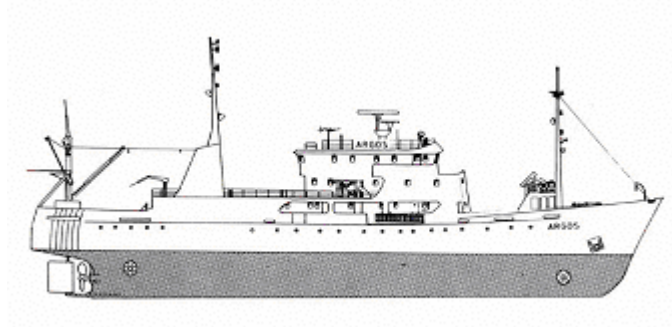


CRUISE REPORT FROM R/V ARGOS



Survey period: 2005-09-26 - 2005-09-30

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 water temperatures were normal, except for in the southern and eastern Baltic, where the temperature was higher than normal.

In the Arkona and Bornholm Basins, phosphate- and silicate concentrations in the surface water remained high. The surface water streaming out of the Baltic led to high values in the Sound as well.

Oxygen concentrations below 2 ml/l were observed in the bottom water of the Arkona Basin and at depths exceeding 70 to 80 metres in other parts of the Baltic. Hydrogen sulphide was found below 80 metres in the Bornholm Basin and western Gotland Basin, and from 150 metres in the eastern Gotland Basin.

The next expedition is scheduled for October 24 to 29, 2005.

PRELIMINARY RESULTS

The cruise, part of SMHI's ordinary monitoring programme, began in Gothenburg on September 26th and ended in Västervik on September 30th. The weather on the West Coast was misty with a minimum air temperature of 15°C and weak to moderate winds from the south.

Oxygen values from P2 and Släggö in the Skagerrak have been excluded because of problems with the titration equipment. This equipment was replaced after these stations.

In the Baltic the wind was southwest to west with variable cloudiness.

The Skagerrak

Surface water temperatures were normal throughout the investigated area. They varied between 14.7°C at Å15 and 15.1°C at Släggö, nearest the coast. Surface salinities were within the normal variation, being between 25 psu at Släggö and 31 psu at the offshore end of the Å-transect. Near the coast the thermocline began at 40 metres, while at Å17 it was shallower, at 15 metres.

The nitrate concentration of the surface water was still below the limit of detection, 0.1 µmol/l. The phosphate and silicate values at Å13 (near the coast) were slightly higher than normal, 0.17 and 4.5 µmol/l respectively. The lowest concentrations, 0.04 µmol/l phosphate and 0.6 µmol/l silicate, were found in the central Skagerrak. Secchi depths were 12 metres at P2 and only 5 metres near the coast to the north.

The Kattegat and the Sound

Surface water temperatures decreased southwards, with the highest temperature found at Läsö E., 15.9°C, to the lowest 15.1°C at Drogden E. Surface salinities were normal in the Kattegat, 20 psu, and in the Sound, 9 psu. The halocline was found at 10 to 15 metres, as was the thermocline. The thermocline was weak for the time of year.

Nitrate concentrations in the surface water were almost zero. In the Sound, high phosphate (0.5 µmol/l) and silicate concentrations (13 µmol/l) were recorded in the out-flowing water from the Baltic. The corresponding concentrations of the Kattegat were 0.1 and about 3 µmol/l respectively. The Secchi depths were 6 metres.

The lowest bottom water oxygen concentration was found at W Landskrona and Anholt E, with 2.5-2.6 ml/l. This corresponds to a saturation of 39-40%.

Baltic Proper

Surface water temperature, which varied between 13.9 and 16.5°C, was high for the season in the southern and eastern Baltic. The distinct thermocline began at 20-35 metres. The halocline in the southern Baltic began at 30-40 metres and in the other regions at 65-70 metres.

In the Arkona and Bornholm Basins the phosphate and silicate concentrations were still high, about 0.4-0.5 and 12-14 µmol/l respectively. Secchi depths were 6 - 7 metres. In the remainder of the area the surface nutrient concentrations were normal for the season i.e. phosphate 0.1 and silicate 7 - 10 µmol/l. Nitrate concentrations in the surface water were below 0.10 µmol/l throughout the Baltic Proper.

Oxygen concentrations below 2 ml/l were found at the bottom in the Arkona Basin, and at depths exceeding 70 metres in the southern Baltic and Karlsö Deep, and from 80 metres in the remainder of the Baltic. Hydrogen sulphide was found from 80 metres in the Bornholm Basin, deeper than 150 metres in the eastern Gotland Basin and from 80 to 100 metres in the western Gotland Basin.

PARTICIPANTS

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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