

Report from SMHI's monitoring cruise on board KBV001 Poseidon



Survey period: 2013-02-26 - 2013-03-02
Survey area: The Skagerrak, Kattegat, Sound, and the Southwestern Baltic Proper.
Principal: SMHI and the Swedish Agency for Marine and Water Management

SUMMARY

The expedition was part of the Swedish regular marine monitoring programme and covered the Skagerrak, the Kattegat, the Sound and the Southwestern Baltic Proper. Winter conditions were mapped in the southwestern Baltic Proper. Data presented in this report have been subject to preliminary quality control procedures only.

In the western Skagerrak the spring bloom was ongoing and in the Kattegat it was in the beginning. The concentrations of phosphate and silicate were over to much over normal levels in the whole area.

The bottom water of the Arkona Basin was well oxygenated. Oxygen concentrations below 2 ml/l were present intermediate at 60-80 metres in the Hanö Bight and Bornholm Basin. The inflow that occurred in the end of January had reached the Hanö Bight and BY4.

The next expedition is scheduled for March 20 to March 26, 2013.

PRELIMINARY RESULTS

The cruise, part of the Swedish regular marine monitoring programme, began in Göteborg on February 26th and ended in the same port March 2nd. Winter conditions were mapped in the southwestern Baltic Proper.

Winds during most of the expedition were weak except for the last day when it increased to gale.

The Skagerrak

Surface water temperatures were lower than normal and varied between -0.3 and 1.4°C. Surface salinities were also below normal, varying between 18 to 23 psu. The halocline and thermocline coincided at a depth of 10 metres.

Phosphate concentrations were higher than normal and varied between 0.51 µmol/l and 0.66 µmol/l. The sum of nitrite + nitrate showed normal levels between 3.93 µmol/l and 6.58 µmol/l. The concentrations of silicate were higher or much higher than normal, varying between 10.3 µmol/l and 16.0 µmol/l. The spring bloom was ongoing in the western part of the area, indicated by high fluorescence in the surface layer. The oxygen conditions in the bottom water were good.

The Kattegat and the Sound

Surface water temperatures was lower than normal, varying from -0.1 to 0.9°C. The surface salinity was also lower than normal and varied from 8 psu in the Sound to 19 psu at Fladen. The halocline and thermocline were both found at 5 to 15 metres.

The concentration of phosphates was about 0.7 µmol/l, which is higher than normal. The silicate concentration was much higher than normal, varying between 16.4 µmol/l and 17.8 µmol/l, while the sum of nitrite+nitrate was normal and varied between 5.61 µmol/l and 5.87 µmol/l.

Oxygen conditions in the deep water were good.

Fluorescence measurements indicated that the spring bloom was about to start in the area.

The Southwest Baltic Proper

The temperature in the surface was normal at all stations and varied between 1.4 and 2.3 °C. The thermocline and halocline were found at about 35 meters depth in the Arkona Basin, 50-60 meters depth at Hanö Bight and the Bornholm Basin.

The amount of nitrite+nitrate in the surface was normal and varied between 3.0 and 3.4 µmol/l. The concentration of phosphate was normal to above normal at all stations and varied between 0.68 and 0.75 µmol/l. The silicate concentration was normal to above normal in the measured areas and varied between 13.8 and 15.0 µmol/l.

The bottom water of the Arkona Basin was well oxygenated, with concentrations of ca. 6.6 ml/l.

Oxygen concentrations below 2 ml/l were present at intermediate depths, 60-80 metres in the Hanö Bight and Bornholm Basin. Oxygen concentrations in the bottom water of the Hanö Bight and the Bornholm Basin varied between 2.3 and 4.3 ml/l. The inflow that occurred in the end of January had reached the Hanö Bight and BY4.

The phytoplankton activity was low in the whole area.

PARTICIPANTS

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APPENDICES



Click on the button to open appendices.
Note that this will only work when
connected to Internet!

- Track chart
- Table over stations, parameters and sampling depths
- Map showing bottom oxygen concentrations
- Monthly average plots for selected stations
- Profiles for selected stations