CRUISE REPORT FROM R/V ARGOS

Survey period: 19991024-19991029

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 temperatures varied between 9 and 12 degrees C. Nutrient concentrations were normal for the season in all areas. Hydrogen sulphide was found at depths greater than 120-140 meters.

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

PRELIMINARY RESULTS

The expedition, as part of the ordinary monitoring programme of SMHI, started in Karlskrona on the 24th and ended in Göteborg October 29. Weather during the cruise was variable with winds from all directions and with strengths varying from 2 to 15 m/s. It was mostly cloudy during the cruise.
A detailed algal situation report will shortly be available on http://www.smhi.se/sgn0102/nodc/reports/.

Skagerrak

The surface water temperature was 11-12°C. In the central Skagerrak a week halocline was found between 25 and 50 meters depth. The concentrations of nutrients were as follows: Phosphate; 0.2 µM, nitrate about 0.15 and silica 1-2 µM. Going eastward through the Å-transect you came into the Baltic current, obvious by a lower salinity. Between the stations Å17 and Å16, about 10 knots between the stations, the surface salinity dropped from 31 to 26 PSU. Surface concentrations of phosphate were about 0.15 µM and of nitrate and silicate 0.6 - 1.0 µM.

Kattegat and the Sound

In the Kattegat the surface water temperature was about 11°C. The halocline, found at 10-20 meters depth, was very obvious. Nutrients were essentially absent from the surface layer. Phosphate was about 0.07, nitrate in the same range and silicat about 0.2 µM. The low nutrient concentrations mirror the autumn bloom of phytoplankton that the algal analysis shows. (See Algal Situation: http://www.smhi.se/sgn0102/nodc/reports/.)
In the Öresund the situation was somewhat different. A low salinity was found in the upper 10 meters surface layer. Here the salinity was 14-20 PSU, with increasing values to the north. The pycnocline was found between 5 and 10 meters depth. Nutrient concentrations above the halocline were 0.2-0.3 µM for phosphate, 0.1-1 for nitrate and 3-8 µM for silicate. Below 15 meters depth oxygen saturation was below 50 %. This, however, was an increase since last month.

The Baltic Sea

The surface water temperature was between 9 and 11°C. The thermocline was found at 30-50 meters depth in the east parts of the Baltic and generally between 20 and 40 meters depth in the west and south parts.
The inflow of salt water that was observed a month ago could not be detected now. At BY1 in the Arkona basin the salinity was 16 and at BY2 17.5 PSU at a depth of 40 meters.
Nutrients in the east and north parts of the Baltic showed low levels. Phosphate in the surface layer ranged from 0.08 to 0.15 µM, nitrate was about 0.15 and silicate 6-10 µM.
In the western and southern parts of the Baltic phosphorous and nitrate concentrations were 0.2-0.3 µM and silicate about 10 µM. Oxygen conditions in the Baltic deep waters were poor. In large parts of the Baltic the oxygen concentration below 80 meters depth was below 1 ml/l. Hydrogen sulphide was distributed over a large area. From BY10 to BY29 hydrogen sulphide was found from 125-140 meters depth and downwards. On the west side of Gotland hydrogen sulphide was found between BY232 (Norrköpingsdjupet) and north of Bornholmsdjupet. At BY5, Bornholmsdjupet, however, we did not trace any hydrogen sulphide

PARTICIPANTS

Name	From
Lars Edler, expeditionsledare,	SMHI Oceanographic Services
Tuulikki Jaakko	– ” –
Jan Szaron	– ” –
Bodil Thorstensson	– ” –
Jorge Valderrama	– ” –

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