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## CRUISE REPORT FROM R/V ARGOS

**Survey period:** 20010611-20010618

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

**Principal:** SMHI

### SUMMARY

*The expedition was performed within SMHI's regular marine monitoring programme and covered the Skagerrak, the Kattegat, the Sound, and the Baltic Proper. Nutrient conditions were normal for the season in all areas. Oxygen concentrations below 2 ml/l were found in the whole Baltic Proper at depths greater than 70 metres. Hydrogen sulphide was present in the eastern and western Gotland Basins at depths greater than 125 metres, in the Hanö Bight from 70 metres and in an intermediate layer at a depth of 70 metres at Christiansö, in the Bornholm Basin.*

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## **PRELIMINARY RESULTS**

The cruise, part of the SMHI ordinary monitoring programme, began in Göteborg on the 11<sup>th</sup> of June and ended in the same port on the 18<sup>th</sup> and included a visit in Ronneby during the weekend. The weather was sunny, and the winds weak to moderate, during the main part of the expedition.

### **The Skagerrak**

Surface water temperatures varied from 10 °C to 13.4 °C in the coastal zone. Surface salinity in the open parts varied between 30 and 31 psu, which is clearly higher than normal. Nutrient concentrations were normal for the season. Nitrate from detection limit, 0.10 µmol/l up to 0.24 µmol/l. Phosphate between 0.05 and 0.20 µmol/l and silicate between 0.3 and 0.9 µmol/l. High fluorescence was measured in the south-eastern part and in the mouth of the Gullmar fjord. Also some very high peaks were detected at a depth of 20-30 metres in the central part.

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

Surface water temperatures varied between 13 and 14 °C, which is normal for the season. The thermocline and halocline were both located at a depth of 5-10 metres. Also here nutrient concentrations were normal, nitrite and nitrate below detection limits, phosphate 0.05-0.08 and silicate 0.5 to 3 µmol/l. The lowest oxygen concentration of the deep water was measured at W Landskrona in the Sound, 4.9 ml/l, corresponding to a saturation of 69 %.

### **The Baltic Sea**

Surface water temperatures varied from 11 °C to 12.5 °C. The thermocline was located at approx. 10 metres in the whole area. The halocline was found at 30-50 metres in the southern parts, while it was found at 60-80 metres in the central areas. High fluorescence was measured in a limited area northwest of Gotland.

Nitrite and nitrate concentrations were normal for the season, close to or below the limit of detection, 0.02 and 0.1 µmol/l respectively. The concentration of phosphate was also of a normal level between 0.05 and 0.15 µmol/l. Silicate concentrations varied between 4.8 and 6.8 µmol/l, which is lower than normal.

Oxygen concentrations below 2 ml/l were present at depths greater than 70-80 metres in the whole area. Hydrogen sulphide was present in the eastern and western Gotland Basins at depths greater than 125 metres, in the Hanö Bight from 70 metres, and

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at an intermediate layer, at a depth of 70 metres at Chistiansö in the Bornholm Basin.

## **PARTICIPANTS**

Name		From		
Lars Andersson,	chief scientist	SMHI Oceanographical lab.		
Jonas Henriksen	12-16/6		- "	-
Tuulikki Jaako			- "	-
Sari Sipilä			- "	-
Jorge Valderrama			- "	-
Richard Nygren	11-12/6		- "	-

## **APPENDICES**

- Track chart
  - Table over stations, parameters and sampling depths
  - Map showing bottom oxygen concentrations
  - Monthly average plots for selected stations
  - Profiles for selected stations
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