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CRUISE REPORT FROM R/V ARGOS

Survey period: 20010730-20010804

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

Principal: SMHI

SUMMARY

The expedition was the 8th within SMHIs regular marine monitoring programme for 2001, and covered the Skagerrak, the Kattegat, the Sound, and the Baltic Proper.

The surface water temperatures were higher than normal in all areas (although the temperature had dropped 1.5-2.5°C in the Skagerrak and northern Kattegat since the previous expedition) with the exception of the Western Gotland Basin. The temperature was 17.2-20.2°C in Skagerrak-Kattegat and 18.0-19.7°C in the Baltic Proper.

Oxygen concentrations below 2 ml/l were found at depths from 80m in almost the whole Baltic Proper. The situation in the Arkona Basin, Hanö Bight, Bornholm Basin and Western Gotland Basin was even worse. Hydrogen sulphide was present at depths from 70m in the Hanö Bight, 85m in Bornholm Basin, 125m in the Eastern Gotland Basin and 80m in theWestern Gotland Basin.

The nutrient concentrations in the surface layer were normal for the season in all areas (more or less depleted). Silicate does not deplete in the Baltic Proper but the trend of concentrations lower than normal continued.

High fluorescence peaks (chlorophyll) were measured only in the south eastern Kattegat and the Sound. No super saturation of oxygen was found (compared to the previous expedition).

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PRELIMINARY RESULTS

The expedition, the 8th within SMHIs regular marine monitoring programme for 2001, started in Göteborg 30th of July and ended in Göteborg 4th of August. The weather was good and sunny during most of the expedition. The air temperatures varied from ~17°C during evenings and nights to ~20°C in daytime. Westerly winds, moderate to brisk, prevailed during the main part of the expedition.

The Skagerrak

The lowest surface water temperature (17.2°C) was found in the central part of the Skagerrak and the highest (18°C) in the south eastern coastal zone. The temperatures were higher than normal although they had dropped 1.5-2.5°C in the Skagerrak and northern Kattegat since the previous expedition.

The surface salinity in the open parts and in the coastal zone was 30-31 psu, for the coastal zone clearly higher than normal.

The mixed layer depth reached down to 5m in the central part and 10m in the coastal zone.

The nutrient concentrations in the surface water were normal for the season, i.e. close to, or a somewhat above, the detection limit.

No high fluorescense peaks and no oxygen super saturation were registered as was the case on the previous expedition.

The Kattegat and the Sound

The surface temperature was 19.5-20.5°C on the Swedish side of the Kattegat and in the Sound. The temperatures were, as in the Skagerrak, higher than normal although they had dropped since the previous expedition. On the way home the temperatures had decreased a further ~2°C at stations Drogden E and Anholt E.

The surface water salinity in the Kattegat was normal, but clearly higher than normal in the Sound due to a strong southerly surface current.

The mixed layer depth was ~7m.

The lowest oxygen concentration was found in the deep water at W Landskrona in the Sound. From 20m and deeper the concentration was 4.2 ml/l (62% saturation).

The nutrient concentrations in the surface water were normal for the season, i.e. close to, or just above, the detection limit (somewhat higher values for phosphate). The silicate concentration in the Sound was 1.5 µmol/l, clearly below normal (strong southerly surface current of Kattegat water with low silicate content).

High fluorescense peaks were found at Anholt E (at 30-35m depth) and in the Sound (10-20m). No oxygen super saturation was registered. On the way home a considerably lower fluorescense peak was found at Anholt E.

The Baltic Proper

The surface water temperature was higher than normal (~19.5°C) in the entire Baltic Proper with the exception of the Western Gotland Basin where the temperature was more normal (~18.0°C). At Ölands S Udde upwelling prevailed (16.3°C).

The surface salinity was normal, or somewhat below normal (lowest in the Gotland Deep), in the entire Baltic Proper.

The thermocline was located at 10-15m depth in the whole area. The halocline was located ~30m in the southern part and ~60m in the Eastern and Western Gotland Basin.

Oxygen concentrations below 2 ml/l were present from 80m depth in almost the entire area. In the Arkona Basin the near bottom water contained < 2 ml/l. In Hanö Bight, the Bornholm Basin and the Western Gotland Basin the 2 ml level started already at ~70m depth.

Hydrogen sulphide was found in the Hanö Bight from 70m depth, in the Bornholm Basin (85m), in the Eastern Gotland Basin (125m) and in the Western Gotland Basin (80m).

The nutrient concentrations in the surface water were normal for the season in the entire area (more or less depleted).
The silicate concentrations were still lower than normal and continued to decrease somewhat.

No high fuorescense peaks were registered.

PARTICIPANTS

Figurer

Klicka på knappen för att öppna bilagor.
Observera att denna länk enbart fungerar om Ni är uppkopplade mot internet!

Name	From
Jan Szaron, chief scientist	SMHI Oceanographic Services
Tuulikki Jaako	- ″ -
Richard Nygren	- ″ -
Sari Sipilä	- ″ -
Jorge Valderrama	- ″ -

APPENDICES

- Track chart
- Table over visited stations, meteorological conditions and parameters sampled during the expedition
- Map showing bottom oxygen concentrations
- Profiles for selected stations
- Monthly average (and current observed values) plots for selected stations