

EXPEDITIONSRAPPORT FRÅN U/F ARGOS

CRUISE REPORT FROM R/V ARGOS

Expeditionens varaktighet: 970414-970419

Survey period:

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

Uppdragsgivare: SMHI
Principal:

SUMMARY

Skagerrak: *The surface temperatures varied between 5.5 and 5.9 °C. The nutrients concentrations above the halocline showed, for the season, normal values.*

Kattegat and the Sound: *The surface salinity was higher than normal. The pycnocline started between 4 and 15 metres depth and was weakly developed.. The surface temperatures varied between 5.0°C in the east and 5.8°C in northwest. The nutrients concentrations showed, for the season, normal values. Phytoplankton was characterized by a post bloom situation.*

The Baltic Proper: *The surface temperature was 4,2 °C in the south and decreased to 1.9°C in the north.. All nutrients showed for the season normal concentrations. The nitrate concentration above the halocline was zero in the Arkona and Bornholm Basins and in the Hanö Bight. The oxygen conditions in the bottom water are displayed in a figure. In the Bornholm Basin at BY4, where 6.1 ml/l oxygen was found in the bottom water in the middle of March, the concentration had now decreased to 2.0 ml/l. The oxygenated water had moved eastward to BY5 where bottom oxygen concentration had increased from 0.6 to 2.9 ml/L. Hydrogen sulphide was found in the Gotland Deep from 190 metres and downwards and at BY10 at 140 meter. In the Arkona and Bornholm Basins the spring bloom was in progress. In the Eastern, Western and Northern Gotland Basins the spring bloom had not yet reached its peak.*

PRELIMINÄRA RESULTAT

Expeditionen, som utgick från och avslutades i Göteborg, ingick i SMHIs ordinarie havsövervakningsprogram. Förutom besök på basstationerna utfördes provtagning i Hanöbukten för Västra Hanöbuktens Vattenvårdsförbund.

Vädret under expeditionen dominerades av friska till måttliga nordanvindar.

Skagerrak

Ytvattentemperaturerna i området varierade mellan 5,5-5,9°C. Närsalthalterna i ytlagret var låga och för årstiden normala.

Kattegatt och Öresund

Ytsalthalten i östra Kattegatt och Öresund var över den normala, vilket medförde att språngskiktet, som började på djup mellan 4 och 15 meter, var svagt utbildat. Ytvattentemperaturen var c:a 5,0°C i den östra delen och 5,8°C i nordväst. Närsalthalterna i ytlagret var för årstiden normala.

Phytoplankton dominerades av heterotrofa dinoflagellater (*Protoperidinium* spp., *Gymnodinium* spp.), som är karaktäristiska för efterblomningsperioden. *Peridiniella catenata* and *Dinobryon balticum* var vanliga. Diatoméer närvarande i måttliga mängder.

Östersjön

Ytvattentemperaturen var 4,2°C i söder och minskade till 1,9°C längst i norr. Samtliga närsalter hade för årstiden normala koncentrationer i hela området. Nitrat var slut ovan haloklinen i Arkona och Bornholmsbassängerna samt i Hanöbukten. Syreförhållandena i bottenvattnet under haloklinen framgår av figur. I Arkonabassängen var syrehalterna goda i hela vattenmassan. Syrehalten vid botten på station BY4 (Christiansö), där hela 6,1 ml/l uppmättes i vecka 11, hade nu sjunkit till knappt 2 ml/l. Vattnet hade rört sig österut till BY5 (Bornholmsdjupet) där ml/l syrehalten vid botten hade ökat från 0,6 ml/l till 2,9 och halterna översteg 2 ml/l i hela vattenpelaren. I östra, norra och västra Gotlandsbassängen låg gränsen för 2 ml O₂/l vid 90 till 100 meter. Svavelväte återfanns på BY15 (Gotlandsdjupet) från 190 meter och nedåt samt på station BY10 på 140 meters djup.

Vårblomningen pågick i **Arkonabassängen**. *Peridiniella catenata* tillsammans med flera diatoméer t.ex. *Skeletonema costatum*, *Chaetoceros wighamii*, *C. similis*, *Achnathes taeniata*.

Thalassiosira baltica dominerade. I **Bornholmsbassängen** var vårblomning kraftig och totalt dominerad av *Peridiniella catenata*. Samma diatoméer som i Arkona var också vanliga här. I **sydöstra Östersjön** hade vårblomningen ännu inte nått sitt maximum.

Peridiniella catenata och diatoméer med *Thalassiosira baltica*, *Skeletonema costatum* och flera arter av *Chaetoceros* dominerar, men förekommer i mindre mängd än i Arkona och Bornholms-bassängerna. Enstaka knippen av *Aphanizomenon "baltica"* observerades. Inte heller i **östra Gotlandsbassängen** hade vårblomningen nått sitt maximum. *Thalassiosira baltica* dominerade. *Skeletonema costatum*, *Melosira arctica* och flera arter av *Chaetoceros* var också vanliga. Dinoflagellaterna *Peridiniella catenata* och *Dinophysis norwegica* fanns i små mängder. Enstaka knippen av *Aphanizomenon "baltica"* observerades. I **norra Östersjön** och i **västra Gotlandsbassängen** fanns mycket phytoplankton med *Thalassiosira baltica* som dominerande art.

DELTAGARE

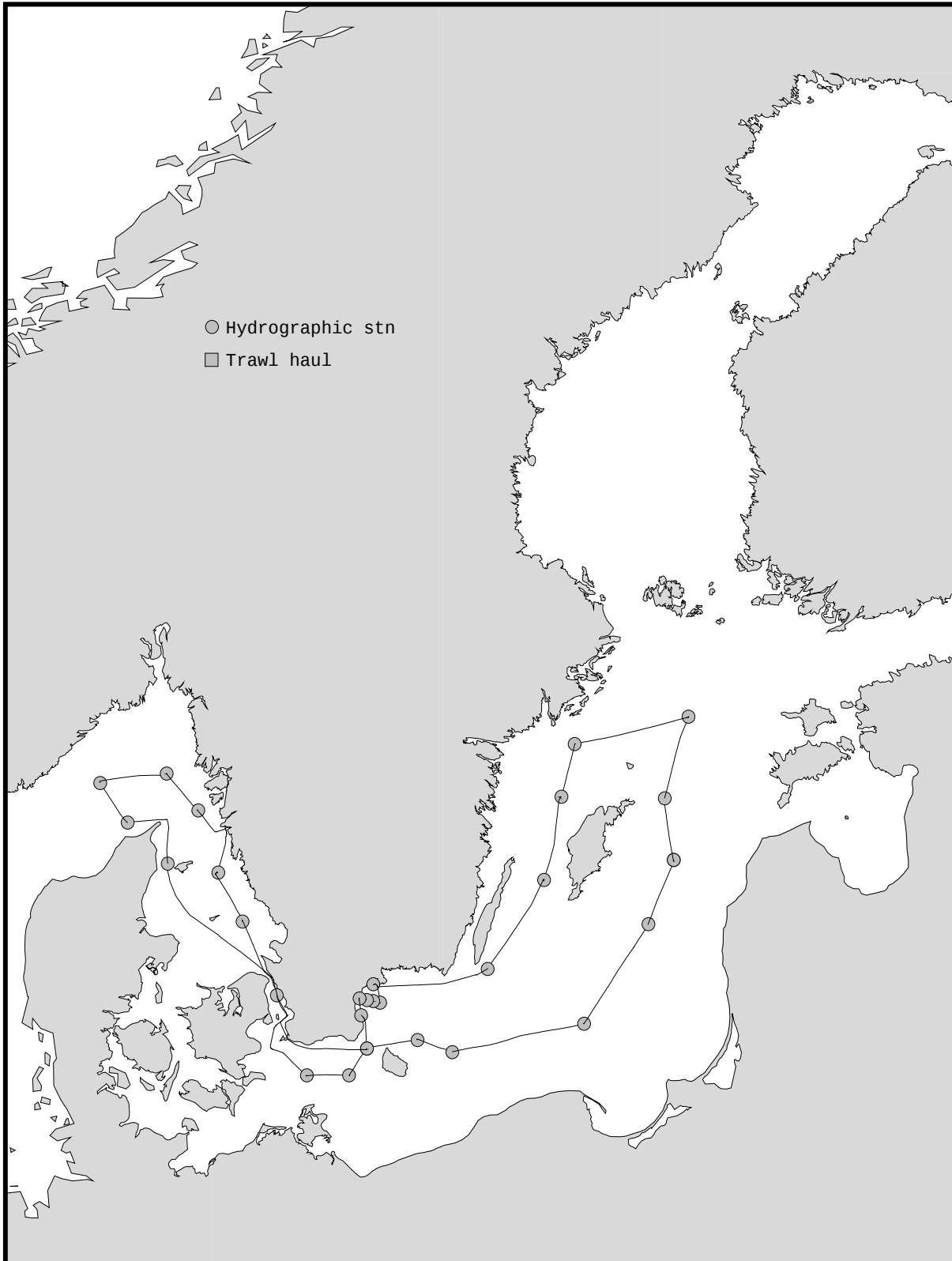
Namn	Från
Bengt Yhlen, expeditionsledare, SMHI Oceanografiska lab.	
Bo Juhlin	- " -
Lars Edler	- " -
Marie Larsson	- " -
Tuuliki Jaako	- " -

BILAGOR

- Färdkarta
- Tabell över provtagningsprogrammet + meteorologiska förhållanden
- Karta över syrehalter i bottenvattnet
- Profilplottar för vissa basstationer
- Månadsmedelvärdesplottar för vissa basstationer

TRACK CHART

Country: Sweden
Ship: Argos
Date: 970414-970419
Series: 0268-0297



SMHI
Ocean lab

Hydrographic
series

Ship: 14-Argos
Year: 1997

Date: 1997-04-24
Time: 07:19

Ser no	Stat code	P r o j	Station-----	Lat-----	Lon-----	Date yymmdd	Time hhmm utc	Bott deph m	Mld m	Secc deph m	Wind di ve	Air temp C	Air pres hPa	WCSI elec aoae	C t d	PPCPZT Hrhhoor Cilyooa motPBw PrP l	No de	T e	S a	P h	O x	H 2	P t	N o	N h	N t	A t	S k	H o	L i	P u	P i	T o	C o		
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0269	KAEX29BAS		ANHOLT E	N5640.0	E1207.0	970414	1605	57		9.5	34 12	7.5	1007	1130	x	xxx---	9	x	x	x	x	-	x	x	x	x	x	x	x	x	-	-	-	-	-	-
0270	SOCX39BAS		W LANDSKRONA	N5552.0	E1245.0	970414	2110	46			36 14	5	1007	9920	x	-x----	8	x	x	-	x	-	x	x	x	x	x	x	-	x	-	-	-	-	-	
0271	BPSA02BAS		BY1	N5500	E1318	970415	0400	48			32 12	2.8	1008	1130	x	-----	8	x	x	-	x	-	x	x	x	x	x	x	-	x	-	-	-	-	-	
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SMHI
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Hydrographic
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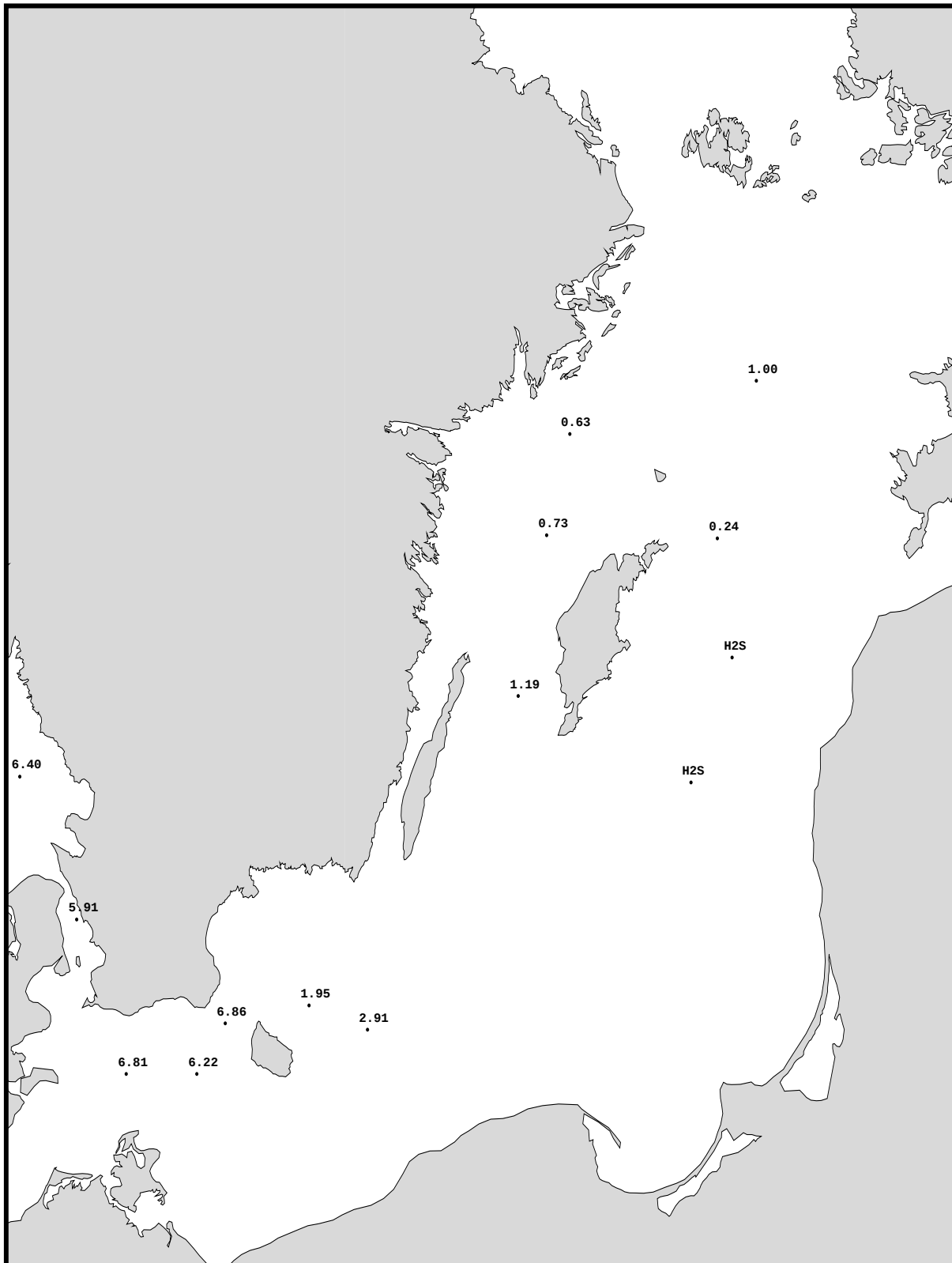
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Year: 1997

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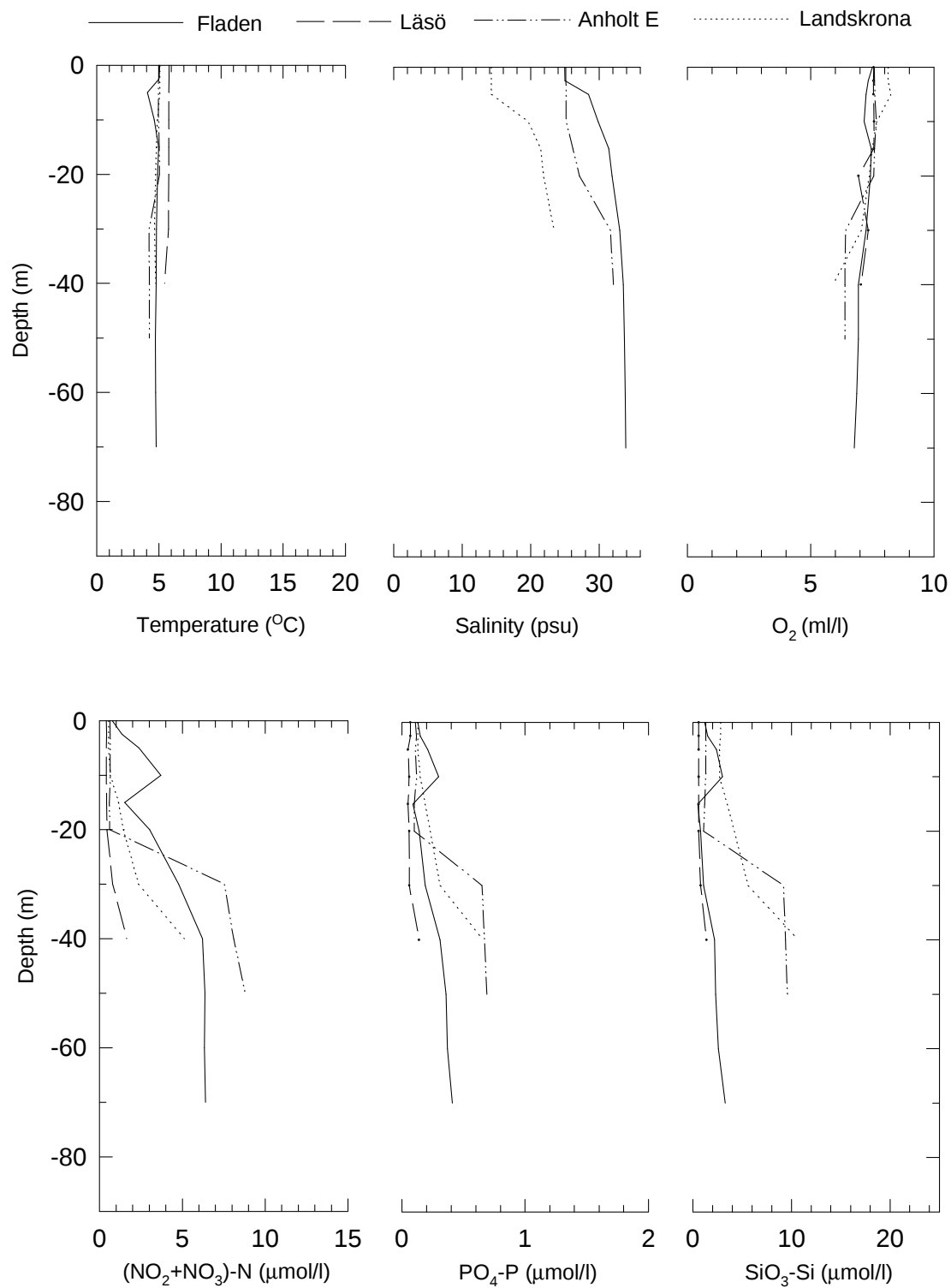
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no	code	r				yymmdd	hhmm	deph		deph	di ve	temp	pres	elec	t	hrhhoor	de	e	a	h	x	2	o	o	o	h	o	l	i	u	i	0	0	0	0	0
		o					utc	m	m	m		C	hPa	aoae	d	Cilyooa		m	l	y	S	4	t	2	3	4	t	k	0	m	g	N	C	C	m	
		j												tu		motPBw		p	i	g		P	P	N	N	N	N	a	3	u	n					m
														hd		PrP		l	n									l	s	i						
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Bottom water oxygen concentration (ml/l)

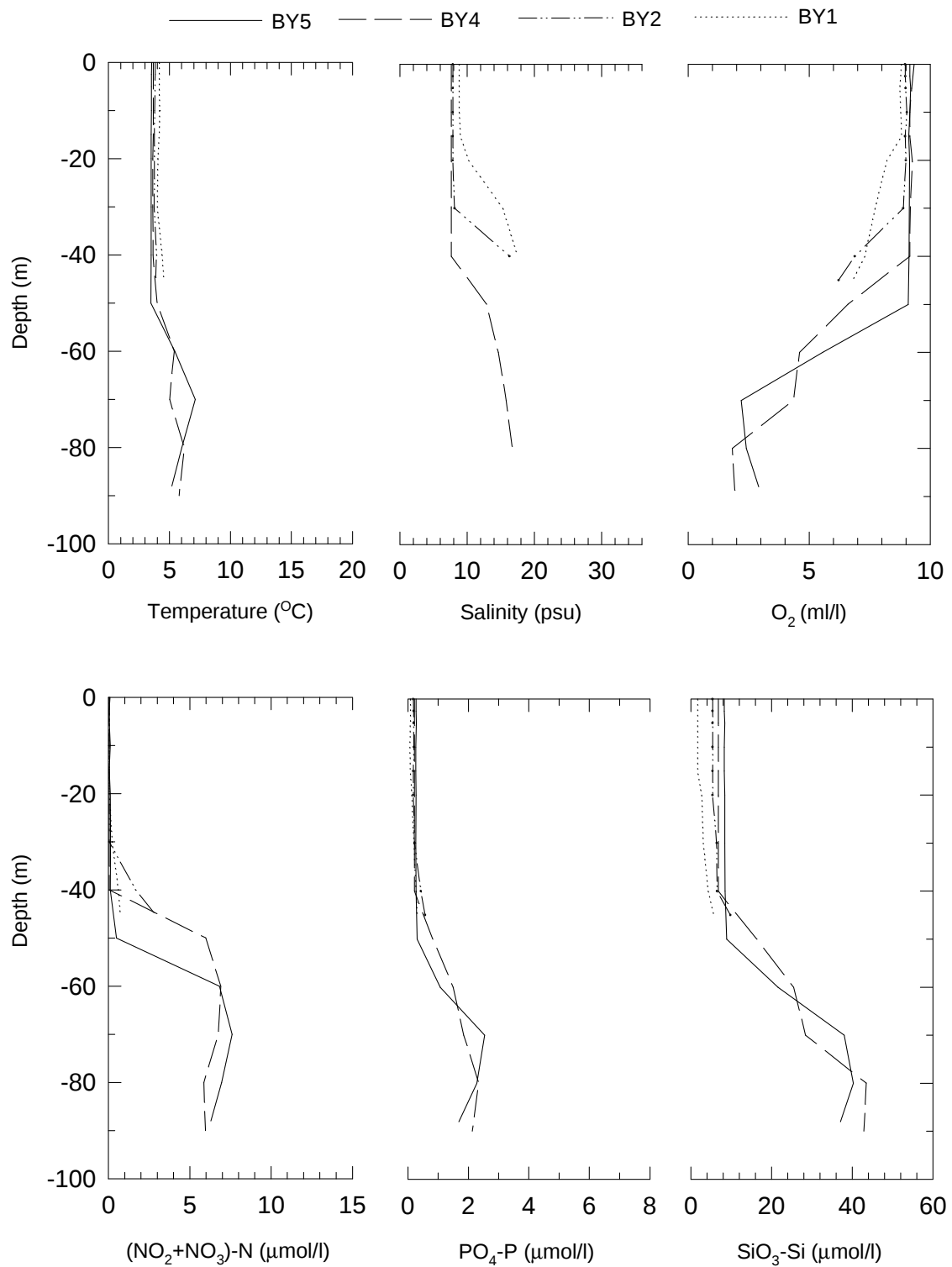
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Date: 970414-970417
Series: 0268-0284



KATTEGAT and THE SOUND week 16 -97



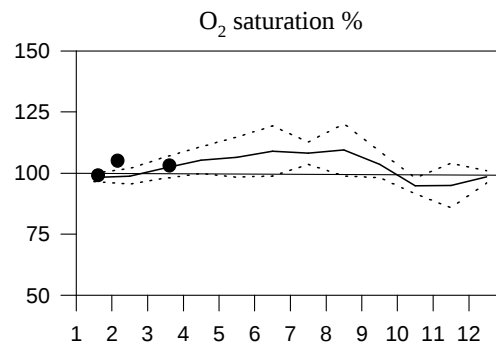
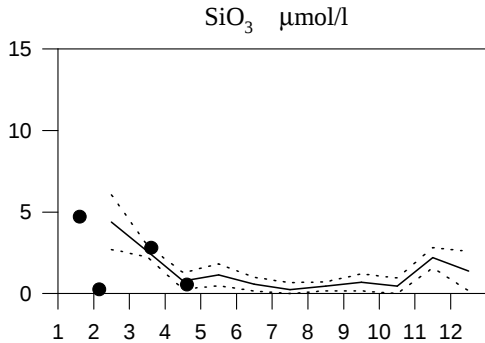
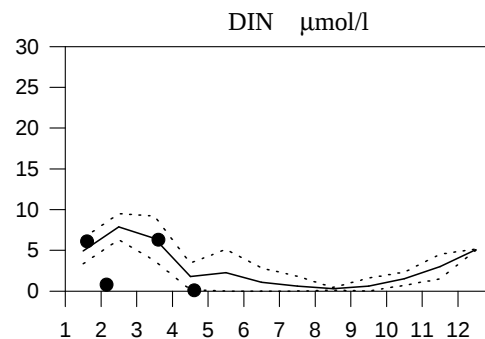
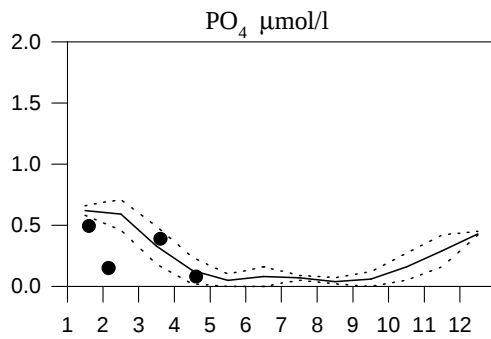
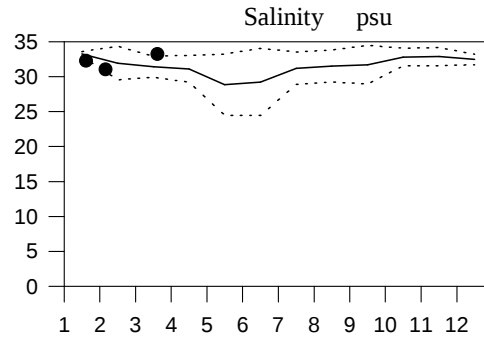
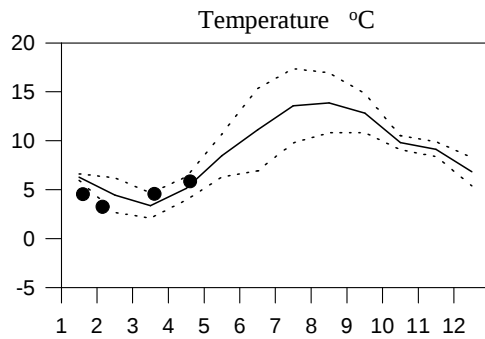
SOUTH BALTIC week 16 -97



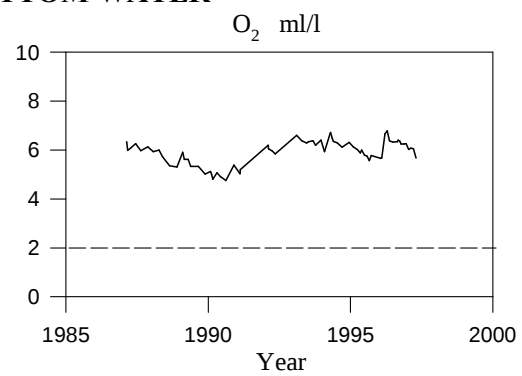
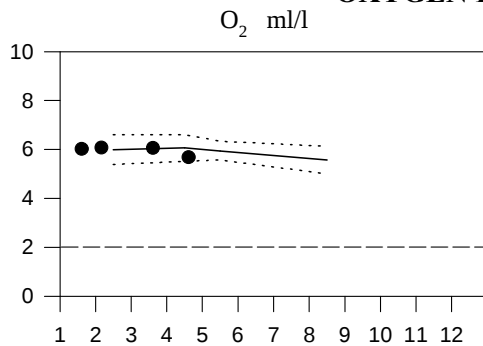
STATION M6 SURFACE WATER (0-15 m)

Annual Cycles

— Mean 1986-1995 - - - St.Dev. ● 1997



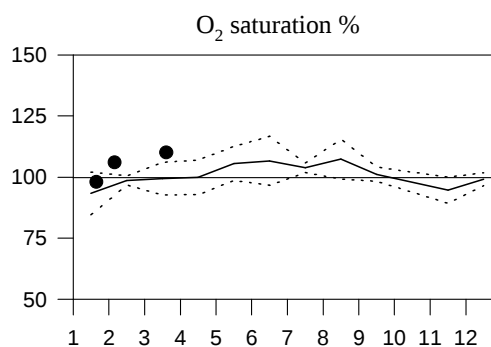
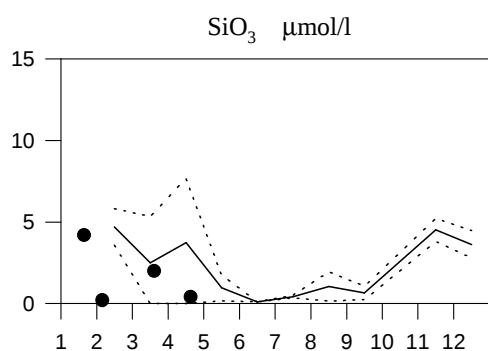
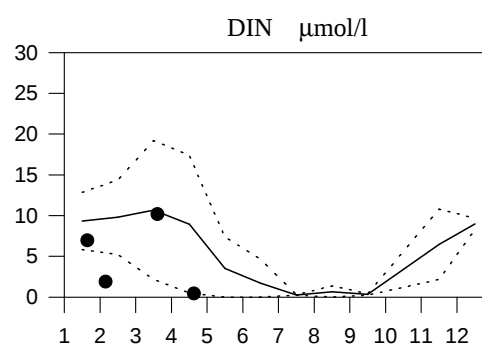
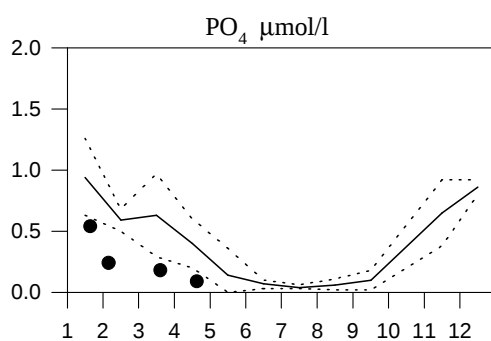
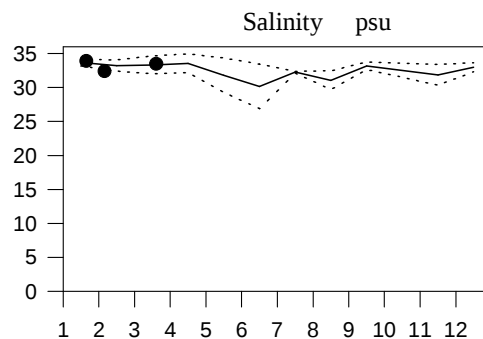
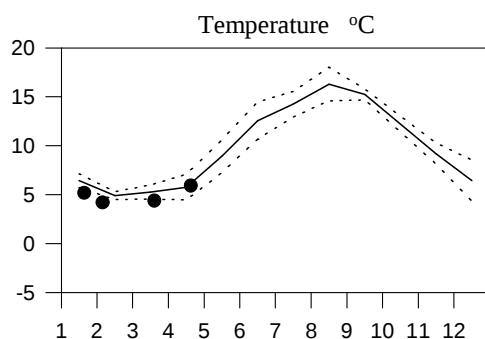
OXYGEN IN BOTTOM WATER



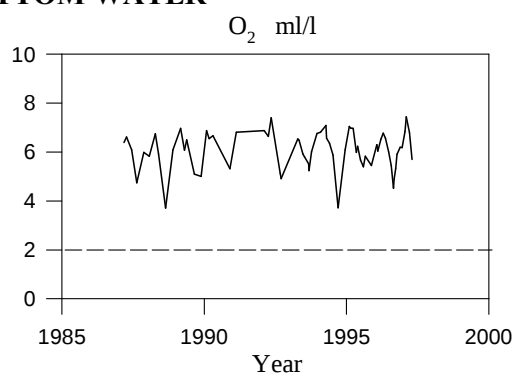
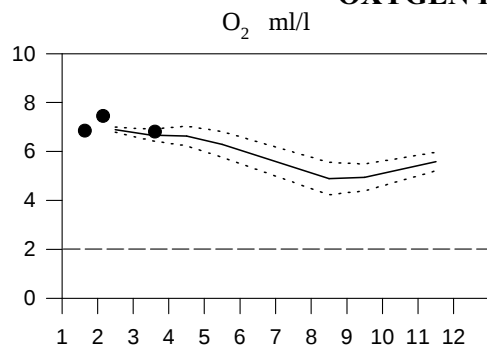
STATION HS5 SURFACE WATER (0-15 m)

Annual Cycles

— Mean 1986-1995 - - - St.Dev. ● 1997



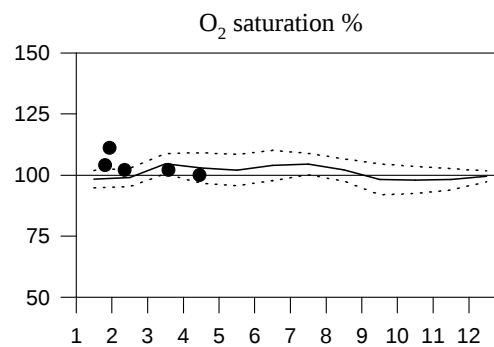
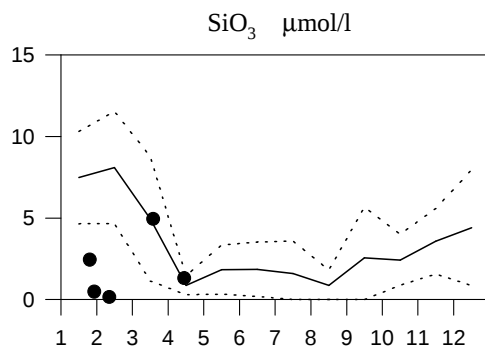
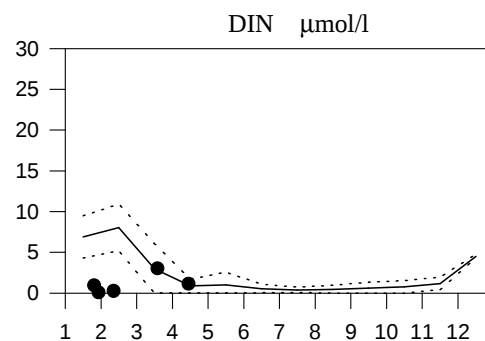
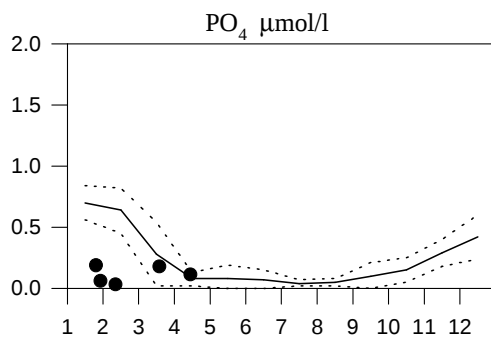
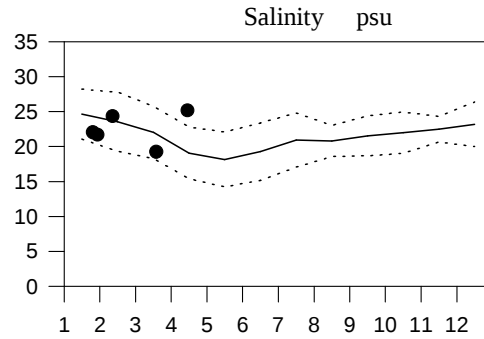
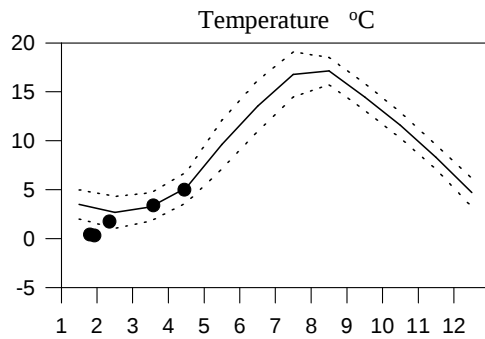
OXYGEN IN BOTTOM WATER



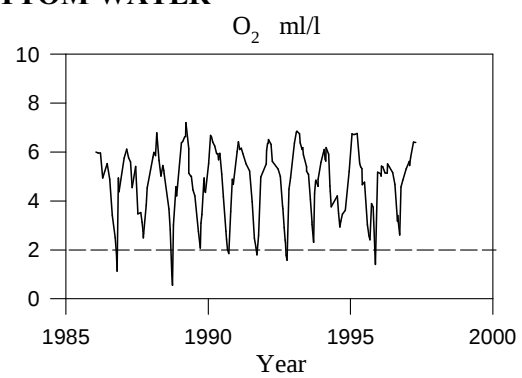
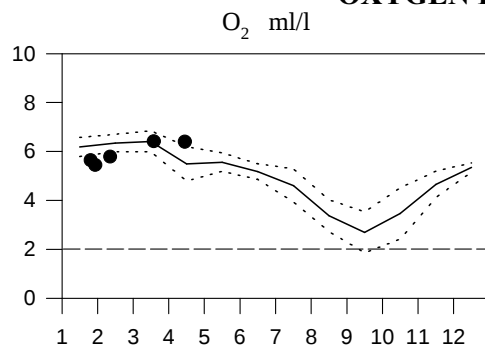
STATION ANHOLT E SURFACE WATER (above halocline)

Annual Cycles

— Mean 1986-1995 - - - St.Dev. ● 1997



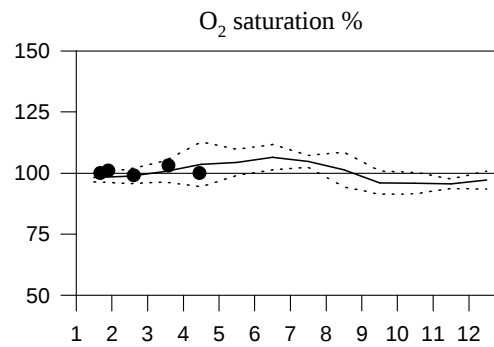
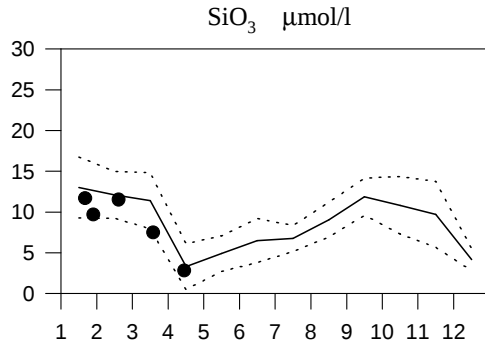
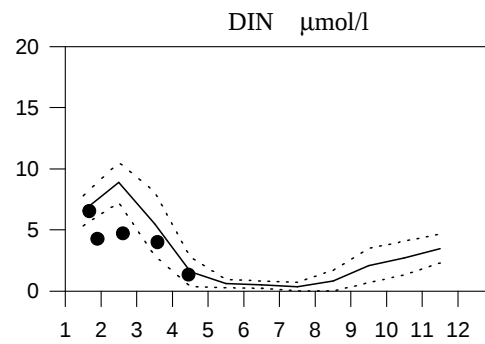
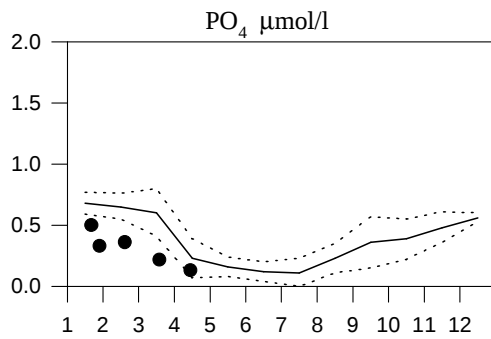
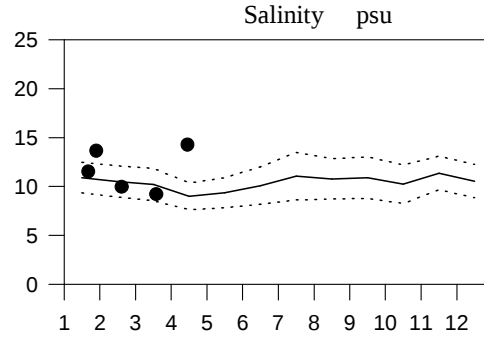
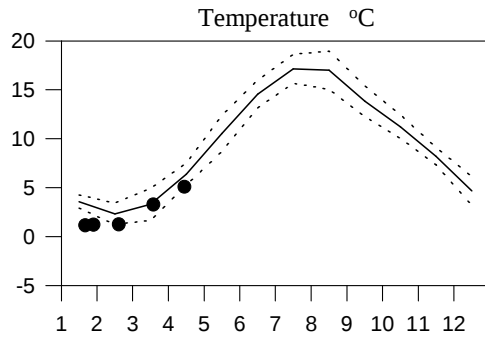
OXYGEN IN BOTTOM WATER



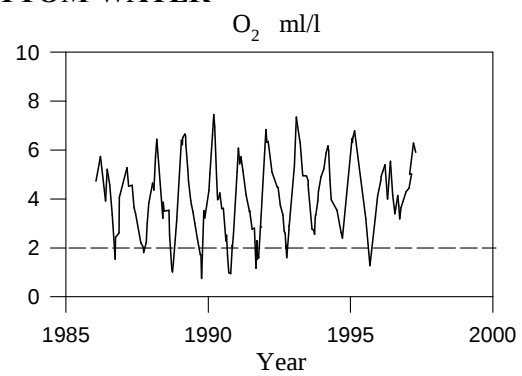
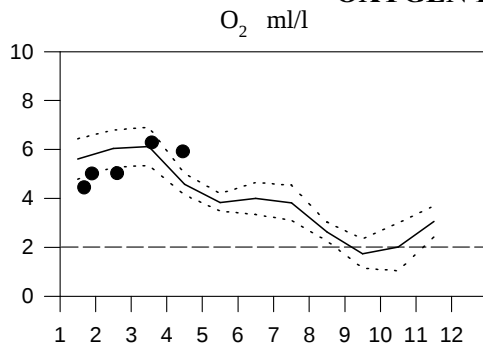
STATION W LANDSKRONA SURFACE WATER (0-15 m)

Annual Cycles

— Mean 1986-1995 - - - St.Dev. ● 1997



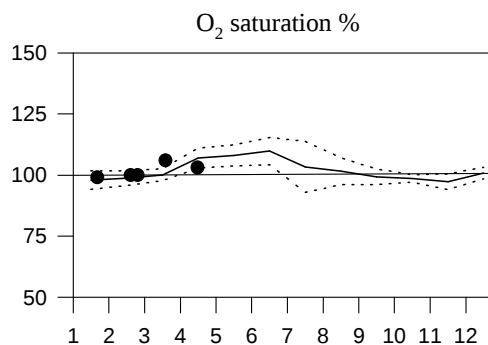
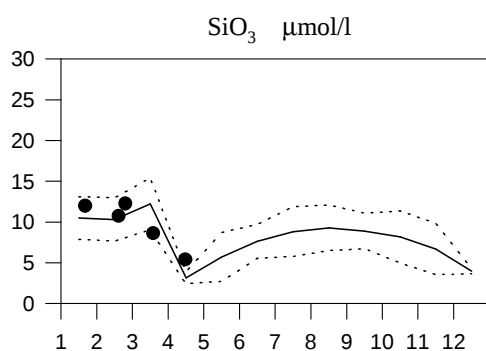
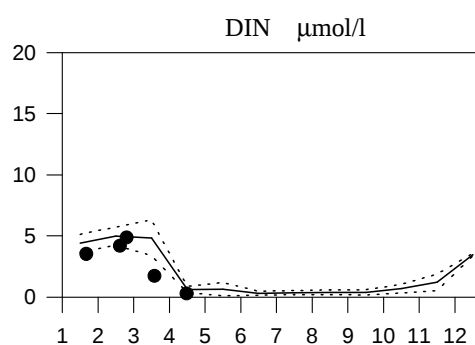
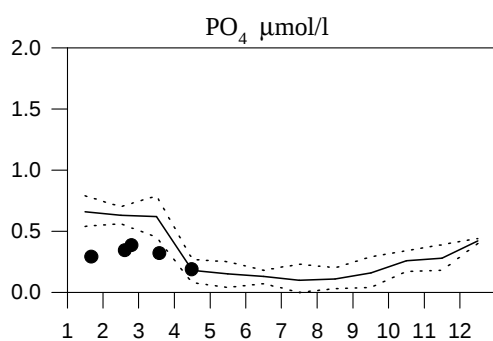
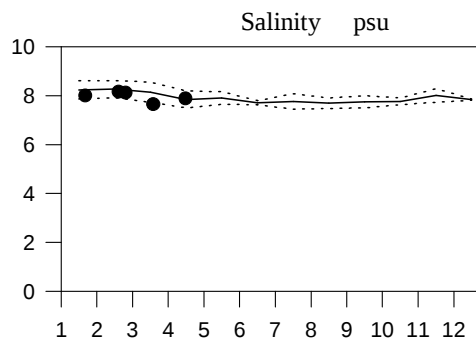
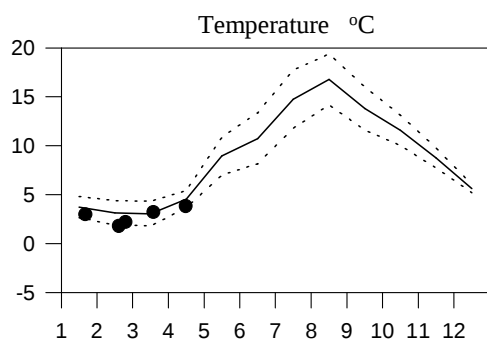
OXYGEN IN BOTTOM WATER



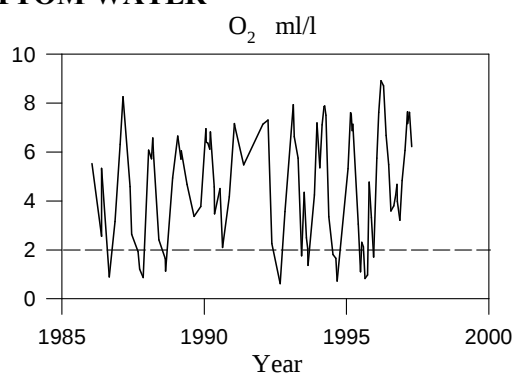
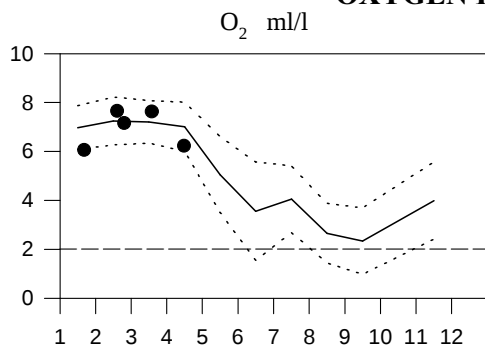
STATION BY2 SURFACE WATER (0-15 m)

Annual Cycles

— Mean 1986-1995 - - - St.Dev. ● 1997



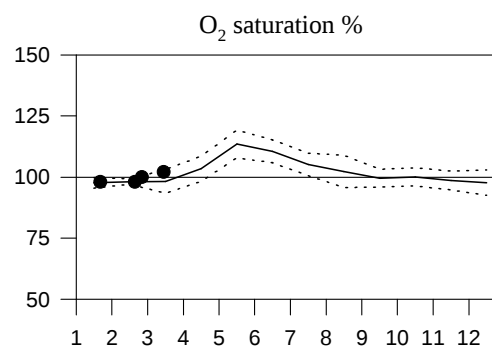
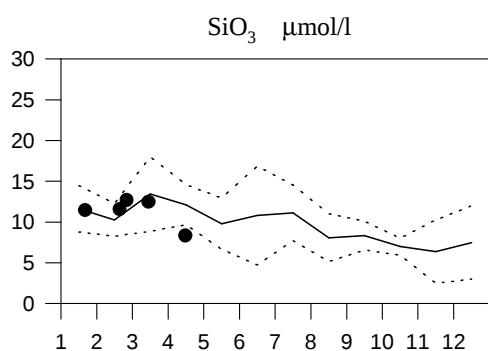
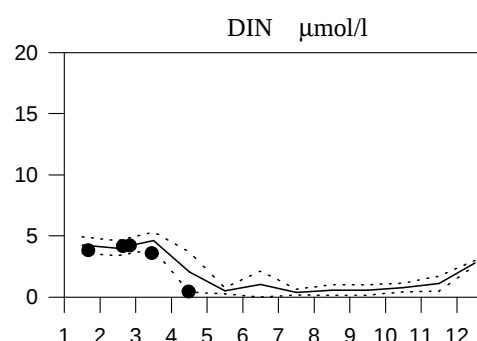
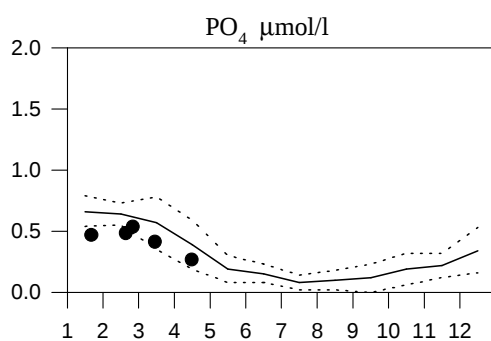
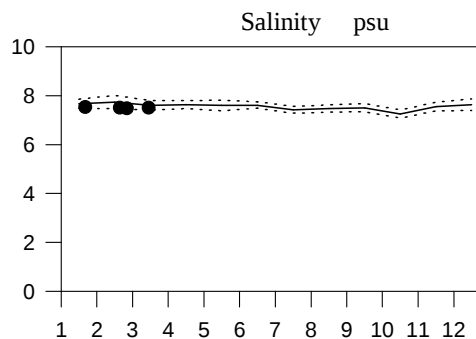
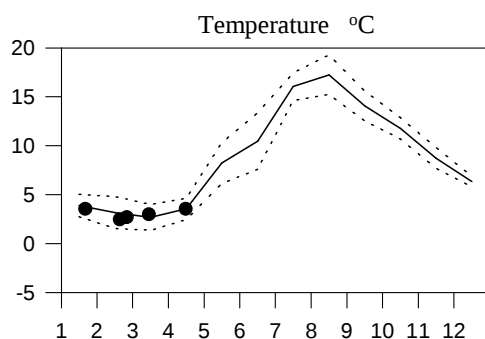
OXYGEN IN BOTTOM WATER



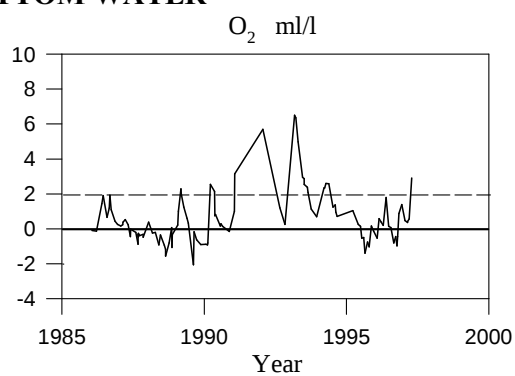
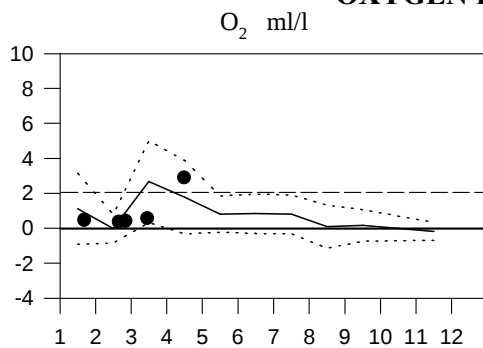
STATION BY5 SURFACE WATER (0-15 m)

Annual Cycles

— Mean 1986-1995 - - - St.Dev. ● 1997



OXYGEN IN BOTTOM WATER

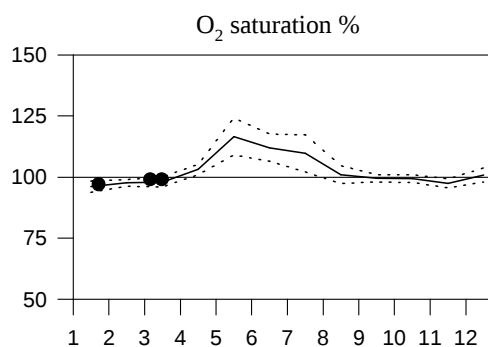
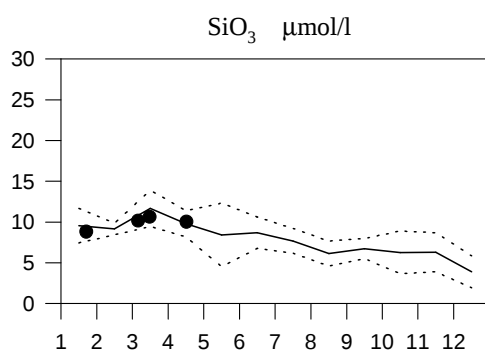
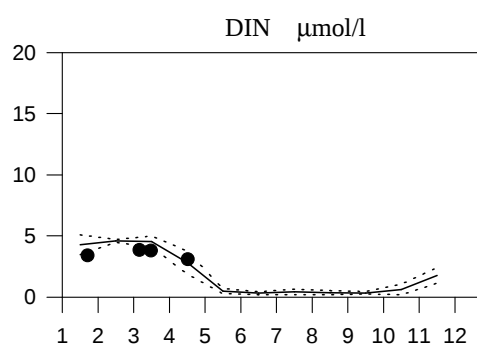
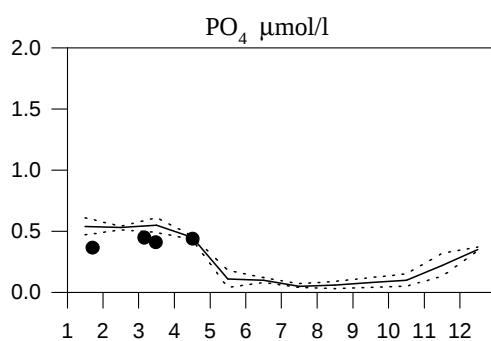
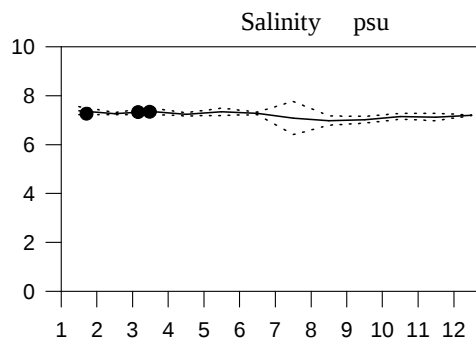
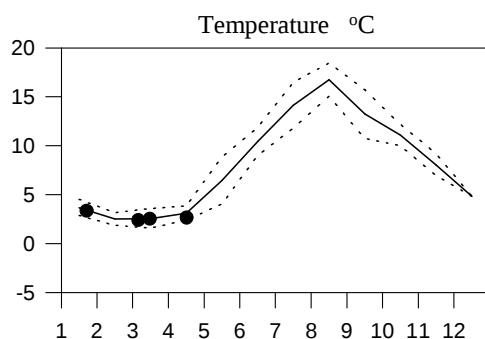


Year

STATION BY15 SURFACE WATER (0-15 m)

Annual Cycles

— Mean 1986-1995 - - - St.Dev. ● 1997



OXYGEN IN BOTTOM WATER

