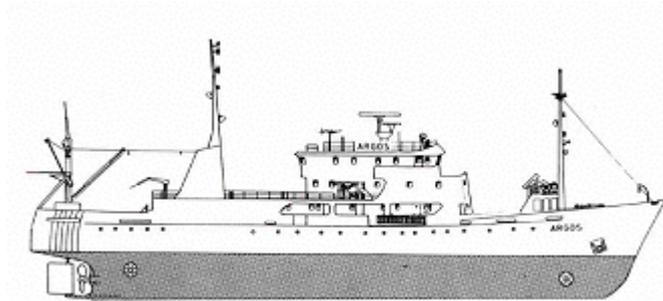


## CRUISE REPORT FROM R/V ARGOS



**Survey period:** 2006-01-16 - 2006-01-22

**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, Kattegat, Sound and Baltic Proper. Mapping of winter conditions was performed in the Kattegat.*

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

*In the Southern Baltic Proper, concentrations of phosphate and silicate in surface waters remain high. Phosphate and silicate concentrations in other areas were normal. Nitrate concentrations were low throughout the study area.*

*In the Baltic Proper oxygen concentrations were below 2 ml/l at depths exceeding 65 to 80 metres. Hydrogen sulphide was found in the eastern Gotland Basin deeper than 125 metres, and in the northern and western Gotland Basin deeper than 100 to 125 metres.*

*The next expedition is scheduled for February 27 to March 5, 2006.*

## **PRELIMINARY RESULTS**

The cruise, part of SMHI's ordinary monitoring programme, began in Göteborg on January 16<sup>th</sup> and ended at the same place January 22<sup>rd</sup>. Mapping of winter conditions was performed in the Kattegat and the Sound.

The wind speed during the expedition was seldom below 10 m/s. In the middle of the expedition air temperature fell to minus 10 °C causing severe ship icing. Because of this the Karlsö Deep station, BY38, could not be sampled.

### **The Skagerrak**

Surface water temperatures were normal in the whole area. They varied from 1.5 °C at the entrance of Gullmar fjord to 6.3 °C in the central Skagerrak. In the eastern parts there was a pronounced halocline at depths between 15 and 20 metres, with surface salinities from 23 to 28 psu. In the central part surface salinity was above 30 psu and the halocline weaker.

Surface phosphate and silicate concentrations were normal for the season. Phosphate was between 0.5 and 0.6 µmol/l and silicate between 5 and 8 µmol/l. Nitrate concentrations at the surface was somewhat lower than normal in the eastern parts, ca 4.5 µmol/l, and normal in the central part, ca 6 µmol/l.

The chlorophyll fluorescence indicated some phytoplankton activity above halocline in the eastern parts.

### **The Kattegat and the Sound**

Surface water temperature in the area was between 1.8 and 4 °C, which is normal for the season. Surface salinities, which were somewhat lower than normal, decreased from ca 25 psu in the northwestern part to 15 psu at Kullen and 9 psu in the Sound. The halocline was found at depths between 10 and 20 metres.

Surface phosphate and silicate concentrations at the frequent stations in the eastern part of the Kattegat were normal for the season, while nitrate concentration was somewhat lower. Phosphate concentrations in the Kattegat were between 0.4 and 0.9, silicate between 4 and 16 and nitrate between 1.9 and 4.5 µmol/l. In the Sound, phosphate and silicate concentrations were higher than normal, ca 0.8 and ca 14 to 15 µmol/l respectively, while nitrate concentrations were lower than normal, 3 to 4 µmol/l.

The lowest oxygen value in the bottom water was measured in the Sound, 3.66 ml/l corresponding to a saturation of almost 60%.

In the Kattegat phytoplankton activity occurred above the halocline. In the Sound there was very little activity.

### **Baltic Proper**

Surface water temperature was normal for the season. It increased from 2.7 °C in the south to 4.0 °C in the north.

In the Arkona and Bornholm Basins, surface phosphate and silicate concentrations were still above normal, almost 0.8 and 14-15 µmol/l respectively. In the remainder of the Baltic Proper these concentrations were normal, phosphate ca 0.6 and silicate 9-14 µmol/l. Nitrate concentration in the surface was below normal at most stations, and varied between 1.9 and 3.7 µmol/l.

In the Arkona Basin, oxygen conditions were good. In the remainder of the Baltic Proper oxygen concentrations below 2 ml/l were found at depths exceeding 65 to 80 metres. Hydrogen sulphide was found below 125 metres in the eastern Gotland Basin and deeper than 100 to 125 metres in the northern and western Gotland Basin.

Phytoplankton activity was very low.

## PARTICIPANTS

Name		From
Bengt Yhlen	Chief scientist	SMHI Oceanographic lab.
Lars Andersson		-"-
Sari Sipilä		-"-
Jan Szaron		-"-
Bodil Thorstensson		-"-

## APPENDICES

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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