Lars Andersson

Swedish Meteorological and Hydrological Institute
Oceanographical Laboratory

990424
Dnr: Sh-1999-67

CRUISE REPORT FROM R/V ARGOS

Survey period: 990419-990424

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

Principal: SMHI

SUMMARY

The expedition was performed within SMHIs regular marine monitoring programme. Surface water temperatures were normal for the season in all areas. In the Skagerrak, high nitrate concentrations were detected along the Jutland coast, where there also was a high algal production. In the rest of the Skagerrak and in the Kattegat, the spring bloom was almost over. In the Baltic all nutrients showed for the season normal values. The springbloom was ongoing in the eastern, northern and western Gotland Basins while it already had passed its peak in the Arkona and Bornholm Basins.
Oxygen concentrations below 2 ml/l were found in the deep water below 70 to 80 meters in the whole Baltic Proper, while hydrogen sulphide was detected only in the eastern Gotland Basin, at depths greater than 150 meters.

A detailed algal situation report is available on http://www.smhi.se/sgn0102/nodc/reports/

Address:
Byggnad 31 Nya Varvet
SE-426 71 Västra Frölunda
SWEDEN

Telephone:
+46 11 495 8000
Telefax:
+46 31 751 8980

E-mail:
shark@smhi.se
WWW:
http://www.smhi.se/sgn0102/nodc/

PRELIMINARY RESULTS

The expedition, which was a part of SMHI's ordinary monitoring programme, began and ended in Göteborg. The weather during the expedition was dominated by weak winds of varying direction. During the later part periods with heavy fog occurred.

The Skagerrak

Surface water temperatures were normal for the season, appr. 6°C. The halocline was located at a depth of 15 m in the south-eastern and central parts. In these areas phosphate and silicate showed for the season typical values (0.2 and 1-2 µmol/l respectively). The concentration of inorganic nitrogen varied between 6 and 12 µmol/l, which is higher than normal. Along the Jutland coast the water was vertically homogeneous with low values of phosphate and silicate but with very high concentrations of inorganic nitrogen, 18 µmol/l. In this area high fluorescence as well as high oxygen saturation (110-120%) were measured.

The Kattegat and the Sound

Surface water temperatures varied between 5.5 and 6.5°C. The halocline was located at a depth of 10 to 15 metres. Nutrient concentrations were low and oxygen saturation varied around 100%, which indicates that the spring bloom was almost over.
The lowest oxygen concentration was measured in the bottom water at W Landskrona in the Sound, 5.4 ml/l, corresponding to a saturation of 75%.

The Baltic Sea

Surface water temperatures varied between 3 and 4.5°C, highest in the south and lowest in the north-west. The halocline was found at a depth of appr. 40 to 60 m in the south and at 80 to 90 m in the north.
All nutrients showed for the season typical values in the surface layer. In the Arkona and Bornholm basins as well as in the northern and western Gotland basins, concentrations of nitrite and nitrate were below detection limits (0.02 and 0.10 µmol/l respectively) while there still was phosphate and silicate left. In the south-east Baltic as well as the eastern Gotland basin, nitrate concentrations around 0.6 µmol/l were measured.
The highest fluorescence values were registered in the western Gotland basin, where also the highest oxygen saturation values (116%) were detected. In the rest of the Baltic, oxygen saturation in the surface layers was around 105% despite very high fluorescence recorded at some locations.
Oxygen concentrations below 2 ml/l were measured at depths greater than 70-80 metres in the whole Baltic Proper, while hydrogen sulphide only was found in the eastern Gotland Basin at depths greater than 150 metres.

PARTICIPANTS

Name		From
Lars Andersson	, Chief scientist	SMHI Oceanographical lab.
Tuulikki Jaako		- ″ -
Mats Ohlson		- ″ -
Bodil Thorstensson		- ″ -
Bo Juhlin		SMHI Mkt

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
- Vertical profiles for selected stations