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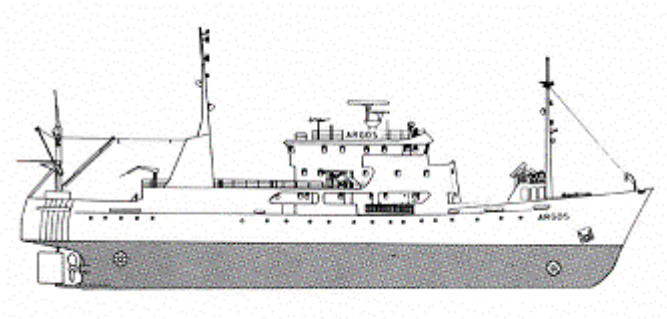
CRUISE REPORT FROM R/V ARGOS



Survey period: 2004-11-08 - 2004-11-13

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.
Data presented in this report have been subject to preliminary quality control procedures only.
The bottom water oxygen conditions in the Kattegat were good, > 4.5 ml/l. At W Landskrona in the Sound, oxygen concentration in the bottom water was 2.58 ml/l.
In the Baltic Proper oxygen concentrations below 2 ml/l were found at depths exceeding 60 to 70 metres. Hydrogen sulphide was found in the Bornholm Basin, at BY15 (Gotland deep) and in the northern and western Gotland Basins.
In Kattegat, silicate showed lower values than normal.
In the Baltic Proper, phosphate as well as silicate showed enhanced concentrations while nitrate were somewhat lower than normal.

Next expedition is scheduled for November 29 to December 10, 2004.

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PRELIMINARY RESULTS

The cruise, part of SMHI´s ordinary monitoring programme, began in Göteborg November 8 and ended in Kalmar November 12.
The winds during the beginning of the expedition were weak to moderate mainly from south. During the last days however, south-westerly winds with gale force dominated. Because of lack of time due to this, no visit could be made at BY38. Water sampling in the Baltic Proper was done from intermediate depths with low oxygen concentrations, for identifying specific bacteria, in co-operation with the University of Gothenburg.

The Skagerrak

Surface water temperatures varied between 9.5 and 10.5°C. Thermocline and halocline were found at the same depth, between 5 to 10 metres.
Nutrient concentrations were normal for the season. Nitrate concentrations were between 1.1 and 2.2 µmol/l, silicate between 1 and 4 µmol/l and phosphate ca. 0.3 µmol/l. At the stations P2 and Å13, high ammonia concentrations were found at intermediate layers between 10 and 50 metres depth. Oxygen situation was normal for the season.

The Kattegat, the Belt Sea and the Sound

Surface water temperature was about 9.5°C in the Kattegat and 8.8°C in the Sound. Surface salinities decreased from 23 psu in the northern Kattegat to 10.5 psu at W Landskrona. The thermocline and halocline, began at a depth of 10 metres at Fladen, at 18 metres at Anholt E and was found at a depth of 13 metres in the Sound.
Phosphate concentrations in the surface water varied between 0.15 and 0.25 µmol/l, in the Sound 0.47 µmol/l. Nitrate concentrations varied between < 0.1 in the north to 1.3 µmol/l in the Sound and silicate concentrations varied from 0.3-0.9 µmol, in the Kattegat to 11.5 in the Sound. The silicate values in the Kattegat was much below normal for the season, maybe a result of an algal bloom.
The bottom water oxygen concentration in the Sound was 2.58 ml/l, which corresponds to 43 % saturation. In the Kattegat, the concentrations were over 4.5 ml/l.

Baltic Proper

Surface water temperature varied between 8.3 and 10.5°C, lowest in the Hanö Bight and in the western Gotland Basin, highest in the Arkona. The thermocline was found at a depth of 30 to 40 metres.
Surface phosphate concentrations were higher than normal, especially in the Hanö Bight and the Bornholm Basin, 0.3-0.6 µmol/l. Nitrate concentration, on the other hand, were lower than normal 0.3 to 1.0 µmol/l, except for the north-eastern part were it was normal, ca. 1.2 µmol/l. Silicate values varied between 7 and 12 µmol/l, somewhat above normal for the season, in most areas.
Oxygen concentrations below 2 ml/l were measured at depths exceeding 60 to 70 metres.
Hydrogen sulphide was found in the bottom water in the Bornholm Basin, at BY15 (Gotland Deep) below 225 metres, at BY20 (Fårö Deep) from 175 metres, in the northern Gotland Basin (BY29) intermediate around 100 metres, and at BY31 (Landsort Deep) and BY32 at depths exceeding 80 metres.

PARTICIPANTS

Name		From
Lars Andersson	Chief scientist	SMHI Oceanographic lab.
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Anna-Kerstin Thell	-	-”- -
Bodil Thorstensson	-	-”- -
Bengt Yhlen	-	-”- -

Plots

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