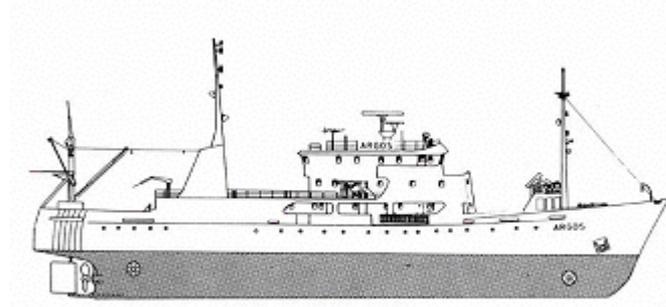


CRUISE REPORT FROM R/V ARGOS



Survey period: 2007-07-09 - 2007-07-14

Survey area: The Skagerrak, Kattegat, Sound, and Baltic Proper

Principal: SMHI

SUMMARY

The expedition took place within SMHI's regular marine monitoring programme and covered the Skagerrak, Kattegat, Sound and Baltic Proper.

Data presented in this report have been subject to preliminary quality control procedures only.

Surface temperatures were normal or below normal throughout the area.

No surface accumulations of cyanobacteria (blue green algae) were observed in the Baltic.

Nutrient concentrations in the surface layer were normal for the season, except in the Arkona and Bornholm Basins where phosphate and silicate were elevated, and in the Fårö Deep and western Gotland Basin where silicate concentrations were high.

In the Sound and the Arkona Basin, bottom water oxygen concentrations were ca. 3 ml/l. Oxygen concentrations in the Baltic Proper were below 2 ml/l everywhere at depths exceeding 60 – 80 metres. Hydrogen sulphide was found at the bottom in the Bornholm Deep, below 125 metres in the eastern and from 80 metres in the western Gotland Basin.

A more detailed report on the algal situation can be found at: [Algal report \(Pdf\)](#)

The next expedition is scheduled for August 6 to 11, 2007.

PRELIMINARY RESULTS

The cruise, part of SMHI's ordinary monitoring programme, began in Gothenburg on July 09 and ended in the same port on July 14. The winds during the expedition were moderate from a range of directions.

The Skagerrak

Surface water temperatures were normal throughout the investigated area. They varied between 15 and 17°C. Surface salinities across the Å-section were between 27.6 and 30.5 psu. Secchi depths were between 7 and 8 metres in the open sea.

All nutrients in the surface waters of the central part had been consumed. Closer to the coast low concentrations of phosphate, nitrate and silicate remained.

With a maximum peak of 0.3 µg/l in coastal Skagerrak and barely 1.0 µg/l in open Skagerrak, chlorophyll fluorescence was very low throughout this area. In the surface layer the plankton flora was poor. The diatoms *Proboscia alata* and *Pseudo-nitzschia* spp. were the most common species. Among potentially toxic species, a few *Dinophysis acuta* and *D. norvegica* were observed in addition to *Pseudo-nitzschia* spp.

The Kattegat and the Sound

Surface water temperatures varied between 16 and 17°C, normal for the season. Surface salinities were above normal in the northern Kattegat and the Sound, at 28 and 13 psu respectively, but normal at Anholt, ca. 20 psu. The halocline was relatively deep, at about 20 metres. Secchi depths were 5 to 9 metres.

Surface nitrogen components in the Kattegat had been consumed. Surface phosphate concentrations were low, ca. 0.03 µmol/l. Silicate levels ranged from zero in the northern part to 2 µmol/l in the south. In the Sound surface phosphate was 0.3, silicate 8 and nitrate 0.6 µmol/l.

Chlorophyll concentration was also low in this area, under 1 µg/l. Consequently the plankton flora was poor, with the highest cell numbers being represented by the diatoms *Proboscia alata* in the Kattegat and *Thalassionema nitzschioides* in the Sound. Some filaments of the blue-green algae *Anabaena* spp. were present at all the stations in the area.

Oxygen concentrations close to 2 ml/l were found at intermediate depths (20 and 25 metres) in the Sound. Towards the bottom they increased to 3 ml/l, which is more normal.

Baltic Proper

Surface water temperature, which varied from 12.9 to 16.5°C, was normal or below normal for the season. The halocline began at 30 metres in the Arkona Basin and at 50 – 60 metres in the remainder of the Baltic. The thermocline began at depths of 15 to 25 metres. Secchi depths varied between 5 and 6 metres.

Surface phosphate and silicate concentrations were elevated in the Arkona and Bornholm Basins, at about 0.3 and 12 µmol/l respectively. Silicate concentrations were similarly high at the Fårö Deep and in the western Gotland Basin. In the remainder of the Baltic, surface nutrient concentrations were typical for the summer: phosphate 0.1; silicate 10 and nitrate ca. 0.1 µmol/l.

No surface accumulations of cyanobacteria (blue green algae) were observed in the Baltic. All the plankton samples taken in the Baltic contained blue-green algae though. The dominant species at most stations was *Aphanizomenon flos-aquae*. The potentially toxic *Nodularia spumigena* was the most abundant at one station only, at BCS III-10 in the southeast of the Baltic.

Oxygen concentrations in the bottom water of the Arkona Basin were almost 3 ml/l. Oxygen concentrations below 2 ml/l were found deeper than 60 – 80 metres in the remainder of the Baltic. Hydrogen sulphide was found at the bottom in the Bornholm Deep, below 125 metres in the eastern Gotland Basin, and from 80 metres in the Fårö Deep and the western Gotland Basin.

PARTICIPANTS

Name		From
Bengt Yhlen	Chief scientist	SMHI Oceanographic lab.
Philip Axe		-''-
Sara Johansson		-''-
Ann-Turi Skjevik		-''-
Anna-Kerstin Thell		-''-
Bodil Thorstensson		-''-



Click on the button to open appendices.
Note that this will only work when
connected to Internet!

APPENDICES

- Track chart
- Table over stations, parameters and sampling depths
- Map showing bottom oxygen concentrations
- Monthly average plots for selected stations
- Profiles for selected stations