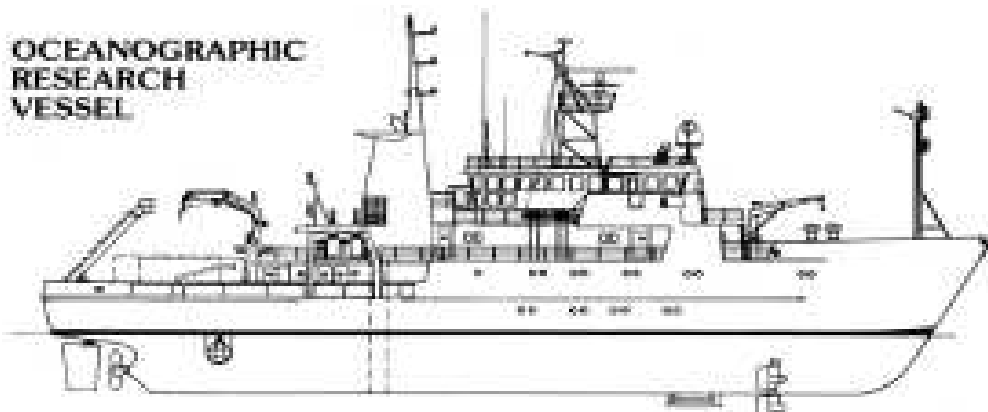


## CRUISE REPORT FROM R/V FRANKLIN



**Survey period:** 2011-03-07 - 2011-03-15

**Survey area:** The Skagerrak, Kattegat, Sound, and 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. Winter conditions were mapped in the Baltic Proper.

Data presented in this report have been subject to preliminary quality control procedures only. Surface water temperatures were below normal in the whole area. Surface nutrient concentrations were normal at most stations but above normal silicate and nitrate concentrations were recorded in the central parts of Skagerrak and in the Arkona Basin. The bottom water of the Arkona Basin was well oxygenated with concentrations exceeding 7.4 ml/l. In the remaining parts, oxygen concentrations below 2 ml/l were present at depths exceeding 60-80 metres. Hydrogen sulphide was found deeper than 80 to 90 metres in the western Gotland Basin and deeper than 125 to 150 metres in the northern- and eastern Gotland Basins. The spring bloom was ongoing in the Kattegat. The next expedition is scheduled for April 2 to 8, 2011.

## **PRELIMINARY RESULTS**

The cruise, part of SMHI's ordinary monitoring programme, began in Göteborg on March 7th and ended in the same port on March 15th. The cruise used R/V Franklin since all work on R/V Argos has been forbidden due the presence of asbestos on board.

Winter conditions were mapped in the Baltic Proper.

Winds during most of the expedition were of or close to gale force. During the last 3 days winds were moderate.

### **The Skagerrak**

Surface water temperature was low throughout the area, between 0.8 and 2.4°C. Surface salinities increased from 24 psu at the coast to 33 psu in the central part.

Nutrient levels in the surface layer were normal in the eastern part but elevated (for the season) silicate and nitrate concentrations were measured in the central part. Phosphate concentrations varied from 0.07 µmol/l at the coast to 0.39 in the west. Nitrate concentrations were between 0.4 and 7 µmol/l and silicate from 6.6 to 4.3 µmol/l.

Phytoplankton activity was low.

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

As in the Skagerrak, surface water temperatures were below normal, between 0 and 0.4°C. Surface salinities were normal and decreased from 20.5 in the north to 15.6 psu in the Sound.

Surface nutrient concentrations were normal for the season, except for silicate. Phosphate concentrations in the Kattegat were about 0.1 µmol/l and in the Sound 0.2 µmol/l. Nitrate in the Kattegat was below the detection limit (0.1 µmol/l) and 1 µmol/l in the Sound. Silicate was 6 µmol/l in the northern Kattegat and 10 in the southern part. Silicate concentrations in the Sound were 9 µmol/l.

Bottom water was well oxygenated: over 6 ml/l in the Kattegat and 5 ml/l in the Sound.

The spring bloom was ongoing in the Kattegat.

### **Baltic Proper**

Surface water temperatures were below normal throughout the area and varied from -0.2 in the north to 1.9°C in the southeastern parts.

Surface phosphate varied between 0.5 and 0.7 µmol/l and was normal at most stations. High surface nitrate concentrations were recorded in the Arkona Basin and at BCSIII-10: 8.4 and 6.0 µmol/l respectively. In the remaining parts, concentrations were normal between 3.0 and 4.4 µmol/l.

Surface silicate varied between 11.4 and 16.9 µmol/l. They were also higher than normal in the Arkona Basin and in the surface water at the Landsort Deep and at BY29.

The bottom water of the Arkona Basin was well oxygenated with concentrations exceeding 7.4 ml/l. In the remaining parts, oxygen concentrations below 2 ml/l were present at depths exceeding 60-80 metres.

Hydrogen sulphide was found deeper than 80 to 90 metres in the western Gotland Basin and deeper than 125 to 150 metres in the northern- and eastern Gotland Basins.

Phytoplankton activity was low throughout the whole area.

## PARTICIPANTS

Name		From
Bengt Yhlen	Chief Scientist	SMHI Oceanographic laboratory
Johan Håkansson		-"-
Arne Svensson		-"-
Anna-Kerstin Thell		-"-
Bodil Thorstensson		-"-

## 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