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Oceanographical Laboratory

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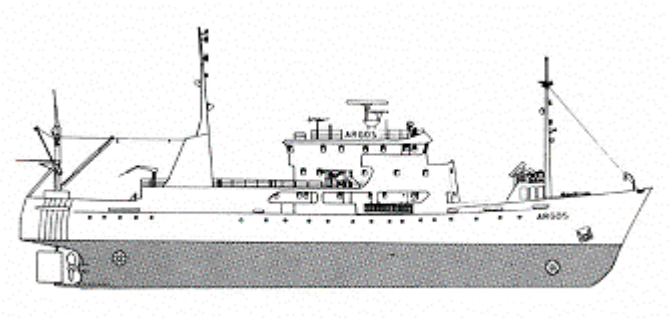
CRUISE REPORT FROM R/V ARGOS



Survey period: 2003-07-07 - 2003-07-12

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

Principal: SMHI

SUMMARY

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

This report is based on preliminary data.

Nutrient concentrations were normal for the season in all areas.

An ongoing bloom preliminary of Aphanizomenon "baltica" and Nodularia spumigena was seen at stations in the Gotland Basins.

In the deepwater of the Bornholm Basin, the Hanö Bight, southeast of Baltic Proper and east of Gotland the oxygen concentrations was slightly over 2 ml/l. Hydrogen sulphide was present a BY10, BY20 and in western Gotland Basin.

Next expedition is scheduled for July 28 to August 9

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PRELIMINARY RESULTS

The cruise, part of SMHI´s ordinary monitoring programme, began in Göteborg July 7th and ended as well in Göteborg July 12th. The weather during the week was cloudy with sunny intervals. The week started with strong westerly winds, which weakened during Tuesday. The air temperature was about 16-20°C at daytime during the expedition.
Samples for the EU-project HABILE were taken at Fladen, Anholt E (twice) and BY5.

The Skagerrak

Surface water temperature varied from 16.4°C in the central part of the Skagerrak (Å17), which was slightly higher than normal, to about 18.1°C in the coastal area (Släggö). The salinity of the surface water varied between 23.6 psu at Släggö and 31.9 psu at Å17.
Nutrient concentrations in the surface layer showed typical summer values. Phosphate concentrations were 0.02-0.05 µmol/l. Silicate concentration showed a value between 0.3-0.7 µmol/l. Nitrite+nitrate were below the detection limit, 0.1 µmol/l, in the whole area.

The Kattegat and the Sound

Both surface water temperature and surface salinity were normal for the season.
Highest temperature was measured in the north of Kattegat at Läsø-bouy, 17.9°C. Lowest temperature was 14.3°C in the Sound (Drogden).
In the north of the Kattegat salinity measurements showed 22.1 psu (Läsø-bouy) and in the south 8.5 psu (W Landskrona). The thermocline and the halocline were found between 10-20 metres. Low nutrient concentrations were measured in the whole area. This is normal for the summer season. The sum nitrite+nitrate was below detection limit, 0.1 µmol/l. The phosphate concentration was measured to 0.06-0.16 µmol/l. The silicate concentration was 0.3 µmol/l in the north part (Fladen) and 8.2 µmol/l in the south (W Landskrona).
An outflow from the Baltic was going on during the expedition week

Baltic Sea

The surface water temperature was normal for the season and varied from 13.5°C in the south (By2) to 16.5°C in the north (By38). Sea surface salinity varied between 6.7 psu and 7.5 psu. The thermocline was located at a depth of 10-20 metres in the whole area.

The halocline was located at a depth of 30-50 metres in Arkona and Bornholm Basin and 70-90 metres in the central parts of Baltic Proper.
In the southeast of Baltic Proper the bottom waters had an oxygen concentration just above 2 ml/l.
As in previous expedition a layer between 100 and 150 metres depth was found at Gotlandsdjupet (BY15) with a oxygen concentraton below 2 ml/l. The bottom water had a value slightly over 2 ml/l.
Hydrogen sulphide was established at depths from 90 metres to the bottom at Fårödjupet (BY20) and Norrköpingsdjupet (BY38). Hydrogen sulphide was also present from 125 metres to the bottom at Karlsödjupet (BY32) and also in a thin layer around 125 metres at BY10.
This expedition showed lower oxygen concentrations in the bottom waters in the whole area compared to previous expeditions. This ends the positive effects on the bottom concentration of oxygen due to the January inflow.
In the whole area the nutrient concentrations were low. Concentration of nitrite+nitrate in the surface water was below the detection limit, 0.10 µmol/l. Phosphate was about 0.5-0.11 µmol/l and silicate 7.3-10.1 µmol/l.
An ongoing bloom preliminary of *Aphanizomenon "baltica"* and *Nodularia spumigena* was seen at stations east, north and west of Gotland.

PARTICIPANTS

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Arne Sjöquist	chief scientist	SMHI Oceanographical lab.
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Jan Szaron		- ″ -
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APPENDICES

Plots

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