

CRUISE REPORT FROM R/V ARGOS

Survey period: 2002-02-18 - 2002-02-23

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. Due to the extremely bad weather conditions during the expedition, with one gale and two storms, the eastern and northern Gotland Basins could not be visited.

The temperature as well as nutrient conditions in the surface layer were normal for the season in all areas with the exception of southeastern Skagerrak, where a watermass with elevated nitrate and silicate concentrations were found.

Oxygen concentrations below 2 ml/l, were found at depths exceeding 70 to 80 metres in the Hanö Bight, the Bornholm Basin, the southeastern Baltic and the western Gotland Basin.

Hydrogen sulphide was found from 100 metres depth at the Karlsö Deep in the western Gotland Basin.

PRELIMINARY RESULTS

The cruise, part of the SMHI's ordinary monitoring programme, began in Göteborg February 18 and ended in Kalmar February 23. During the beginning of the expedition a westerly gale prevailed, followed by an easterly storm and thereafter a storm from southwest with wind speed over 30 m/s. Due to the extremely bad weather the mapping of winter nutrient conditions in the Baltic could not be done and the expedition had to be shortened. Algal samples for the EU-project HABILE were taken at Fladen and Anholt E.

The Skagerrak

Surface water temperatures varied between 4.5 and 5.8 °C, lowest at the Swedish coast. The halocline was located at a depth of 20 metres.

The nutrient concentrations in the surface layer were mostly normal for the season. Phosphate concentration varied between 0.4 and 0.7 µmol/l, silicate varied around 5 µmol/l and nitrate about 8 µmol/l. At the stations P2 in the south-eastern Skagerrak and at Å13 at the Swedish coast a differed watermass, probably from the southern North Sea, was found with elevated concentrations of nitrate and silicate, 18 and 12 µmol/l respectively.

The Kattegat and the Sound

Surface water temperatures varied between 3.5 °C and 4.0 °C, coldest in the Sound. The halocline was found at a depth of 10 to 20 meters in the Kattegat while it in the Sound was located at 5 meters.

All nutrients showed for the season normal values in the surface layer, phosphate ca 4 µmol/l, silicate ca 9 µmol/l and nitrate around 7 µmol/l.

The bottom water was well oxygenated.

The Baltic Proper

Measurements were only carried out in the southern Baltic and in the western Gotland Basin.

Surface water temperatures varied between 2.2 and 3.5 °C, highest in the south, lowest in the northwest. Thermocline and halocline were located at the same depth and were found at 50 to 60 meters, except in the Arkona Basin, where the water was isothermal and the halocline located at 30 metres.

All nutrients showed for the season normal values, phosphate 0.4 – 0.5 µmol/l, nitrate 3-5 µmol/l and silicate 10-14 µmol/l.

Oxygen concentrations below 2 ml/l was found at depths exceeding 75 meters in the Hanö Bight, 80 meters in the Bornholm Basin, 75 meters in the south-eastern Baltic and from 70 meters in the western Gotland Basin. Hydrogen sulphide was registered from 100 metres at the Karlsö Depth in the western Gotland Basin

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
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