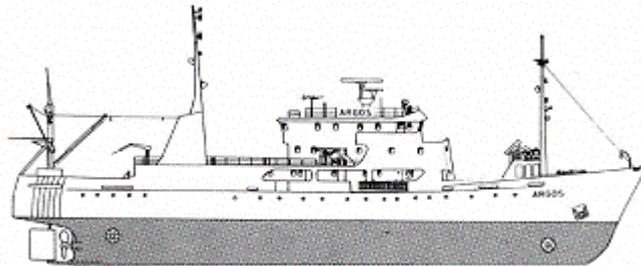


CRUISE REPORT FROM R/V ARGOS



Survey period: 2005-04-25 - 2005-04-30

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

Principal: SMHI

SUMMARY

The expedition was 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.

Phosphate concentrations in the Baltic Proper remain much higher than normal for the season. Silicate measurements also showed high levels, while nitrate levels were normal. Nutrient concentrations in the Skagerrak, Kattegat and Sound were normal.

In the Baltic Proper oxygen concentrations below 2 ml/l were found at depths exceeding 70 to 90 metres. Hydrogen sulphide was found in the bottom water in the Hanö Bight and the Bornholm Basin, in the eastern Gotland Basin from 220 metres and in the western Gotland Basin from 150 metres.

The next expedition is scheduled for May 16 to 21, 2005.

PRELIMINARY RESULTS

The cruise, part of SMHI's ordinary monitoring programme, began in Göteborg on April 25 and ended in the same port April 30. Weak to moderate winds from north to east dominated the weather during the expedition.

The Skagerrak

Surface water temperatures were normal in the whole investigated area varied between 8.2 and 9.1°C, highest at Å17 in the central part and close to the coast. Surface salinities were lower or much lower than normal. The lowest value was measured at Å14, 17.5 psu. The stratification was located at a depth of ca. 10 metres.

All nutrients showed, for the season, normal surface concentrations. Phosphate varied between 0.05 and 0.08 µmol/l, nitrate concentrations were below the limit of detection, 0.10 µmol/l and silicate had concentrations of 0.2- 0.4 µmol/l.

Relatively high peaks of chlorophyll fluorescence were recorded at a depths between 12 and 20 meters. This together with a supersaturation of oxygen, about 110-115 % indicates an ongoing phytoplankton bloom. Secchi depth varied between 7 and 9 metres.

The Kattegat and the Sound

Surface water temperature in the Kattegat was between 7.8 och 8.2°C. In the Sound W Landskrona had a temperature of 7.4 and Drogden E 6.4 °C. Surface salinities were lower than normal in the whole area. A marked halocline was found a depth of 10 to 15 metres.

Surface nutrient concentrations in the Kattegat were normal for the season. Phosphate concentrations were 0.05-0.08 µmol/l and silicate varied between 0.2 to 0.6 µmol/l. In the Sound, phosphate and silicate showed concentrations above normal 0.38 and 7.0 µmol/l, respectively. Nitrate concentration was below the limit of detection, 0.10 µmol/l, throughout the whole region. Oxygen saturation I the surface water of the Kattegat was 104% and peaks of fluorescence was found at 15 to 20 metres depth. In the Sound a very strong peak was found at 15 m and oxygen saturation was 110% in the surface layer. Secchi depth was 8 - 10 metres.

The lowest bottom water oxygen concentration was found in the Sound 4.86 ml/l corresponding to a saturation of 70%. At the second visit to Anholt E at the end of the expedition concentrations of phosphate and silicate had increased as a result of out-flowing water from the Baltic.

Baltic Proper

Surface water temperature varied between 3.9 and 4.9°C, which is normal for the season. The Halocline in the Arkona Basin was found at 35-40 metres. In other regions stratification began at depths of 65 to 80 metres. In the northern and central parts a weak thermocline was found at 15-20 metres, while it was missing in the southern parts where also the fluorescence was relatively low. In the eastern and western Gotland Basins high fluorescence was recorded from surface down to ca. 25 metres. Secchi depth varied between 8 and 10 metres.

Surface phosphate concentration is still very high, especially in the Bornholm Basin, where concentrations now is 0.75 µmol/l, which is higher than normal winter values. In the remaining parts concentrations varied between 0.35 and 0.55 µmol/l. Silicate concentrations are also above normal at all stations, between 7 and 14 µmol/l. Nitrate concentration in the surface water was below the limit of detection, 0.10 µmol/l, which is normal.

In the Arkona Basin, oxygen conditions were good. In the remainder of the Baltic Proper oxygen concentrations below 2 ml/l were found at depths exceeding 70 to 90 metres. Hydrogen sulphide was found in the bottom water of the Hanö Bight and the Bornholm Basin, from 220 metres in the eastern Gotland Basin and in the western Gotland Basin from 150 metres.

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