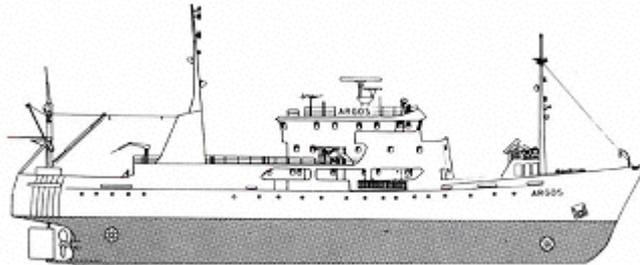


CRUISE REPORT FROM R/V ARGOS



Survey period: 2010-11-08- 2010-11-13

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

Principal: SMHI

SUMMARY

The expedition was part of SMHI's regular marine monitoring programme and covered the Skagerrak, the Kattegat, the Sound and the Baltic Proper.

Surface water temperatures were normal in the whole area and nutrient levels were also normal except from silicate which was lower than normal in parts of the Baltic Proper and in the Kattegat. Oxygen levels in the deep water of the Arkona Basin and Hanö Bight were good. In the Bornholm Basin the oxygen levels had decreased to just above zero. In the rest of the Baltic Proper, oxygen concentrations below 2 ml/l were found at depths exceeding 60 to 75 metres.

Hydrogen sulphide was found at the Landsort Deep (BY31) from 90 metres, from 60-100 metres in the Western Gotland Basin and already from 90 to 140 metres in the Eastern Gotland Basin.

Phytoplankton activity was low in the region.

Data presented in this report have been subject to preliminary quality control procedures only.

The next expedition will take place 28th November to 9th December

PRELIMINARY RESULTS

The cruise, part of SMHI's ordinary monitoring programme, began in Göteborg on November 8 and ended in Karlskrona on November 13. The winds during the first half of the expedition were weak and during the other half strong.

The Skagerrak

Both temperature and salinity in the surface water were normal for the season. The temperature varied between 7.6 and 9.3°C and the salinity from 23.4 to 32.4 psu, lower at the coast and higher offshore. The surface layer was thin in the southern parts and along the coast. In the outer parts the thermocline and the halocline began at 10-15 meters depth.

Nutrient levels in the surface layer showed generally higher concentrations near the coast and the southern parts. The sum of nitrate and nitrite ranged from 0.27-0.45 µmol/l, phosphate between 0.07-0.45 and silicate from 0.4-21.1 µmol/l. At Släggö the inorganic nitrogen components were higher than normal and the silicate concentration was 4 times higher than normal. The water at Släggö was influenced by freshwater runoff, indicated by high turbidity and low salinity.

Oxygen saturation and fluorescence measurements indicated that the phytoplankton activity was low.

The Kattegat and the Sound

Surface water temperatures and salinity were normal for the season around 8°C and between 23-28 psu. In the Sound the salinity was about 10 psu. The halocline and thermocline was found at 15 metres depth in the Kattegat. The stratification in the Sound was weak.

The phosphate concentration in the surface layer was normal in the whole area and varied between 0.12-0.28 µmol/l. Nitrate + nitrite concentrations were below normal, 0.18-0.36 µmol/l, in the southern parts and silicate, 0.7-7.1 µmol/l, were lower than normal throughout the monitored area. The lowest oxygen concentration, 3.24 ml/l, was detected at 30 meters depth in the Sound, which correspond to a saturation of 52%.

Phytoplankton activity was low throughout the area.

Baltic Proper

The surface temperature showed normal values for the season. It ranged between 6.8-10.6°C, lowest in the north and highest in the south. The halocline and thermocline began at 25 metres in the Arkona Basin and at 40 to 50 metres in the remainder of the area.

All nutrients, in the surface layer, showed normal concentrations throughout the investigated area except from silicate, which was below normal in the eastern Gotland Basin, Hanö Bight and parts of the Bornholm Basin. Phosphate varied from 0.14-0.32 µmol/l, the sum of nitrite + nitrate from 0.15 in the south to 0.76 µmol/l in the north, silicate levels ranged from 3.2 to 10.4 µmol/l.

Oxygen levels in deep waters of the Arkona Basin and Hanö Bight were good, about 5-6 ml/l and 2.6 ml/l. Though a small inflow was detected during the previous cruise oxygen levels were back to almost oxygen free conditions, 0.18-0.23 ml/l. The inflow which was noted intermediately in the eastern Gotland Basin during October was now almost consumed and the oxygen concentration between 110 and 130 meters depth had decreased from around 2 to 0.7 ml/l. In the rest of the Baltic Proper, oxygen concentrations below 2 ml/l were found at depths exceeding 60 to 75 metres.

Hydrogen sulphide was found at the Landsort Deep (BY31) from 90 metres, from 60-100 metres in the Western Gotland Basin and from 90 to 140 metres in the Eastern Gotland Basin.

Phytoplankton activity was low throughout the region.

PARTICIPANTS

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Kristin Andreasson		-"-

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