

Report from SMHI's monitoring cruise on board KBV001 Poseidon



Survey period: 2012-11-07 to 2012-11-10
Survey area: Skagerrak, Kattegat, the Sound and parts of the southern Baltic Proper.
Principal: SMHI

SUMMARY

The expedition, part of SMHI's regular marine monitoring programme, covered Skagerrak, Kattegat, the Sound and the southern part of the Baltic Proper. Data presented in this report have been subject to preliminary quality control procedures only.

A new agreement with the Swedish Coastguard meant that only the Swedish west coast and south western Baltic Proper (Arkona and Bornholm Basins) were sampled. In addition, due to problems with cranes on board, no CTD-measurements or zooplankton sampling could be carried out.

In Skagerrak and Kattegat, nutrient conditions were normal for the season. In the investigated parts of the Baltic Proper concentrations of phosphate and silicate were higher than normal, while inorganic nitrogen showed normal values.

Oxygen concentrations below 2 ml/l (hypoxia) were found at depth exceeding 60 metres in the Bornholm Basin as well as in the Hanö Bight.

The next expedition is scheduled for the Baltic Proper in late November.

PRELIMINARY RESULTS

The cruise, part of SMHI's ordinary monitoring programme, began in Göteborg on November 7th and ended in the same port November 10th. Winds during the beginning of the expedition were strong but abated during the later part. Wind directions were mainly between west and southwest. A new agreement with the Swedish Coastguard means that SMHI's expeditions for the remainder of 2012 will be split, making use of the two ships KBV001 for the west Coast and the south-western parts of the Baltic Proper, and KBV002 for remaining areas. In addition, due to problems with cranes on board, neither CTD-measurements nor zooplankton sampling could be carried out. Hence, no salinity data or information about the stratification can be presented.

Skagerrak

Surface water temperatures were normal for the season and varied between 8.5 and 9.8°C. Nutrient concentrations in the surface layer were typical for the season. Concentration of phosphate varied from 0.18 to 0.39 µmol/l and the sum of nitrite + nitrate between 1.0 and 2.3 µmol/l, highest close to the coast. Silicate concentrations increased from 2.4 µmol/l in the west, to 5.6 µmol/l in the east.

Oxygen conditions in the deep water were good in the whole area.

Kattegat and the Sound

Also in this area surface water temperatures were normal, between 8.5 and 9.0°C.

All nutrients, in the surface layer, showed typical values for the season. Phosphate concentrations varied between 0.30 and 0.36 µmol/l and nitrite + nitrate between 0.39 and 0.57 µmol/l. Silicate levels in Kattegat were between 5.2 and 6.8 µmol/l, while the concentration in the Sound was higher 8.4 µmol/l.

The oxygen situation in the bottom water of Kattegat was good. The lowest value measured was found at an intermediate depth in the Sound, 2.75 ml/l.

Arkona, Hanö Bight and the Bornholm Basin

The temperature in the surface water was typical for the season, varying between 8.1 and 9.4°C.

Concentrations of nitrite + nitrate were between 0.39 and 0.70 µmol/l, which is normal. However, both phosphate and silicate showed clearly elevated levels. Phosphate varied between 0.55 and 0.70 µmol/l, while silicate concentrations were between 11.5 and 13.9 µmol/l.

Oxygen conditions in the bottom water of the Arkona Basin varied, at BY1 the concentration had dropped since the last visit in October, from 5.7 ml/l to 2.2 ml/l, while the concentration at BY2 had increased somewhat, from 2.3 ml/l to 3.5 ml/l. In the Bornholm Basin as well as in the Hanö Bight, oxygen was almost depleted in the deep water and concentrations between 0.1 and 0.3 ml/l were measured.

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