

EXPEDITIONSRAPPORT FRÅN U/F ARGOS

CRUISE REPORT FROM R/V ARGOS

Survey period: 980418-980424

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. Weak winds from the north dominated. The surface water temperatures were normal for the season in the whole area i.e. about 6°C in the Skagerak, 6.5°C in the Kattegat and between 5 and 3°C in the Baltic. Water of high nitrate content (20 µM) was found north of Jylland (station HS5) In the Kattegat both inorganic nitrogen and the phosphate concentrations were low in the surface water. The spring bloom in the Baltic had started. The oxygen concentrations in the Baltic were below 2 ml/l from about 80 m depth in the Gotland Basin and about 70 m in the Bornholm Basin. No hydrogen sulphide was detected in the Baltic Sea. A full algal report No 7, 1998 is available on <http://www.smhi.se/sgn0102/nodc/index.htm>

PRELIMINARY RESULTS

The expedition, which was a part of the ordinary monitoring programme of SMHI, began in Göteborg on the 18th of April and ended in the same place on the 24th of April.

A high pressure during the expedition carried weak winds from the north.

A full algal report No 7, 1998 is available on <http://www.smhi.se/sgn0102/nodc/index.htm>.

The Skagerrak

The sea surface temperature was just below 6°C. A 7 m thick surface layer with nitrate concentration of almost 20 µM was found at station HS5 north of the Jylland coast where the phytoplankton primary production also was potent. The rest of the nutrient concentrations were typical for the season in the whole area.

The Kattegatt and the Sound

The sea surface temperature varied between 6 and 7°C. A considerable algae bloom occurred at station Läsö Ränna in the north-western Kattegatt. At the stations along the Swedish coast the primary production was moderate in the beginning of the week. When the stations were revisited at the end of the expedition a powerful phytoplankton production had started in a thin layer just below the halocline which was situated at a depth of about 10 meters. The surface layer was almost depleted of nitrate and phosphate.

The bottom oxygen concentrations were normal for the season. The lowest oxygen saturation (60%) was measured in the bottom water at station W Landskrona in the Sound.

The Baltic Sea

The sea surface temperature in the southern Baltic was almost 5°C and decreased to nearly 3 in the northern part. The spring bloom was ongoing in the whole area and had proceeded longest in the Arkona Basin where the surface layer was depleted of nitrate and the phosphate concentration had decreased to about 0.2 µM.

The oxygen saturation in the Arkona Basin was not below 50%. Oxygen concentrations below 2 ml/l were measured from about 80 m depth in the Gotland Basin and about 70 m in the Bornholm Basin. No hydrogen sulphide was detected in the Baltic Sea.

PARTICIPANTS

Name	From
Bengt Yhlen, chief scientist	SMHI Oceanographical lab.
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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

SMHI
Ocean lab

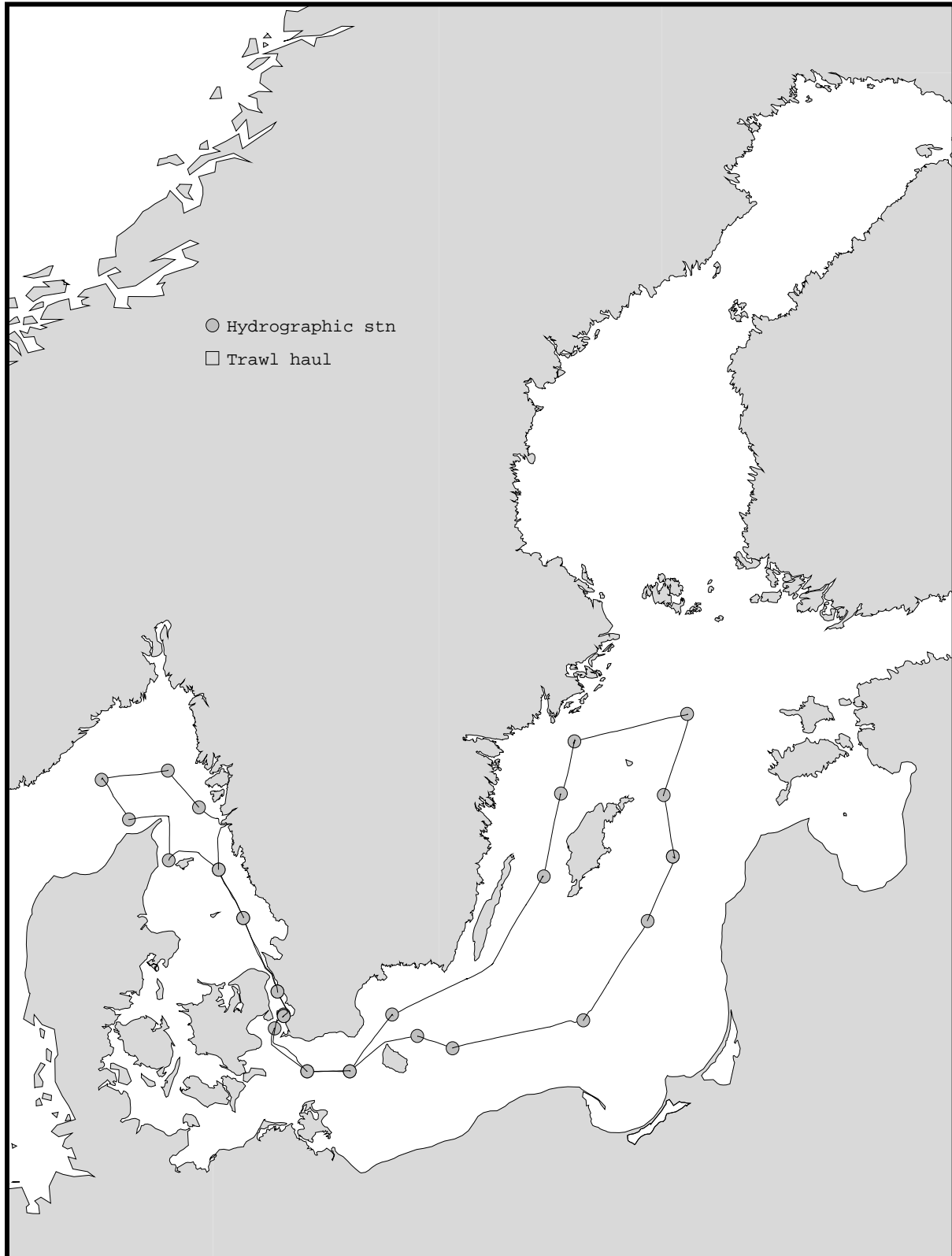
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***** series Year: 1998

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Time: 09:16

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						utc	m	m		m			C	hPa	aoae	d	Cilyooa		m	l	y	S	4	t	2	3	4	t	k	O	m	g	N	C	C	m	
															tu	motPBw																					
															hd	PrP	l																				
0278	SKEX23BAS	P2		N5752	E1118	980418	1900	94			05	4	7.4	1006	1520	x	--x----	9	x	x	-	x	-	x	x	x	x	x	x	-	x	-	-	-	-	-	x
0279	SKEX17BAS	Å16		N5816	E1043.5	980418	2145	196			05	7	6.5	1007	9920	x	--x----	12	x	x	-	x	-	x	x	x	x	x	x	-	x	-	-	-	-	-	x
0280	SKNX21BAS	M6		N5810	E0930	980419	0200	645			05	3	6.8	1007	9900	x	--xx---	17	x	x	x	x	-	x	x	x	x	x	x	x	x	-	-	-	-	-	x
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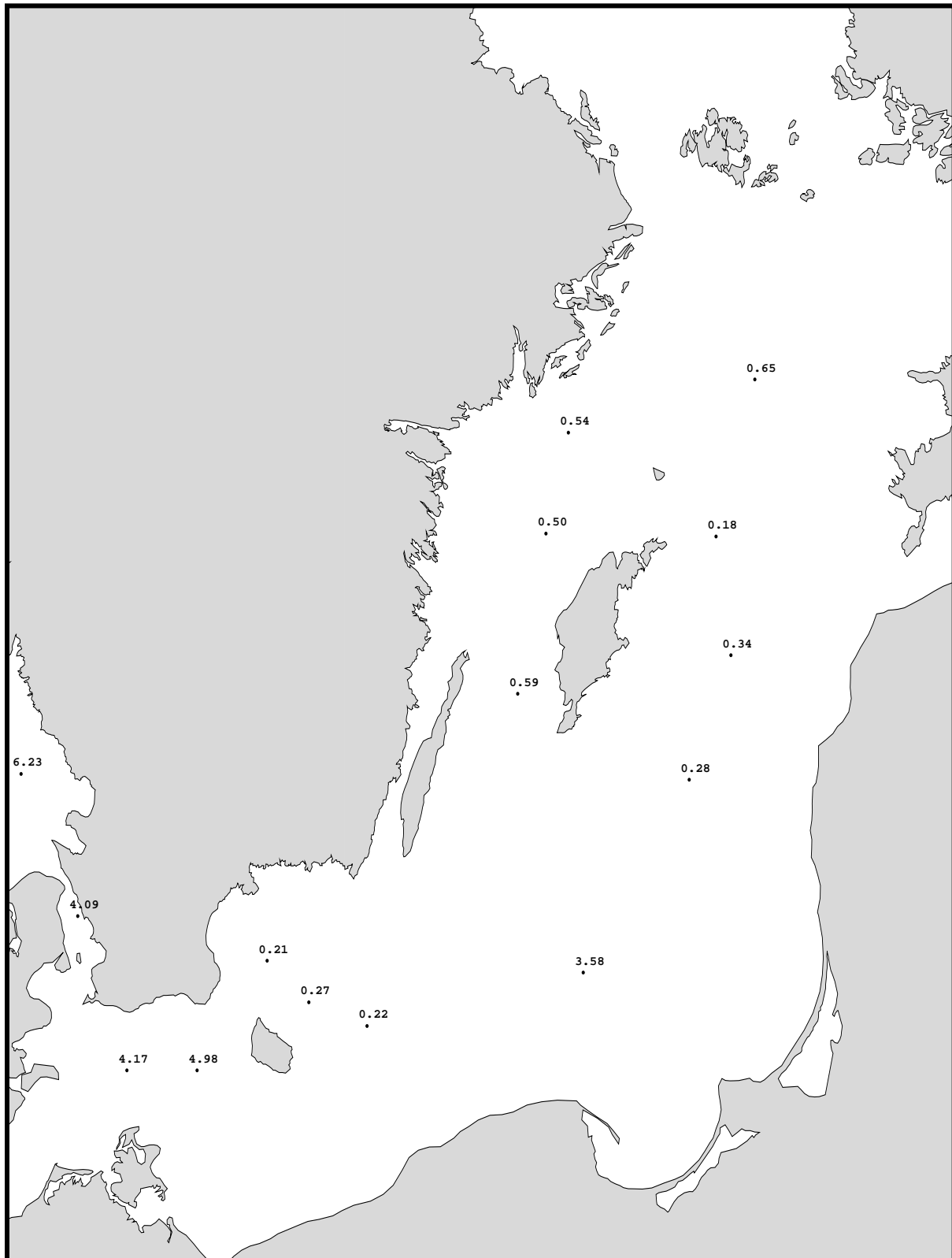
TRACK CHART

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Series : 0278-0308



Bottom water oxygen concentration (ml/l)

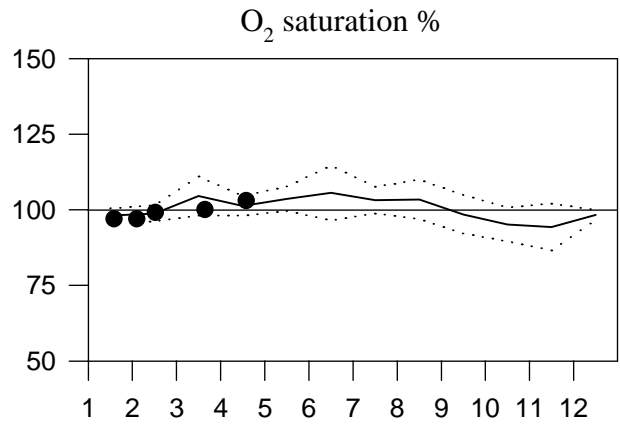
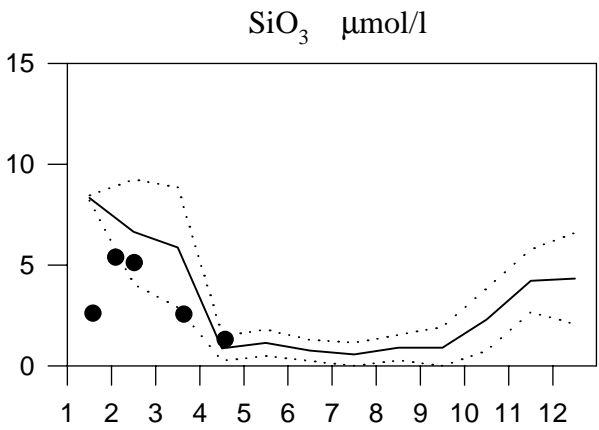
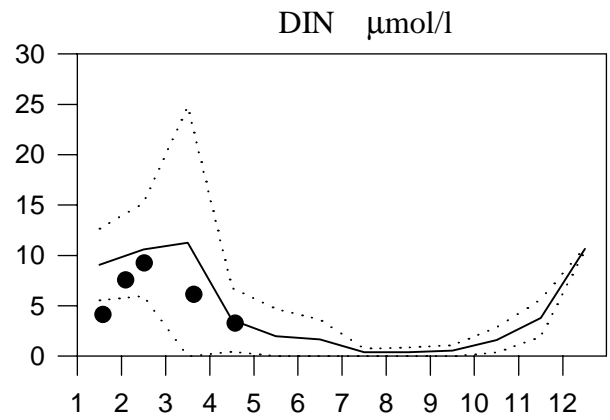
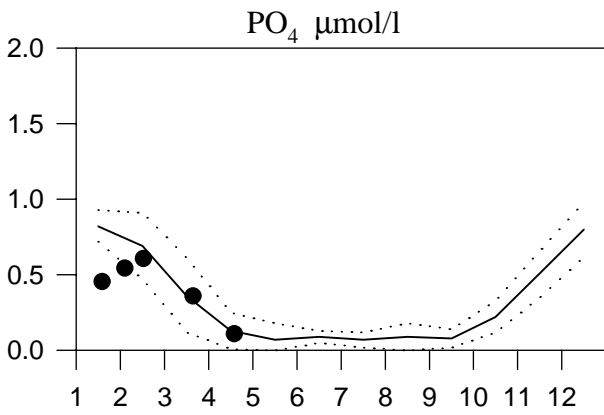
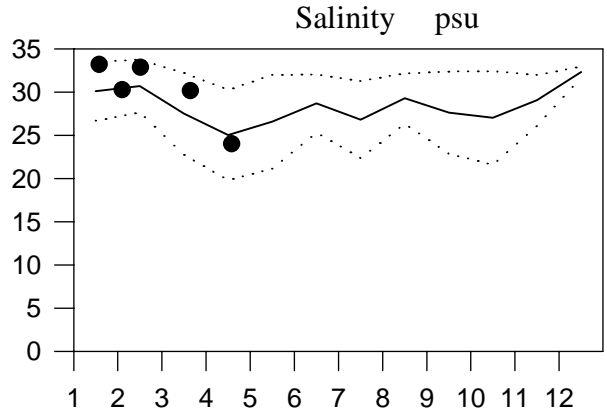
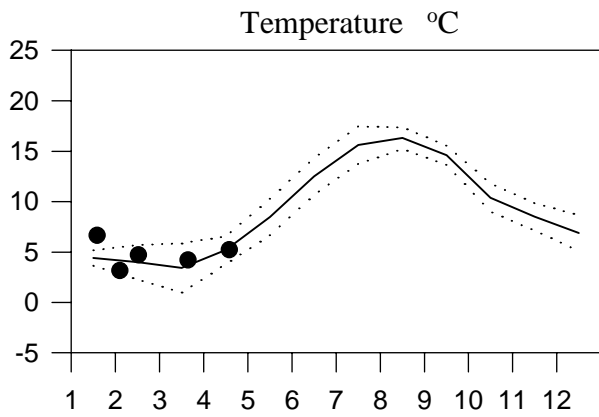
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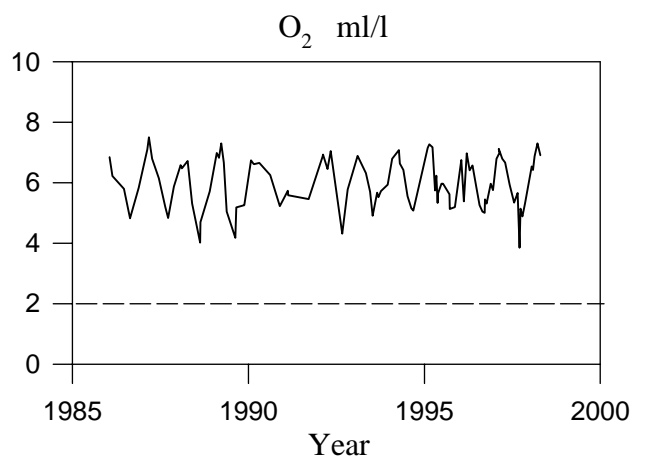
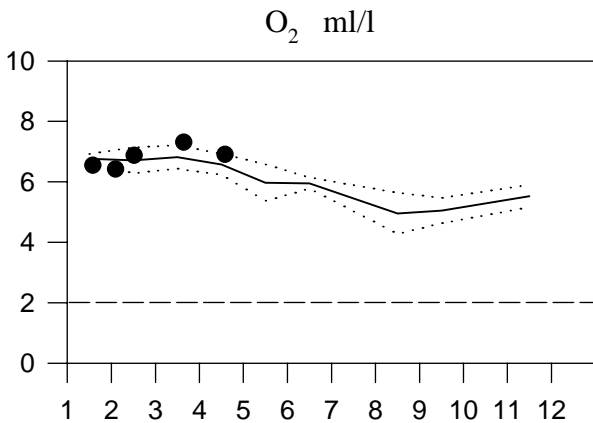
STATION P2 SURFACE WATER (0-15 m)

Annual Cycles

— Mean 1986-1995 ····· St.Dev. ● 1998



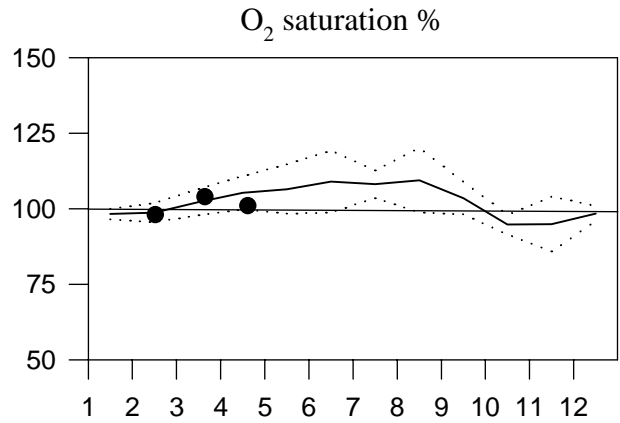
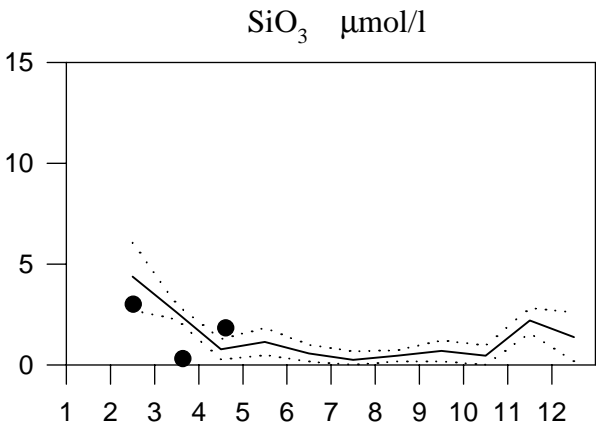
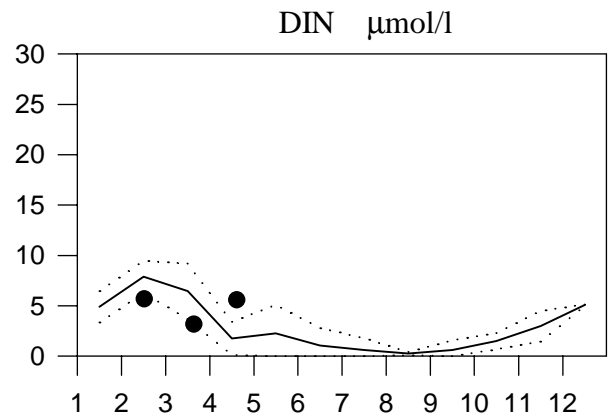
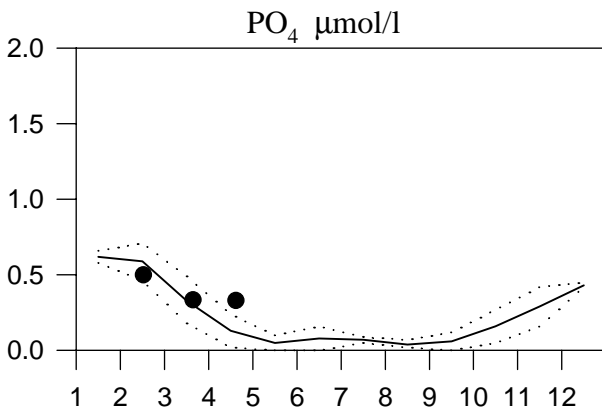
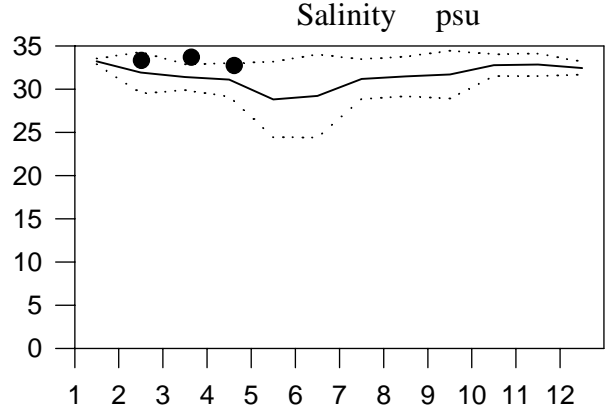
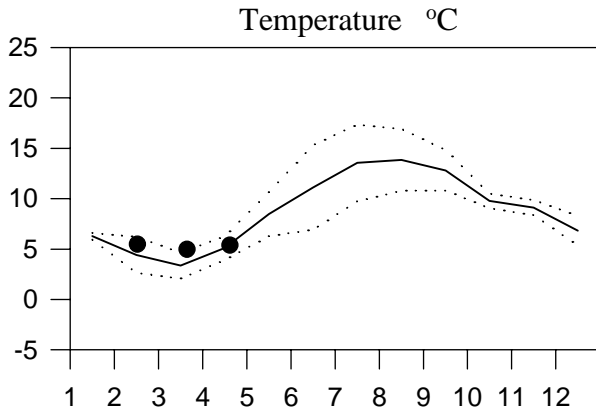
OXYGEN IN BOTTOM WATER



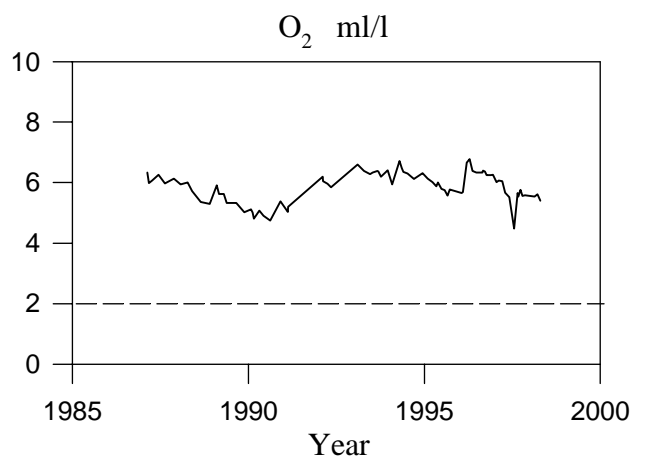
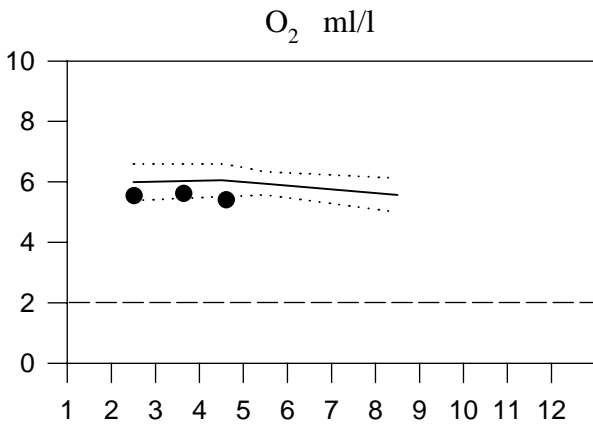
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Annual Cycles

— Mean 1986-1995 ····· St.Dev. ● 1998



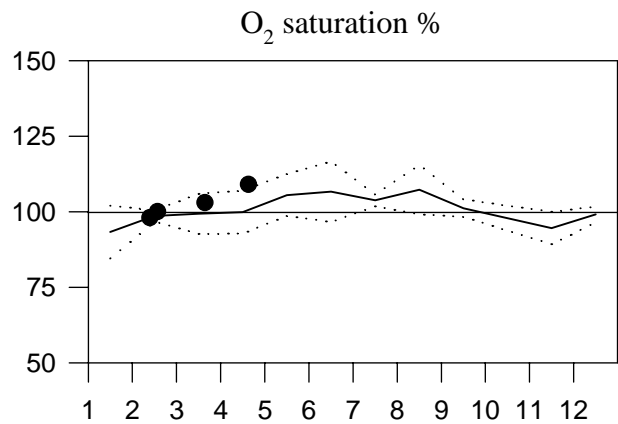
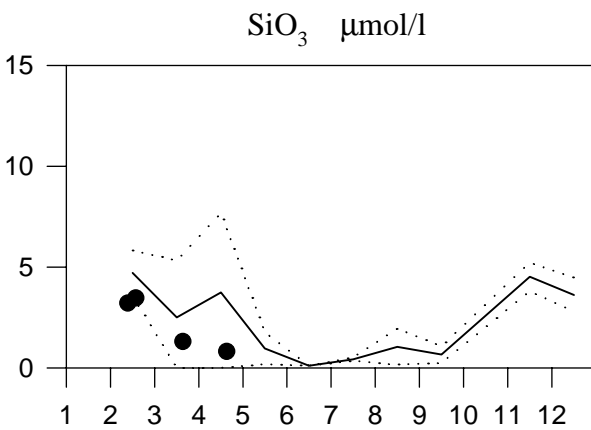
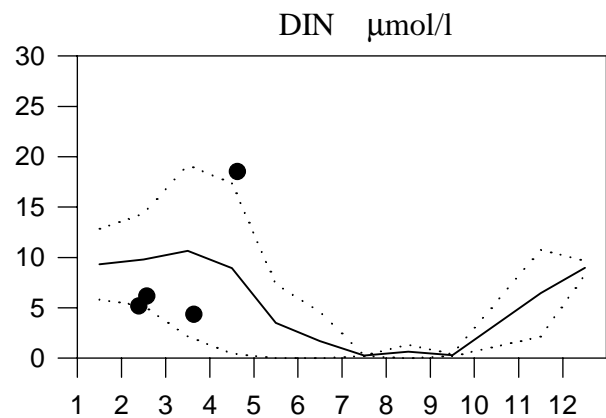
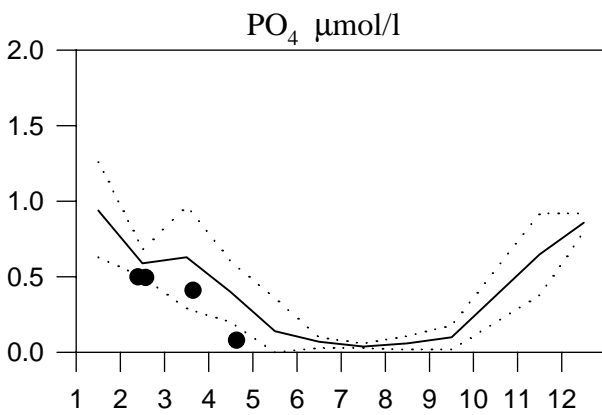
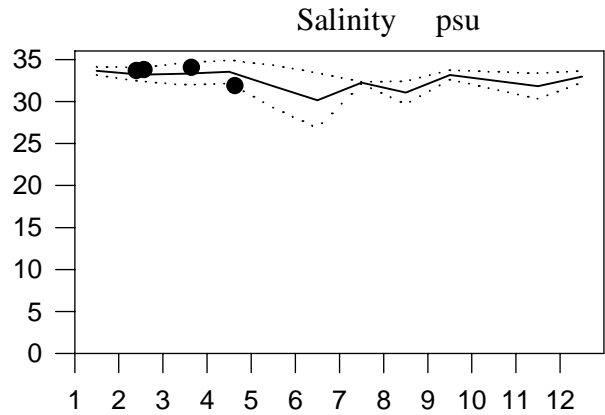
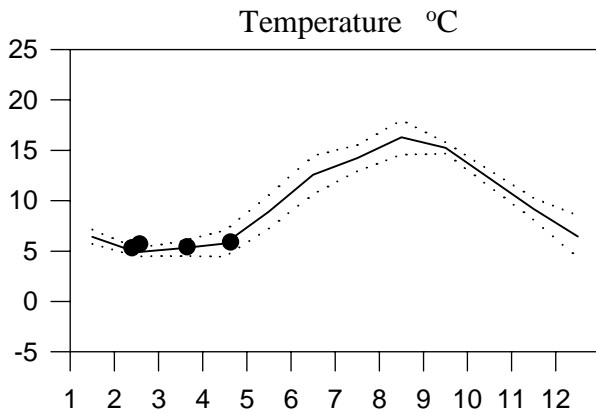
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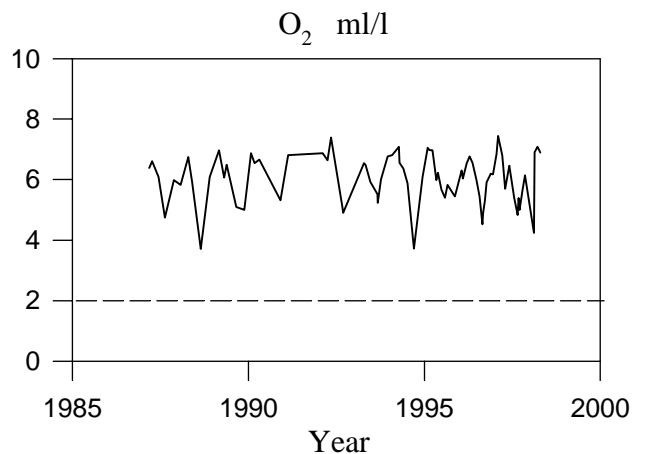
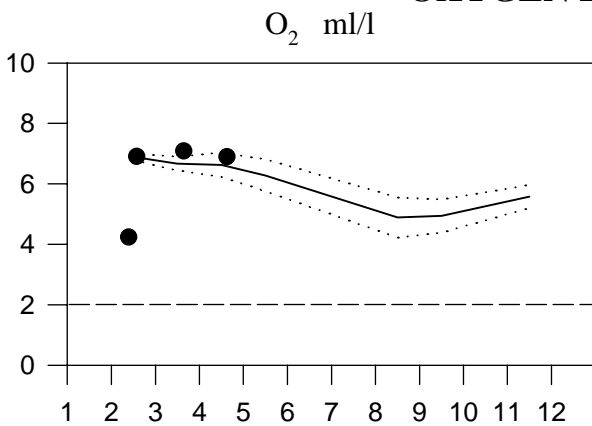
STATION HS5 SURFACE WATER (0-15 m)

Annual Cycles

— Mean 1986-1995 ····· St.Dev. ● 1998



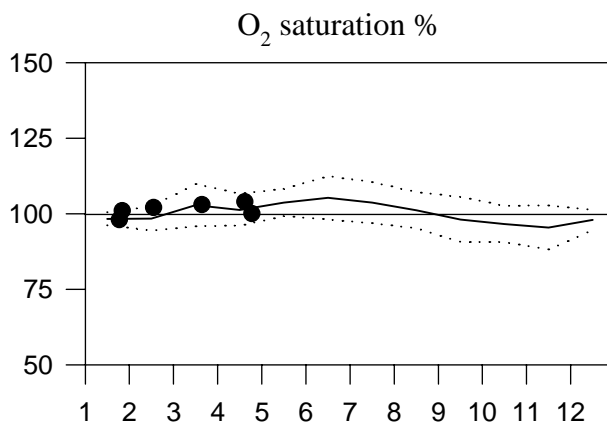
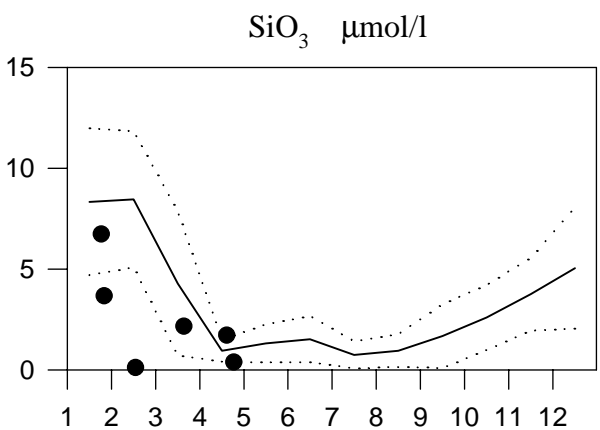
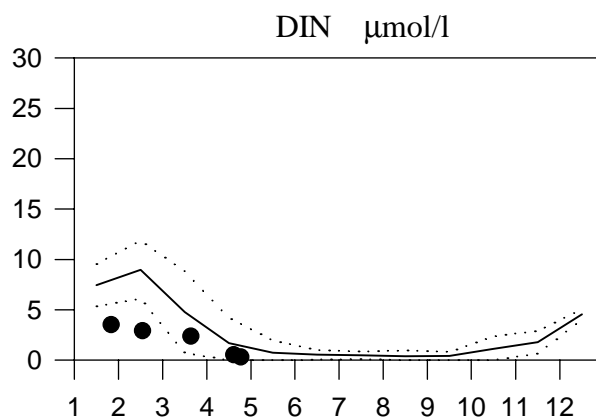
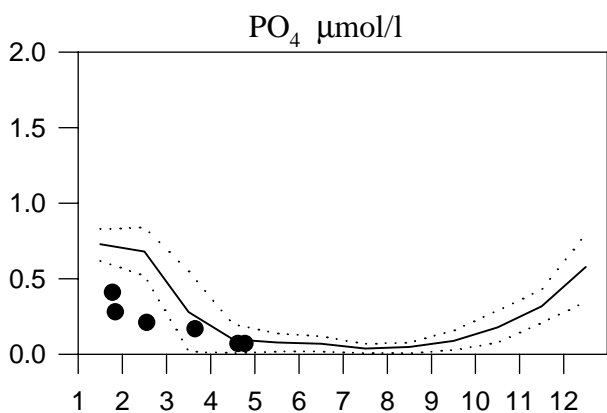
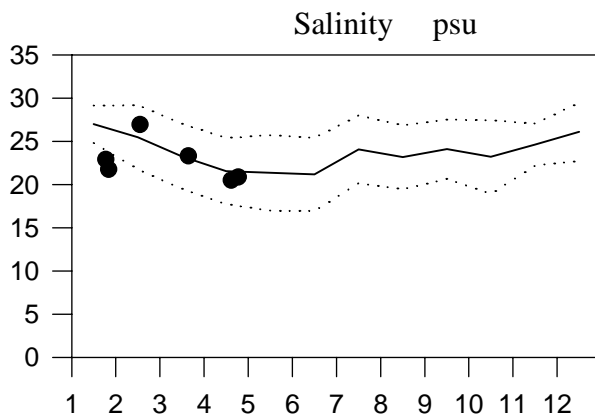
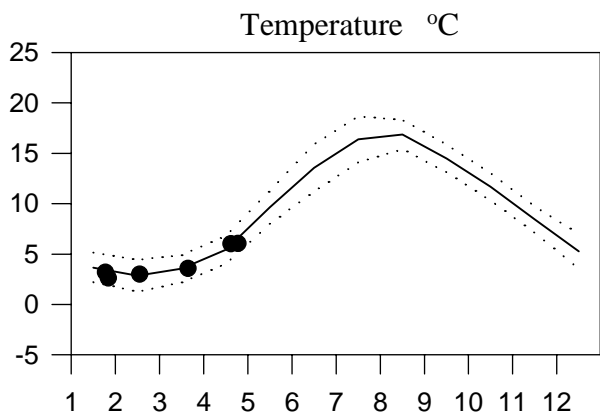
OXYGEN IN BOTTOM WATER



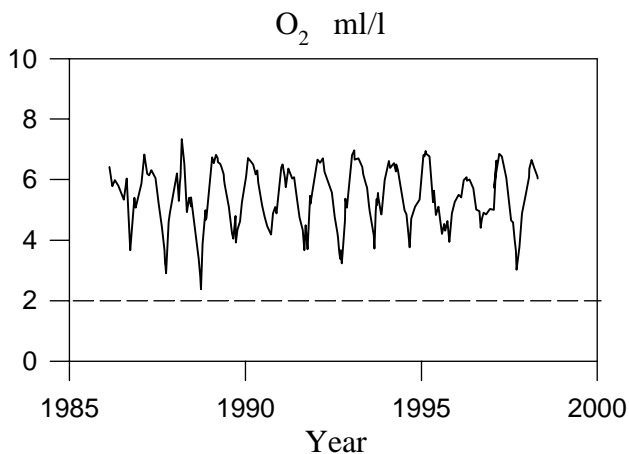
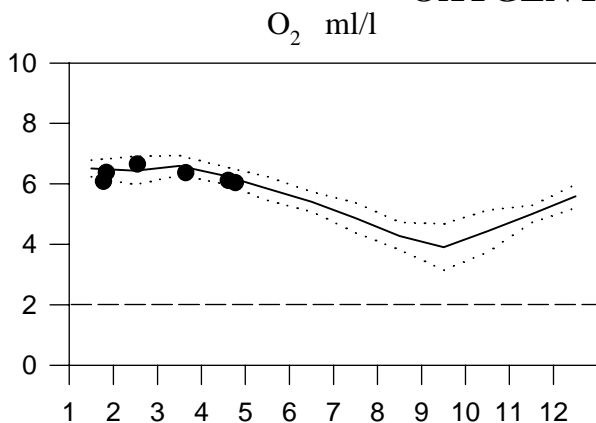
STATION FLADEN SURFACE WATER (0-15 m)

Annual Cycles

— Mean 1986-1995 ····· St.Dev. ● 1998



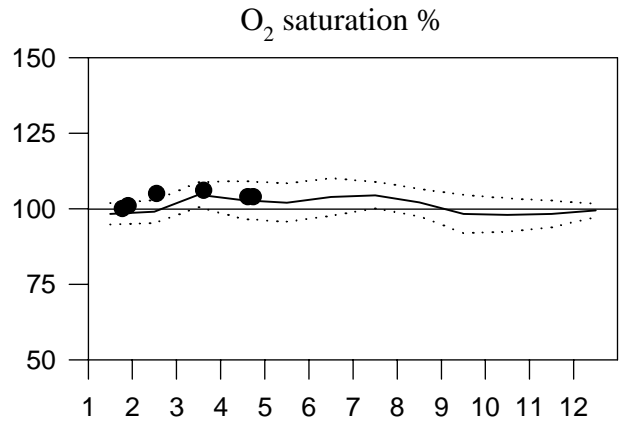
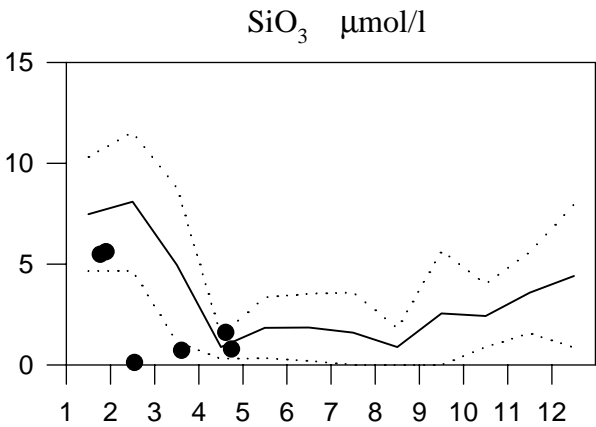
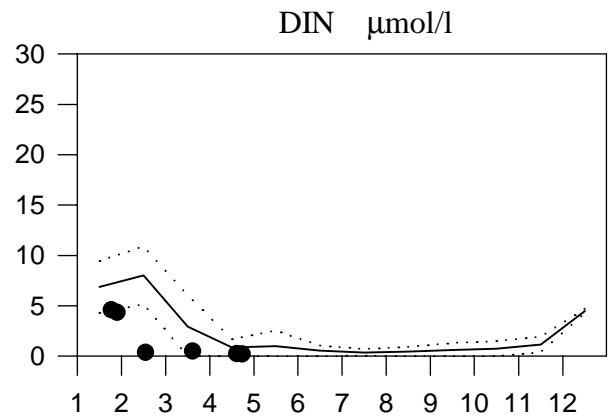
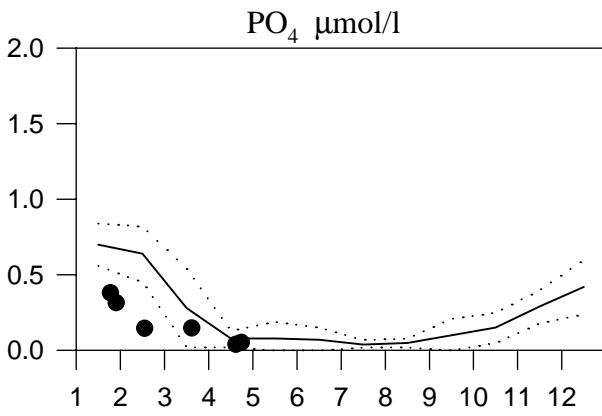
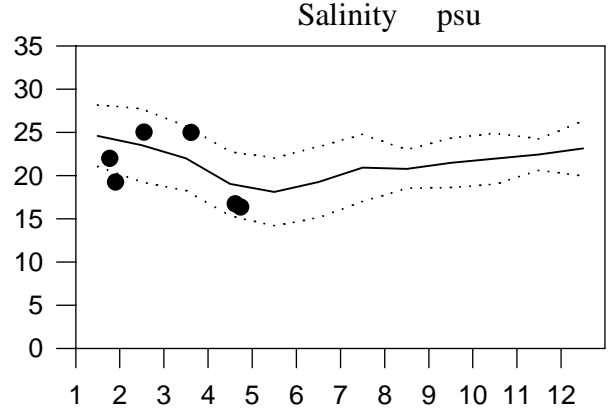
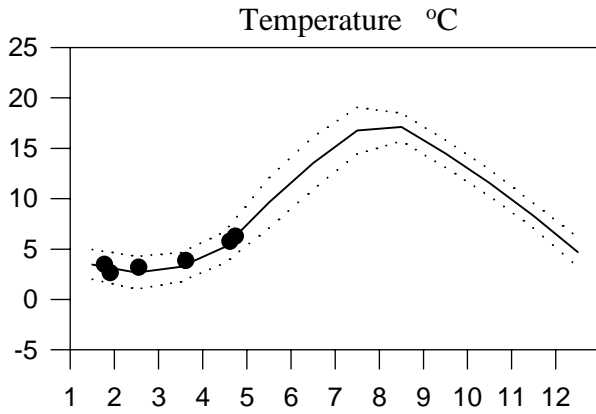
OXYGEN IN BOTTOM WATER



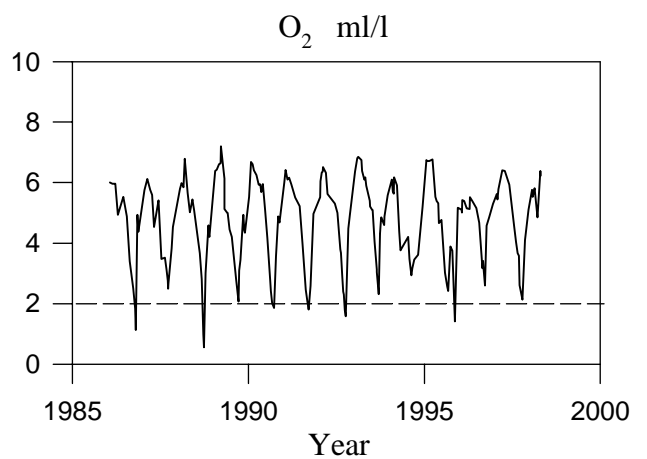
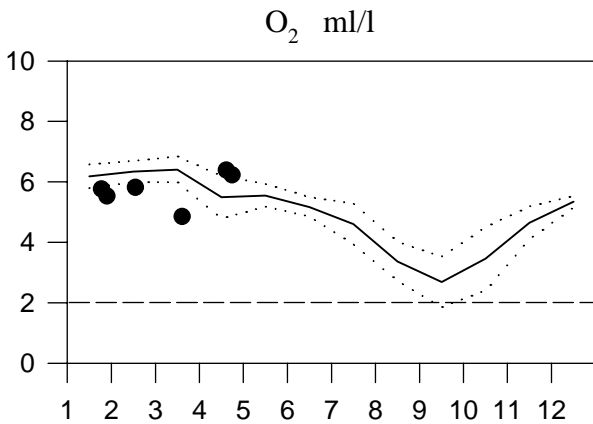
STATION ANHOLT E SURFACE WATER (above halocline)

Annual Cycles

— Mean 1986-1995 ····· St.Dev. ● 1998



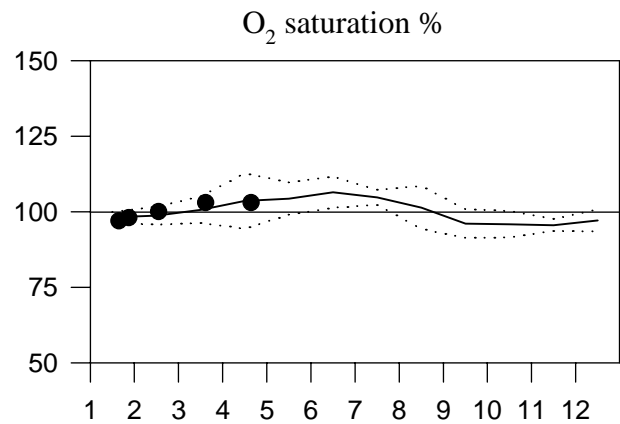
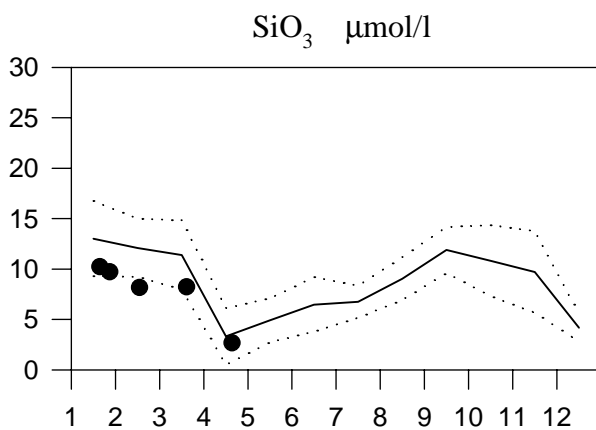
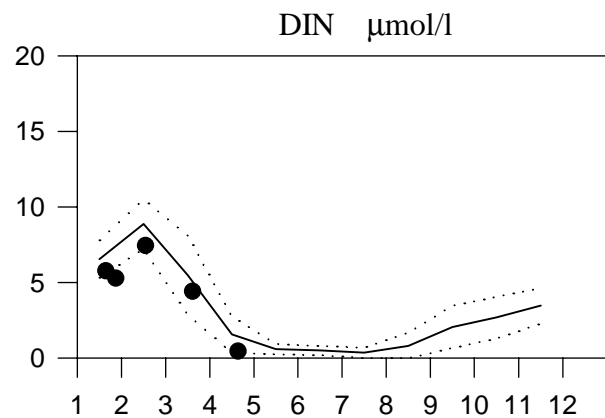
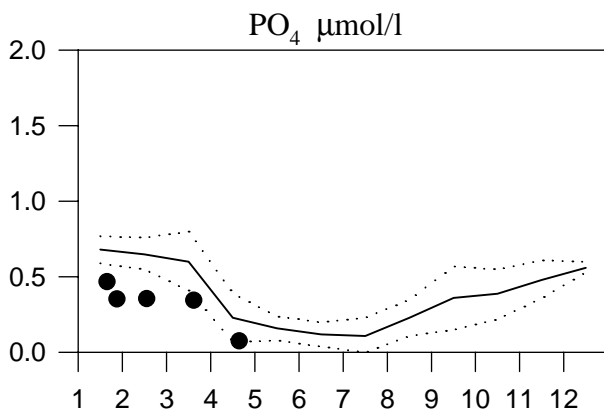
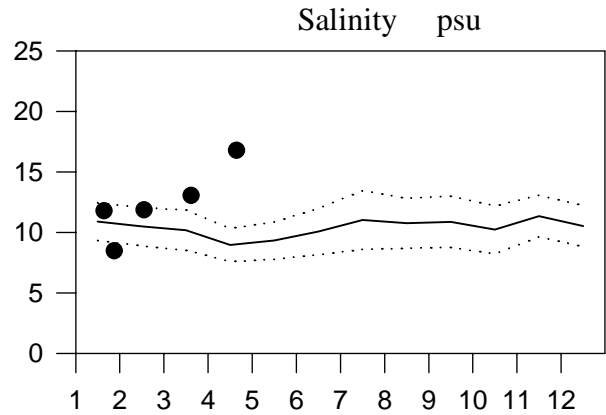
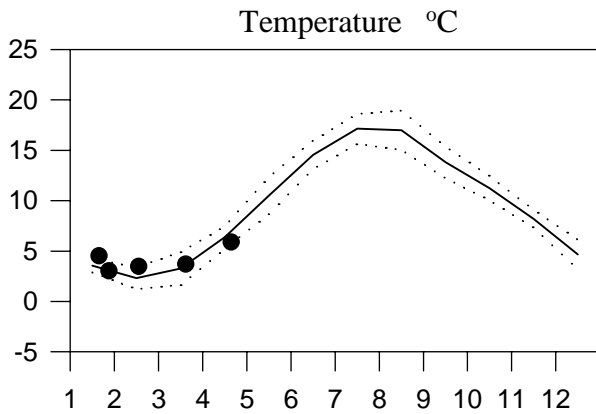
OXYGEN IN BOTTOM WATER



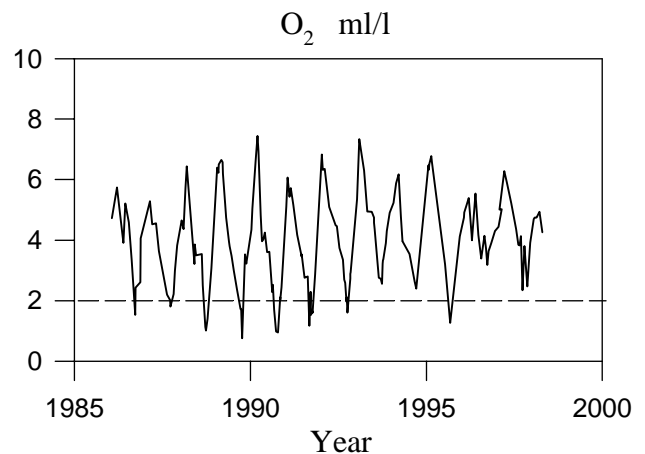
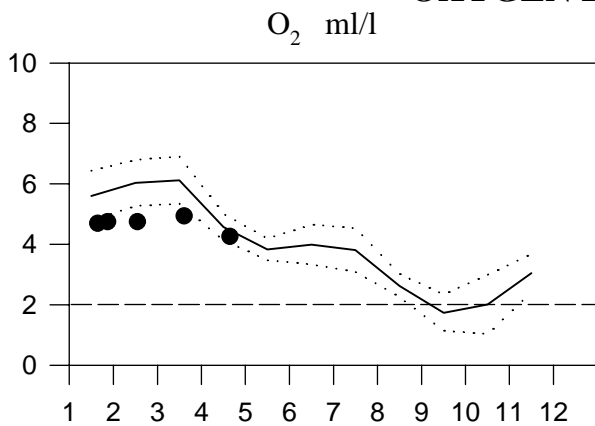
STATION W LANDSKRONA SURFACE WATER (0-15 m)

Annual Cycles

— Mean 1986-1995 ····· St.Dev. ● 1998



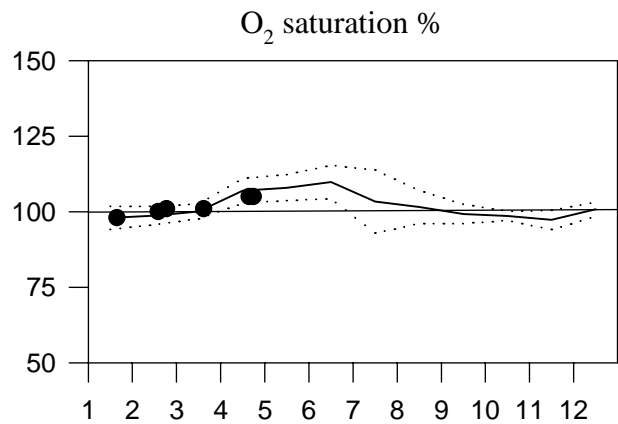
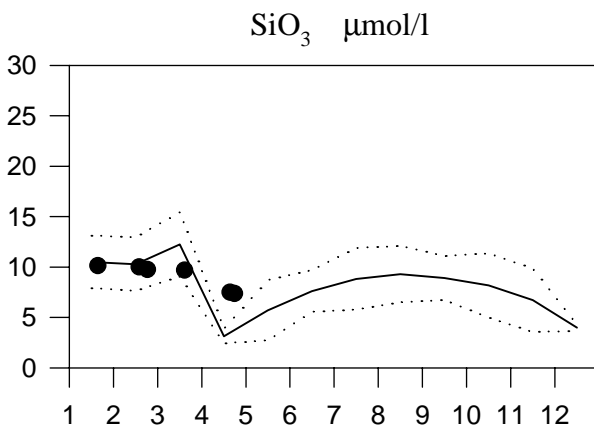
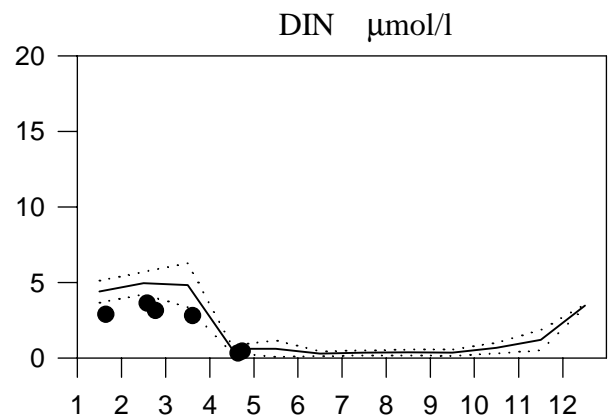
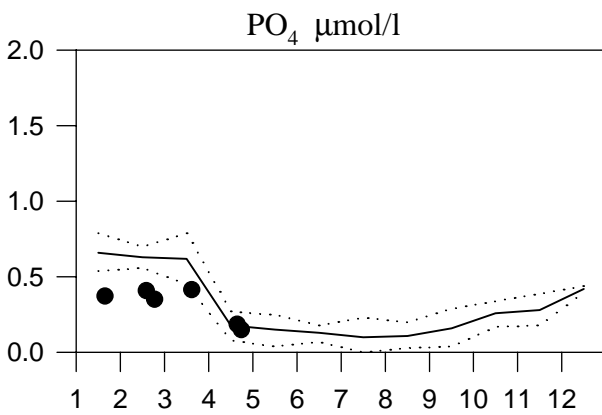
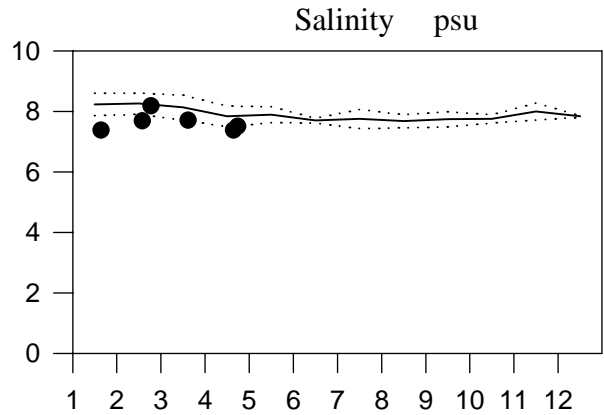
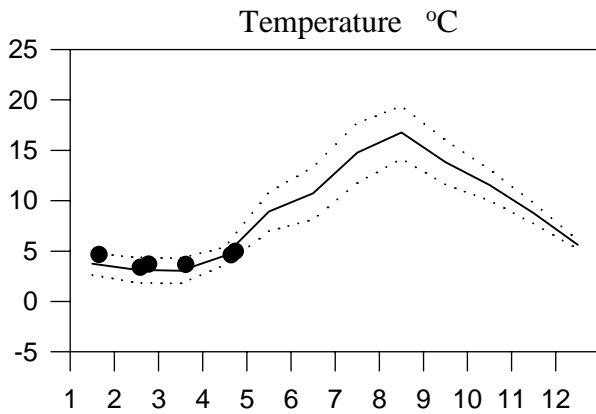
OXYGEN IN BOTTOM WATER



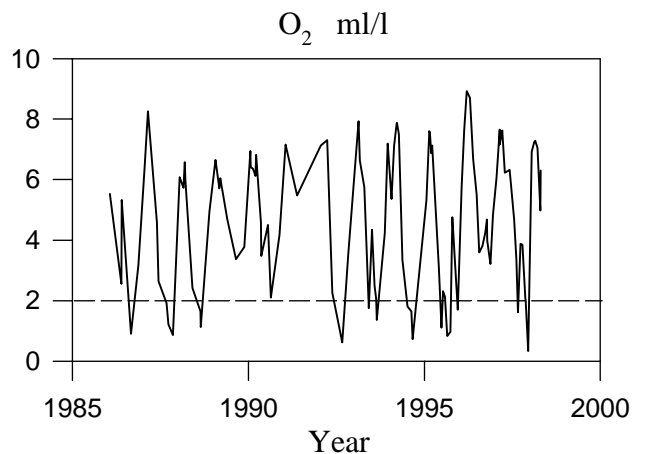
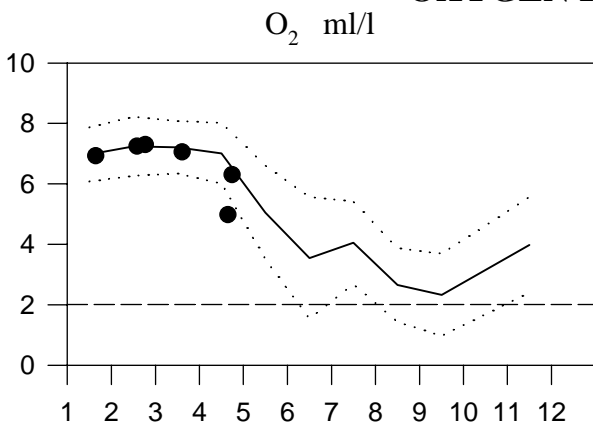
STATION BY2 SURFACE WATER (0-15 m)

Annual Cycles

— Mean 1986-1995 ····· St.Dev. ● 1998



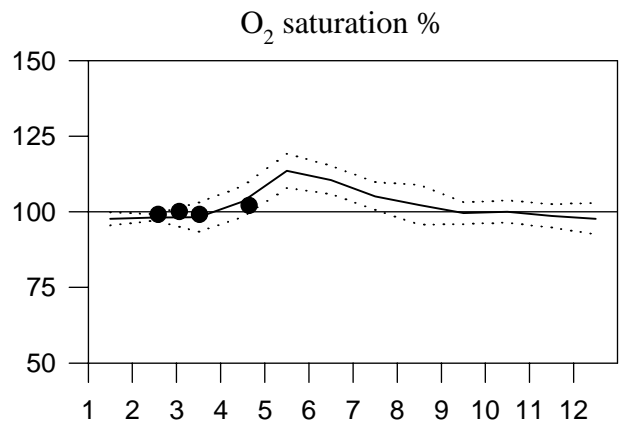
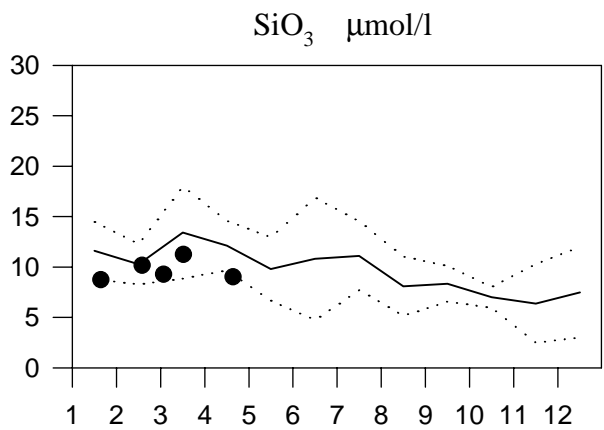
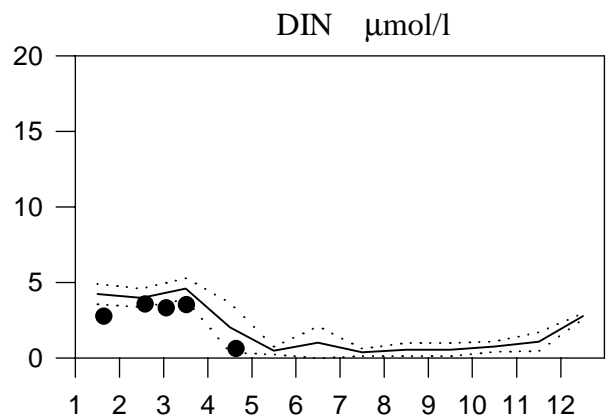
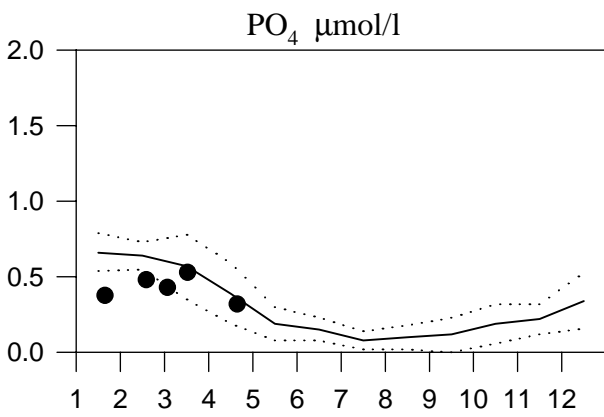
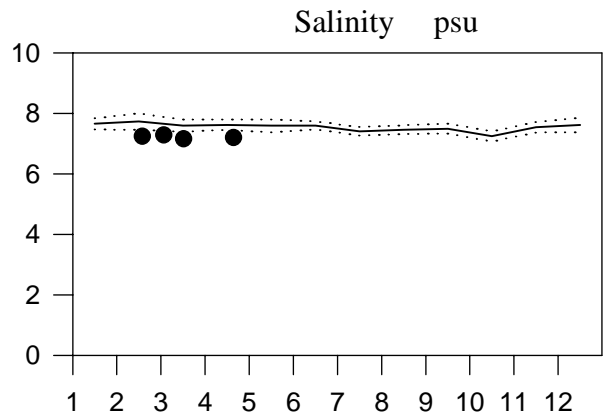
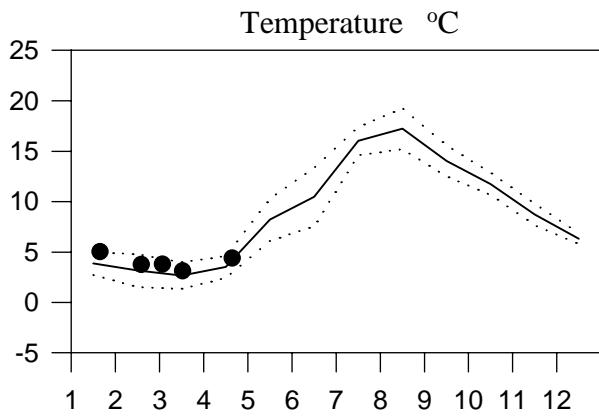
OXYGEN IN BOTTOM WATER



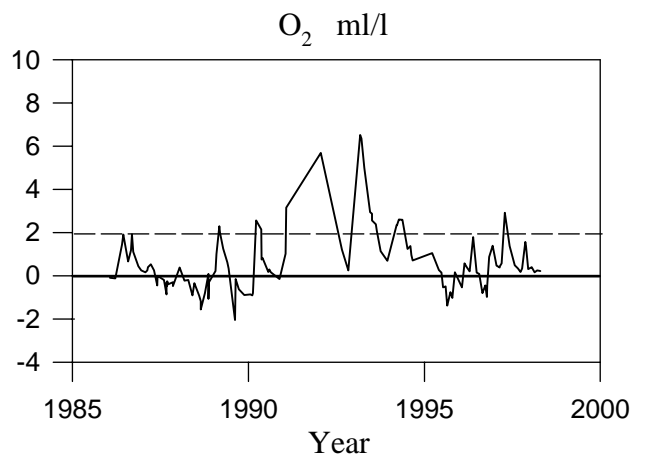
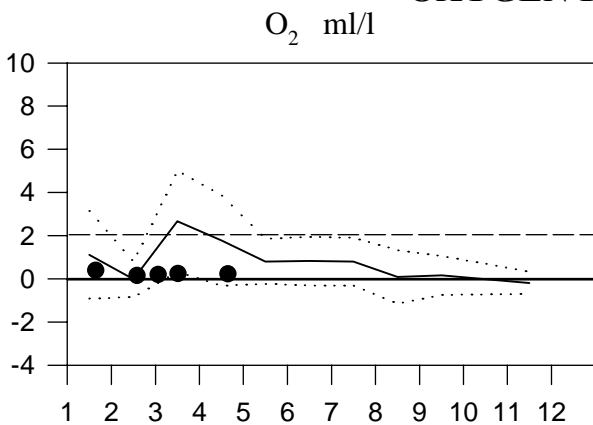
STATION BY5 SURFACE WATER (0-15 m)

Annual Cycles

— Mean 1986-1995 ····· St.Dev. ● 1998



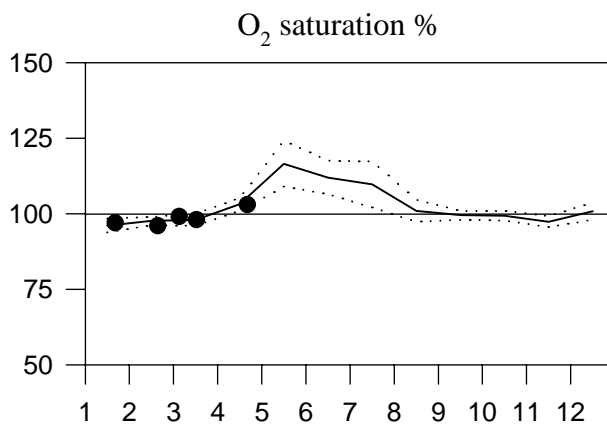
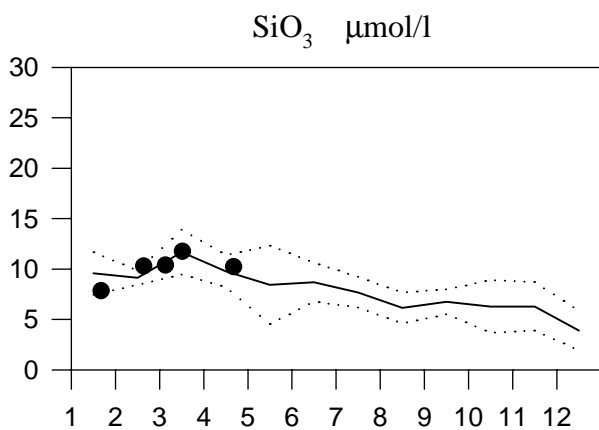
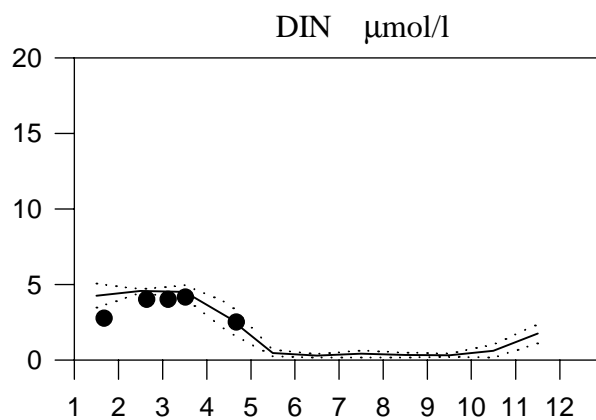
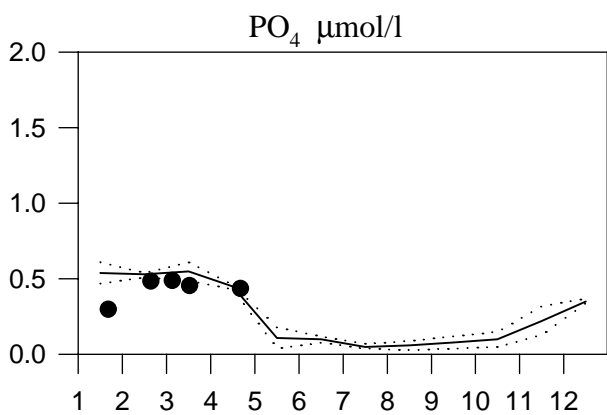
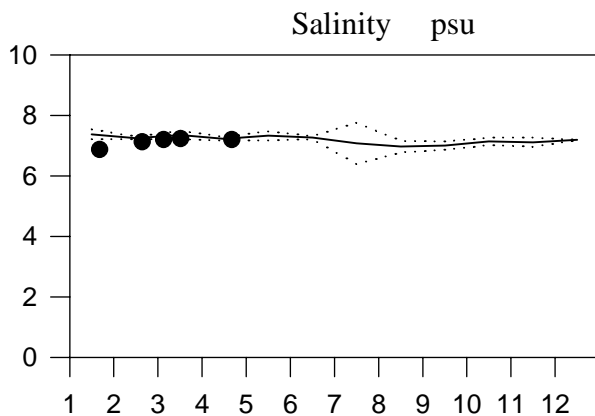
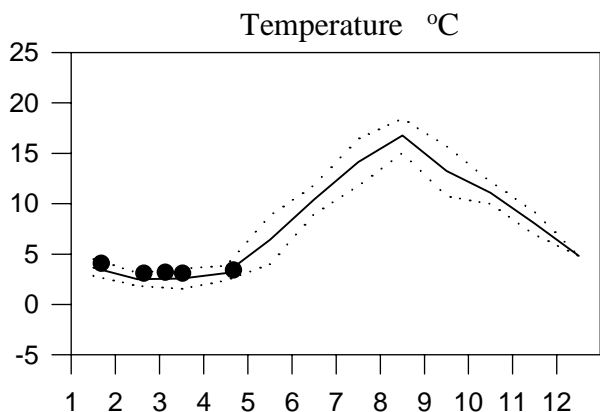
OXYGEN IN BOTTOM WATER



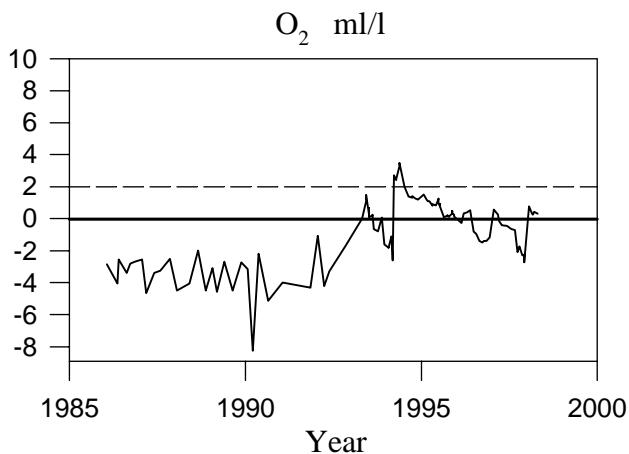
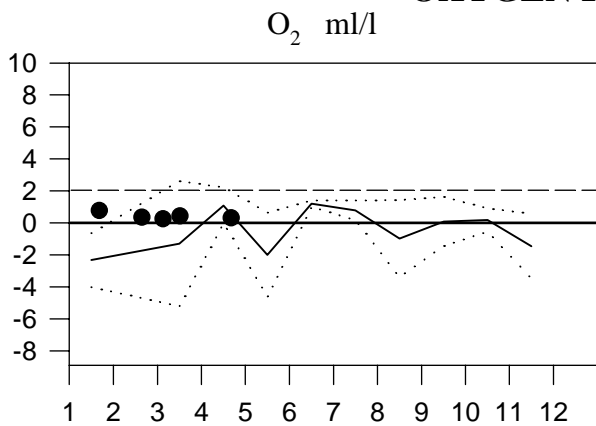
STATION BY15 SURFACE WATER (0-15 m)

Annual Cycles

— Mean 1986-1995 ····· St.Dev. ● 1998



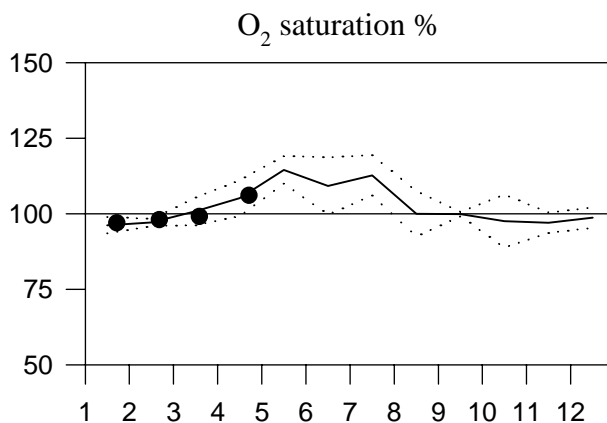
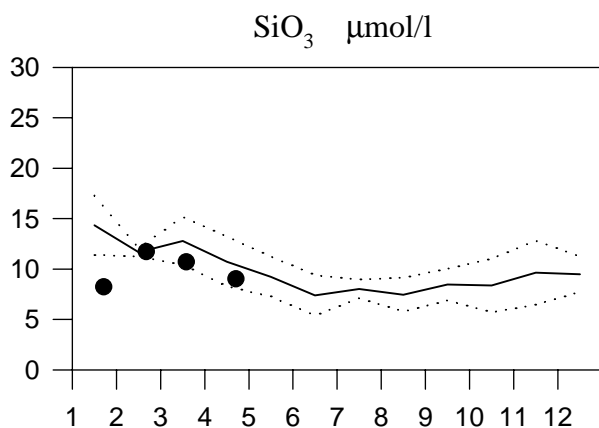
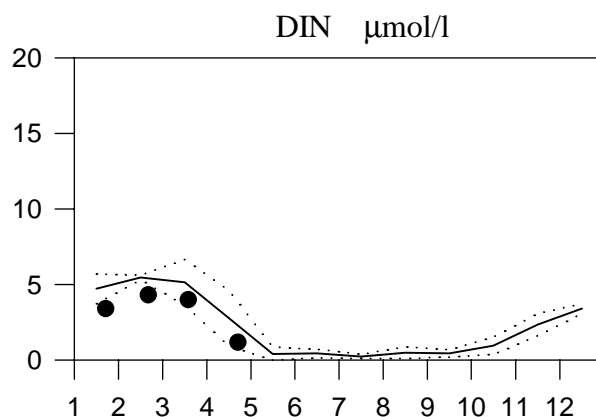
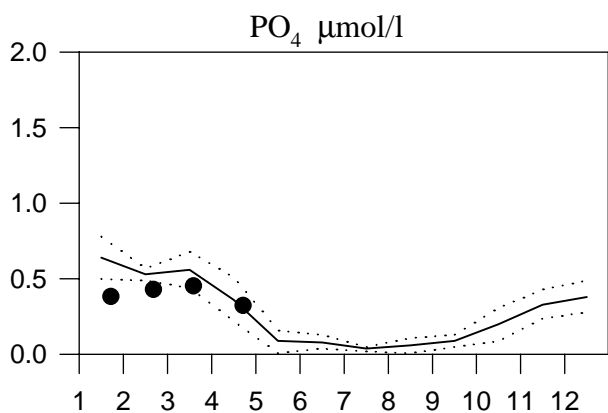
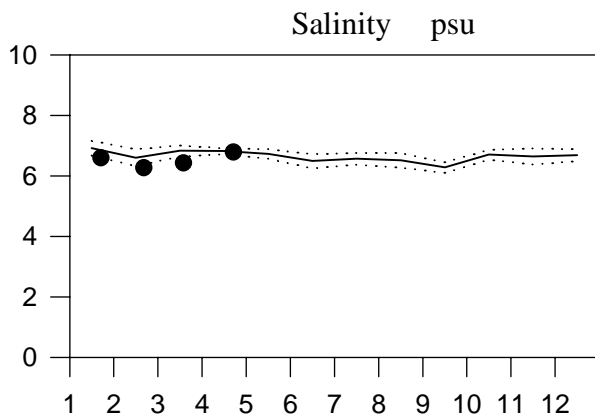
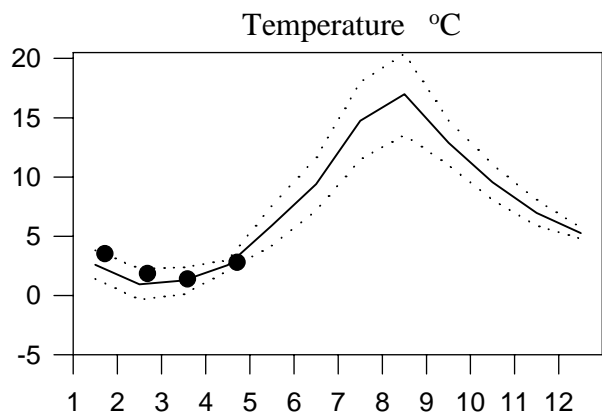
OXYGEN IN BOTTOM WATER



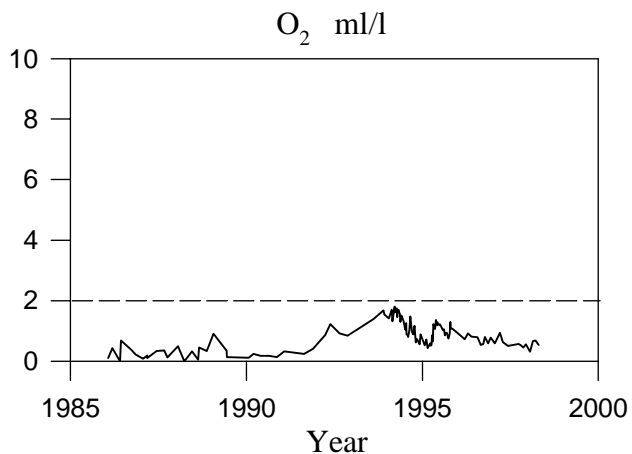
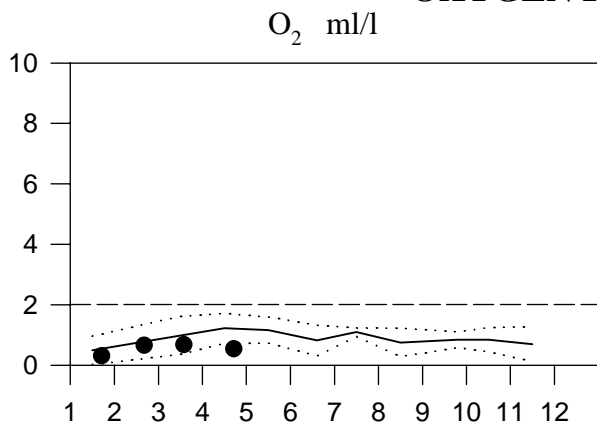
STATION BY31 SURFACE WATER (0-15 m)

Annual Cycles

— Mean 1986-1995 ····· St.Dev. ● 1998



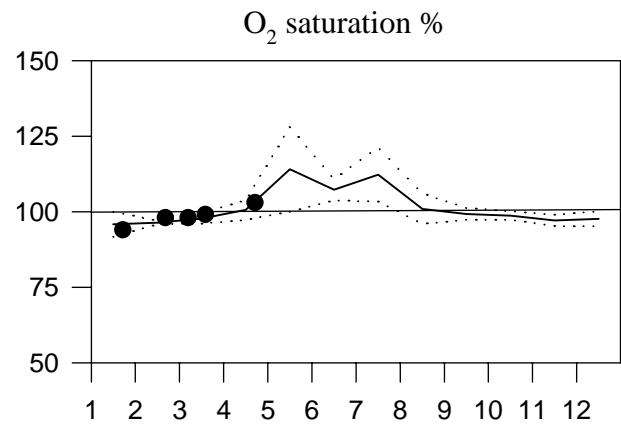
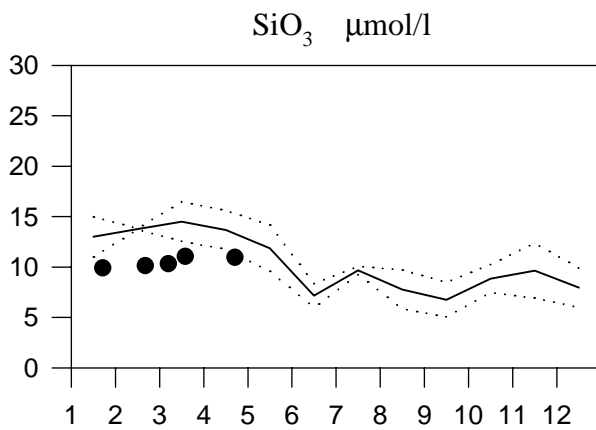
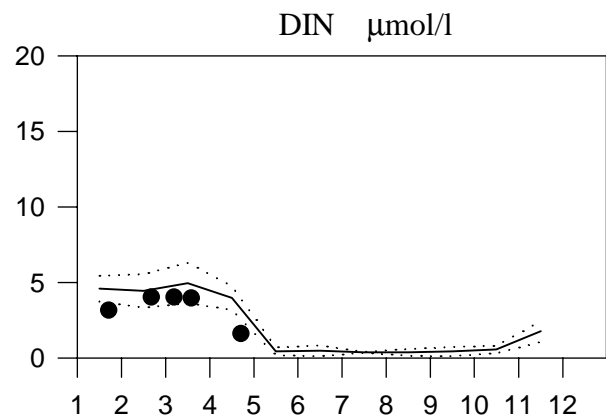
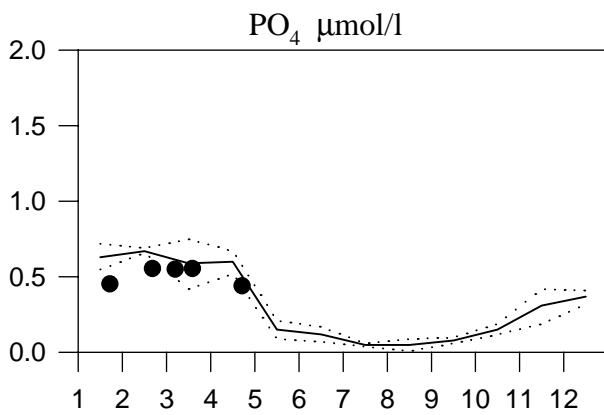
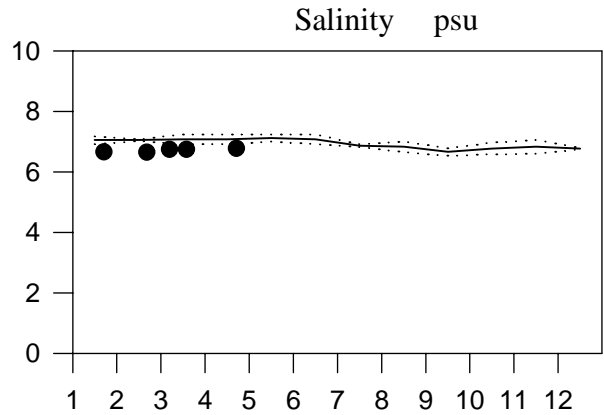
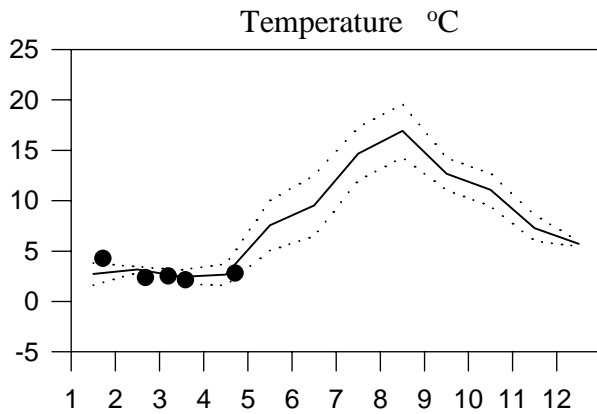
OXYGEN IN BOTTOM WATER



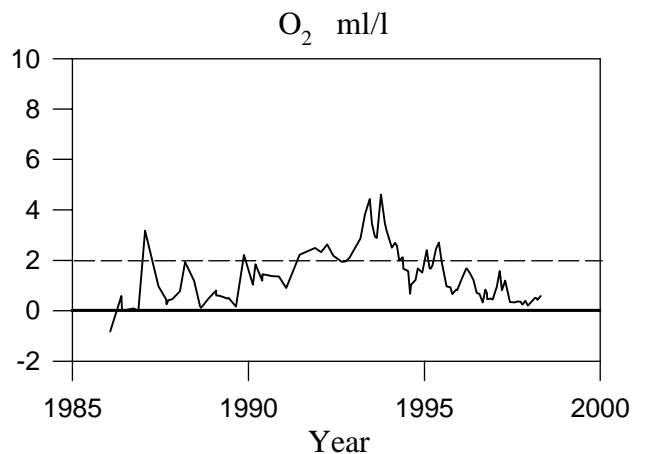
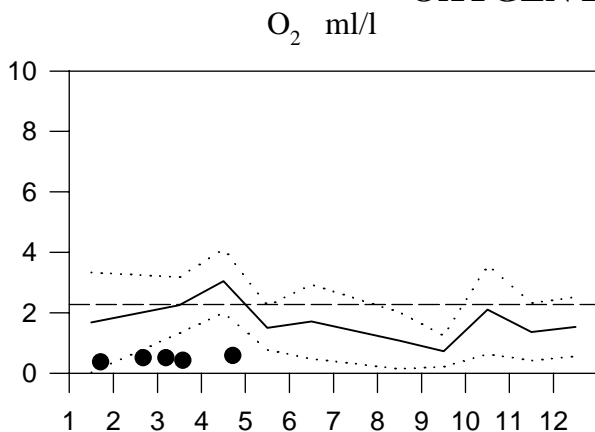
STATION BY38 SURFACE WATER (0-15 m)

Annual Cycles

— Mean 1986-1995 ····· St.Dev. ● 1998

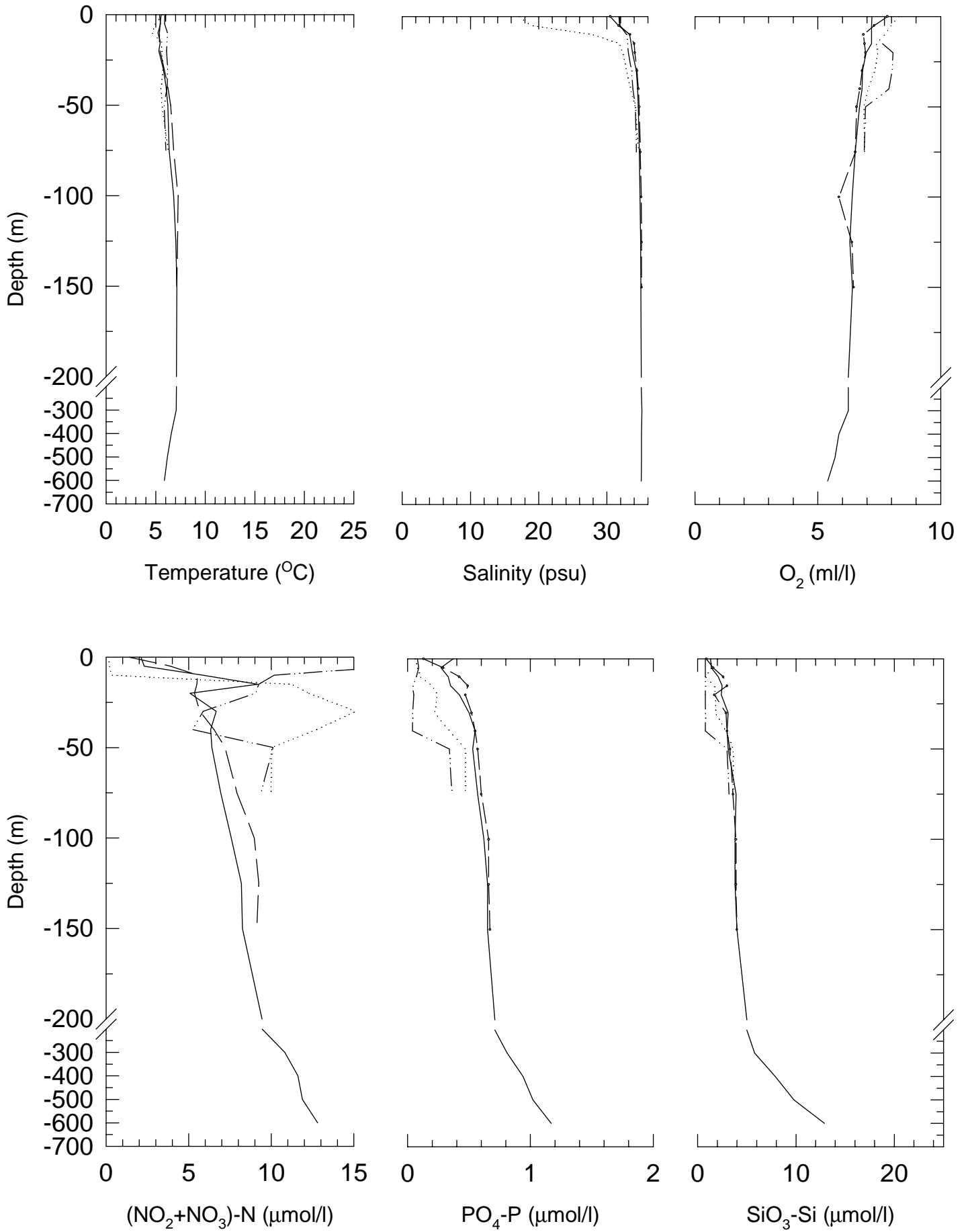


OXYGEN IN BOTTOM WATER

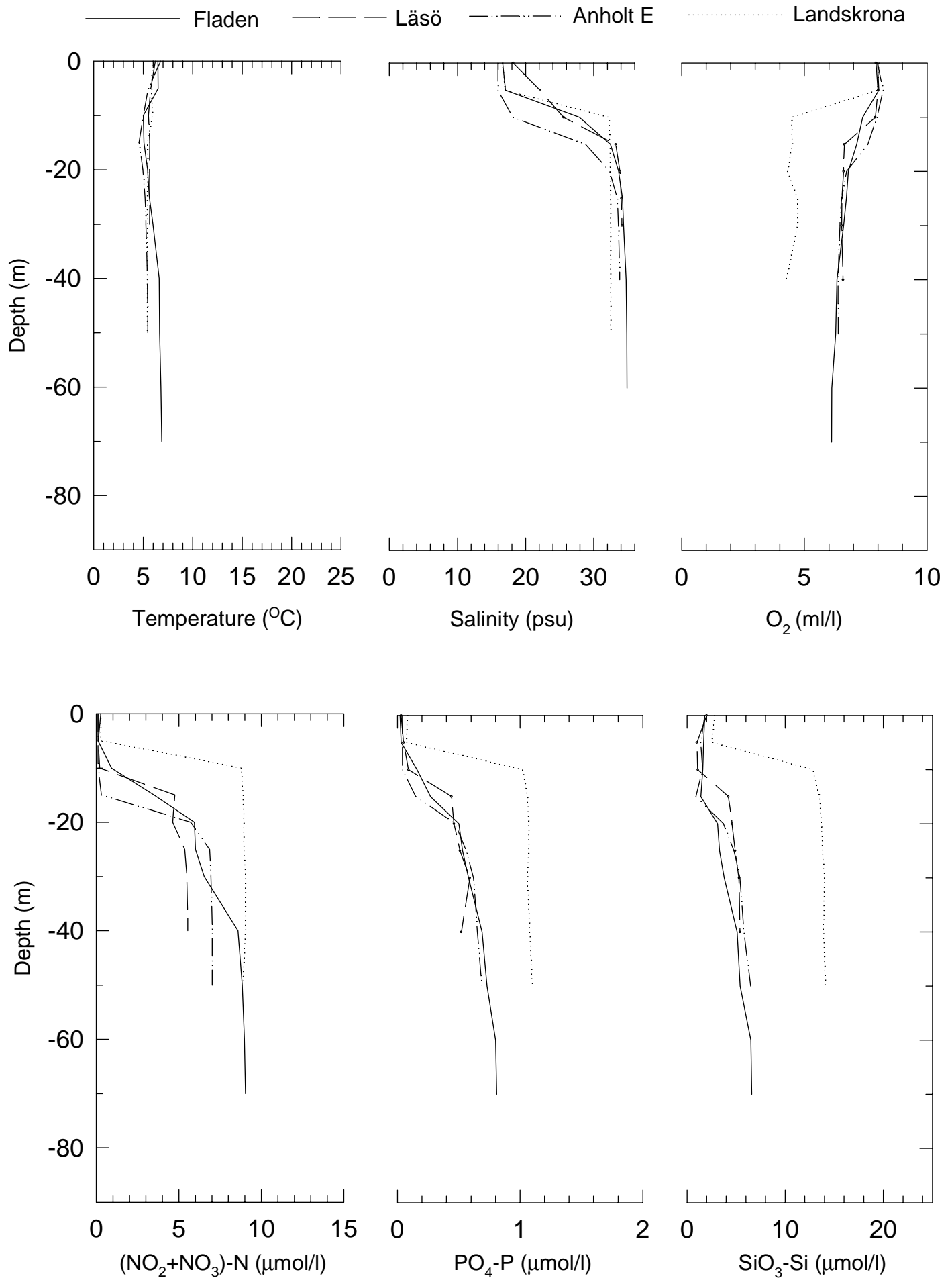


SKAGERRAK 980418-980424

————— M6 - - - - - Å16 - · - · - · HS5 ······· P2

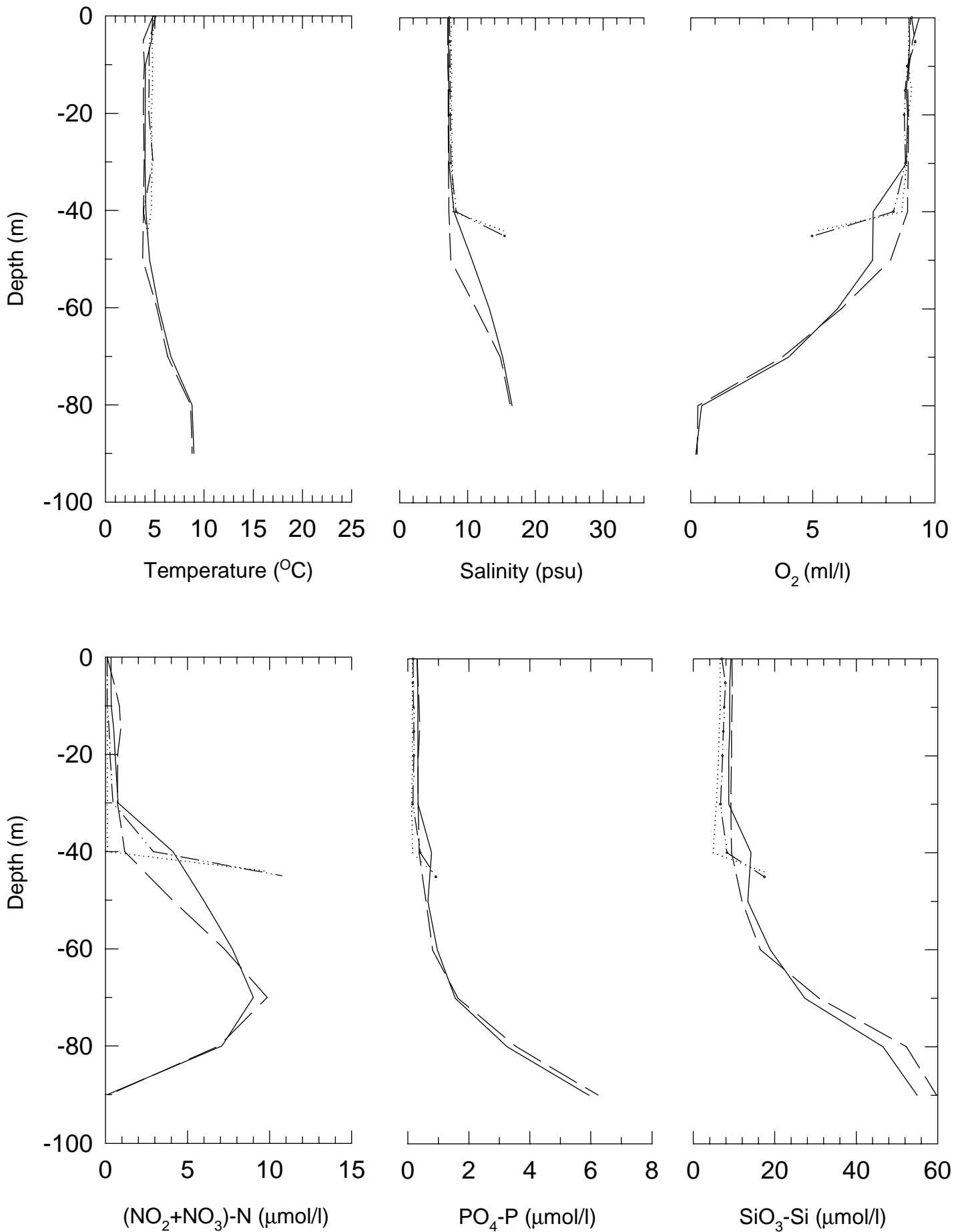


KATTEGAT and THE SOUND 980418-980424



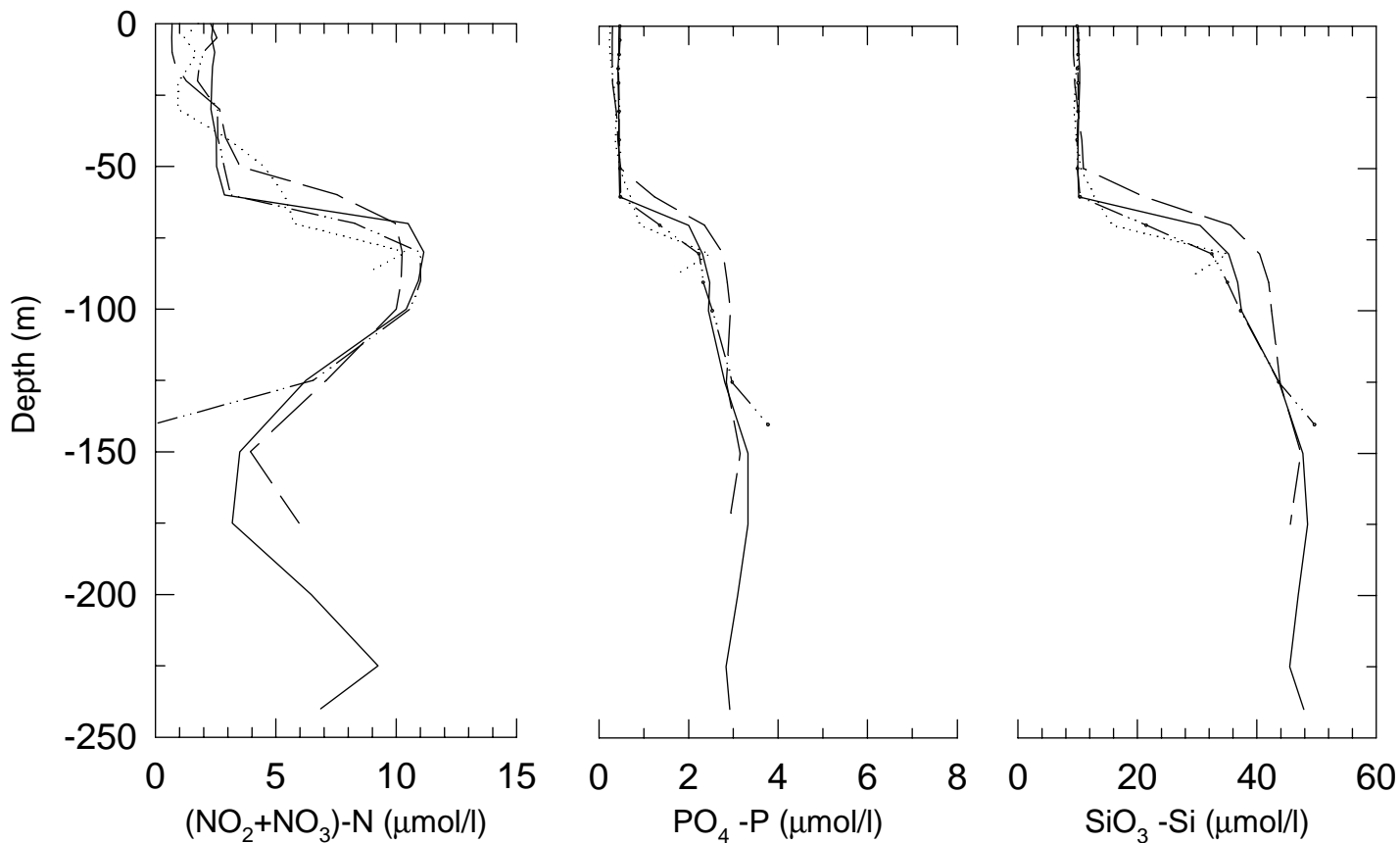
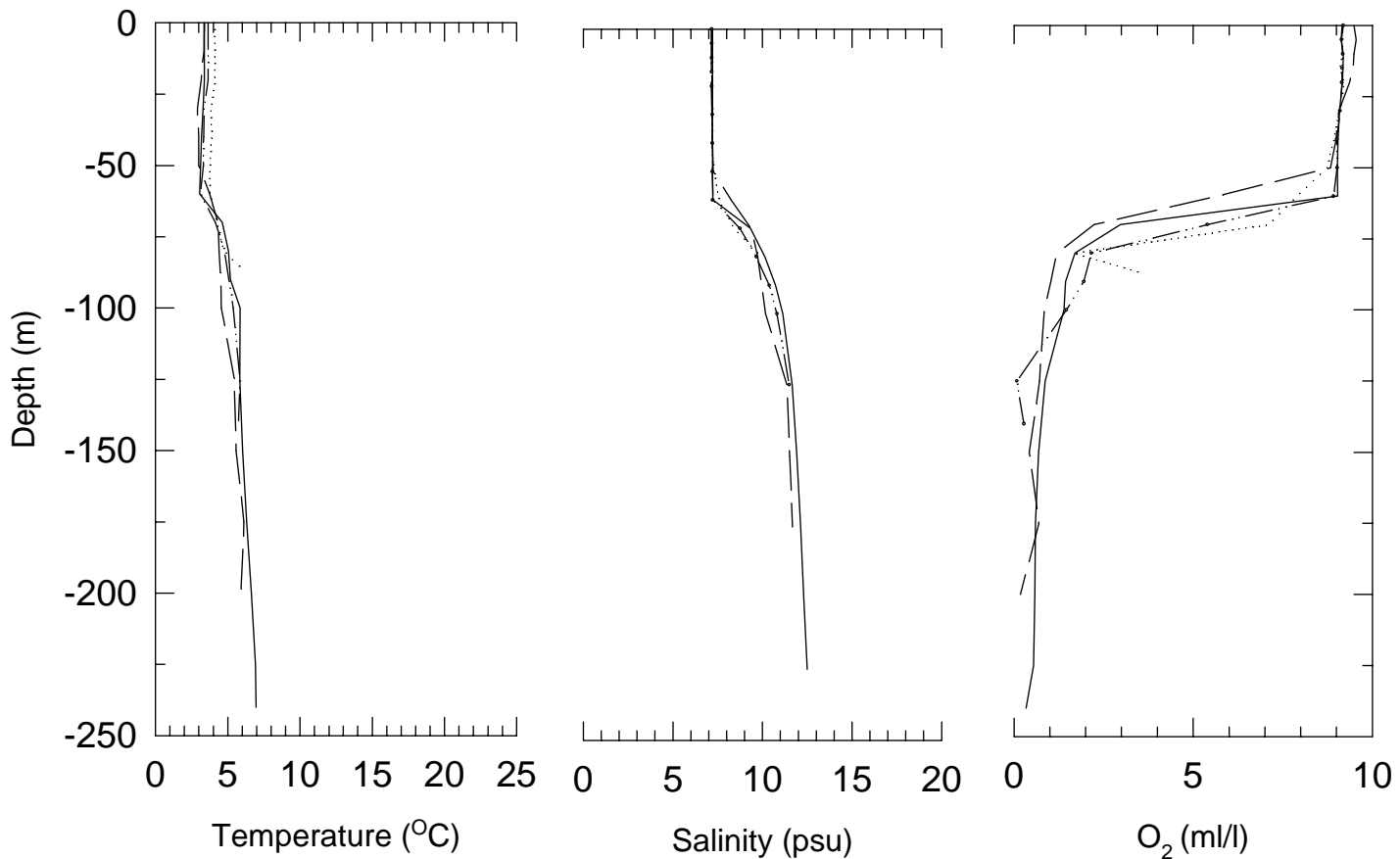
SOUTH BALTIC 980418-980424

— BY5 - - - BY4 - · - · - BY2 ····· BY1



EAST BALTIC 980418-980424

— BY20 — BY15 - · - BY10 ····· BCS III-10



WEST BALTIC 980418-980424

— BY31 - - - BY32 BY38

