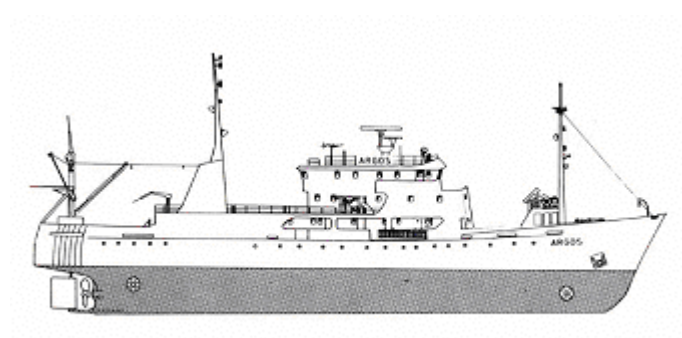


## CRUISE REPORT FROM R/V ARGOS



Survey period: 2003-10-19 - 2003-10-25

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.*

*This report is based on preliminary data.*

*Nutrient concentrations were normal for the season in all areas.*

*In the south of Kattegat and in the Sound, deeper than 20 meters, oxygen concentrations were under 2 ml/l. In the southwest and south of Baltic, all stations except Arkona basin and Hanö bight had low oxygen values, the lowest being 0.22 ml /l, was observed at BY1.5.*

*Proper and east of Gotland, the oxygen concentrations were under or well under 2 ml/l. Only BY5 was slightly over the 2 ml/l limit. Hydrogen sulphide was present at BY20 and in the western Gotland Basin.*

## PRELIMINARY RESULTS

The cruise, part of SMHI's ordinary monitoring programme, began in Karlskrona October 19<sup>th</sup> and ended in Göteborg October 25<sup>th</sup>. During the first part of expedition there were moderate northerly winds. The weather was sunny with an air temperature about 20°C. In the middle of the week there came a hurricane. These also were northerly and brought chill air. The temperature decreased to 13°C. Because of gale warning at the south part of Gotland there was no sampling at Karlsö Deep.

### The Skagerrak

Surface water temperature varied from 16.4°C in the central part of the Skagerrak (Å17), which was slightly higher than normal, to about 18.1°C in the coastal area (Släggö). The salinity of the surface water varied between 23.6 psu at Släggö and 31.9 psu at Å17.

Nutrient concentrations in the surface layer showed typical summer values. Phosphate concentrations were 0.02-0.05 µmol/l. Silicate concentration showed a value between 0.3-0.7 µmol/l.

Nitrite+nitrate were below the detection limit, 0.1 µmol/l, in the whole area.

### The Kattegat and the Sound

The surface water temperatures were at Fladen 18.8°C and some tenths lower in the southern Kattegat and at W Landskrona. The measurement at Drogden showed only 13.4°C.

The surface water salinity at Anholt E and W Landskrona were higher than normal, 25.6 and 20.4 psu respectively.

The thermocline was found at a depth of about 5 metres.

The nutrient concentrations were low, which is normal for the season. The phosphate concentration was measured to 0.05-0.13 µmol/l. The sum of the nitrite and nitrate concentration was below the limit of detection, <0.1 µmol/l. The silicate concentration outflow from the Baltic was going on during the expedition week

### Baltic Sea

The surface water temperature was normal for the season and varied from 13.5°C in the south (By2) to 16.5°C in the north (By38). Sea surface salinity varied between 6.7 psu and 7.5 psu. The thermocline was located at a depth of 10-20 metres in the whole area.

The halocline was located at a depth of 30-50 metres in Arkona and Bornholm Basin and 70-90 metres in the central parts of Baltic Proper.

In the southeast of Baltic Proper the bottom waters had an oxygen concentration just above 2 ml/l.

As in previous expedition a layer between 100 and 150 metres depth was found at Gotlandsdjupet (BY15) with a oxygen concentraton below 2 ml/l. The bottom water had a value slightly over 2 ml/l. Hydrogen sulphide was established at depths from 90 metres to the bottom at Fårödjupet (BY20) and Norrköpingsdjupet (BY38). Hydrogen sulphide was also present from 125 metres to the bottom at Karlsödjupet (BY32) and also in a thin layer around 125 metres at BY10.

This expedition showed lower oxygen concentrations in the bottom waters in the whole area compared to previous expeditions. This ends the positive effects on the bottom concentration of oxygen due to the January inflow.

In the whole area the nutrient concentrations were low.

Concentration of nitrite+nitrate in the surface water was below the detection limit, 0.10 µmol/l. Phosphate was about 0.5-0.11 µmol/l and silicate 7.3-10.1 µmol/l.

An ongoing bloom preliminary of *Aphanizomenon "baltica"* and *Nodularia spumigena* was seen at stations east, north and west of Gotland.

## PARTICIPANTS

| Name                           | From                      |
|--------------------------------|---------------------------|
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| Tuulikki Jaako                 | -"-                       |
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## 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