

CRUISE REPORT FROM R/V ARGOS

Survey period: 981110-981121

Survey area: The Skagerrak, the Kattegat, the Sound, and the Baltic Proper, and the Gulf of Bothnia

Principal: SMHI

SUMMARY

The expedition was performed within SMHI's regular marine monitoring program and covered the Skagerrak, the Kattegat, the Sound, the Baltic Proper and the Gulf of Bothnia. The surface temperatures varied from 10°C in the Skagerrak to 3°C in the Gulf of Bothnia. The nutrient concentrations were normal for the season in most areas. Hydrogen sulphide was found at depths greater than 80m in the Bornholm Basin and Hanö Bight, and at depths greater than 150m in the eastern Gotland Basin. A detailed algal situation report is available on <http://www.smhi.se/sgn0102/nodc/reports/>.

PRELIMINARY RESULTS

The expedition, which was one of SMHI's ordinary expeditions within the marine monitoring programme and included mapping of the Gulf of Bothnia, started in Göteborg the 10th of November and ended in Karlskrona on the 21st of November. The weather was dominated by light to moderate winds, however during the beginning of the cruise they were strong.

A detailed algal situation report is available on <http://www.smhi.se/sgn0102/nodc/reports/>.

The Skagerrak

The surface temperature varied between 8.2°C in the south-western part and 9.9°C in the north-east. A halocline was found on 30m at station M6 and at 20m at station P2. The halocline was absent at the other stations. Phosphate concentrations in the surface water were about 0.6 µmol/l except at M6 where it was 0.3 µmol/l. These concentrations are normal for the season. Nitrogen and silicate concentrations also showed normal values for the season.

The Kattegat and the Sound

The temperature of the surface water was 7.6°C except in the northern part where it was colder.

A strong halocline was found in the Sound at 15m. The surface water was dominated by Baltic water with salinity of 9.2 psu, while the water below the halocline had a salinity above 30 psu. The nutrient concentrations in the surface water were normal for the season in the Kattegat. Higher concentrations than normal of nitrogen and silicate were found in the Sound, while the phosphate concentrations were normal.

The lowest oxygen concentration in the bottom water was found in the southern Kattegat and at station W Landskrona, 4.29 ml/l, which corresponds to an oxygen saturation of 67-68%.

The Baltic Sea

The surface water temperatures in the Baltic varied between 7°C and 8.5°C with the coldest temperatures in the south-eastern part and highest in the Hanö Bight.

The nutrient concentrations, mainly nitrogen and silicate, were higher than normal in the southern Baltic, and lower than normal at station BY31. The rest of the Baltic Sea showed normal nutrient concentrations.

Hydrogen sulphide was found at depths greater than 150m in the eastern Gotland Basin, at depths greater than 80m in the Bornholm Basin, and at depths greater than 60m in the Hanö Bight. Oxygen concentrations below 2 ml/l were measured on depths greater than 70 in the Baltic Proper.

The Gulf of Bothnia

The surface water temperature varied between 6°C and 3°C where the lowest temperatures were found in the central part of the Bothnian Bay, and highest in the southern part and near the coast.

The phosphate concentrations varied between 0.15 µmol/l and 0.25 µmol/l in the Bothnian Sea and around 0.10 µmol/l in then Bothnian Bay. The nitrogen concentrations varied between 2.1 and 3.5 µmol/l in the Bothnian Sea, and between 5.8 and 6.7 µmol/l in the Bothnian Bay. Silicate concentrations of 8-14 µmol/l were found in the Bothnian Sea, 26-33 µmol/l in the Bothnian Bay.

No low oxygen concentrations were found in the deep water.

PARTICIPANTS

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APPENDICES

- Track chart
- Table of stations, parameters and sampling depths
- Map showing bottom oxygen concentrations
- Depth profiles of selected stations
- Monthly average and presently observed values of selected stations