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CRUISE REPORT FROM R/V ARGOS

Survey period: 2002-05-13 - 2002-05-18

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.

Surface temperatures in the Skagerrak and Kattegat were higher than normal while the temperatures in the Baltic were normal.

Unusually high phosphate concentrations were measured at some stations in the Baltic. The other nutrients showed, for the season, normal values.

Oxygen concentrations below 2 ml/l was found at depths greater than 70 to 80 metres in the whole Baltic Proper. Hydrogen sulphide was present at depths greater than 125 metres in the eastern Gotland Basin from 100 metres at the Karlsö Deep and from 175 metres at the Norrköping Deep.

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PRELIMINARY RESULTS

The cruise, part of the SMHI ordinary monitoring programme, began in Göteborg on May 13 and ended in the same port May 18. The weather during the expedition was dominated by weak to moderate winds mainly from west. Sampling for the EU-project HABILE was carried out at Fladen, Anholt E and at BY5.

The Skagerrak

The surface water temperatures varied between 11.5 and 12.5°C, 3-5 degrees higher than normal. The thermocline and halocline was close to the surface at depths less than 10 metres, and as last month the surface salinity extremely low, ca. 10 psu lower than normal.
The nutrient concentrations in the surface layer were normal for the season. Phosphate concentrations were 0.05-0.08 µmol/l, nitrate below detection limit (0.10 µmol/l) and silicate from 1.0 to 1.5 µmol/l. Oxygen saturation in the surface layer varied between 105 and 125%.

The Kattegat and the Sound

Surface water temperatures varied between 10.4 and 11.5°C, about one degree above normal. The thermocline and halocline was located at a depth of 5-10 metres and as in Skagerrak, surface salinity was unusually low.
Phosphate concentrations were about 0.06 µmol/l. Nitrate concentrations were below detection limit (0.1 µmol/l) and silicate varied between 2.5 and 3.8 µmol/l, normal for the season. Oxygen saturation in the surface layer was in this area 105 to 110%. The bottom water was well oxygenated, with the lowest value, 4.95 ml/l in the Sound.

The Baltic Sea

Surface water temperatures varied between 6.5 and 8.5°C, which is normal of the season. No clear thermocline was present. The halocline were located at 35 metres in the Arkona Basin, in the western and southern Baltic at 50-60 metres and in the eastern and western Gotland Basins at 60-70 m.
Nutrient concentrations were mostly normal for the season; nitrate below detection limit (0.10 µmol/l) and silicate between 6.5 and 14 µmol/l. At some stations in the Hanö Bight, the Bornholm Basin and the Western Gotland Basin, unusually high phosphate concentrations between 0.2 and 0.4 µmol/l were measured while the concentrations in the other areas were normal 0.1 to 0.ö2 µmol/l. Oxygen saturation in the surface layer was between 107 and 120%.

The oxygen situation in the deep waters of the Baltic Proper is still very bad. Oxygen concentrations below 2 ml/l were found at depths from 70-90 metres in the whole area. Hydrogen sulphide was found at depths exceeding 90 metres at the Karlsö Deep, from 175 at the Norrköping Deep and from 125 metres in the Eastern Gotland Basin.

PARTICIPANTS

Name	From
Lars Andersson, chief scientist	SMHI Oceanographical lab.
Jonas Henriksen	- ″ -
Hans Olsson	- ″ -
Sari Sipilä	- ″ -
Bodil Thorstensson	- ″ -
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Click on the button to open appendices.
Note that this will only work when
connected to Internet!

Plots

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