

Oceanographic Services
Lars Edler

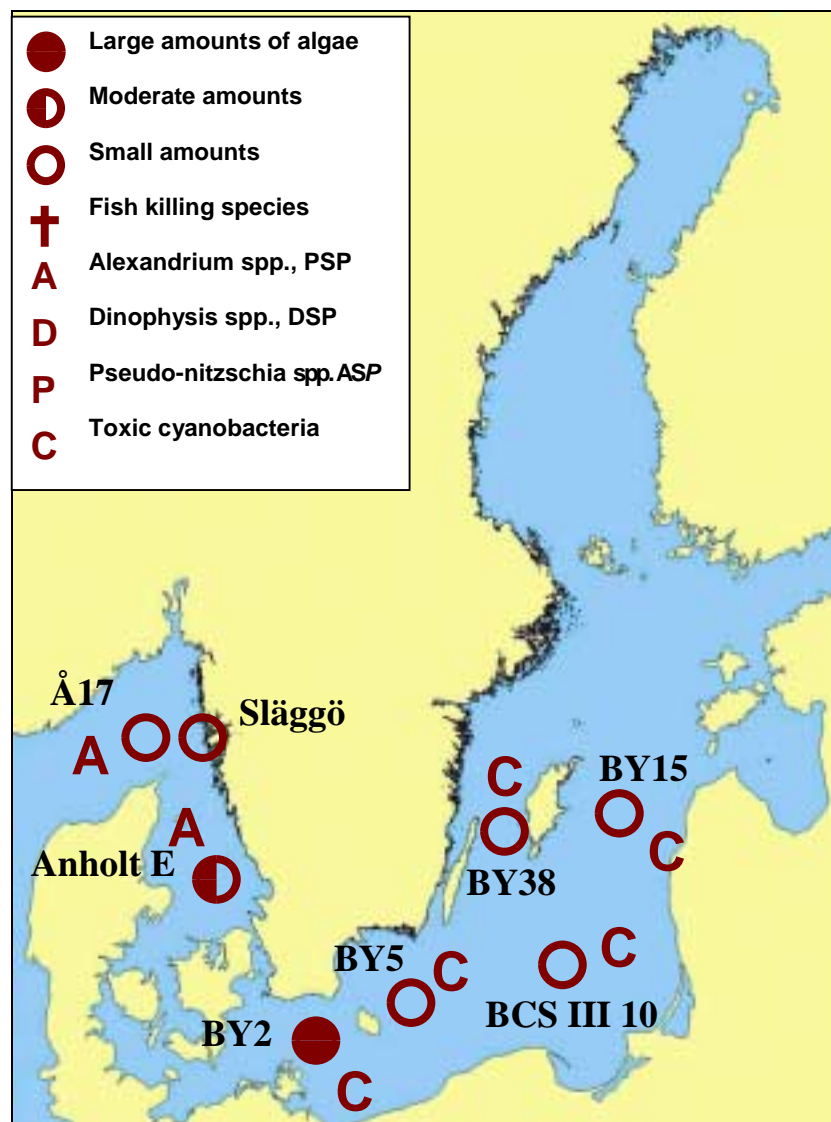
ALGAL SITUATION IN SWEDISH MARINE WATERS

No 8, 2003, 28 July - 2 August

OVERVIEW

In the Skagerrak the plankton flora was poor with few diatoms and dinoflagellates. Toxic species as *Dinophysis acuminata**, *Dinophysis rotundata**, cf. *Alexandrium pseudogonyaulax** and *Chrysochromulina* spp. * were present in low concentrations. In the Kattegat a diatom bloom of *Guinardia flaccida*, *Proboscia alata* and *Dactyliosolen fragilissimus* decreased between the two samplings. Small amounts of Baltic cyanobacteria were found, as well cf. *Alexandrium pseudogonyaulax**.

In the Baltic blue-green algae were common at most stations, with a dominance of *Aphanizomenon* sp. and less of *Nodularia spumigena**. Most of the *Nodularia* chains were senescent and a lot of *Nitzschia paleacea* were attached to the chains. In Arkona a large *Prorocentrum minimum* bloom was going on.



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DETAILS

* POTENTIALLY HARMFUL SPECIES

SKAGERRAK

Station Å17, 28 July

A poor plankton flora with hardly any diatoms was found at this station, with the exception of about 15 000 cells/l of *Chaetoceros thronsdonii*. Among dinoflagellates *Heterocapsa minuta/rotundata* dominated. Few cells of cf. *Alexandrium pseudogonyaulax** and *Dinophysis rotundata** were also seen. Small flagellates with *Chrysochromulina* spp.* and *Pyramimonas* spp. reached the highest cell densities.

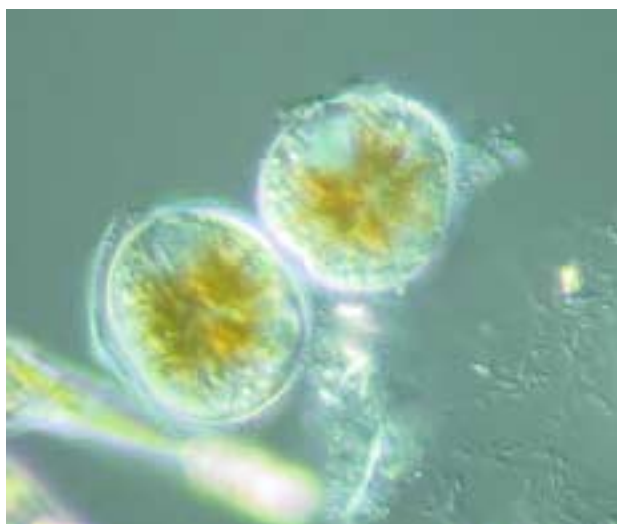
Station Släggö, 28 July

At this station a few species of diatoms - *Guinardia flaccida*, *Proboscia alata*, *Skeletonema cosatum* and *Leptocylindrus danicus* - were present, but all in low concentrations. *Dinophysis acuminata** and *Heterocapsa minuta/rotundata* were the most important dinoflagellates. Small flagellates with *Chrysochromulina* spp.* and *Pyramimonas* spp. reached the highest cell densities. The characteristic blue-greens of the Baltic Sea, *Aphanizomenon* spp. and *Nodularia spumigena** were found in very low amounts of about 0.05 m/l, indicating a transport of low saline water northwards along the Swedish west coast.

KATTEGAT

Station Anholt E, 29 July

Diatoms were common with the highest cell densities of *Proboscia alata*, *Guinardia flaccida* and *Dactyliosolen fragilissimus*. A number of dinoflagellates were found, but only *Heterocapsa minuta/rotundata* reached over 20 000 cells/l. Small unidentified flagellates and non-flagellated cells were very common. A few threads of *Nodularia spumigena** were observed.

cf. *Alexandrium pseudogonyaulax**

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Station Anholt E, 2 August

During the days between the samplings at this station the plankton flora changed, so that the diatom concentration declined considerably. The cell densities of *Proboscia alata*, *Guinardia flaccida* and *Dactyliosolen fragilissimus* had dropped by 60-80%. Also species of other phytoplankton groups had gone down. Most noticeable was the presence of small numbers of cf. *Alexandrium pseudogonyaulax** and about 15 000 cells/l of *Prorocentrum minimum*.

| | 2003-07-28 | 2003-07-28 | 2003-07-29 | 2003-08-02 |
|--|------------|------------|------------|------------|
| | Å17 | Släggö | Anholt E | Anholt E |
| | 0-10 m | 0-10 m | 0-10 m | 0-10 m |
| <i>Chaetoceros thronsdensei</i> | 16 569 | | | |
| <i>Dactyliosolen fragilissimus</i> | | | 27 528 | 5 304 |
| <i>Guinardia flaccida</i> | | present | 32 412 | 12 444 |
| <i>Leptocylindrus danicus</i> | | present | 3 552 | present |
| <i>Proboscia alata</i> | present | present | 76 368 | 13 668 |
| <i>Skeletonema costatum</i> | | sparse | | |
| cf. <i>Alexandrium pseudogonyaulax</i> | 204 | | | 1 122 |
| <i>Ceratium tripos</i> | sparse | present | sparse | sparse |
| <i>Dinophysis acuminata</i> | | 204 | | |
| <i>Dinophysis acuta</i> | present | | present | |
| <i>Dinophysis norvegica</i> | present | | | present |
| <i>Dinophysis rotundata</i> | present | | present | present |
| <i>Heterocapsa minima/rotundata</i> | 26 037 | 54 441 | 18 936 | |
| <i>Prorocentrum minimum</i> | | | | 14 202 |
| <i>Pyramimonas</i> spp. | 47 340 | 132 552 | 9 468 | |
| <i>Chrysochromulina</i> sp. (3-6 µm) | 52 074 | 18 936 | | 18 936 |
| <i>Chrysochromulina</i> sp. (6-10 µm) | | 42 606 | | |
| <i>Aphanizomenon</i> sp. | | present | | |
| <i>Nodularia spumigena</i> | present | present | present | |

BALTIC SEA

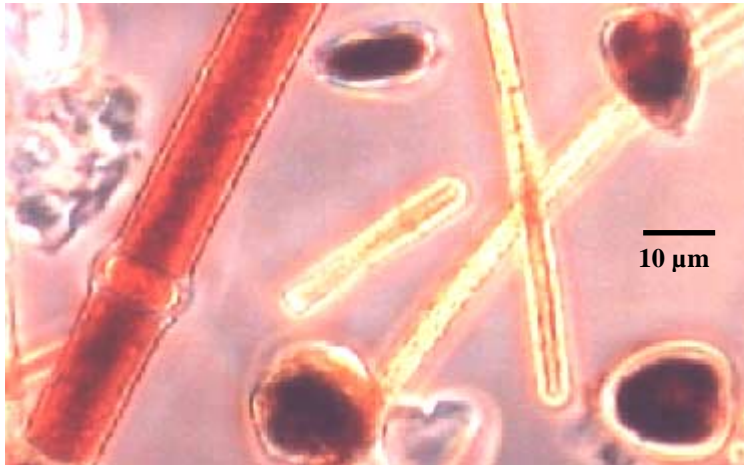
Arkona basin. Station BY2, 29 July

The plankton flora was dominated by *Aphanizomenon* sp., present with about 1 m/l. *Nodularia spumigena**, however, was present only with a few threads. The diatom *Nitzschia paleacea* was very common and *Chaetoceros impressus* and *Dactyliosolen fragilissimus* were relatively common, as was the dinoflagellate *Ceratium tripos*. The most common species was *Prorocentrum minimum*, which reached almost 0.7 million cells/l. Also Cryptophyceans, *Pyramimonas* spp. and *Chrysochromulina* spp.* were common.

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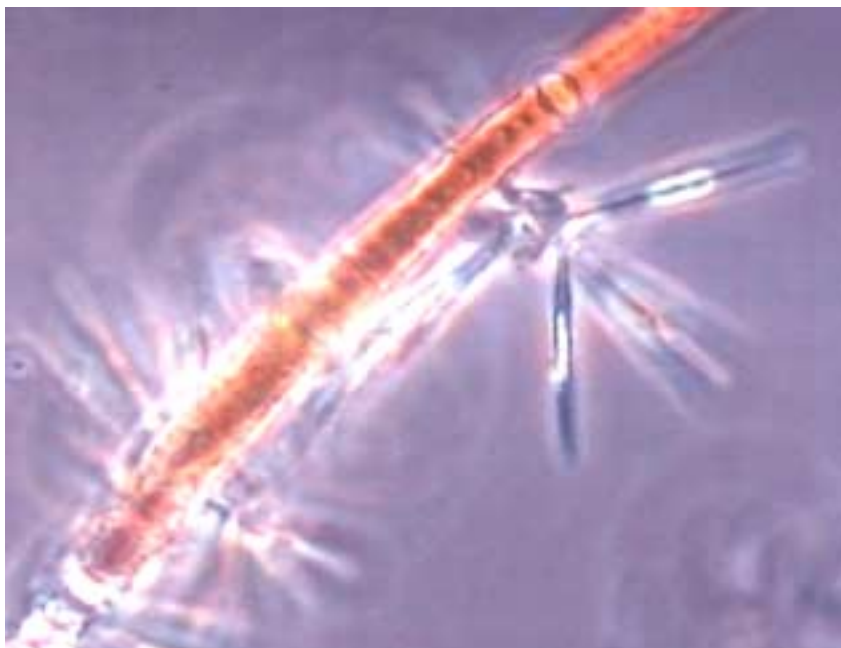
Nodularia spumigena (left),
Aphanizomenon sp. (x-threads)
and *Prorocentrum minimum*.

Bornholm basin. Station BY5, 30 July

A similar situation was found at this station, but with much lower abundance of all species. The large amounts of *Aphanizomenon* sp. and *Prorocentrum minimum* were not seen here and the few threads of *Nodularia spumigena** were senescent and large amounts of *Nitzschia paleacea* were attached to them. Small amounts of *Dinophysis norvegica** were also found.

Southeast Baltic. Station BCS III 10, 30 July

Cell densities of most species were lower at this station compared to BY5 and the only additional species were *Planctonema lauterbornii* and *Myrionecta rubra*.



Senescent *Nodularia* chain with
attached *Nitzschia paleacea*.

Eastern Gotland basin, Station BY15, 31 July

Cell densities of most species continued to decrease at this station. Only *Nitzschia paleacea* kept its relatively high abundance. The green alga *Monoraphidium contortum*, which was not seen at any other station, was present here. Small amounts of *Dinophysis norvegica** were also found.

Western Gotland basin, Station BY38, 31 July

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The plankton flora showed the same pattern as east of Gotland. The abundance of *Aphanizomenon* sp. was higher here.

| | 2003-07-29 | 2003-07-30 | 2003-07-30 | 2003-07-31 | 2003-07-31 |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|
| | BY2 | BY5 | BCS III 10 | BY15 | BY38 |
| | 0-10 m | 0-10 m | 0-10 m | 0-10 m | 0-10 m |
| <i>Chaetoceros danicus</i> | present | present | | | present |
| <i>Chaetoceros impressus</i> | very common | common | | | |
| <i>Dactyliosolen fragilissimus</i> | common | | | | |
| <i>Nitzschia paleacea</i> | very common | very common | very common | very common | very common |
| <i>Ceratium tripos</i> | present | | | | |
| <i>Dinophysis norvegica</i> | | present | | present | present |
| <i>Gonyaulax verior</i> | | present | | | present |
| <i>Prorocentrum minimum</i> | 700 000 | present | | present | |
| <i>Hemiselmis virescens</i> | | common | common | present | present |
| <i>Leucocryptos marina</i> | present | present | common | | |
| <i>Plagioselmis prolonga</i> | common | present | common | present | |
| <i>Teleaulax acuta</i> | common | common | | | |
| <i>Pyramimonas</i> spp. | 35 000 | common | common | present | present |
| <i>Chrysochromulina</i> sp. (3-6 µm) | 25 000 | present | present | present | present |
| <i>Monoraphidium contortum</i> | | | | common | |
| <i>Planctonema lauterbornii</i> | | | present | | |
| <i>Aphanizomenon</i> sp. | 1 m/l | very common | common | present | common |
| <i>Nodularia spumigena</i> | present | present | present | present | present |
| <i>Myrionecta rubra</i> (40-50) | | | present | | |