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CRUISE REPORT FROM R/V ARGOS

Survey period: 2003-03-23 - 2003-03-28

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.

On the West Coast as well as in the Arkona Basin, all nutrients were almost depleted. A strong bloom was ongoing in the Hanö Bight and in the Bornholm Basin. In the remaining parts of the Baltic Proper winter conditions prevailed.

The deep water in the Arkona and Bornholm Basins as well as in the Hanö Bight were well oxygenated. A thin layer of oxygenated water (0.2 ml/l) was found at the bottom at BY15. Hydrogen sulphide was otherwise present in the Eastern and Western Gotland Basins at depths exceeding 100 to 125 metres.

The next expedition is scheduled to April 7 to 11.

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PRELIMINARY RESULTS

The cruise, part of SMHI's ordinary monitoring programme, began in Karlskrona on March 23 and ended in Göteborg on March 28.
The weather was dominated by a high pressure area, with weak winds of varying directions and fog or haze.
Samples for the EU-project HABILE were taken at BY5, Anholt E and Fladen.
This report is based on preliminary data.

The Skagerrak

Surface water temperatures varied from 3.5 °C in the coastal areas to ca. 4.5 in the central part. The halocline was located at a depth of 5 to 10 metres.
Nutrient concentrations in the surface layer showed low values of phosphate (0.06-0.09 µmol/l), nitrite+nitrate (from <0.10 to 3.2 µmol/l) and very low values of silicate (0.2-0.6 µmol/l). Oxygen saturation was in the range 110 to 120%.

The Kattegat and the Sound

Surface temperature increased from ca. 3 °C in the northern and central parts to 4 °C in the Sound. The halocline was found at a depth of 10-15 metres.
The sum of nitrite+nitrate showed values below the detection limit (0.10 µmol/l). Phosphate concentrations were around 0.08 µmol/l, while silicate showed lower than normal values ca 0.5 µmol/l in the Kattegat and 2 µmol/l in the Sound.
Oxygen saturation varied between 105 and 110%. Strong fluorescence was measured at 10 to 20 metres depth.
The lowest oxygen value, 5.8 ml/l was measured at Anholt E.

The Baltic Sea

The surface temperature varied from 2.7 °C in the south to 0.5 °C in the eastern and northern Gotland Basins. The halocline was located at a depth of 20 metres in the Arkona Basin and at 40 metres in the Bornholm Basin. In the central parts it was found at a depth of 80 metres.
In the central and south-eastern parts, nutrients showed typical values; nitrite+nitrate 2.5-3.5 µmol/l, phosphate ca. 0.6 µmol/l, silicate ca 13 µmol/l. Here oxygen saturation was about 100%. In parts of the Bornholm Basin and in the Hanö Bight a bloom was ongoing and nutrient concentrations lower. In the Arkona Basin all nutrients showed values around or below detection limit and the oxygen saturation was between 110-120%. Unusually silicate showed values around detection limit.
In the Arkona and Bornholm Basins and in the Hanö Bight, bottom water was well oxygenated. In the eastern and western Gotland Basins oxygen concentrations below 2 ml/l were generally found at depths exceeding 70 to 90 metres, while hydrogen sulphide was measured at depths exceeding 100 to 125 metres. In the Gotland Deep (BY15) a thin layer close to the bottom was found where the oxygen concentration was 0.2 ml/l.

PARTICIPANTS

Name	From
Lars Andersson, chief scientist	SMHI Oceanographic lab.
Tuulikki Jaako	- " -
Eva Nyberg	- " -
Sari Sipilä	- " -
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Plots

Click on the button to open appendices.
Note that this will only work when
connected to Internet!

APPENDICES

- Track chart
- Table of stations, parameters and sampling depths
- Map showing bottom oxygen concentrations
- Monthly average plots for selected stations
- Profiles for selected stations