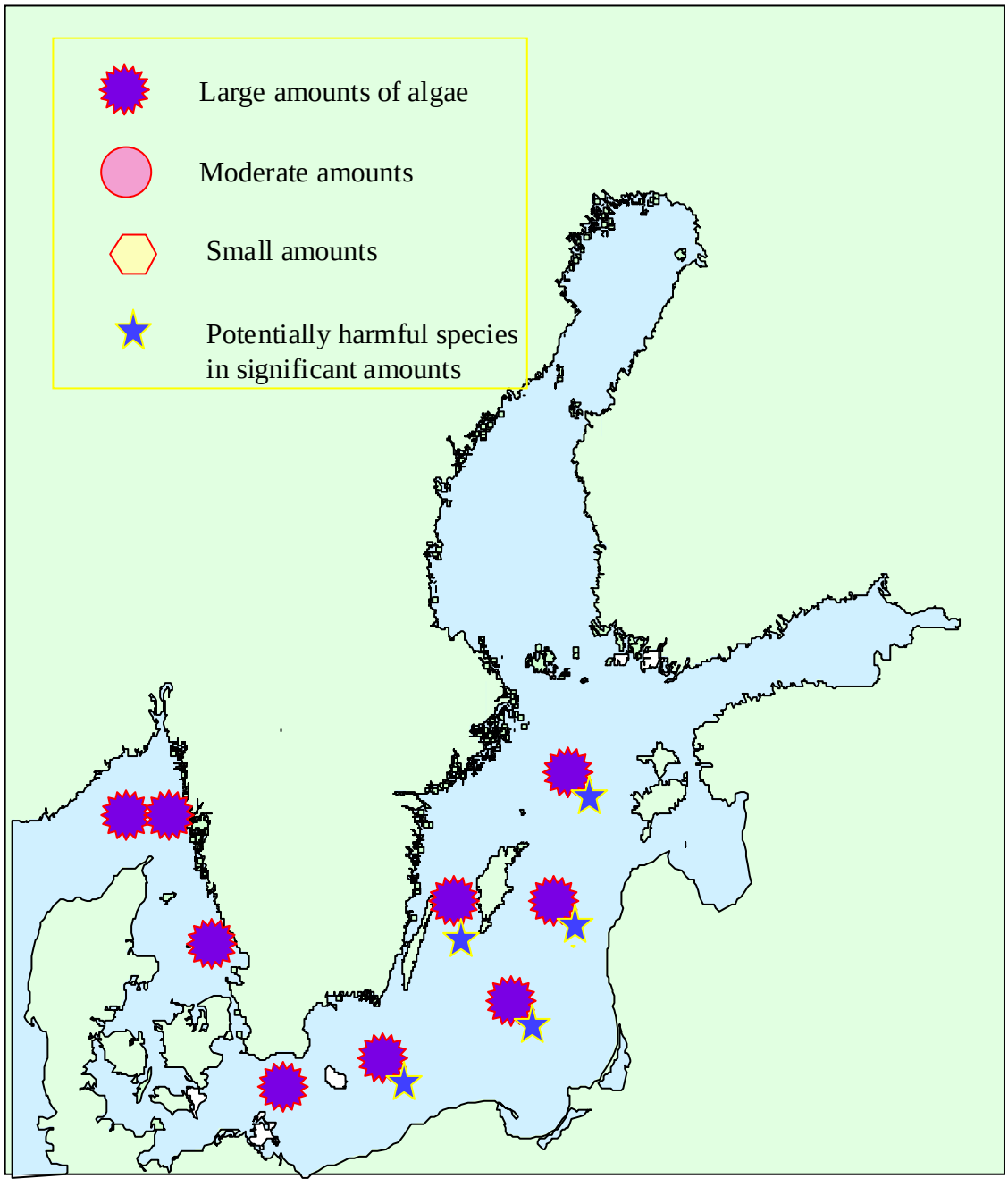
Oceanographic Services

Lars Edler

ALGAL SITUATION IN SWEDISH MARINE WATERS
No 7, 1999, 5-9 July

OVERVIEW

Sampling in the Skagerrak, the Kattegat and the Baltic Sea



SMHI
Oceanographic Services Lars Edler

ALGAL SITUATION IN SWEDISH MARINE WATERS
No 7, 1999, 5-9 July

DETAILS * POTENTIALLY HARMFUL SPECIES

Sampling in the Skagerrak, the Kattegat and the Baltic Sea

SKAGERRAK

Station Å16, 5 JULY

Chlorophyll concentrations in the upper 20 m about 2 µg l^{-1}. A peak of 6.5 µg l^{-1} at 15 m depth.

High diversity of phytoplankton. Several dinoflagellate species of the genera **Ceratium, Protoperidinium, Scrippsiella, Prorocentrum, Lingulodinium, Heterocapsa** and **Gonyaulax**, but in low numbers. **Dinophysis acuta*** and **D. norvegica*** present. Among diatoms **Leptocylindrus danicus** dominated with about 870 000 cells l^{-1}. **Rhizosolenia styliformis** and **Pseudonitzschia delicatissima** also common. The water was colored turquoise by a bloom of the coccolithophorid **Emiliania huxleyi**.

Station M6, 5 JULY

Chlorophyll concentrations in the upper 20 m 1.5 - 3 µg l^{-1}. A peak of 14 µg l^{-1} at 40 m depth.

High diversity of phytoplankton. Several dinoflagellate species of the genera **Ceratium, Protoperidinium, Scrippsiella, Prorocentrum, Lingulodinium, Heterocapsa** and **Gonyaulax**, but in low numbers. **Dinophysis acuta*** and **D. norvegica*** present. Among diatoms **Dactyliosolen fragilissimus** dominated. Small amounts of **Proboscia alata, Chaetoceros compressus** and **C. wighamii** present The bloom of the coccolithophorid **Emiliania huxleyi**.with cell densities of 1.2 million cells l^{-1} in the surface layer colored the water turquoise.

KATTEGAT

Station Anholt E, 6 JULY

Chlorophyll concentrations in the upper 15 m 1.5 – 4.5 µg.L^{-1}.

High diversity of phytoplankton. Several dinoflagellate species of the genera **Ceratium, Protoperidinium, Scrippsiella, Lingulodinium, Heterocapsa** and **Gonyaulax**, but in low numbers. **Dinophysis*** were not observed. **Prorocentrum minimum*** was present with 8 000 cells l^{-1}. Diatoms dominated with several **Chaetoceros, Cerataulina pelagica, Skeletonema costatum** and **Thalassionema nitzschioides**. **Dactyliosolen fragilissimus** with 700 000 cells l^{-1} and **Proboscia alata** with 100 000 cells l^{-1} were the most abundant diatoms.

BALTIC SEA

Arkona basin. Station BY2, 7 JULY

Chlorophyll concentrations down to 20 m about 3 µg.l^{-1}.

The blue-green algae **Aphanizomenon** sp. was very common with about 21 m l^{-1}. Single trichomes of **Nodularia spumigena*** present. Other species of importance were **Eutreptiella gymnastica** (230 000 cells l^{-1}), **Pyramimonas** sp. (95 000 cells l^{-1}), **Plagioselmis** sp. (27 000 cells l^{-1}) and **Chrysochromulina*** spp. (150 000 cells l^{-1}).

Bornholm basin. Station BY5, 7 JULY

Chlorophyll concentrations between the surface and 20 m 2 - 5 µg·l^{-1}.

The blue-green algae **Aphanizomenon** sp. was common with about 5 m·l^{-1}. Single trichomes of **Nodularia spumigena*** present. Other species of importance were **Pyramimonas** sp. (40 000 cells·l^{-1}), **Plagioselmis** sp. (95 000 cells·l^{-1}), **Teleaulax** spp. (40 000 cells·l^{-1}) and **Chrysochromulina*** spp. (165 000 cells·l^{-1}). **Dinophysis norvegica*** with single cells at 5 m depth had a density of 4 000 cells·l^{-1} at 15 m depth.

Southeast Baltic, Station BY9, 7 JULY

Chlorophyll concentrations between the surface and 20 m 2 - 5 µg·l^{-1}.

Anabaena* spp. (28 m·l^{-1}), **Aphanizomenon** sp. (13 m·l^{-1}) and **Nodularia spumigena*** (13 m·l^{-1}) formed a considerable blue-green bloom with vast accumulations on the surface. Pico cyanobacteria colonies (367 000 colonies·l^{-1}) were also common. Other species of importance were **Plagioselmis** sp. (82 000 cells·l^{-1}) and **Chrysochromulina*** spp. (218 000 cells·l^{-1}). **Dinophysis norvegica*** with 200 cells·l^{-1} at 5 m depth had a density of 19 200 cells·l^{-1} at 15 m depth.

Eastern Gotland basin, Station BY15, 7 JULY

Chlorophyll concentrations between the surface and 20 m 3 - 4 µg·l^{-1}.

Anabaena* spp. (36 m·l^{-1}), **Aphanizomenon** sp. (47 m·l^{-1}) and **Nodularia spumigena*** (2 m·l^{-1}) formed a considerable blue-green bloom with accumulations on the surface. Pico cyanobacteria colonies (163 000 colonies·l^{-1}) were also common. Other blue-green species of importance were cf. **Pseudoanabaena** sp. (2 m·l^{-1}) and **Snowella** spp. (14 000 colonies·l^{-1}). **Eutreptiella gymnastica** (54 000 cells·l^{-1}), **Plagioselmis** sp. (54 000 cells·l^{-1}) and **Chrysochromulina*** spp. (300 000 cells·l^{-1}) were also of importance. **Dinophysis norvegica*** with 300 cells·l^{-1} at 5 m depth had a density of 12 000 cells·l^{-1} at 15 m depth.

Northern Baltic, Station BY29, 8 JULY

Chlorophyll concentrations between the surface and 25 m 3 - 4 µg·l^{-1}.

Anabaena* spp. (5 m·l^{-1}), **Aphanizomenon** sp. (87 m·l^{-1}) and **Pseudoanabaena** sp. (34 m·l^{-1}) formed a considerable blue-green bloom. Pico cyanobacteria colonies (272 000 colonies·l^{-1}) and **Snowella** spp. (27 000 colonies·l^{-1}) were also common, whereas only single trichomes of **Nodularia spumigena*** were observed. **Eutreptiella gymnastica** (54 000 cells·l^{-1}), **Plagioselmis** sp. (136 000 cells·l^{-1}) and **Chrysochromulina*** spp. (95 000 cells·l^{-1}) were of importance. **Dinophysis norvegica*** was present with 2 000 cells·l^{-1} at 5 m and 13 600 cells·l^{-1} at 15 m depth.

Western Baltic, Station BY38, 9 JULY

Chlorophyll concentrations between the surface and 15 m 2 - 5 µg·l^{-1}.

Anabaena* spp. (8 m·l^{-1}), **Aphanizomenon** sp. (40 m·l^{-1}), **Nodularia spumigena*** (3 m·l^{-1}) and **Pseudoanabaena** sp. (2 m·l^{-1}) formed a considerable blue-green bloom. Pico cyanobacteria colonies (109 000 colonies·l^{-1}) and **Snowella** spp. (27 000 colonies·l^{-1}) were also common. **Pyramimonas** sp. (272 000 cells·l^{-1}), **Plagioselmis** sp. (231 000 cells·l^{-1}) and **Chrysochromulina*** spp. (231 000 cells·l^{-1}) were of importance. **Dinophysis norvegica*** was absent at 5 m and had a density of 3 200 cells·l^{-1} at 15 m depth.

This report is based on rough estimates of quantitative samples from 5 and 15 m depth. Chlorophyll values are rough estimates based on profiles of fluorescens.

FORECAST

In the Skagerrak and Kattegat short lived blooms of diatoms may develop. Large populations of dinoflagellates are expected to be formed. In the Baltic, the considerable blue-green blooms will develop further, given that the nice and calm weather continues.