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CRUISE REPORT FROM R/V ARGOS

Survey period: 990607-990613

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

Principal: SMHI

SUMMARY

The expedition was performed within SMHIs regular marine monitoring programme and covered the Skagerrak, the Kattegat, the Sound, and the Baltic Proper.
The surface water temperatures were normal for the whole area. The nutrient concentrations were low in all sea areas with exception of HS5 at the Jutland coast (high nitrate) and W Landskrona in the Sound (high silicate). These low values are normal for the season due to the algal blooms.
Detailed algal situation reports are available on http://www.smhi.se/sgn0102/nodc/reports/ for the survey period.
Oxygen concentrations below 2 ml/l were found at depths greater than 80 m in the whole Baltic (from 70 m at Christiansö and in the Hanö Bight). Hydrogen sulphide was found at 80 m at Christiansö, from 75 m in the Hanö Bight and from 140-150 m in the eastern Gotland Basin. During this expedition hydrogen sulphide was also found in the northeastern Baltic at station BY29, 175 meters.

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PRELIMINARY RESULTS

The expedition, which was a part of the SMHI's ordinary monitoring programme, began in Göteborg on the 7th of June and ended in the same place on the 13th of June. The weather during the expedition was most of the time sunny. The wind during the first part of the expedition slowly increased to 11 m/s and changed direction from southeast to souhtwest. The rest of the expedition was characterised by weak winds.
A detailed algal situation report is available on http://www.smhi.se/sgn0102/nodc/reports/.

The Skagerrak

The sea surface temperature varied between 13.6°C (P2 in SE) and 12.1°C (HS5 at the northern coast of Jutland). In the central Skagerrak the thermocline and the halocline were strong and they were situated at 10 meters. Here a high fluorescence was registered (M6) as in the halocline at 15m in the southeastern Skagerrak (P2).
A high salinity, 32.5 psu, was measured in the surface water at the northern coast of Jutland. This water (North Sea water) had a high concentration of nitrate, 7 µmol/l, and ammonia. In the surface water of the eastern Skagerrak the nitrate concentration was <0.10 µmol/l, and in the central Skagerrak just over the limit of detection. The phosphate concentration was in the whole area about 0.06 µmol/l. In the southeast, where the lowest salinity, 19.6 psu, was found, the silicate concentration was ten times higher than in the rest of the Skagerrak, 1.6-2 µmol/l.

The Kattegat and the Sound

The sea surface temperature varied between 14.5°C in the north-eastern Kattegat and 13.6°C in the northwestern part. In the eastern Kattegat and in the Sound the thermo- and halocline was situated at 10 meters and at Läsö Ränna at 5m. At these depths maxima of fluorescence was measured, though at Läsö Ränna at a somewhat greater depth, about 10m.
In the whole area the nitrate concentration of the surface water was below the limit of detection, <0.1 µmol/l, and the phosphate concentration was low, 0.02-0.1 µmol/l. At W Landskrona, in the Sound, the silicate concentration was high in the whole water column, >10 µmol/l.
The lowest oxygen values of the area were measured in the Sound. The saturation was about 65% at W Landskrona at 25m and deeper.

The Baltic Sea

The sea surface temperature varied between 10.3°C in the southeastern Baltic and 12.6°C in the northwestern part.
With the exception of the western part, the nitrate concentration of the whole Baltic Proper still was below the limit of detection, 0.10 µmol/l, down to the halocline. The concentration of phosphate of the surface water was between 0.1-0.15 µmol/l.
Oxygen concentrations less than 2 ml/l were found from 70 m at Christiansö and in the Hanö Bight and from 80 m in the rest of the Baltic.
Hydrogen sulphide was found from 80 m at Christiansö (87 m at the Bornholm Depth), from 75 m in the Hanö Bight and from 140-150 m in the eastern Gotland Basin. This time hydrogen sulphide was found at BY29 in the northeastern Baltic from 175 meters and downwards.

PARTICIPANTS

Name	From
Bodil Thorstensson, chief scientist	SMHI Oceanographical lab.
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APPENDICES

Plots

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