

CRUISE REPORT FROM R/V ARGOS

Survey period: 20000828-20000902

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 varied between 15.5 and 17.5°C. Nutrient concentrations were normal for the season, nitrite and nitrate below detection limits (0.02 and 0.10 µmol/l respectively). Phosphate between 0.02 and 0.3 µmol/l and silicate from 0.3 µmol/l in the Skagerrak to 10 µmol/l in the Baltic. Hydrogen sulphide was present in the bottom water in the Bornholm Basin, Hanö Bight and the eastern and western Gotland Basins.

PRELIMINARY RESULTS

The expedition, which was a part of the SMHI ordinary monitoring programme, began in Göteborg on the 28th of August and ended in the same port on the 2nd of September. The weather during the cruise was dominated by weak winds of varying directions.

The Skagerrak

Surface temperatures varied between 15.5 and 16.5°C. At the Swedish coast, the thermocline was located at a depth of 10 metres, while further west, no distinct temperature stratification was present. Above the halocline, which was found at a depth of 10 to 20 metres, concentrations of nitrite and nitrate were below detection limits (0.02 and 0.10 µmol/l). Concentrations of phosphate were about 0.05 µmol/l while the silica concentrations varied from 0.3 to 1 µmol/l, highest at the coast. At the station, Släggö, in the mouth of the fiord Gullmarn, oxygen concentration in the bottom water was as low as 2.7 ml/l.

The Kattegat and the Sound

Both the thermocline and the halocline were found at a depth of 10 to 15 metres. The surface temperature in the Kattegatt was just below 17°C while it in the Sound was only 15.5°C. As in Skagerrak, concentrations of nitrate and nitrite were below detection limits. Phosphate concentrations varied from below detection limit (0.02 µmol/l), in the central Kattegat to 0.3 µmol/l in the Sound. The lowest oxygen concentration was measured at the station W Landskrona in the Sound, 1.4 ml/l.

The Baltic Sea

Surface temperatures varied from 16°C to 17.5°C, highest in the east and lowest in the northwest. Also in the Baltic, the surface layer was depleted of nitrogen. Concentrations of phosphate varied between 0.05 and 0.20 µmol/l, while the silicate concentrations varied between 8 and 10 µmol/l.

The oxygen conditions in the deep water of the whole Baltic are now very bad. Hydrogen sulphide was present in an intermediate layer at a depth of 70 metres in the Hanö Bight, below 80 metres in the Bornholm Basin and in the eastern and western Gotland Basins at depths exceeding 125 metres. In the two last Basins, oxygen concentrations were generally below 2 ml/l at depths greater than 80 metres.

PARTICIPANTS

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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