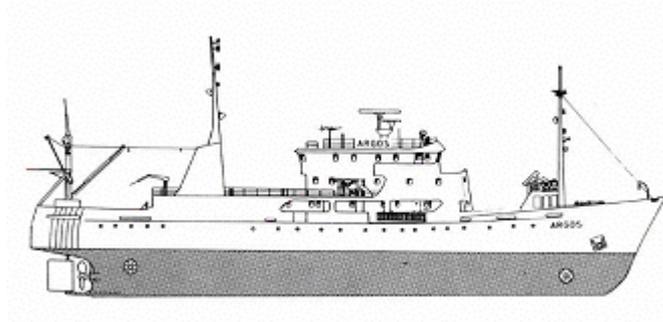


## CRUISE REPORT FROM R/V ARGOS



**Survey period:** 2007-08-26 - 2007-09-01

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

**Principal:** SMHI

### SUMMARY

The expedition was part of SMHI's regular marine monitoring programme and covered the Skagerrak, the Kattegat, the Sound and the Baltic Proper.

High concentrations of phosphate were measured in the southern Baltic Proper. Silicate concentrations were elevated in the northern parts of the Baltic Proper, while concentrations were below normal in the south parts. The nitrogen components showed normal values.

Oxygen levels in the deep waters of south Kattegat were below normal. Hydrogen sulphide was present in the western Gotland Basin from a depth of 75-80m and in the eastern Gotland Basin from 125m depths.

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

The next expedition is scheduled for September 24 to 29, 2007.

## **PRELIMINARY RESULTS**

The cruise, part of SMHI's ordinary monitoring programme, began in Göteborg on August 26<sup>th</sup> and ended in the same port on September 1<sup>st</sup>.

During the first day a fresh westerly breeze prevailed, the following days the winds weakened and turned northwest. The air temperature varied from 10 to 15 °C.

### **The Skagerrak**

Surface water temperatures were normal, and varied between 16.5-18.1°C. Surface water salinity was at all stations below normal and varied from 21.8 along the coast to 26.9psu at the western parts. The halocline was well developed and was found at a depth of 10m. Along the coast the thermocline was found at 10m and at 25-35m depth in the other parts of Skagerrak.

All nutrients were normal for the season in the surface layer. Phosphate varied between 0.04 and 0.10 µmol/l, the sum of nitrite+nitrate was below the detection limit (0.10 µmol/l) Silicate concentrations were slightly below normal at the coastal stations and varied between 0.1 and 1.0 µmol/l. At Släggö, in the mouth of the Gullmars fjord, high concentrations of nutrients were observed in the deep water and oxygen concentrations (3.1 ml/l) were lower than normal. The Secchi depth was lowest at Släggö (4.5m) and highest at P2 (8m).

### **The Kattegat and the Sound**

Surface water temperatures in the Kattegat were normal (17°C). Surface salinity decreased from 23.2 in the north parts to 15.3 psu in the southern parts. In the Sound the salinity were higher than normal due to inflow to the Baltic Sea. The halocline was found between 10-20m and the thermocline at about 15m depths. At Fladen the thermocline was weak.

Surface phosphate and nitrite+nitrate concentrations in the Kattegat were normal for the season except at W. Landskrona in the Sound where phosphate concentrations were (0.23µmol/l) which is slightly above normal. Nitrite+nitrate was below the detection limit (0.10 µmol/l). Silicate concentrations were normal and varied between 0.5-6.4µmol/l.

The lowest oxygen concentrations in the deep water were measured at Anholt E and W. Landskrona, 2.21 and 2.08 ml/l respectively, corresponding to an oxygen saturation of 33%.

### **Baltic Proper**

Surface water temperature was normal for the season (15.5-17.2°C). A well developed thermocline was found at all stations, at depth from 8m (REF M1V1) to 30m at BY20. The halocline was found at depth of 60-75m, except in the Arkona Basin where it was more shallow, about 30-35m.

Surface phosphate concentrations were still elevated above normal in the Arkona and Bornholm Basin (0.24-0.34µmol/l). In the remaining areas concentrations varied between 0.10-0.15µmol/l. Silicate values were below normal in the southeast as well as in the Eastern Gotland Basin (4.4-5.0µmol/l), while concentrations were higher than normal at the Fårö Deep and Norrköping Deep (9.4-11.4µmol/l). The nitrite+nitrate concentrations were normal, i.e. below the detection limit (0.10µmol/l). In the whole Baltic Proper, except from the Arkona Basin, oxygen concentrations below 4ml/l were found from a depth of 64m. In the Arkona Basin oxygen concentrations varied between 1.58-3.92ml/l in the deep water. In the Western Gotland Basin as well as in the Bornholm Basin hydrogen sulphide was found at depth exceeding 75-80m. In the Eastern Gotland Basin Hydrogen sulphide was found at depth exceeding 125m, though hydrogen sulphide was present already at depth of 85m at the Fårö Deep (Station BY20). The oxygen situation was worse than normal in the Western Gotland Basin as well as in the southeastern Baltic Proper.

At a number of stations surface water was turbid and Secchi depth (5-6m) were less than normal. No surface accumulations of cyanobacteria were observed.

## PARTICIPANTS

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Johan Håkansson		-”-
Sari Sipilä		-”-
Bodil Thorstensson		-”-

## APPENDICES



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

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