

CRUISE REPORT FROM R/V ARGOS

Survey period: 20011202-2001214

Survey area: The Skagerrak, the Kattegat, the Sound, the Baltic proper and the Bothnian Bay

Principal: SMHI

SUMMARY

The expedition was performed within SMHI's regular marine monitoring programme and covered the Skagerrak, the Kattegat, the Sound, the Baltic Proper and the Gulf of Bothnia.

The temperature as well as nutrient conditions in the surface layer were normal for the season in all areas.

Oxygen concentrations below 2 ml/l, were found in the Eastern, Western and Northern Gotland Basins at depths exceeding 70 to 80 metres. Hydrogen sulphide was found from 125 metres in the Eastern, from 100 metres in the Northern and from 80 metres in the Western Gotland Basins.

PRELIMINARY RESULTS

The cruise, part of the SMHI's ordinary monitoring programme, began in Karlskrona December 2 and ended in Göteborg December 14. During the beginning of the expedition moderate to strong winds from north to west dominated while the winds during the later part of the first week were weak to moderate from east to south. The weather during the second week was dominated by weak northerly winds.

The Skagerrak

Surface water temperatures varied from 5 to 7 °C, lowest at the Swedish coast, highest in the central parts. No homogeneous surface layer was present.

All nutrients showed for the season normal values in the surface layer, phosphate ca. 0.35 µmol/l, nitrite 0.25 µmol/l, nitrate 3-5 µmol/l and silicate 3-5 µmol/l.

The Kattegat and the Sound

Surface water temperatures were close to 5 °C. The halocline as well as the thermocline was found at a depth of approximately 5 metres.

All nutrients showed for the season normal values in the surface layer, phosphate 0.3-0.4 µmol/l, nitrite 0.25 µmol/l, nitrate ca. 3.5 µmol/l and silicate 6-9 µmol/l, highest in the Sound.

The lowest oxygen concentration measured was at W Landskrona in the Sound, 3.09 ml/l, corresponding to a saturation value of 48%.

The Baltic Proper

Surface water temperatures were in the range 5-6 °C, which is normal for the season. Thermocline and halocline were found at the same depth, 20 metres in the southern part, 60 to 70 metres in the central basins and at ca. 50 metres in the northern area.

Also in this area, all nutrients showed for the season normal values in the surface layer, phosphate 0.2-0.5 µmol/l, nitrite 0.10-0.25 µmol/l, nitrate 1.5-4 µmol/l and silicate 7-12 µmol/l.

In the Western, Eastern and Northern Gotland Basins, oxygen concentrations below 2 ml/l were present at depths exceeding 70-80 metres. Hydrogen sulphide was found at depths greater than 125 metres in the Eastern, from 100 metres in the Northern and from 80 metres in the Western Gotland Basin. The inflow which occurred in October had now passed through the Arcona Basin and was found in the Hanö Bight and the Bornholm Basin, where the deep water were oxygenated.

The Gulf of Bothnia

Surface water temperatures in the Bothnian Sea were in the range 4-5 °C and in the Bothnian Bay in the range 1.8- 3.7 °C.

In the surface water, phosphate varied from below detection limit (0.02 µmol/l) in the north to 0.4 µmol/l in the south. Nitrite + nitrate varied from 3.5 to 8 µmol/l, lowest in the south, highest in the north. Silicate was in the interval 10-35 µmol/l, with the highest values in the north. Due to problems with the auto-analyser, nutrient data from the Bothnian Bay is still under evaluation.

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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