Aphanizomenon flos-aquae* were found in the southern part of the Baltic Sea.

Analyses, text and layout
Marie Johansen

| Selection of observed species | Å17 | Släggö | N14 | Anholt E | Anholt E |
|--------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Red=potentially toxic species | 2013-06-26 | 2013-06-26 | 2013-06-27 | 2013-06-27 | 2013-06-29 |
| Hose 0-10 m | cells/l | cells/l | cells/l | cells/l | cells/l |
| <i>Cylindrotheca closterium</i> | present | | | | |
| <i>Pseudo-nitzschia</i> spp | | present | | | |
| <i>Thalassionema nitzschioides</i> | | | | present | present |
| <i>Dactyliosolen fragilissimus</i> | | present | very common | very common | very common |
| <i>Guinardia delicatula</i> | present | present | present | present | present |
| <i>Guinardia flaccida</i> | present | present | | present | |
| <i>Leptocylindrus danicus</i> | present | present | present | | |
| <i>Leptocylindrus minimus</i> | | present | | | |
| <i>Proboscia alata</i> | present | present | | | |
| <i>Rhizosolenia imbricata</i> | | present | | | |
| <i>Skeletonema marinoi</i> | | present | present | common | present |
| <i>Cerataulina pelagica</i> | | present | | | |
| <i>Chaetoceros</i> spp | | | | present | |
| <i>Chaetoceros contortus</i> | | | | present | |
| <i>Chaetoceros danicus</i> | | | present | present | |
| <i>Chaetoceros debilis</i> | | | | present | |
| <i>Chaetoceros socialis</i> | | common | | | |
| <i>Ceratium lineatum</i> | | present | | | |
| <i>Ceratium longipes</i> | | present | | | |
| <i>Ceratium macroceros</i> | | present | | | |
| <i>Ceratium tripos</i> | present | present | present | present | present |
| <i>Cladopyxis claytonii</i> | present | | | | |
| <i>Dinophysis acuminata</i> | | present | | | |
| <i>Dinophysis norvegica</i> | | present | | | |
| <i>Dinophysis rotundata</i> | | present | | | |
| Gymnodiniales | present | present | present | | present |
| <i>Karenia mikimotoi</i> | | | present | | |
| <i>Katodinium glaucum</i> | | present | | present | |
| Peridinales | | | | present | present |
| <i>Protoperdinium</i> spp | | present | | | |
| <i>Protoperdinium bipes</i> | | present | | | |
| <i>Protoperdinium conicum</i> | | | | | present |
| <i>Protoperdinium depressum</i> | | present | | | |
| <i>Scrippsiella</i> CPX | present | | | | |
| <i>Dinobryon fauliferum</i> | | | | | present |
| Prymnesiales | common | common | common | common | common |
| <i>Emiliana huxleyi</i> | present | | | | |
| Craspedophyceae | | present | | | |
| Chlorodendrales | | present | | | |
| <i>Pyramimonas</i> spp | | common | | | present |
| Cryptomonadales | | common | present | | |
| <i>Leucocryptos marina</i> | | | present | present | present |
| <i>Plagioselmis prolonga</i> | | common | present | common | common |
| <i>Teleaulax</i> spp | present | common | | | |
| <i>Telonema subtile</i> | | | | present | present |
| <i>Mesodinium rubrum</i> | | present | present | | |
| <i>Ciliophora</i> | present | present | present | present | present |

| Selection of observed species | BY2 | BY5 |
|--------------------------------------|-------------------|-------------------|
| Red=potentially toxic species | 2013-06-28 | 2013-06-28 |
| Hose 0-10 m | cells/l | cells/l |
| <i>Thalassiosira</i> spp | present | |
| <i>Chaetoceros danicus</i> | present | present |
| <i>Chaetoceros impressus</i> | common | common |
| <i>Dinophysis norvegica</i> | | present |
| Gymnodiniales | present | present |
| <i>Heterocapsa rotundata</i> | present | present |
| Peridiniales | | present |
| <i>Oocystis</i> spp | | present |
| Cryptomonadales | present | |
| <i>Plagioselmis prolunga</i> | common | common |
| <i>Teleaulax</i> spp | present | present |
| <i>Planctonema lauterbornii</i> | present | present |
| Prymnesiales | common | common |
| <i>Pyramimonas</i> spp | common | common |
| <i>Ebria tripartita</i> | | present |
| <i>Mesodinium rubrum</i> | | present |
| <i>Ciliophora</i> spp | present | present |
| <i>Lemmermanniella</i> spp | | present |
| <i>Aphanothece</i> spp | common | common |
| <i>Nodularia spumigena</i> | present | present |
| <i>Aphanizomenon flos-aquae</i> | present | present |

| Art / Species | Gift / Toxin | Eventuella symptom | Clinical symptoms |
|---|--|---|---|
| <i>Alexandrium</i> spp. | Paralytic shellfish poisoning (PSP) | <p>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</p> <p>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.</p> | <p>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.</p> <p>Extreme case Muscular paralysis; pronounced respiratory difficulty; choking sensation; death through respiratory paralysis may occur within 2-24 hours after ingestion.</p> |
| <i>Dinophysis</i> spp. | Diarrhetic shellfish poisoning (DSP) | <p>Milda symptom: Efter cirka 30 minuter till några timmar: yrsel, illamående, kräkningar, diarré, magont</p> <p>Extrema symptom: Upprepad exponering kan orsaka cancer</p> | <p>Mild case: Within 30 min-a few hours: dizziness, nausea, vomiting, diarrhoea, abdominal pain.</p> <p>Extreme case: Repeated exposure may cause cancer.</p> |
| <i>Pseudo-nitzschia</i> spp. | Amnesic shellfish poisoning (ASP) | <p>Milda symptom: Efter 3-5 timmar: yrsel, illamående, kräkningar, diarré, magkramper</p> <p>Extrema symptom: Yrsel, hallucinationer, förvirring, förlust av korttidsminnet, kramper</p> | <p>Mild case: Within 3-5 hours: dizziness, nausea, vomiting, diarrhoea, abdominal cramps.</p> <p>Extreme case: dizziness, hallucinations, confusion, loss of memory, cramps.</p> |
| <i>Chaetoceros concavicornis</i> / <i>C.convolutus</i> | Mechanical damage through hooks on setae | <p>Låg celltäthet: Ingen påverkan.</p> <p>Hög celltäthet: Fiskens gälar skadas, fisken dör.</p> | <p>Low cell numbers: No effect on fish.</p> <p>High cell numbers: Fish death due to gill damage.</p> |
| <i>Pseudochattonella</i> spp. | Fish toxin | <p>Låg celltäthet: Ingen påverkan.</p> <p>Hög celltäthet: Fiskens gälar skadas, fisken dör.</p> | <p>Low cell numbers: No effect on fish.</p> <p>High cell numbers: Fish death due to gill damage.</p> |