

CRUISE REPORT FROM R/V ARGOS

Survey period: 20011001-20011005

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.

Nutrient conditions and surface water temperatures were normal for the season in all areas.

Oxygen concentrations below 2 ml/l were found at the bottom in Skälderviken, in the Sound from 15 metres, in western Arkona basin from 40 meters and in the rest of the Baltic Proper at depths greater than 60 to 80 metres. The hydrogen sulphide layer started in the Bornholm Basin at a deep of 90 to 70 metres, in the eastern Gotland Basin at a deep of 140 to 125 metres and in the western Gotland Basin already at a deep of 90 to 80 metres.

PRELIMINARY RESULTS

The cruise, part of the SMHI ordinary monitoring programme, began in Göteborg on the 01th of Oktober and ended in Västervik the 05th the same month. In the Skagerrak at the beginning of the expedition, strong winds from southwest blew, while during the later part moderate winds with the same direction dominated.

The Skagerrak

Surface water temperatures were about 14°C, which is normal for the season.

Nutrient concentrations in the surface layer were still low, phosphate around 0.1, silicate 4-1 and nitrate about 0.3 µmol/l i.e normal for the season.

The autumn bloom was ongoing down to the thermocline, which was situated at depths between 15 and 30 meter. The halocline was located somewhat deeper.

The Kattegat and the Sound

Surface water temperatures varied between 13 and 14°C, which is normal for the season. In the open Kattegat thermo- and halocline were both located at a depth of about 15 metres. In the Sound the halocline began already at 7 metres. The autumn bloom proceeded down to the halocline.

Nutrient concentrations, in the surface water of Kattegat, were normal for this time of the year; nitrate below detection limit (0.10), phosphate 0.10 and silicate 1,6 µmol/l. In the Sound, as it ought to, the concentrations were somewhat higher.

At the bottom in Skälderviken and from 15 metres in the Sound oxygen concentrations just less than 2 ml/l, corresponding to a degree of saturation of about 30%, were recorded.

The Baltic Sea

Surface water temperatures varied between 12 and 13°C in the main part of the area. However, in the northern part of the Western Gotland Basin, the temperature was only 10.5°C. The thermocline was located at depths between 20 to 30 metres. The halocline was found at depths of 30-50 metres in the southern and western parts, while it in the eastern part was located at depths of 60-80 metres. An autumn bloom was ongoing down to the thermocline.

Nutrient concentrations, in the surface layer were normal for the season; nitrate below the limit of detection (0.1 µmol/l), phosphate 0.05 to 0.2 µmol/l and silicate between 5 and 8 µmol/l. Oxygen concentrations below 2 ml/l were present at depths greater than 70-80 metres in the whole area; at BY1 in the western part of the Arkona Bassin already at 40 metres. The hydrogen sulphide layer started in the Bornholm Basin at a depth of 90 to 70 metres, in the eastern Gotland Basin at a depth of 140 to 125 metres and in the western Gotland Basin already at a deep of 90 to 80 metres.

PARTICIPANTS

| Name | From |
|--------------------|---|
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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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