Arne Sjöquist

Swedish Meteorological and Hydrological Institute
Oceanographical Laboratory

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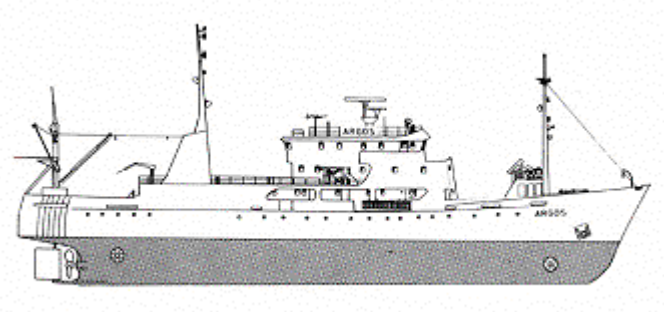
CRUISE REPORT FROM R/V ARGOS



Survey period: 2004-06-07 - 2004-06-12

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

Principal: SMHI

SUMMARY

The expedition took place 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 or near normal for the season in most areas.
High values of phosphate and silicate were found in the west Gotland basin.

The bottom waters in the Baltic Sea, from 70-80 metres had an oxygen concentration of less than 2 ml/l. Hydrogen sulphide was present in the Gotlands Deep and in the west Gotland basin.

An inflow, of approximately 5 km^3 through Öresund, occurred during the whole expedition.

Next expedition is scheduled for June 28 to July 3, 2004.

Address:
Nya Varvet 31
SE-426 71 V‰stra Frˆlunda
SWEDEN

Telephone:
+46 11 4958000
Telefax:
+46 31 7518980

E-mail:
firstname.lastname@smhi.se
WWW:
http://www.smhi.se

PRELIMINARY RESULTS

The cruise, part of SMHI´s ordinary monitoring programme, began in Göteborg June 7th and ended in Göteborg June 12th.
The weather during the week was cloudy. The week started with moderate westerly winds, which shifted towards the south and weakened during the week. The daytime air temperature was about 14-18°C.

The Skagerrak

Surface water temperature varied from 12.5°C to 15 °C, which was normal for the season. The salinity of the surface water varied between 22.8 psu at Släggö and 30.8 psu at Å16, which also was normal for the season. The only exception was at station P2 were the salinity of the surface water was higher than normal. The thermocline and the halocline were found at 10-15 metres at all stations. At P2 no stratification was found.
Nutrient concentrations in the surface layer showed typical values. Phosphate concentrations were 0.05-0.07 µmol/l. Nitrite+nitrate were below the detection limit, 0.1 µmol/l, in the whole area. Silicate concentration showed a value between 0.3-0.4 µmol/l.

The Kattegat and the Sound

Sea surface temperature was 13 - 14 °C. Sea surface salinity was higher than normal.
In the Kattegat sea surface salinity varied between 27 psu (Fladen) and 23.5 psu (Anholt). The thermocline and the halocline were found at 20 metres.
In Öresund, sea surface salinity was 15.5 psu in the beginning of the week. A strong southerly current showed than an inflow through Öresund into the Baltic was going on. At the end of the week the inflow had almost stopped. Only a thin layer of high saline water near the bottom still remained at Drogden, between Öresund and the Baltic Sea. Approximately 5 km^3 of water had flowed into the Baltic Sea.
Normal nutrient concentrations were measured in the whole area. The phosphate concentration was measured to 0.05-0.09 µmol/l.The sum nitrite+nitrate was below detection limit (0.1 µmol/l). The silicate concentration was 0.2 µmol/l in the Kattegat and 2.4 µmol/l in Öresund.
There was no oxygen defiency in the bottom waters of the area.

Baltic Sea

The surface water temperature was normal for the season and varied from 10°C in the north (BY20) to 13°C in the south (BY2). The thermocline was located at a depth of 15-20 metres in the western and southern parts, and at 20 - 30 metres depth in the eastern part. The halocline was located at a depth of 30-50 metres in the Arkona and Bornholm Basins and 60 - 80 metres in the central parts of Baltic Proper.
The phosphate concentration was as in previous expedition high above the normal: 0.3 - 0.4 µmol/l, compared with 0.1 µmol/l. Silicate concentration was also slightly higher than normally and varied between 11.3 - 12.5 µmol/l. In the southern part of the Baltic Sea, the silicate concentration was

lower than normal: 4.2 - 6.7 µmol/l. In southern part of the Baltic proper the nitrite+nitrate concentration was high. The highest value was measured at BY4: 0.26 µmol/l.
At all other stations nutrient concentrations were normal.
There were no changes in oxygen concentration compared to previous expedition. There was no oxygen defiency in the bottom waters of the Arkona basin. In rest of the Baltic sea oxygen concentration were below 2 ml/l at depths below 70 - 80 metres .
Hydrogen sulphide was established at 240 metres depth in the Gotland Deep and below 90 metres in western Gotland basin.

PARTICIPANTS

Name		From	
Arne Sjöquist	chief scientist	SMHI	Oceanographical lab
Johan Håkansson		- ” -	
Tuulikki Jaako		- ” -	
Eva Nyberg		- ” -	
Sari Sipilä		- ” -	

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