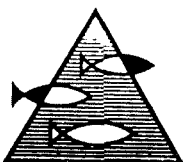


# PROSJEKTRAPPORT

ISSN 0071-5638



## HAVFORSKNINGSINSTITUTTET

MILJØ - RESSURS - HAVBRUK

Nordnesparken 2 Postboks 1870 5024 Bergen

Tlf.: 55 23 85 00 Fax: 55 23 85 31

Forskningsstasjonen

Flødevigen

4817 His

Tlf.: 37 01 05 80

Fax: 37 01 05 15

Austevoll

Havbruksstasjon

5392 Storebø

Tlf.: 56 18 03 42

Fax: 56 18 03 98

Matre

Havbruksstasjon

5198 Matredal

Tlf.: 56 36 60 40

Fax: 56 36 61 43

Distribusjon:

ÅPEN

HI-prosjektnr.:

Oppdragsgiver(e):

Oppdragsgivers referanse:

Rapport:

FISKEN OG HAVET

NR. 1 - 1994

Tittel:

REPORT ON OCEANOGRAPHIC CRUISES AND  
DATA STATIONS 1993

Senter:

Senter for marint miljø

Seksjon: Fysisk oseanografi  
og akustikk

Forfatter(e):

Karen Gjertsen

Antall sider, vedlegg inkl.:

55

Dato:

21.02.94

Sammendrag:

Rapporten gir en oversikt over Havforskningsinstituttets forskningsfartøy G.O. Sars, Johan Hjort, Michael Sars og G.M. Dannevigstokt i 1993.

For de fleste tokt vises kurskart med stasjoner som er tatt. Disse er også innrapportert til ICES sammen med ROSCOP skjema. Rapporten viser også en oversikt over faste snitt og faste stasjoner tatt i 1993.

Summary:

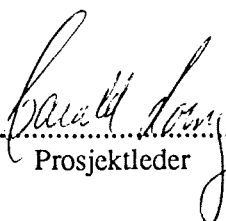
The present report shows the course tracks and stations occupied by R/V G.O. Sars, R/V Johan Hjort, R/V Michael Sars and R/V G.M. Dannevig during 1993. An overview of fixed stations and sections are also given.

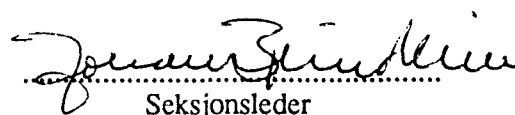
Emneord - norsk:

1. Kurskart
2. Stasjonskart
- 3.

Emneord - engelsk:

1. Course track maps
2. Stations maps
- 3.

  
.....  
Prosjektleder

  
.....  
Seksjonsleder

1968/1305



	Page
CHART oceanographic stations and sections	1
Fixed oceanographic stations	2
Fixed oceanographic sections	3

### "G. O. SARS" 1993

(Ship no 15)

Cruise no	Period of cruises	Page of track chart
1	4 Jan - 12 Feb	4
2	14 Feb - 7 Mar	5
3	8 Mar - 4 Apr	6
4	5 Apr - 23 Apr	7
5	18 May - 1 Jun	8,9
6	1 Jun - 28 Jun	10
7	28 Jun - 24 Jul	11,12
8	24 Jul - 16 Aug	13
9	17 Aug - 3 Oct	
	17 Aug - 8 Sep (1. part)	14
	9 Sep - 3 Oct (2. part)	15
10	16 Oct - 15 Nov	16
11	15 Nov - 15 Dec	17

### "JOHAN HJORT" 1993

(Ship no 12)

Cruise no	Period of cruises	Page of track chart
1	5 Jan - 10 Mar	18
2	11 Mar - 28 Mar	19
3	29 Mar - 12 Apr	20
4	12 Apr - 24 Apr	21
5	27 Apr - 11 May	22
6	2 Jun - 13 Jun	
7	15 Jun - 30 Jun	23
8	1 Jul - 16 Jul	24
9	24 Jul - 15 Aug	25,26
10	16 Aug - 28 Sep	
	16 Aug - 9 Sep (1. part)	27,28
	9 Sep - 28 Sep (2. part)	29
11	29 Sep - 9 Oct	30
12	14 Oct - 4 Nov	31
13	6 Nov - 2 Dec	32
14	6 Dec - 15 Dec	

### "MICHAEL SARS" 1993

(Ship no 11)

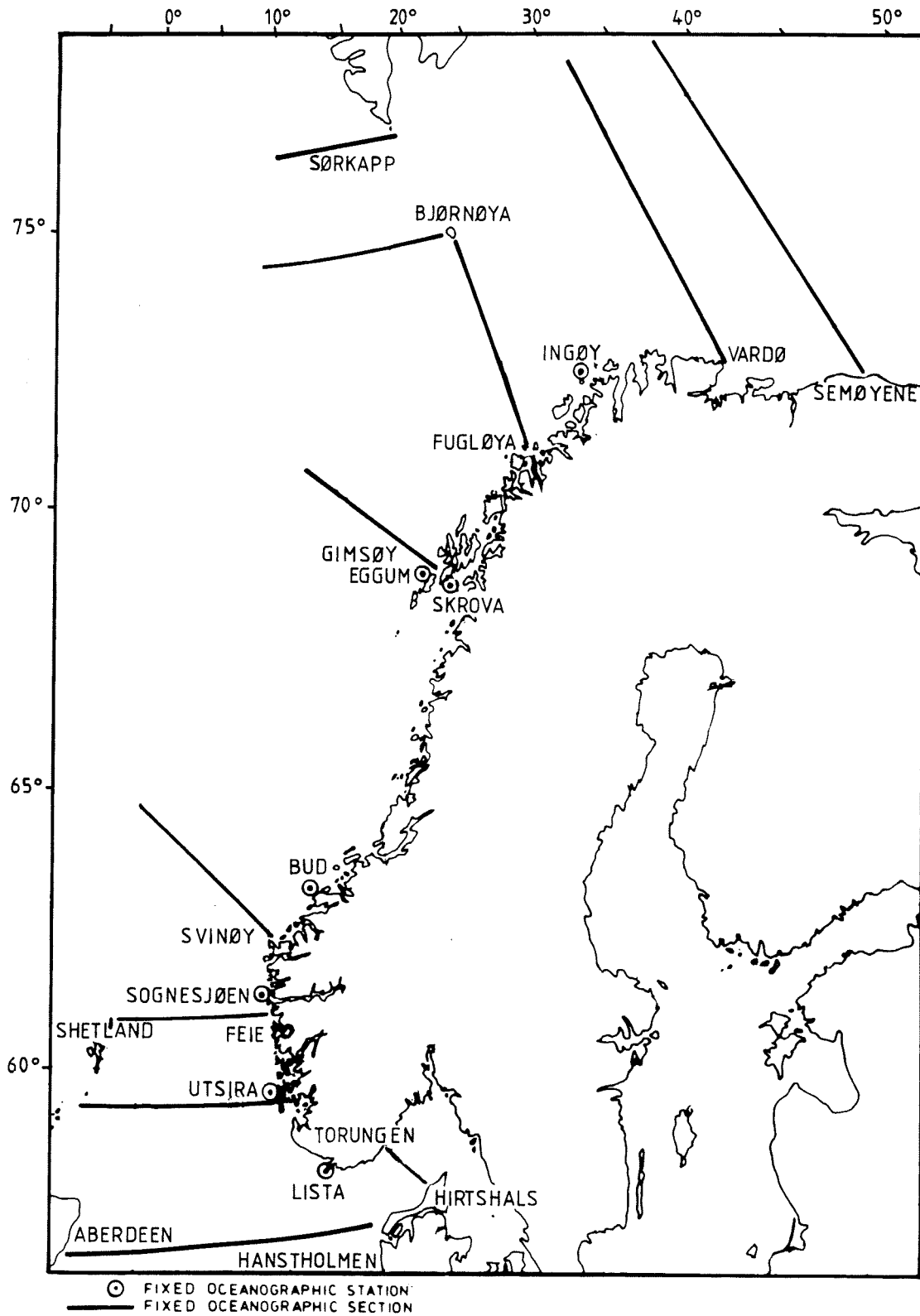
Cruise no	Period of cruises	Page of track chart
1	6 Jan - 24 Jan	33
2	26 Jan - 2 Mar	34
3	6 Mar - 5 Apr	35,36
4	6 Apr - 18 Apr	37
5	20 Apr - 6 May	38
6	7 May - 23 May	
7	25 May - 2 Jun	39
8	3 Jun - 15 Jun	40
9	9 Jul - 31 Jul	41
10	13 Sep - 1 Oct	42,43
11	6 Oct - 27 Oct	44
12	1 Nov - 27 Nov	45,46,47,48
13	29 Nov - 15 Dec	

## "G. M. DANNEVIG" 1993

Ship no 16 Cruise no	Period of cruises	Page of track chart
1	7 Jan - 8 Jan	49
2	13 Jan - 15 Jan	50
3	26 Jan - 30 Jan	
4	3 Feb - 12 Feb	
5	15 Feb - 16 Feb	49
6	22 Feb - 2 Mar	50,51
7	4 Mar - 5 Mar	49
8	8 Mar - 12 Mar	
9	13 Mar - 20 Mar	51
10	23 Mar - 30 Mar	52
11	14 Apr - 30 Apr	49,52
12	18 May - 19 May	49
13	23 May - 28 May	53,54
14	2 Jun - 3 Jun	49
15	7 Jun - 14 Jun	
16	17 Jun - 20 Jun	
17	22 Jun - 29 Jul	
18	12 Jul - 13 Jul	49
19	5 Aug - 6 Aug	49
20	11 Aug - 20 Aug	54
21	30 Aug - 7 Sep	
22	16 Sep - 3 Oct	55
23	4 Oct - 5 Oct	49
24	12 Oct - 14 Oct	55
25	25 Oct - 29 Oct	
26	1 Nov - 4 Nov	49
27	5 Nov - 12 Nov	
28	17 Nov - 24 Nov	
29	14 Dec - 15 Dec	49

### Guidelines:

- z Vertical Oceanogr. st., CTD ST.
- △ Pelagic trawl station
- Bottom trawl station
- ⊙ CTD and PLANKTON st
- Grab station
- ◇ Plankton station



FIXED OCEANOGRAPHIC STATIONS	1993												TOTAL
	Date of observation												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
<b>LISTA</b> N58° 01' E06° 32'	27	6,18	8,26	5,14,21, 24,27,30	4,6, 15,24	3,15,24	3,14,21	2,11, 20,31	8,21,30	8,18,27	6,15,24	6,16,27	37
<b>UTSIRA Y</b> N59° 19' E04° 44'	19,28	6,13,23	2,9,23	2,10,25	5,11,21	4,16,26	2,12,21	4,13,28	7,15,22	3,10, 19,31	8,22	2,9,16	35
<b>UTSIRA I</b> N59° 19' E04° 59'	19,28	6,13,23	2,9,23	2,10,25	5,11,21	4,16,26	2,12,21	4,13,28	7,15,22	3,10 19,31	8,22	2,9,16	35
<b>SOGNESJØEN</b> N61° 01' E04° 50'	20,28	6,17,26	6,16,26	2,14,26	4,11, 19,28	4,11,23	1,8, 15,22	4,11 18,27	6,14, 23,29	9,15, 22,29	4,12, 22	2,17,28	40
<b>BUD</b> N62° 56' E 06° 47'	5,28	10,23	8,22	5,20	3,25	7,22	7,19	3,16,28	10,24	9,22	4,18	1,15	25
<b>SKROVA</b> N68° 07' E14° 39'	7,14,22	6,12, 19,28	6,16, 24,30	6,13, 20,27	4,11, 18,25	18,15, 22,29	6,13, 20,27	3,11, 18,25	18,15, 22,30	7,14,21	3,12, 21,29	21,28, 7,14	46
<b>EGGUM</b> N 68° 23' E13° 38'	10,20	2,12,24	6,17, 29	10,22	3,15,27	9,17,27	9,23,30	10,20,28	7,15	1,9, 19,26	3,12,22	2,13	33
<b>INGØY</b> N71° 08'E 24° 01'	11,22	3,16,28		5,12,27	5,13,22	1,17,28	6,14, 20,27	3,13, 19,26	17,15, 22	7,13,19	3,9, 17,24	2,7,15	36

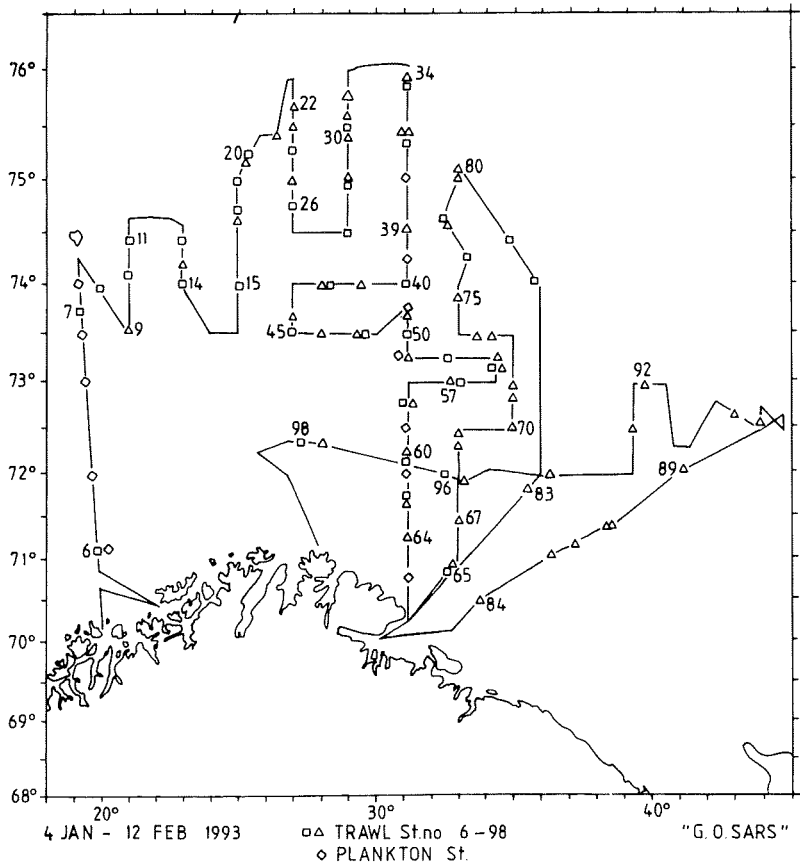
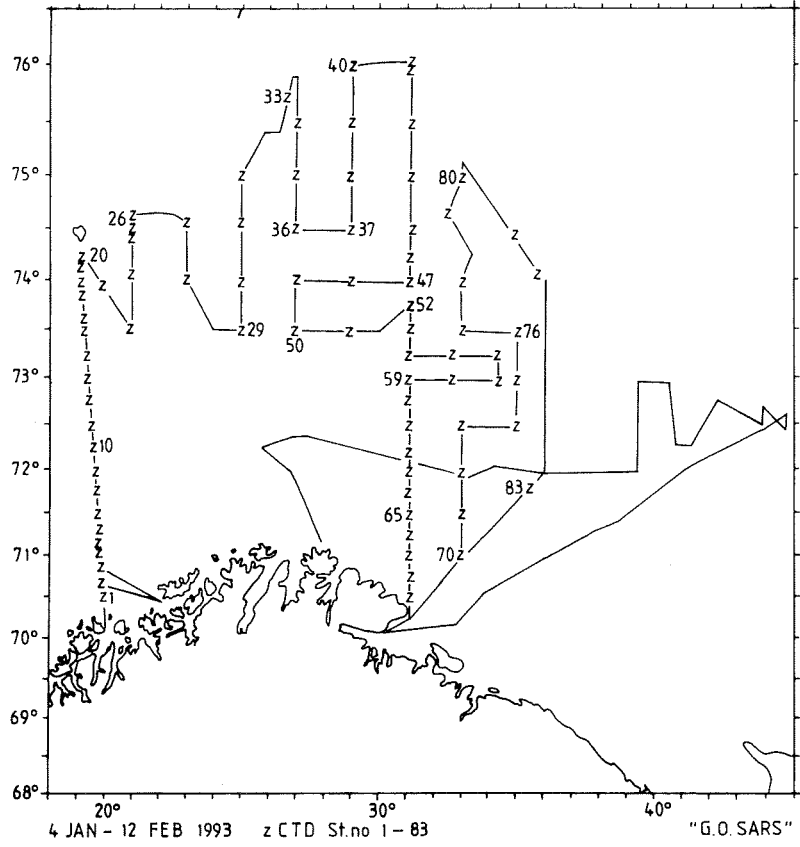
FIXED

1993

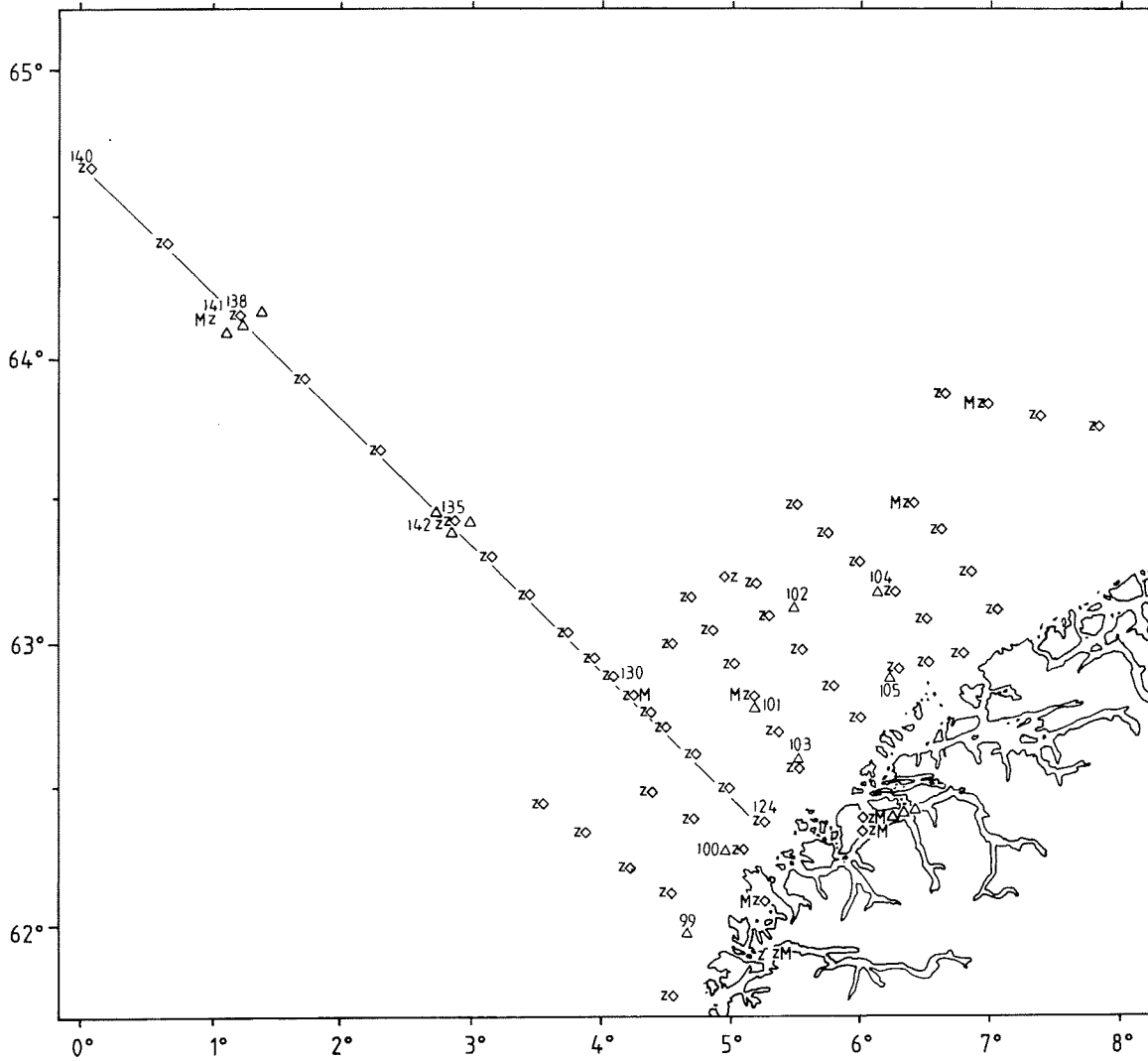
Cruise no/ship

## OCEANOGRAPHIC

SECTION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
(Date/Ship) →	7.1/GMD	15.2/GMD	4.3/GMD	14.4/GMD	18-19.5/GMD		13.7./GMD	5.8/GMD		4-5.10/GMD	1-3.11/GMD	14-15.12/GMD
Torungen - Hirtshals		2/M.Sars										11/G.O.Sars
Hanstholmen - Aberdeen		2/M.Sars									10/G.O.Sars	11/G.O.Sars
Utsira West	2/M Sars						8/J.Hjort			10/G.O.Sars	11/G.O.Sars	
Feie - Shetland	2/M Sars			5/M. Sars		7/J.Hjort				10/G.O.Sars	11/G.O.Sars	
Svinøy - North/west			2/G.O.Sars				9/J.Hjort				13/J.Hjort	
Gimsøy - North/West				4/J.Hjort				8/G.O.Sars				
Sørkapp								10/J.Hjort				
Fugløya - Bear Island	1/G.O.Sars		2/J.Hjort	5/J.Hjort			7/G.O.Sars		10/J.Hjort	11/J.Hjort		
Bear Island - West				5/J.Hjort					10/J.Hjort	11/J.Hjort		
Vardø - North	1/G.O.Sars		2/J.Hjort			6/G.O.Sars		9/G.O.Sars				
Sem. Island - North	1/J.Hjort								9/G.O.Sars			



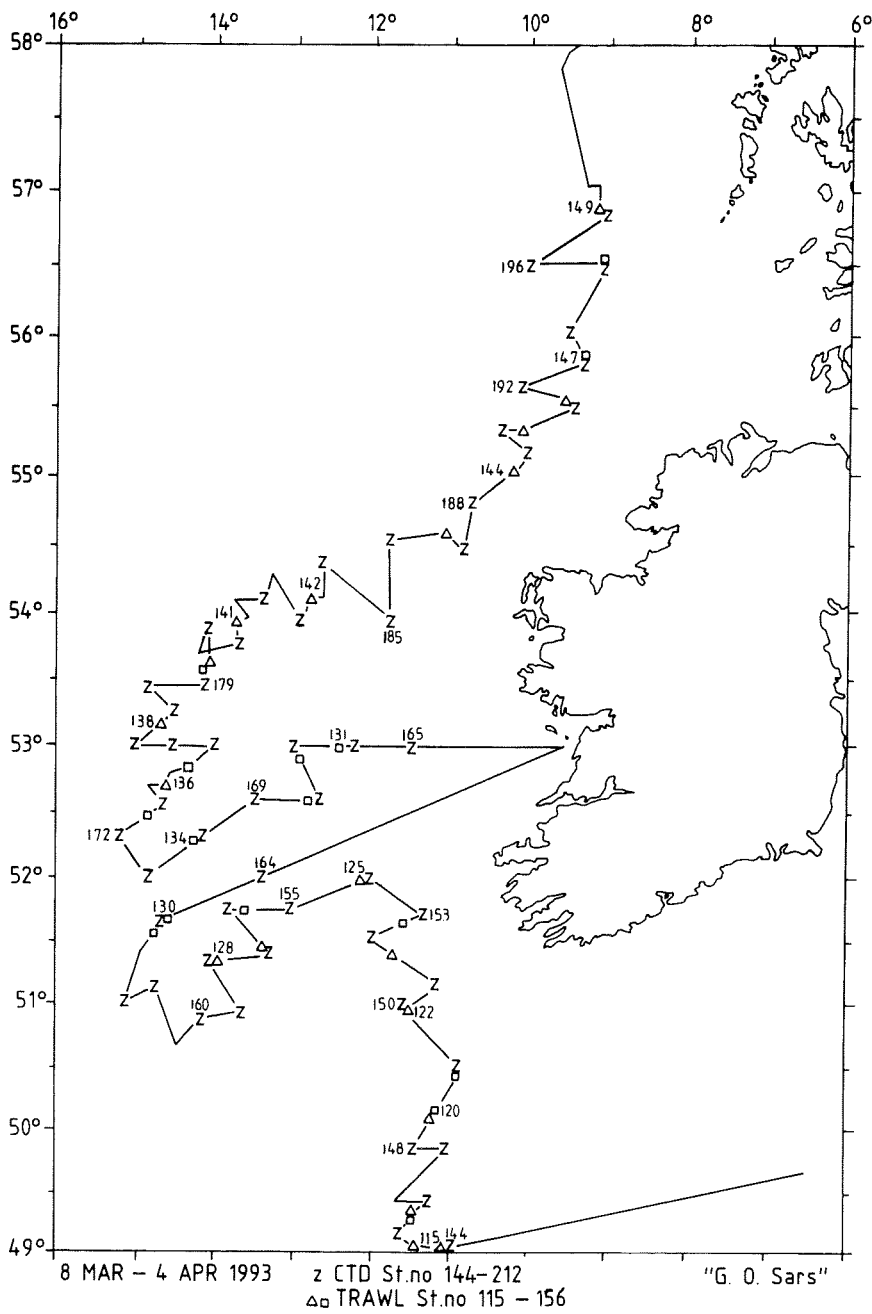
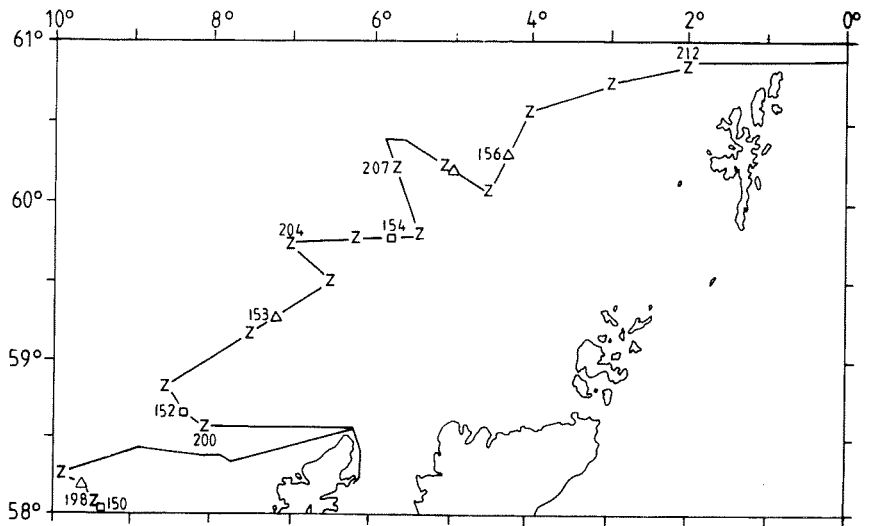


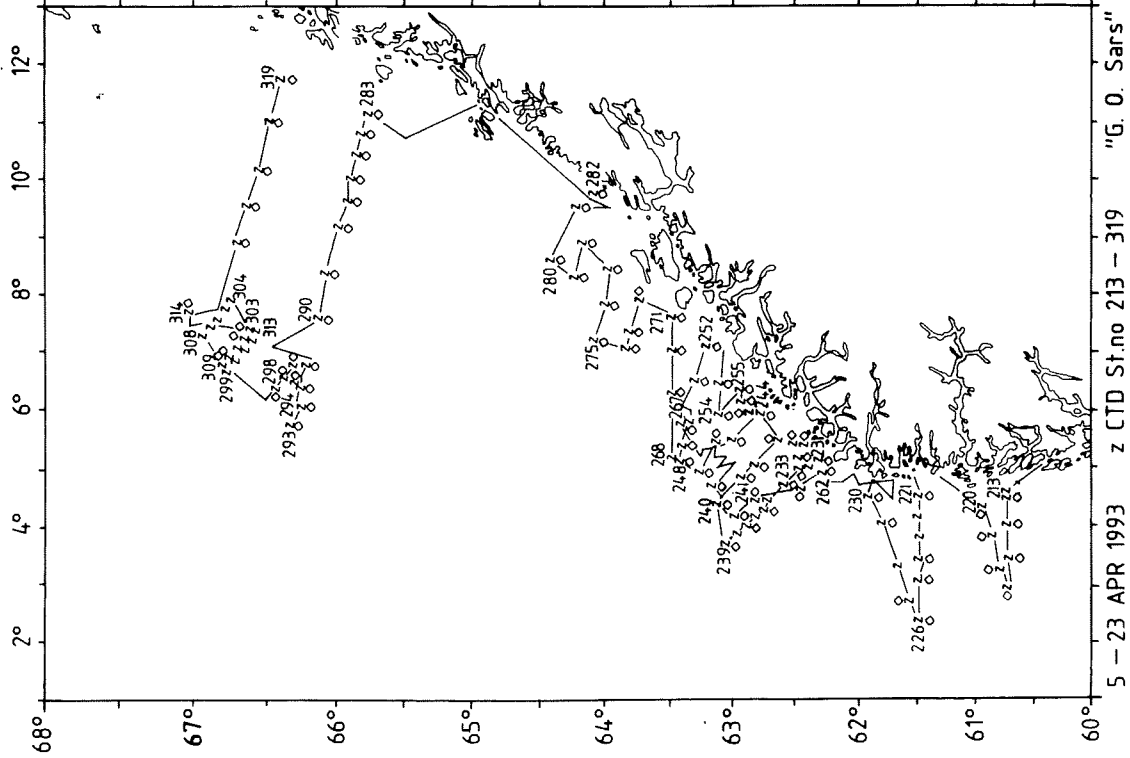
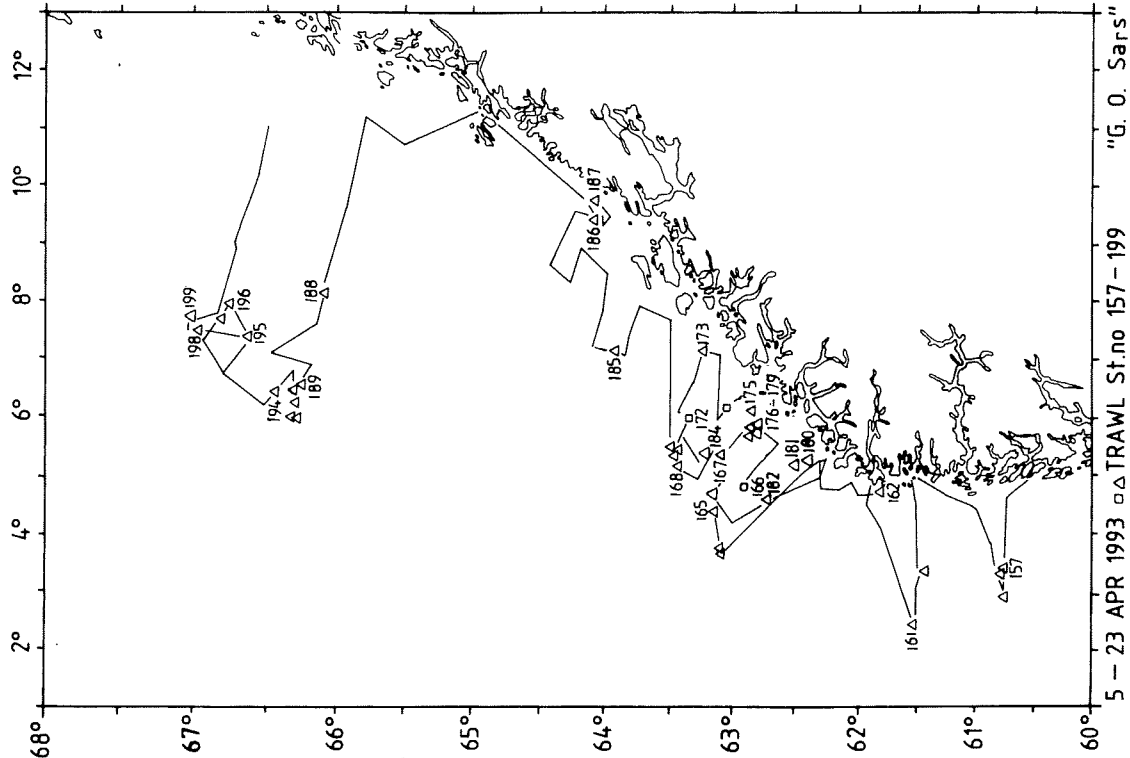


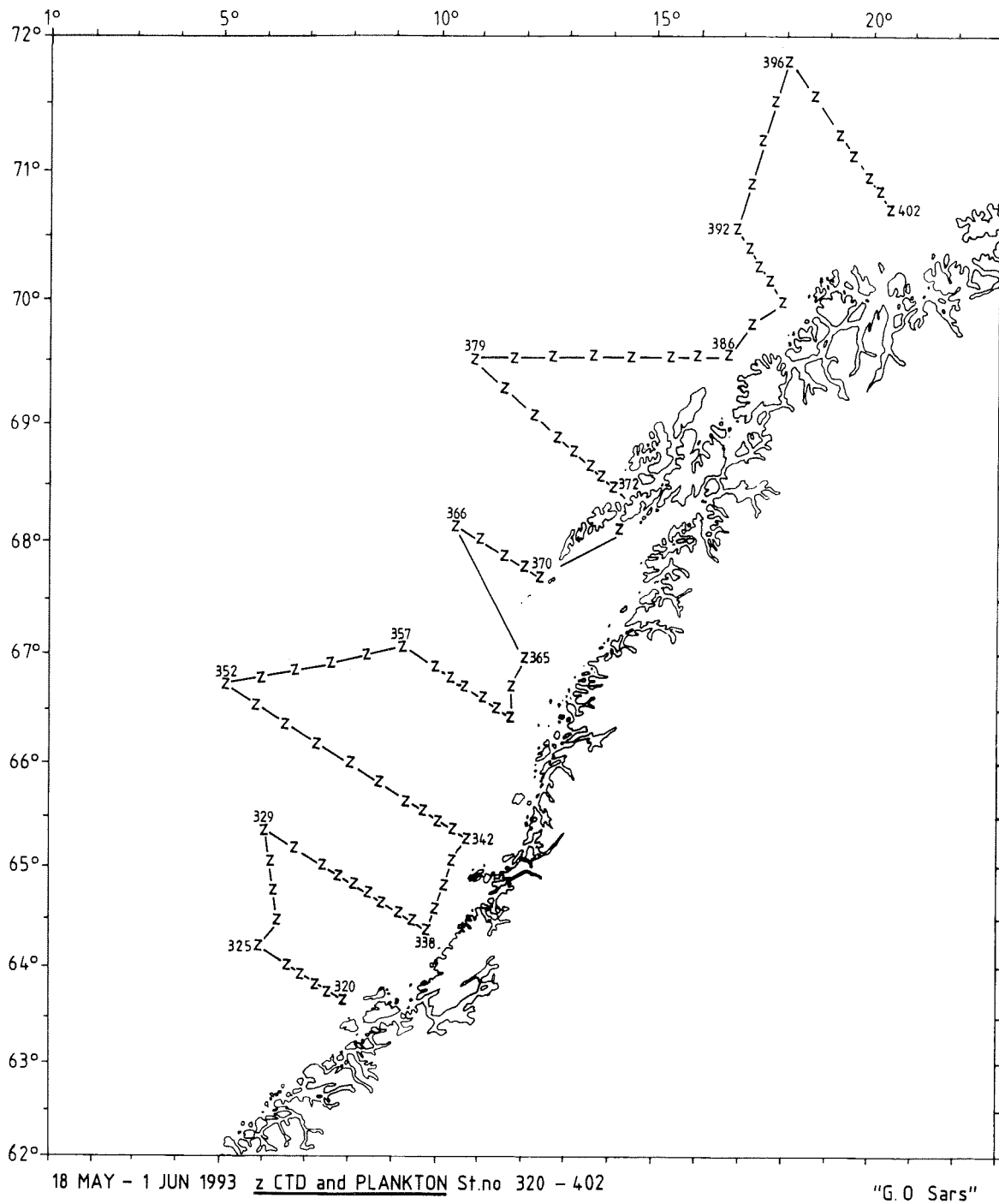
14 FEB - 7 MAR 1993

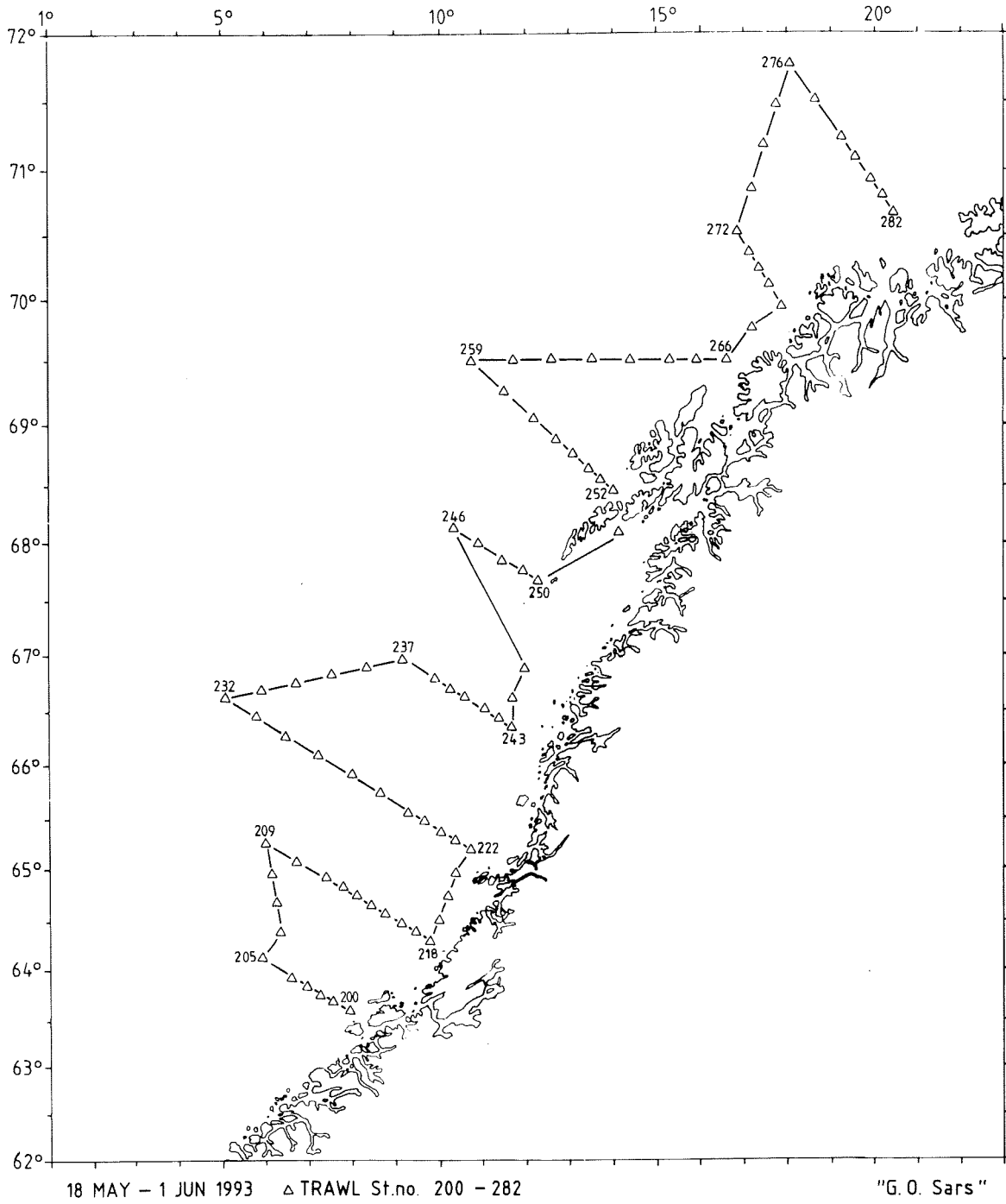
"G. O. SARS"

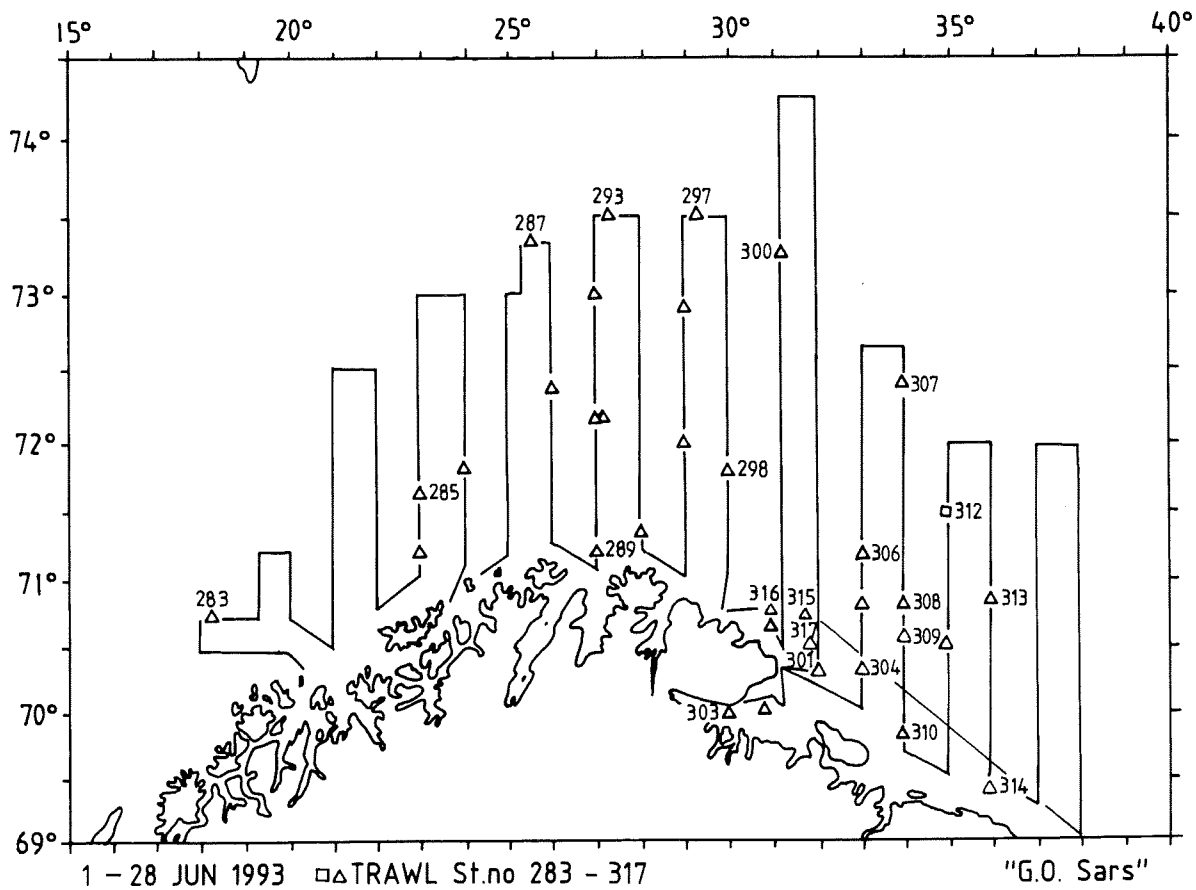
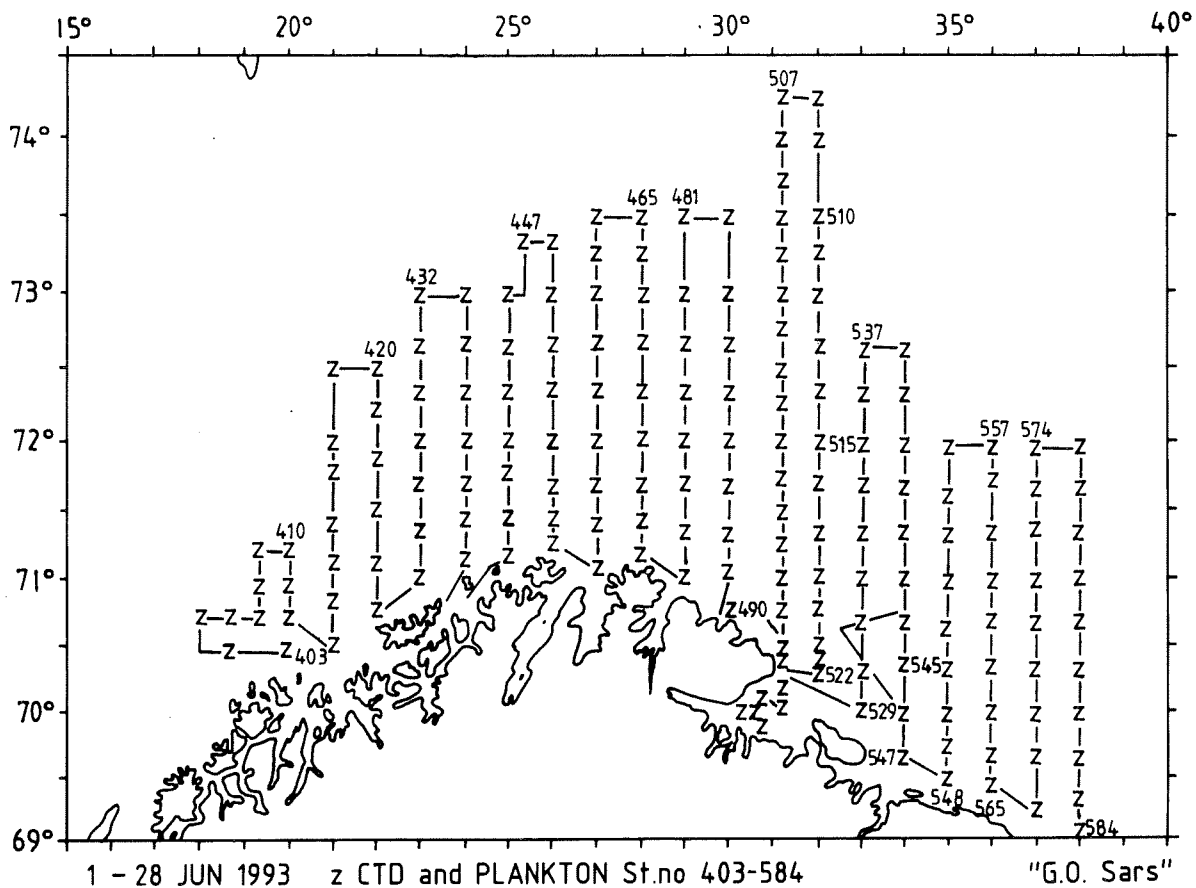
z CTD St. no. 84 - 143, Svinøy section st.no 124 - 140  
 M MOC St. ◇ PLANKTON St.  
 △ TRAWL St. no. 99 - 114



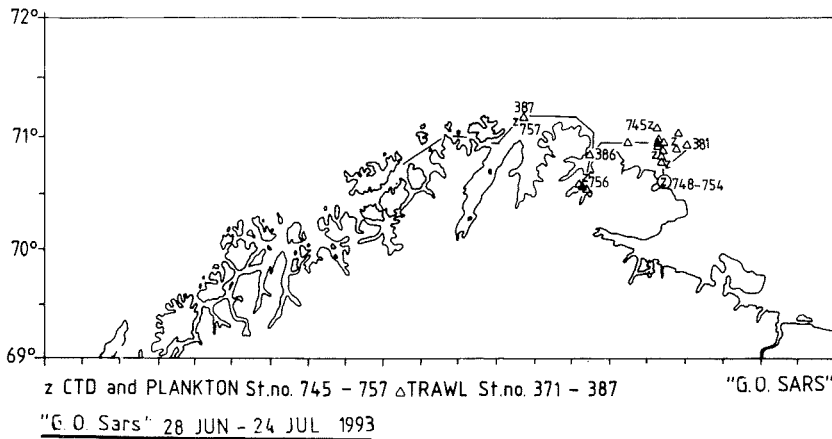
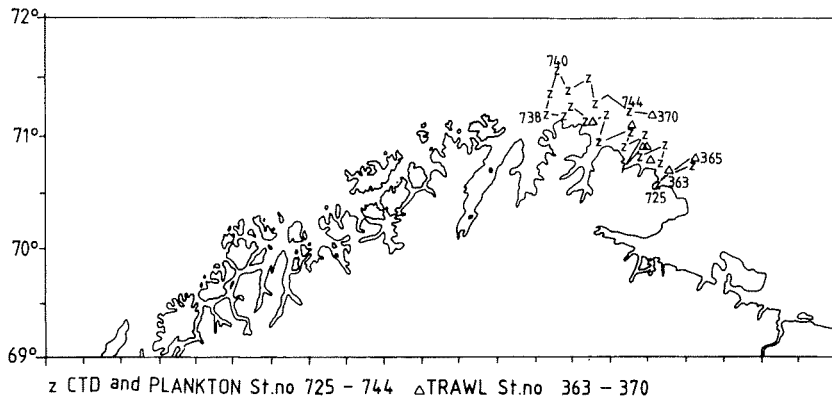
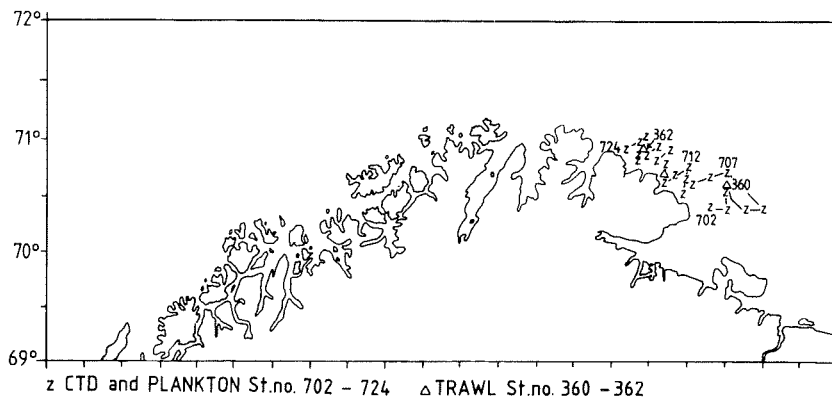
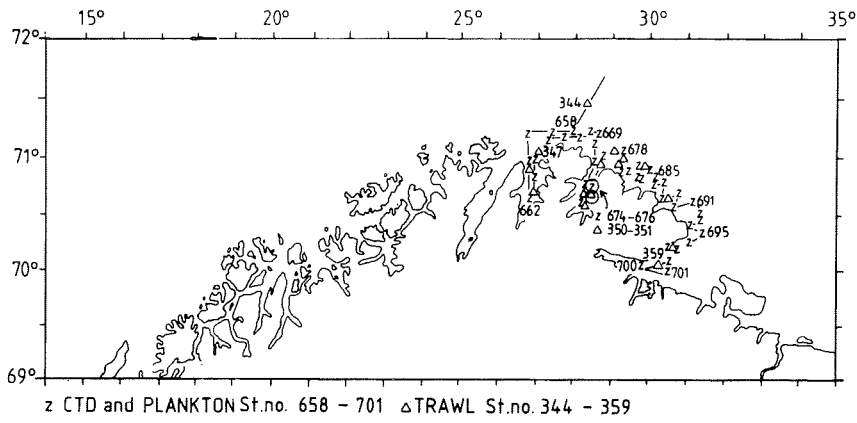








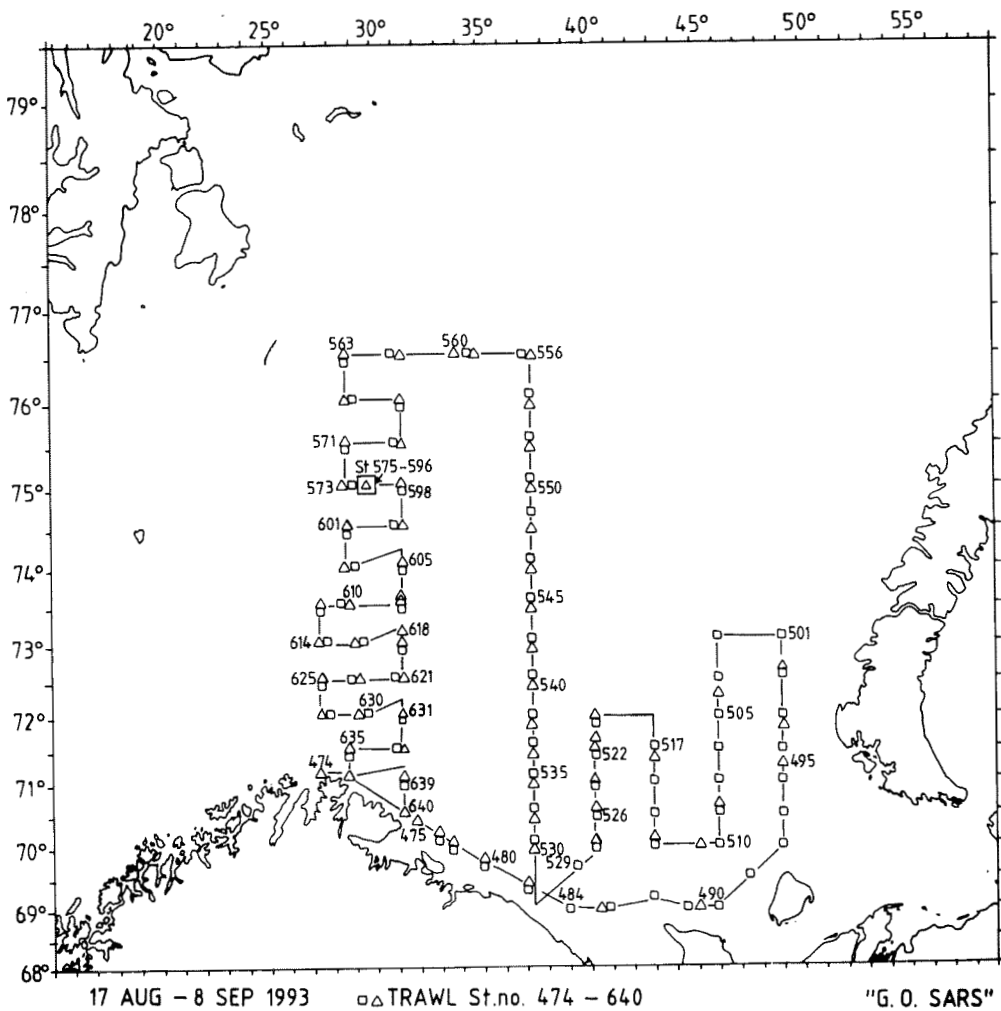
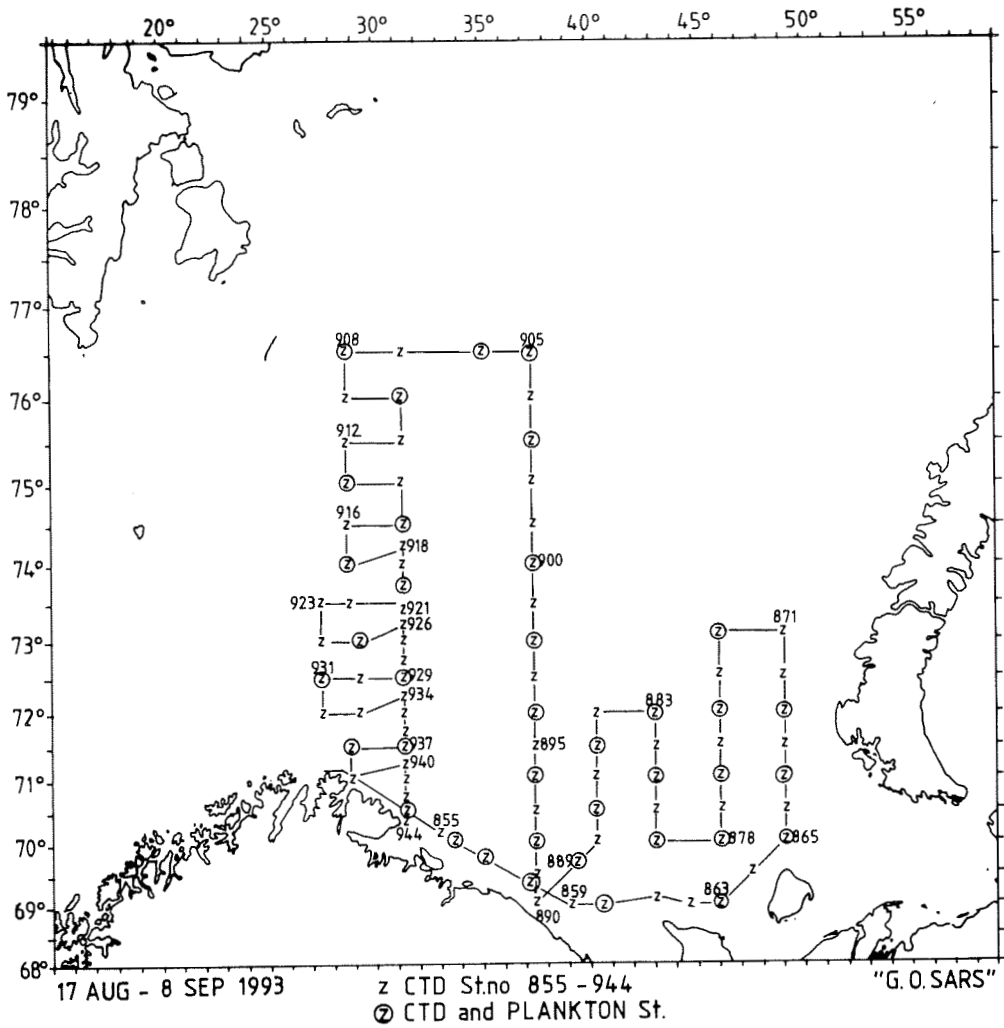


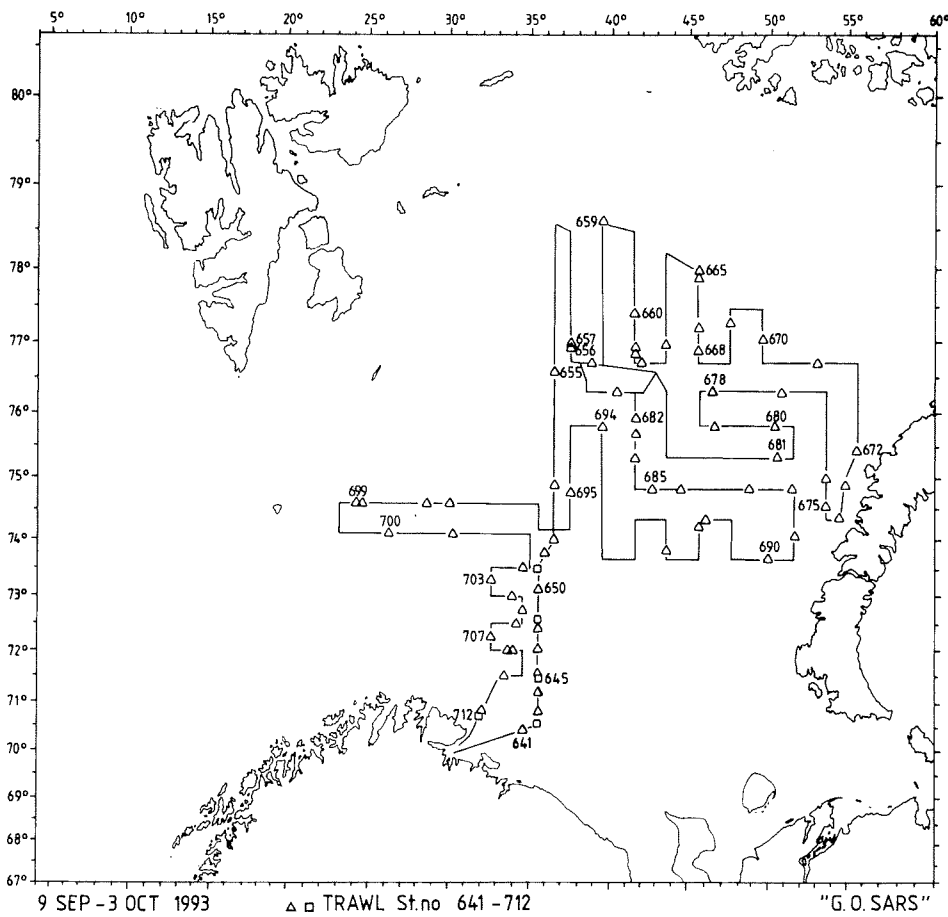
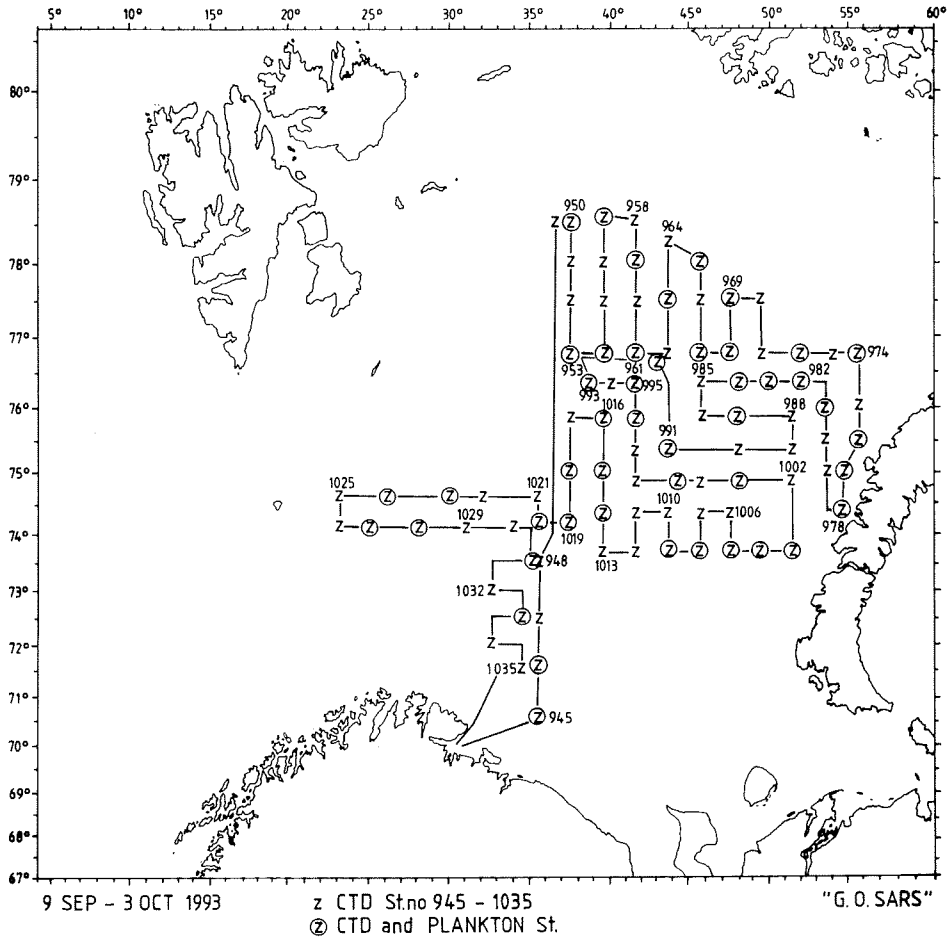


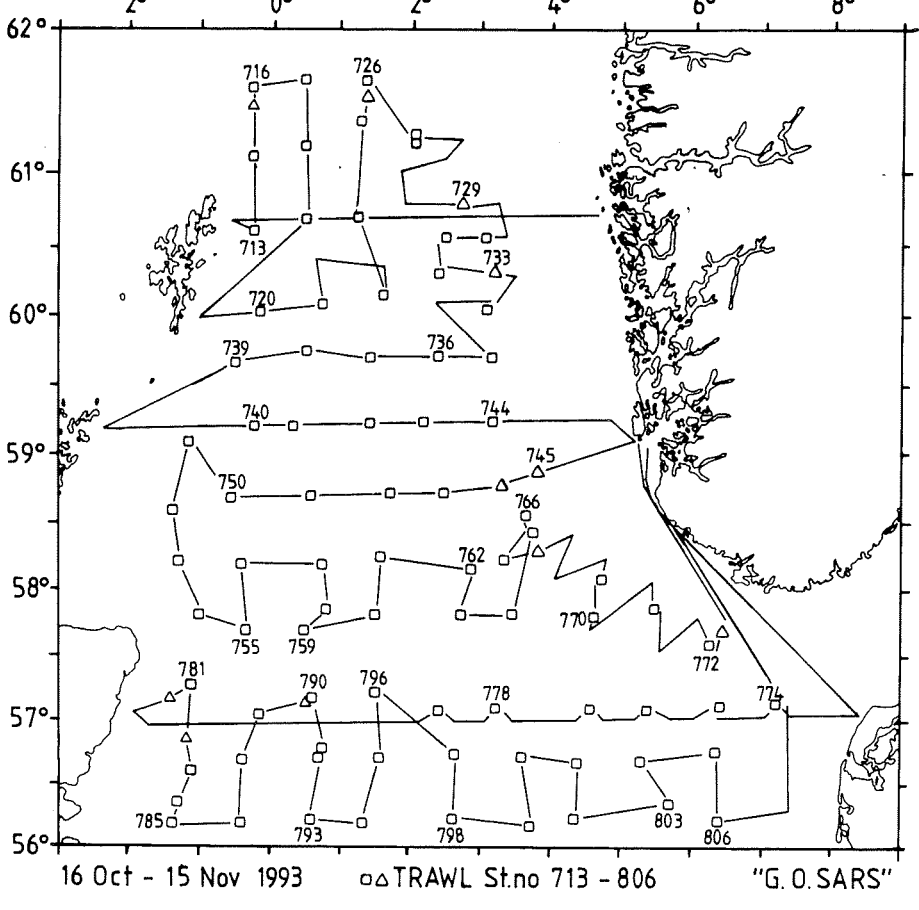
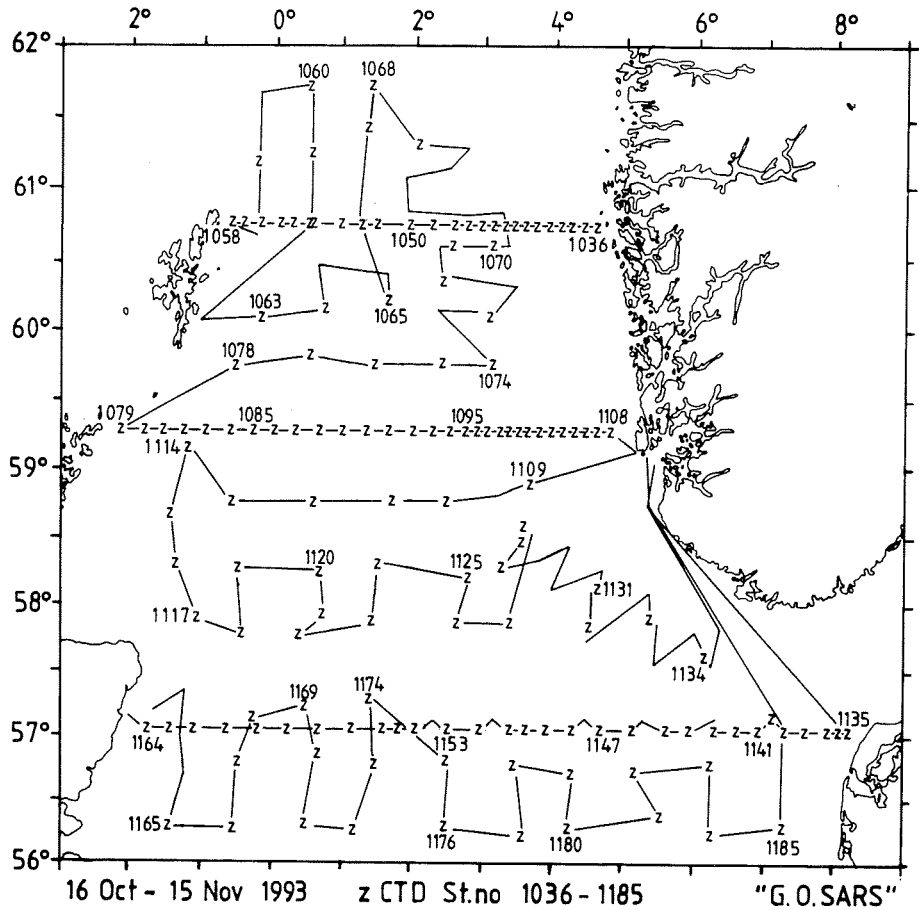
"G. O. SARS" 28 JUN - 24 JUL 1993



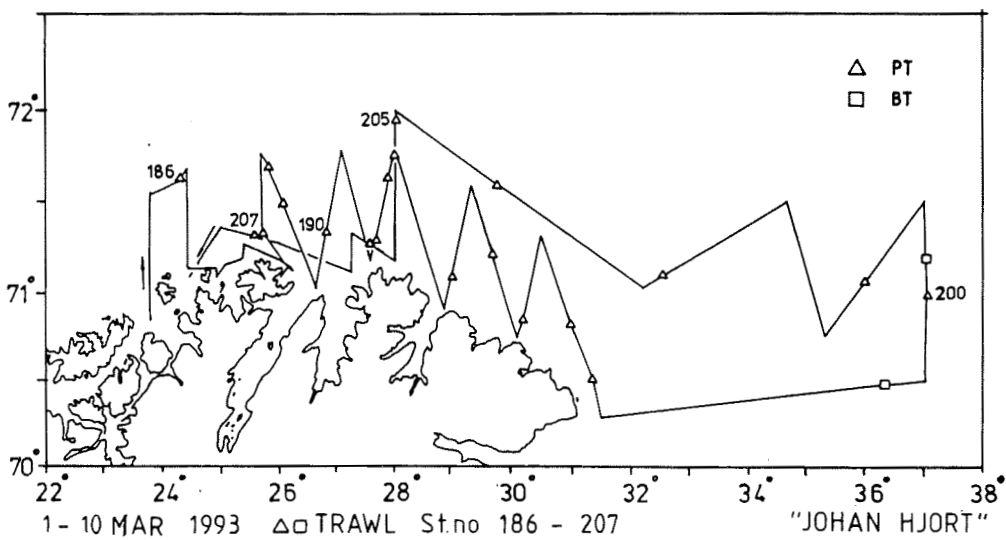
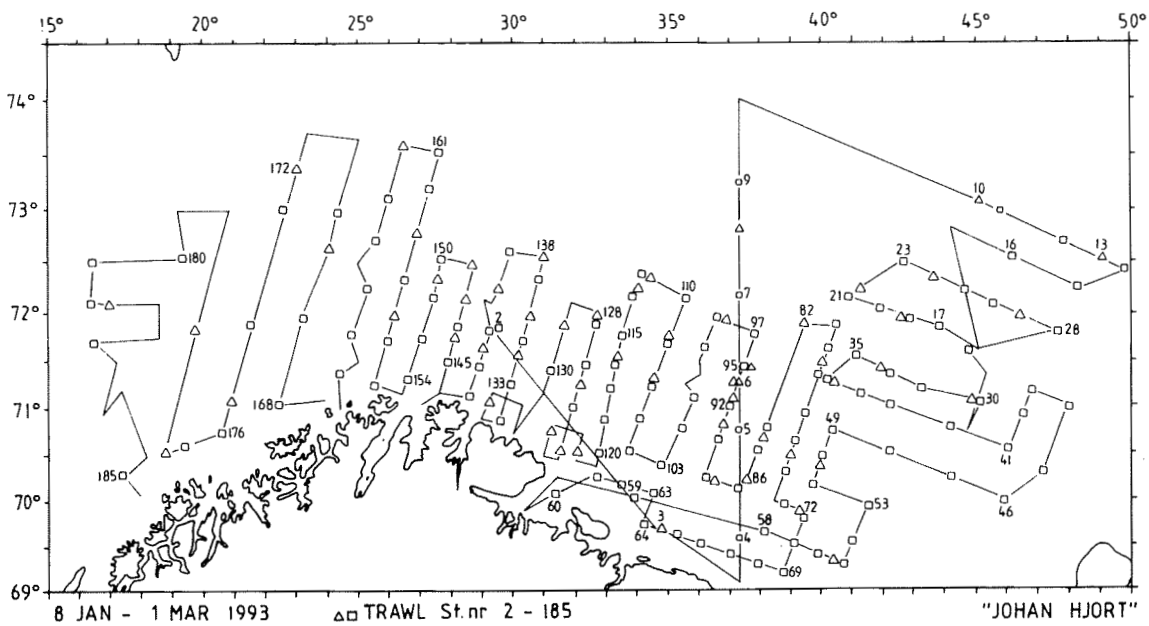
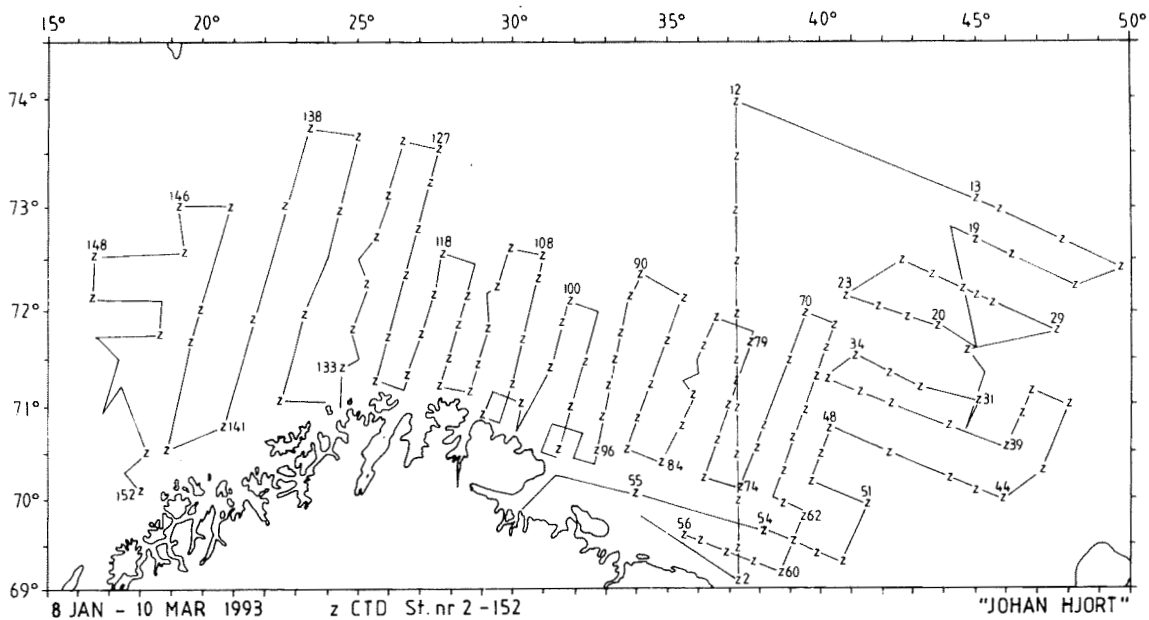


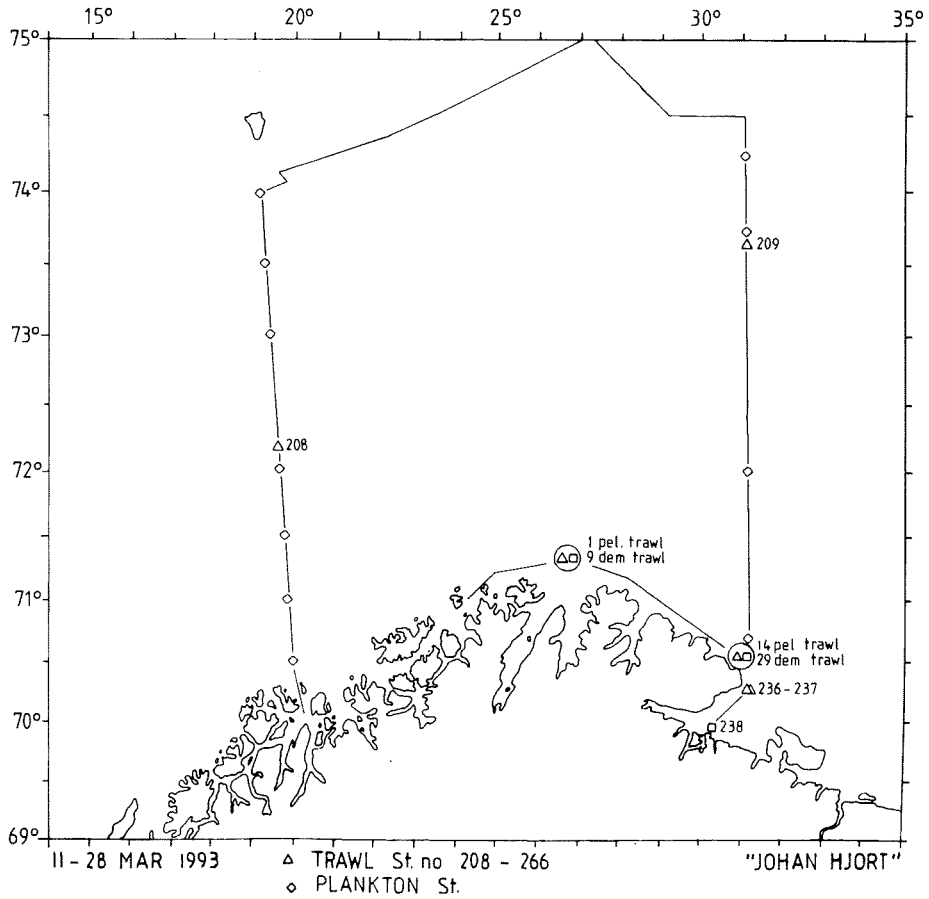
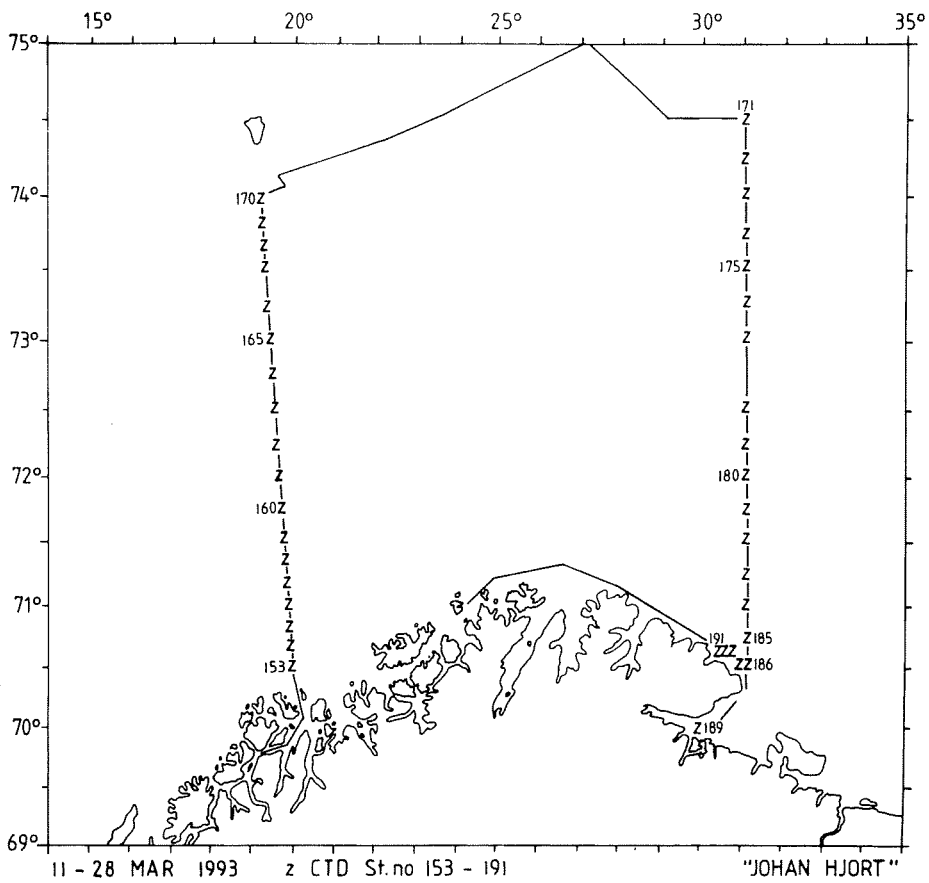


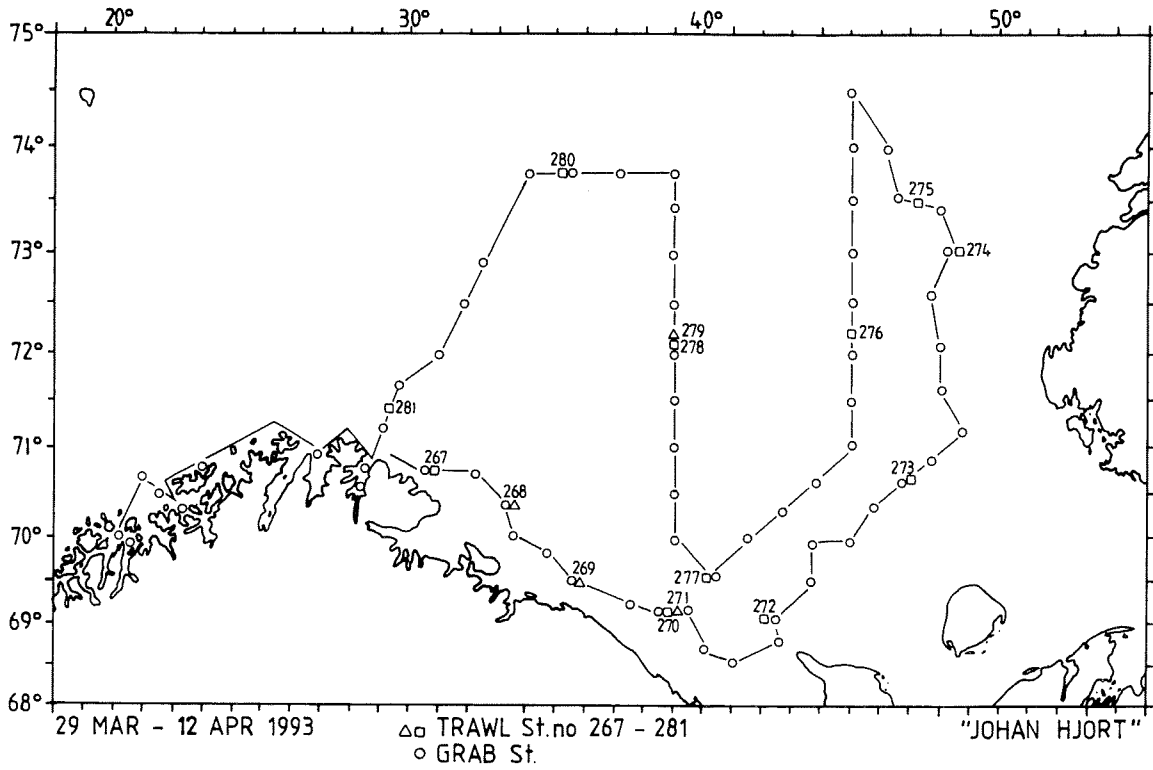
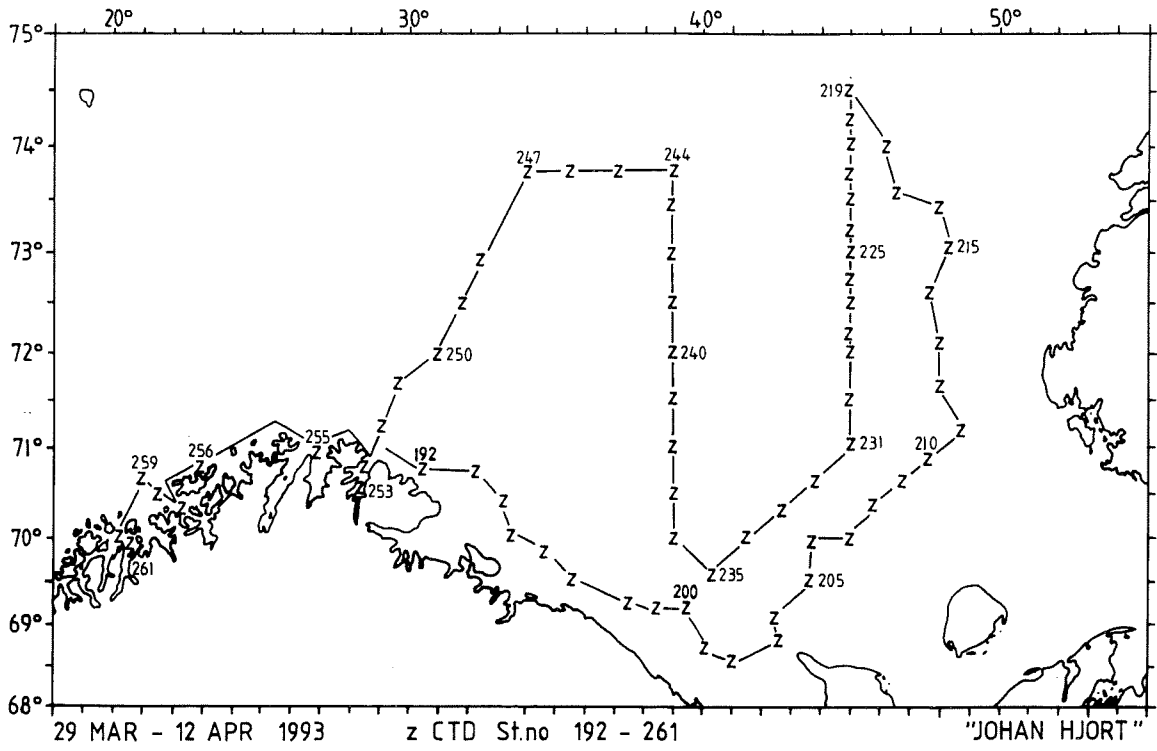




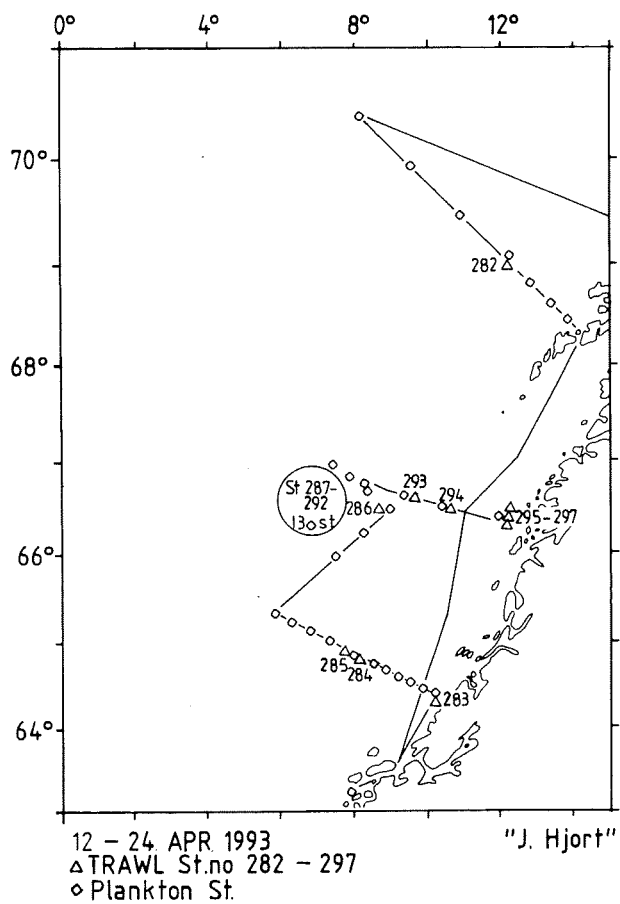
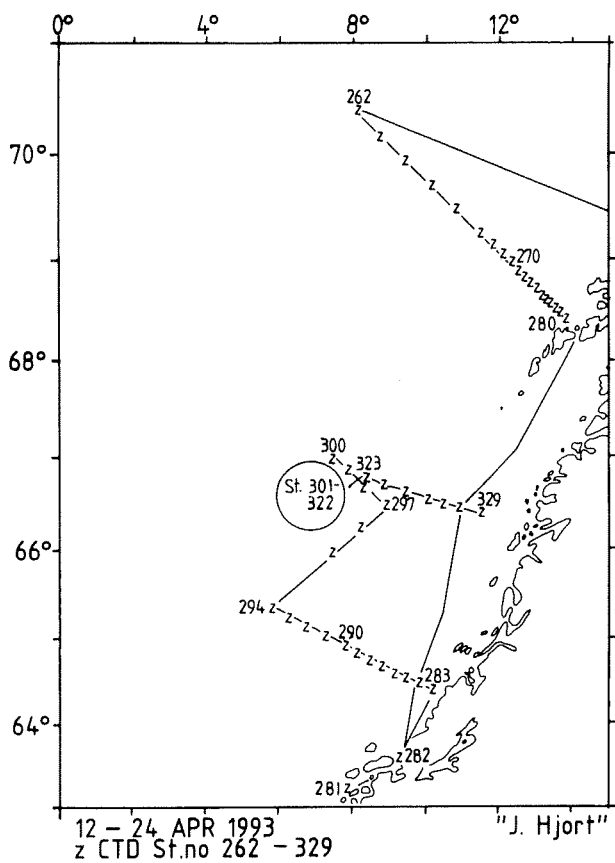


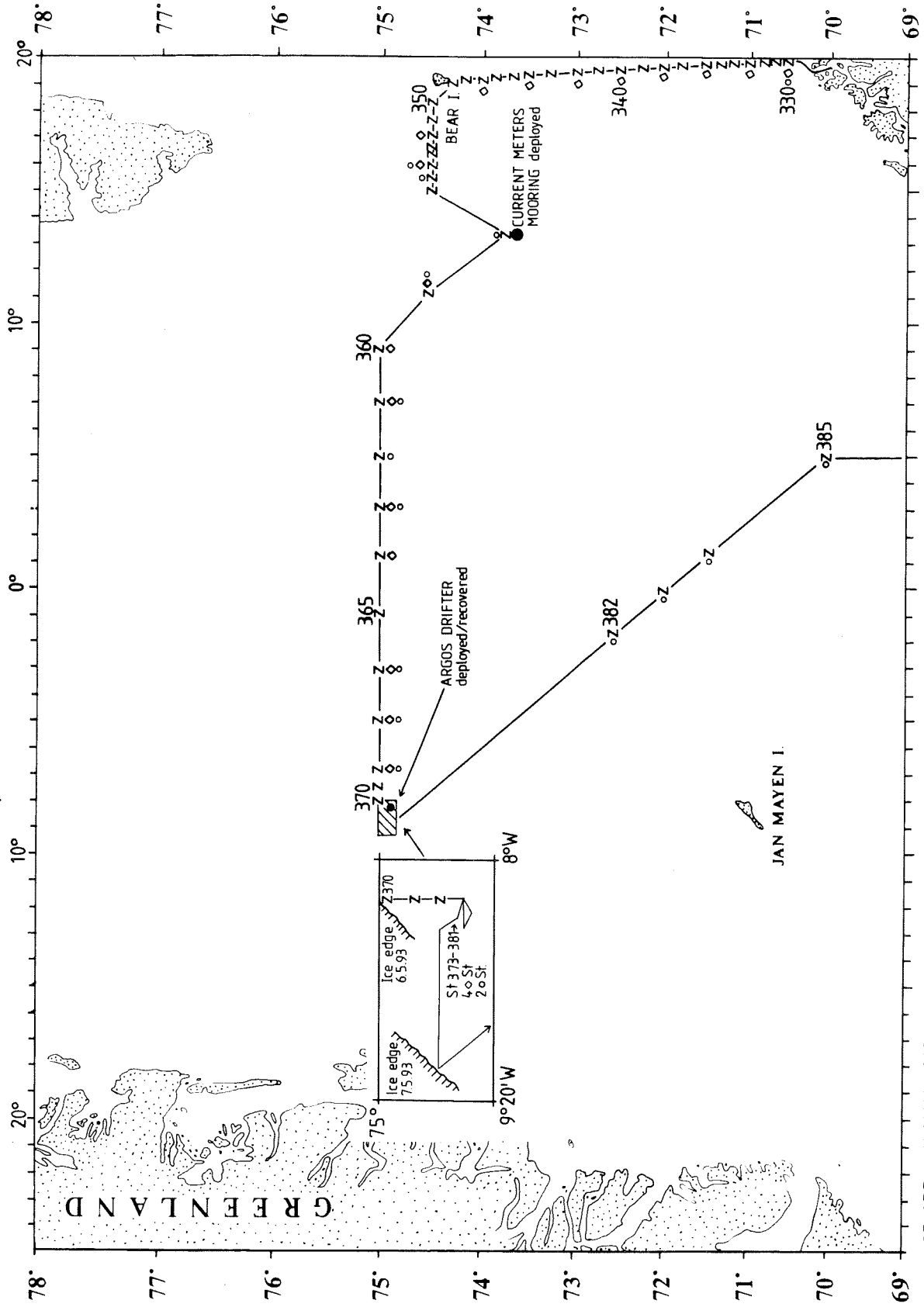












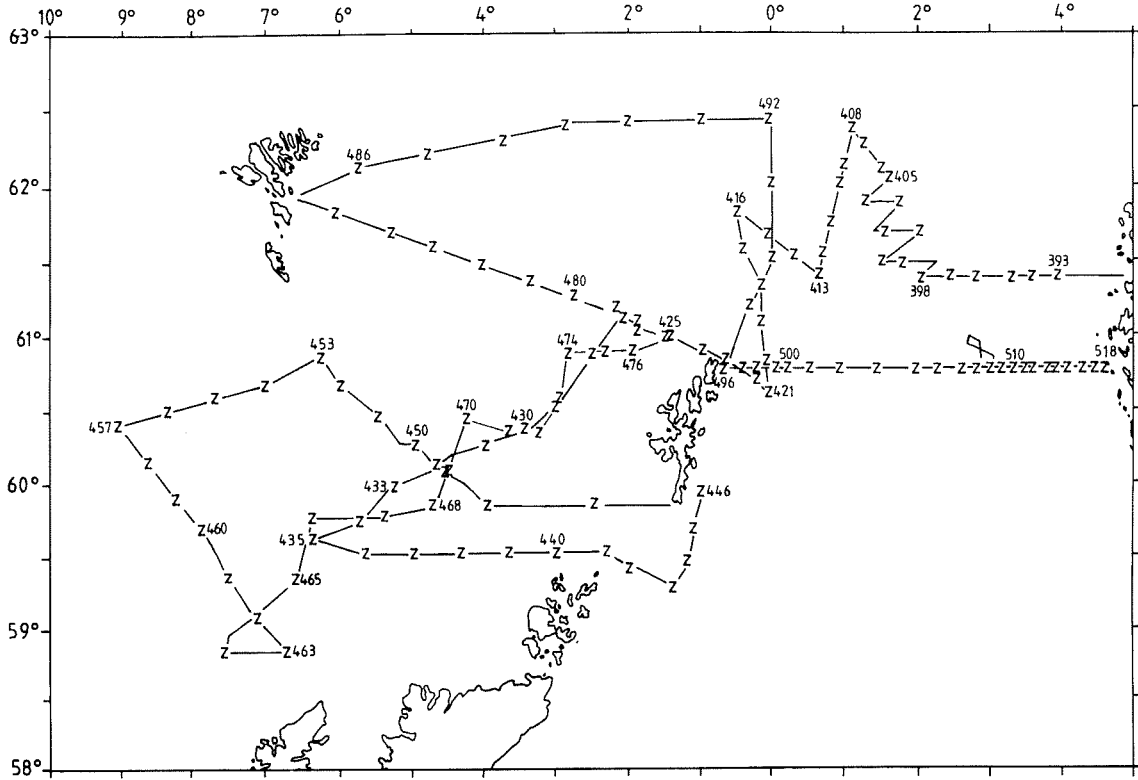
"JOHAN HJORT"

z CTD St.no 330 - 385

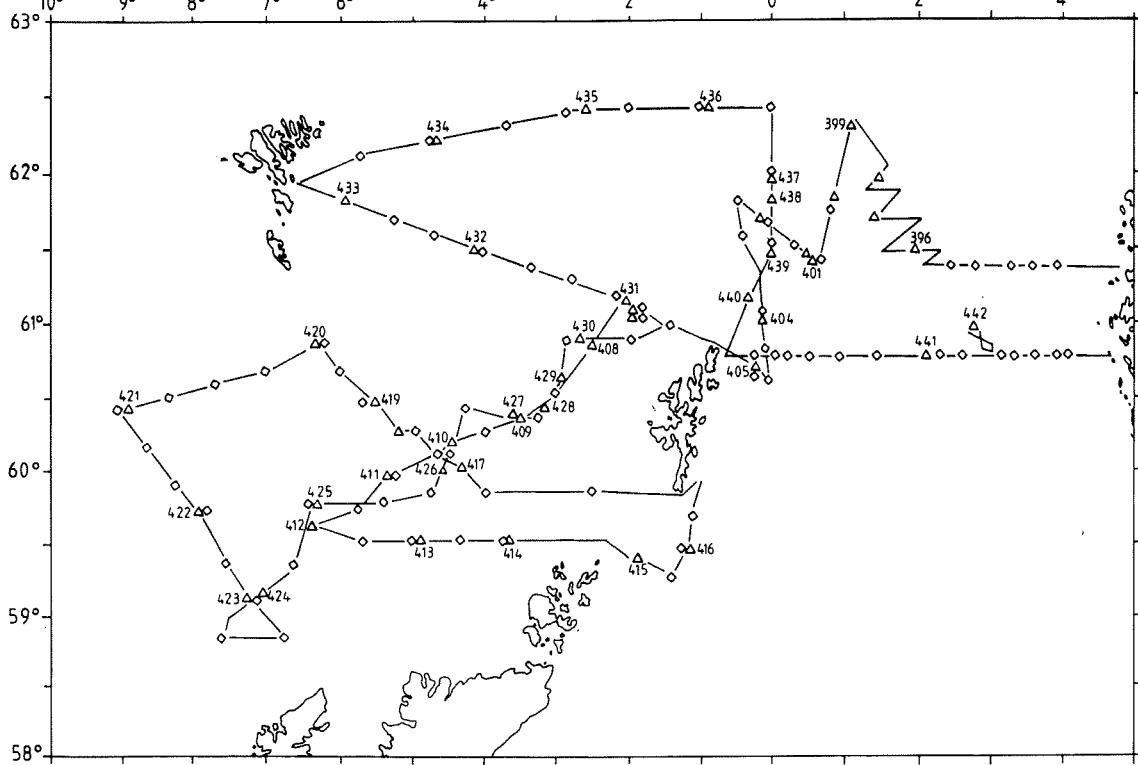
o PLANKTON St.

o OPTICAL PROBE

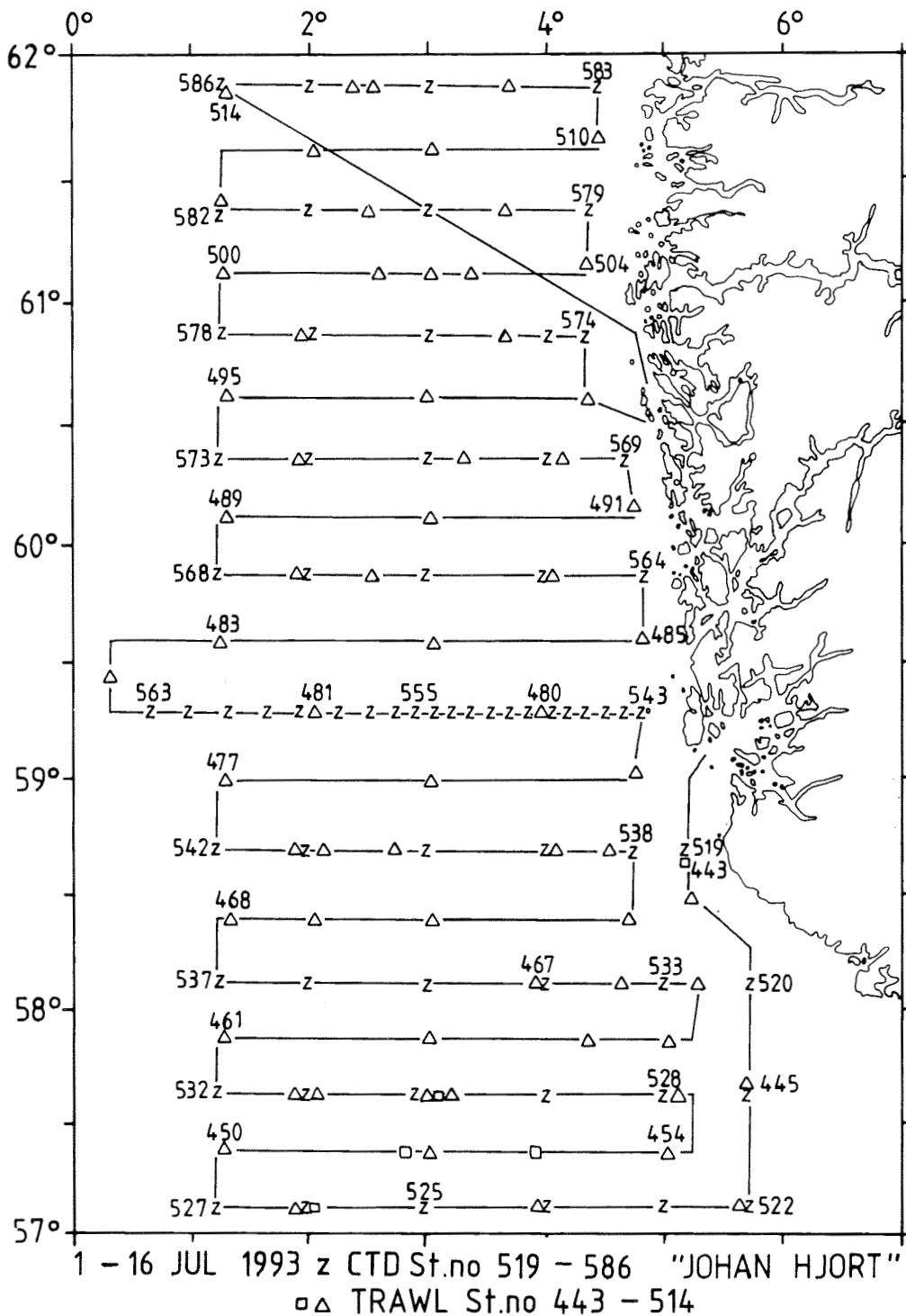
27 APR - 11 MAY 1993

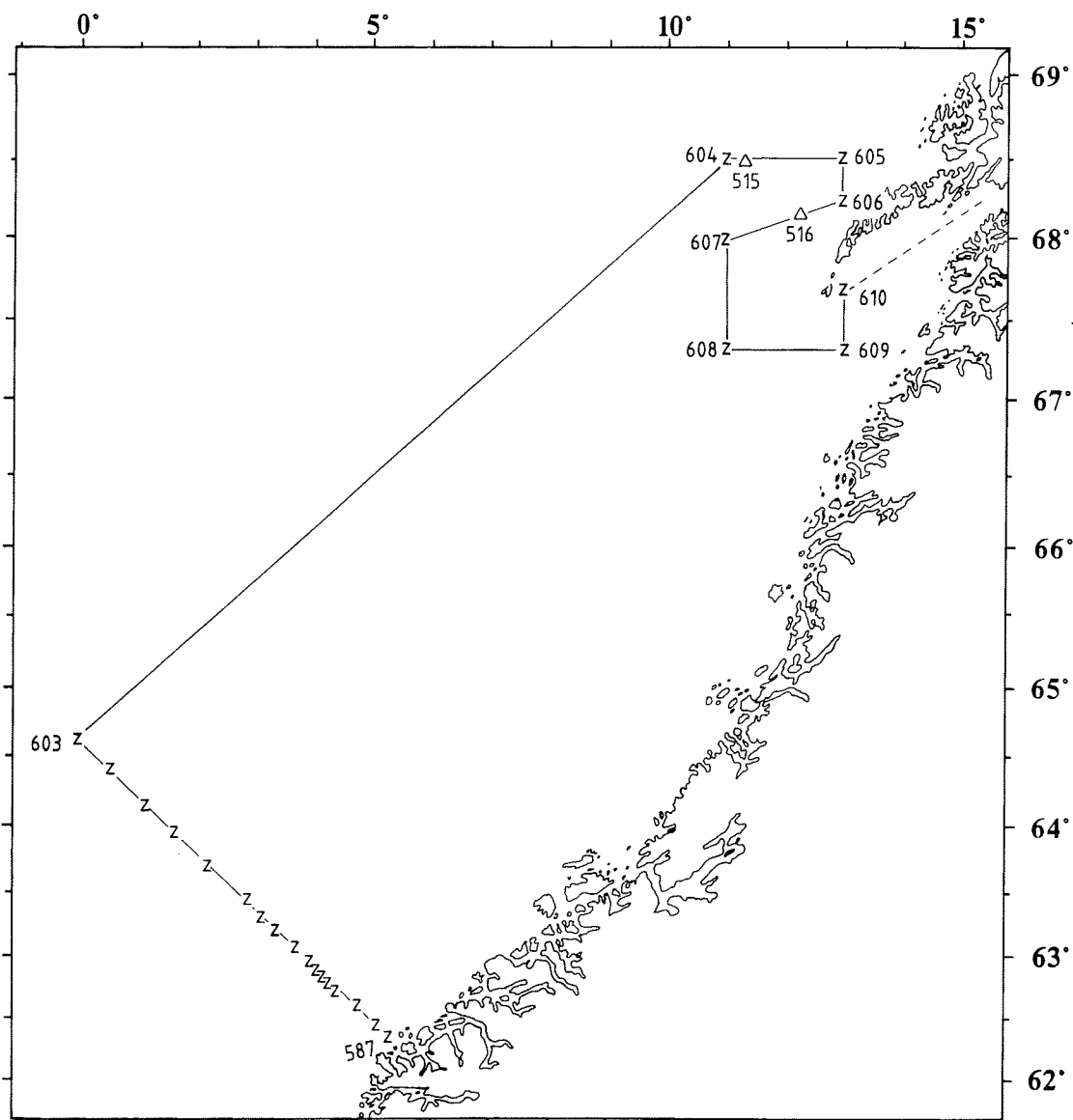


15 - 30 JUN 1993 z CTD St.no 393 - 518 "Johan Hjort"



15 - 30 JUN 1993 Δ TRAWL St.no 396 - 442 ◇ Eggs/larvae/plankton St. "Johan Hjort"





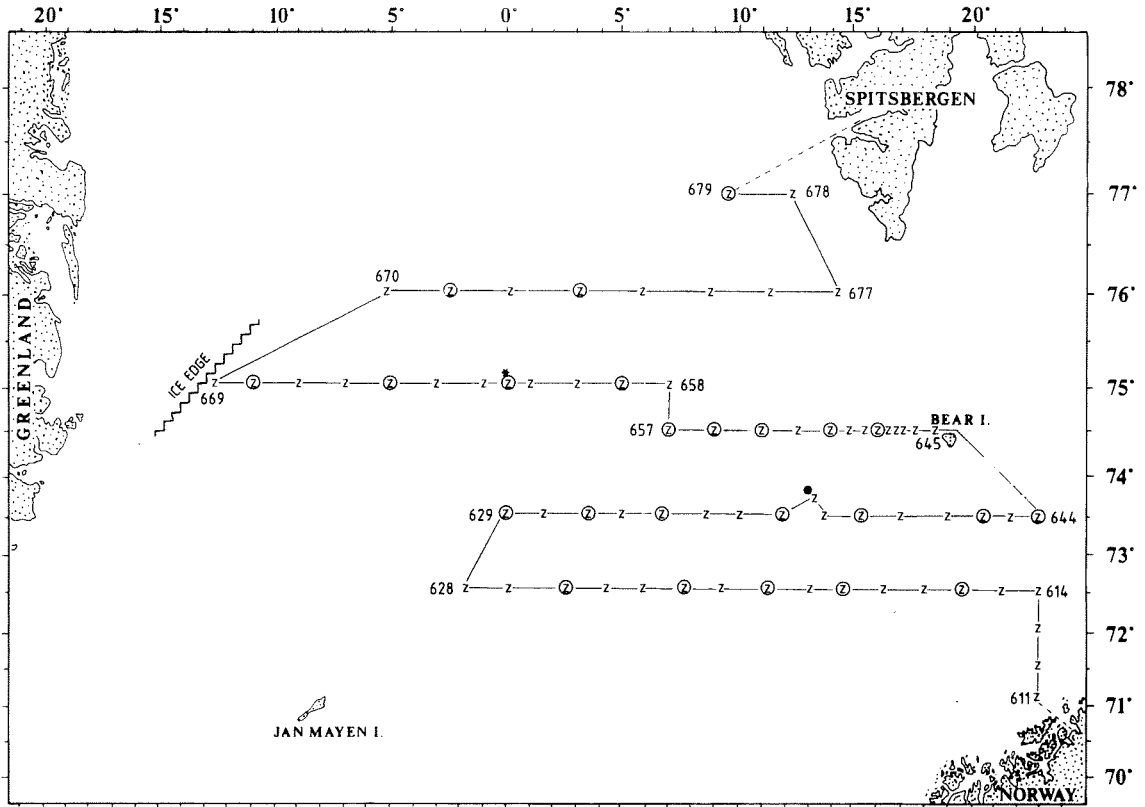
25 - 28 JULY 1993

PART I

z CTD St. no. 587 - 610

Δ TRAWL St. no. 515 - 516

JOHAN HJORT



29 JULY - 15 AUGUST 1993

z CTD St. no 611 - 679

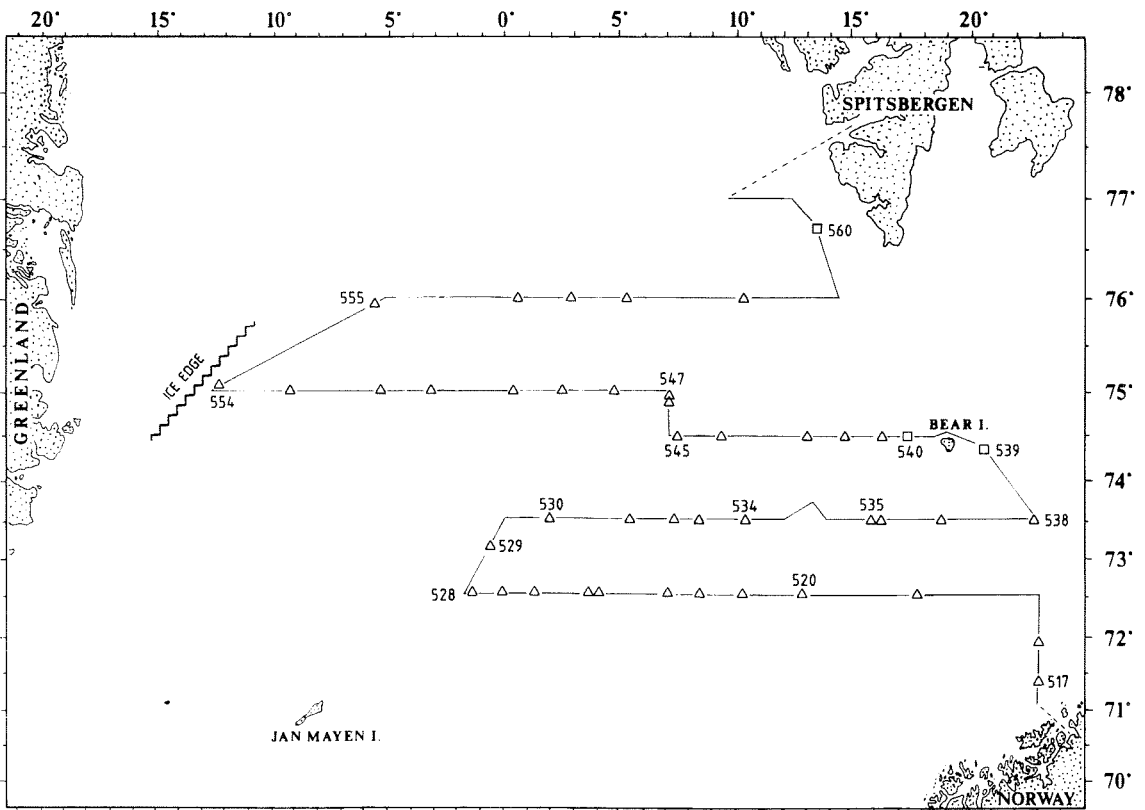
JOHAN HJORT

PART II

○ Plankton sampling

\* SEDIMENT-TRAP MOORING (deployed)

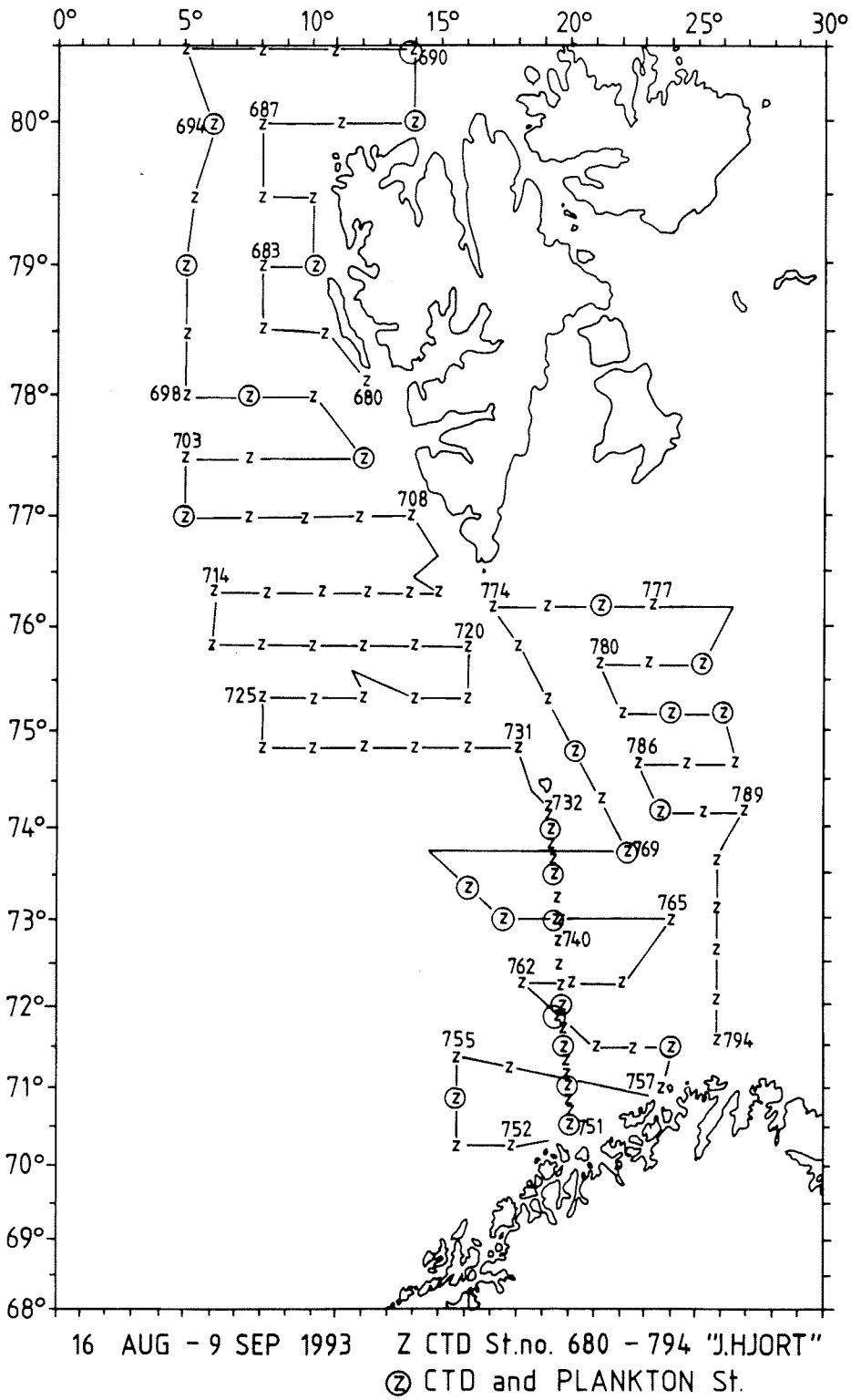
● CURRENT-METER MOORING (recovered)

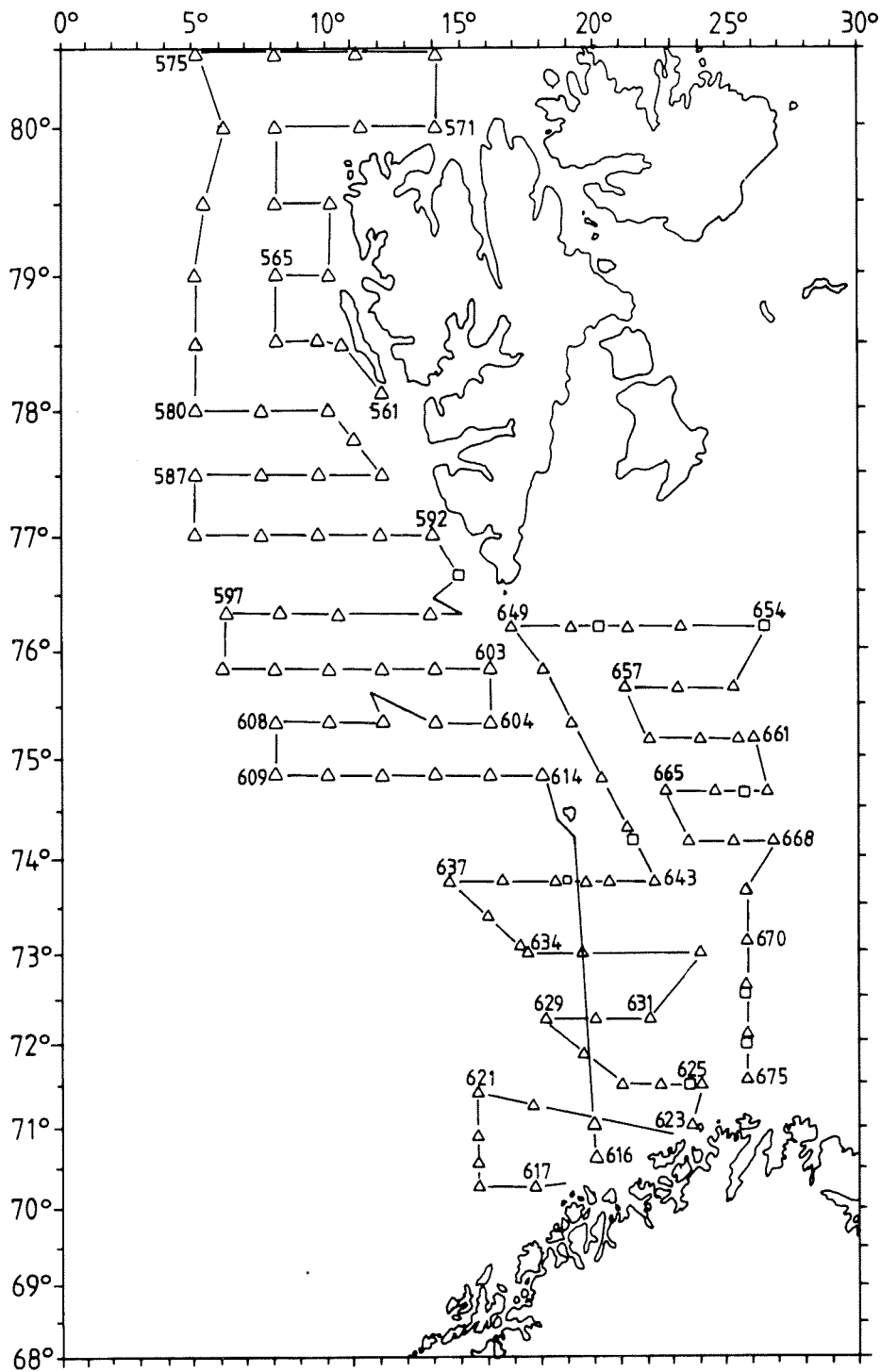


29 JULY - 15 AUGUST 1993

△ TRAWL St. no. 517 - 560

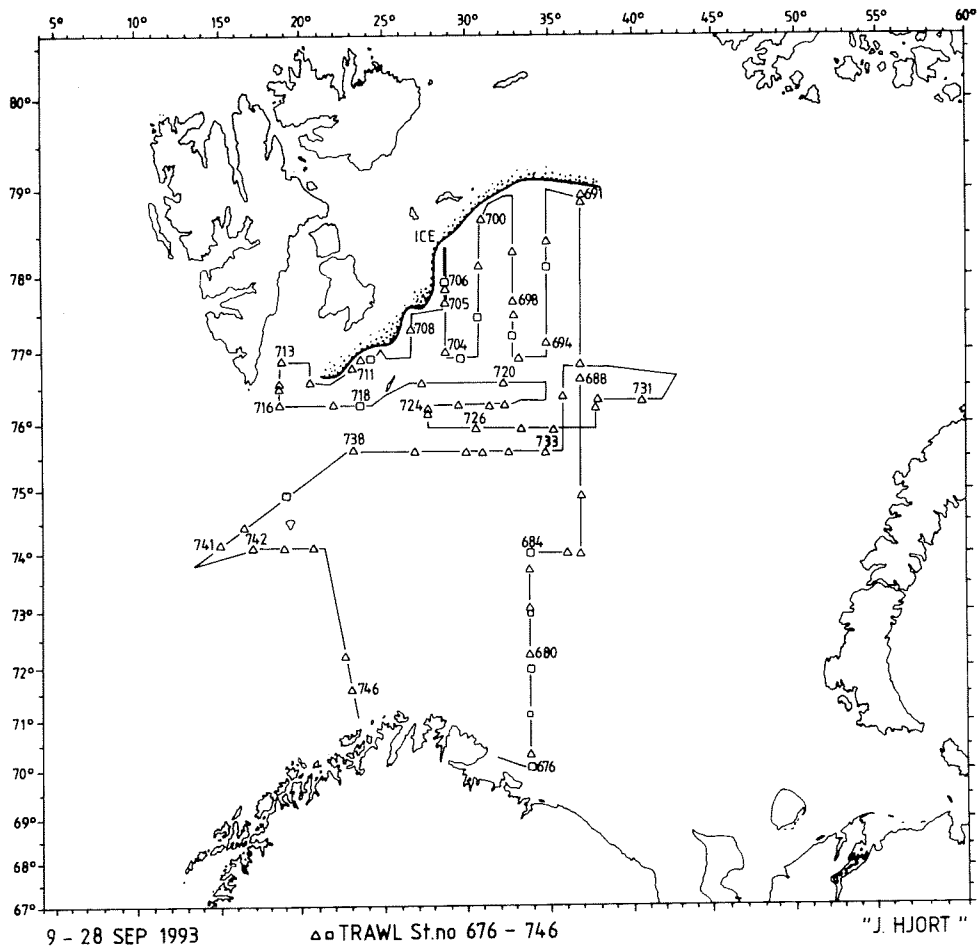
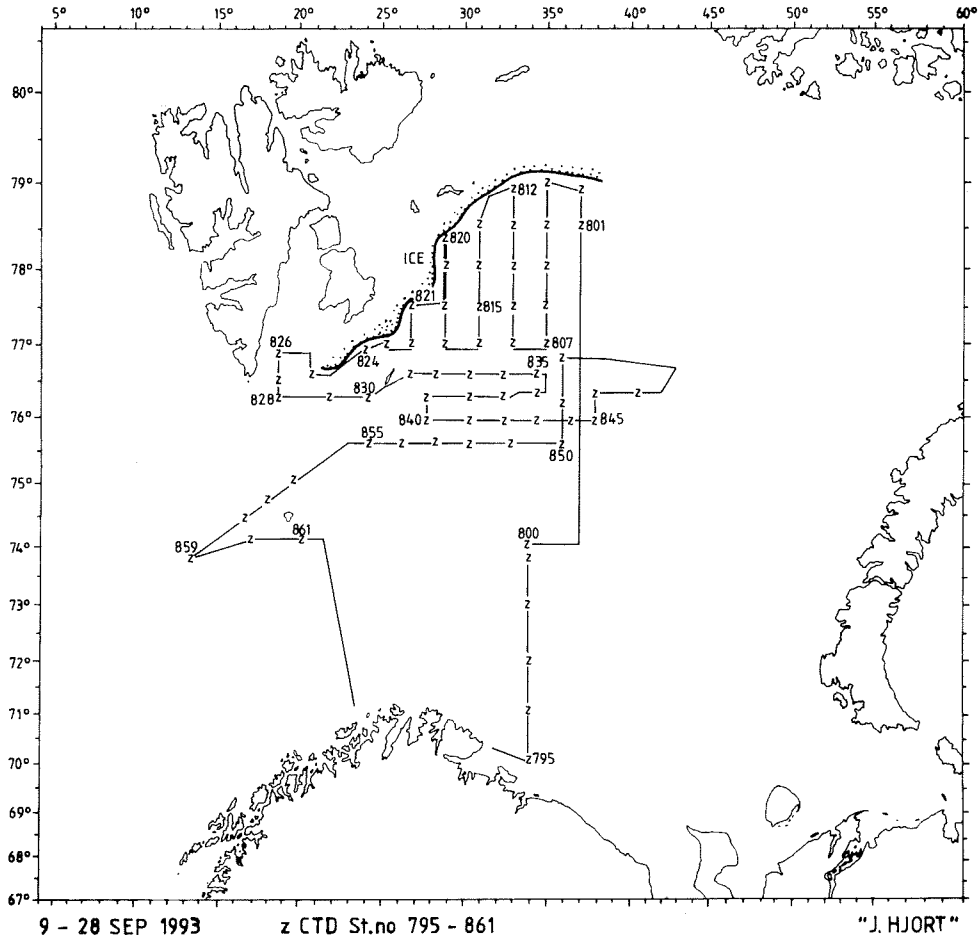
JOHAN HJORT

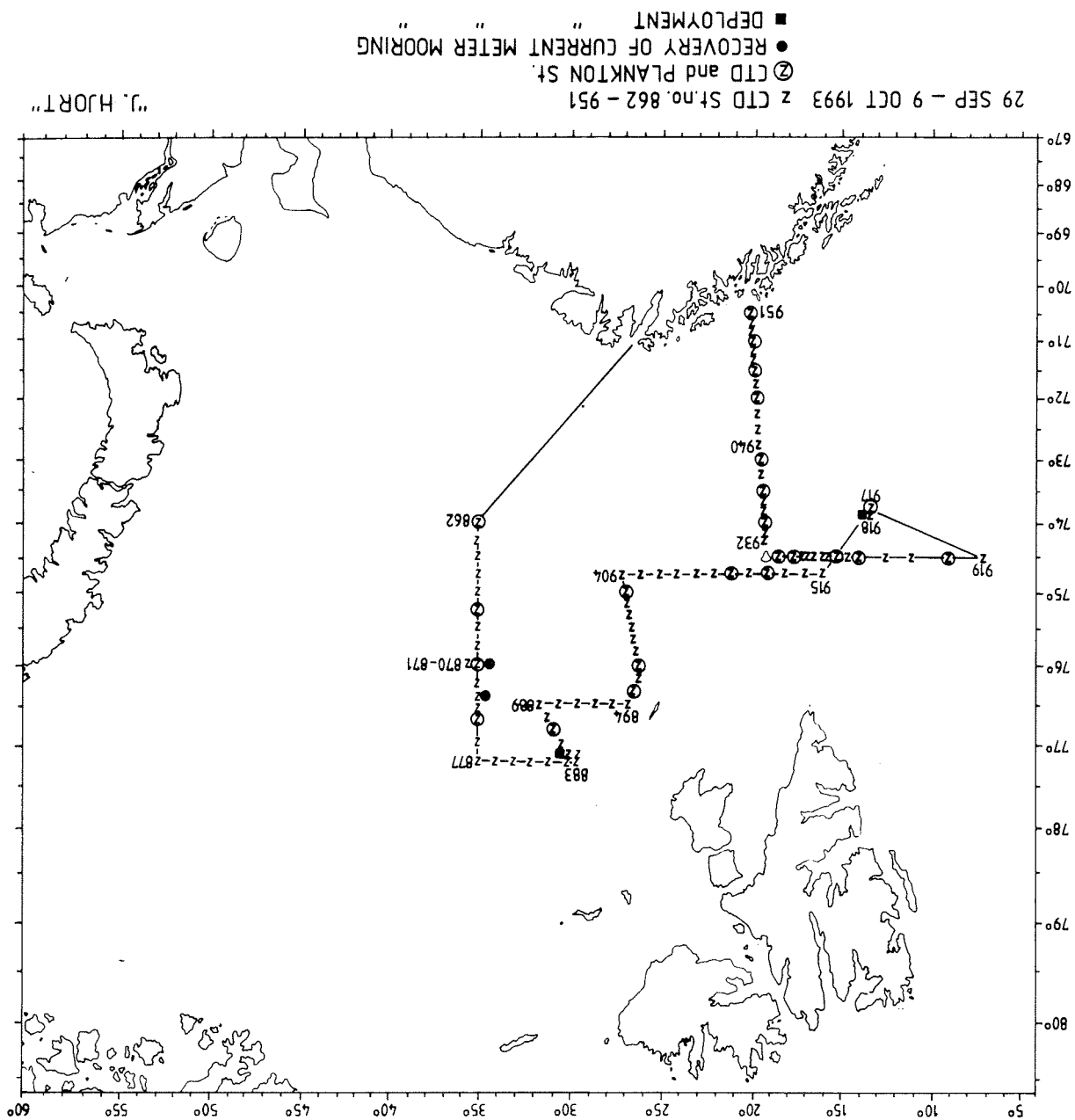


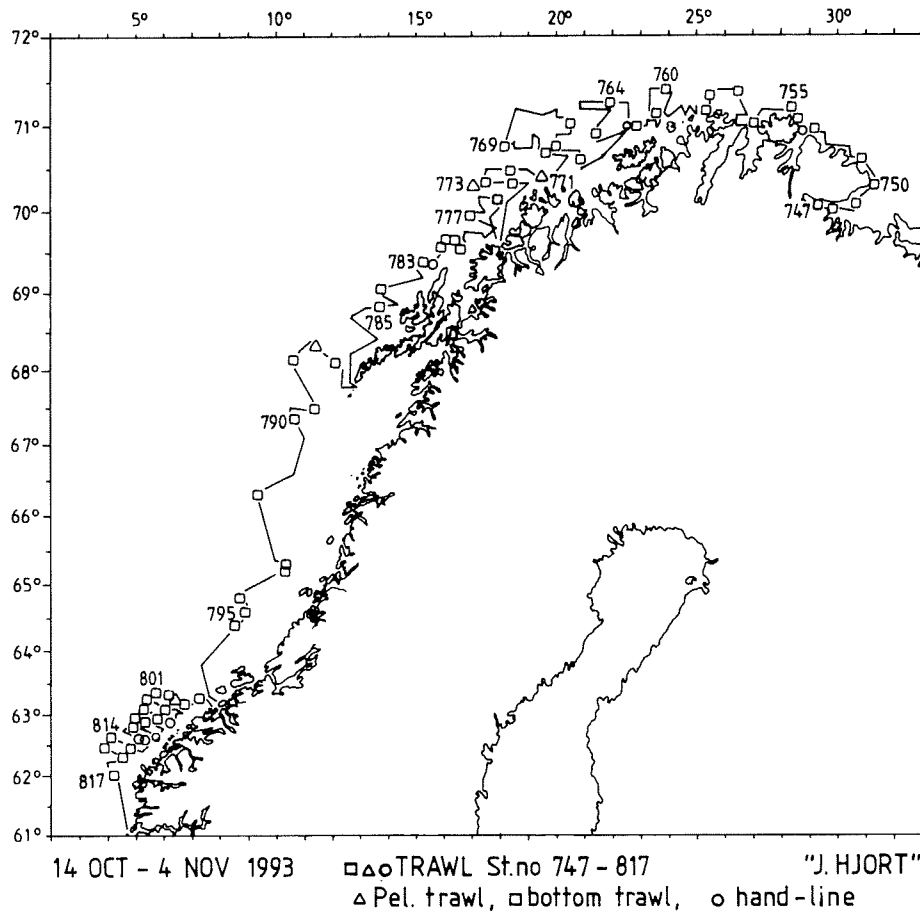
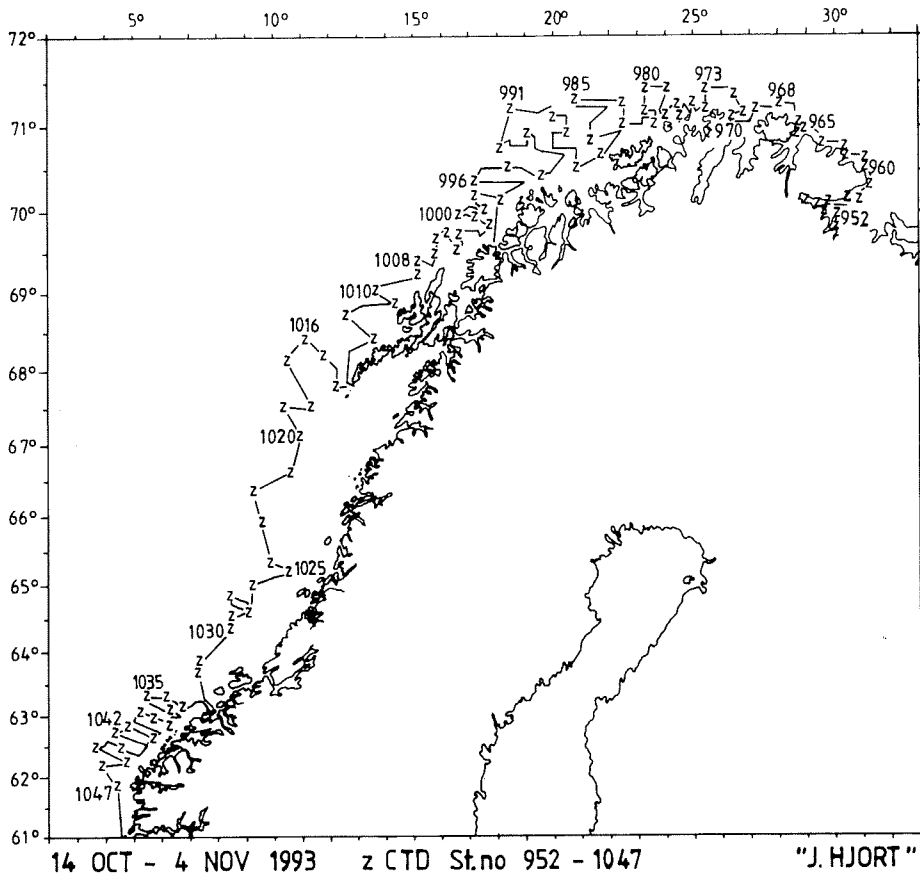


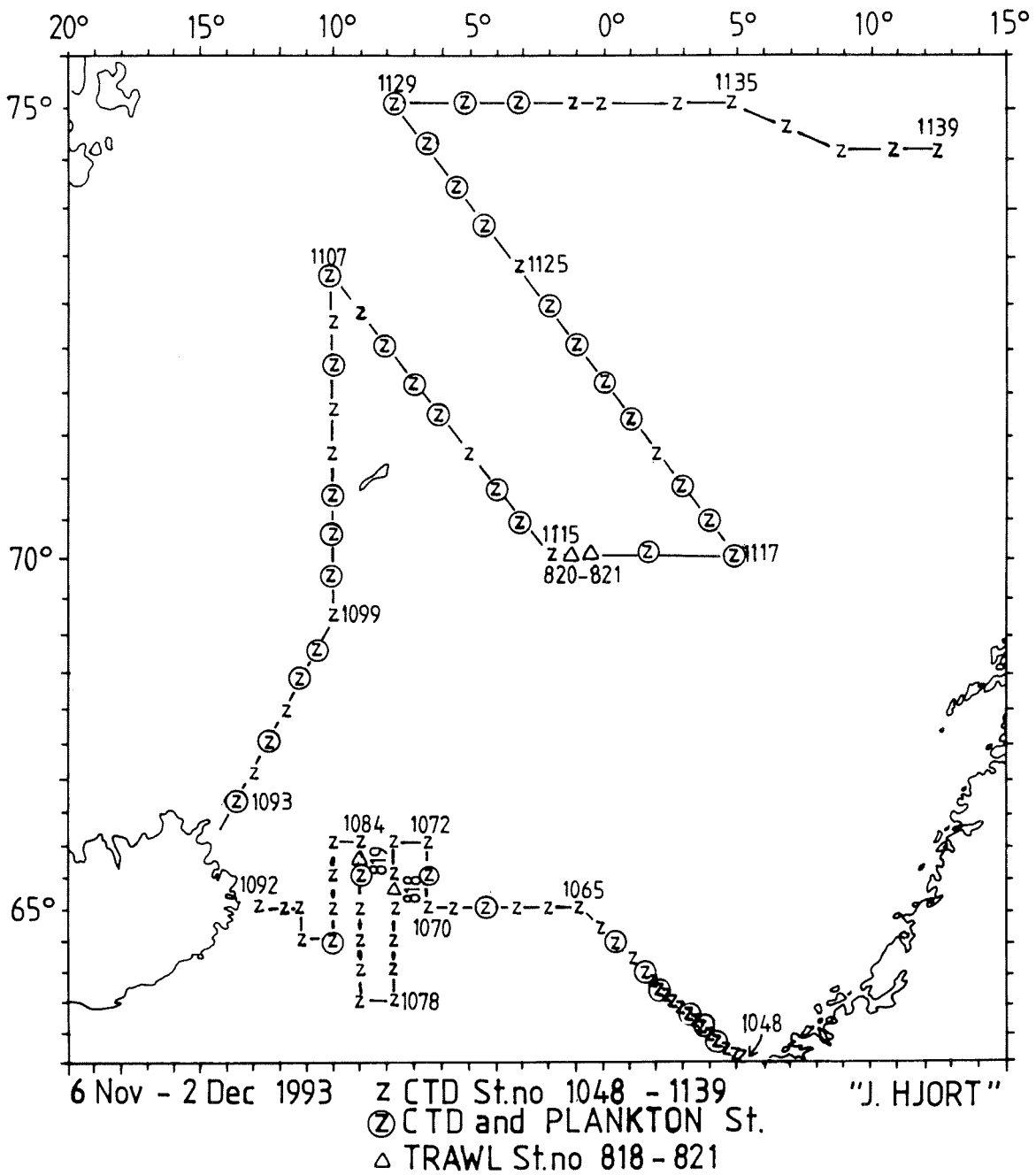
16 AUG - 9 SEP 1993    □△ TRAWL St.no 561 - 675    "J. HJORT"

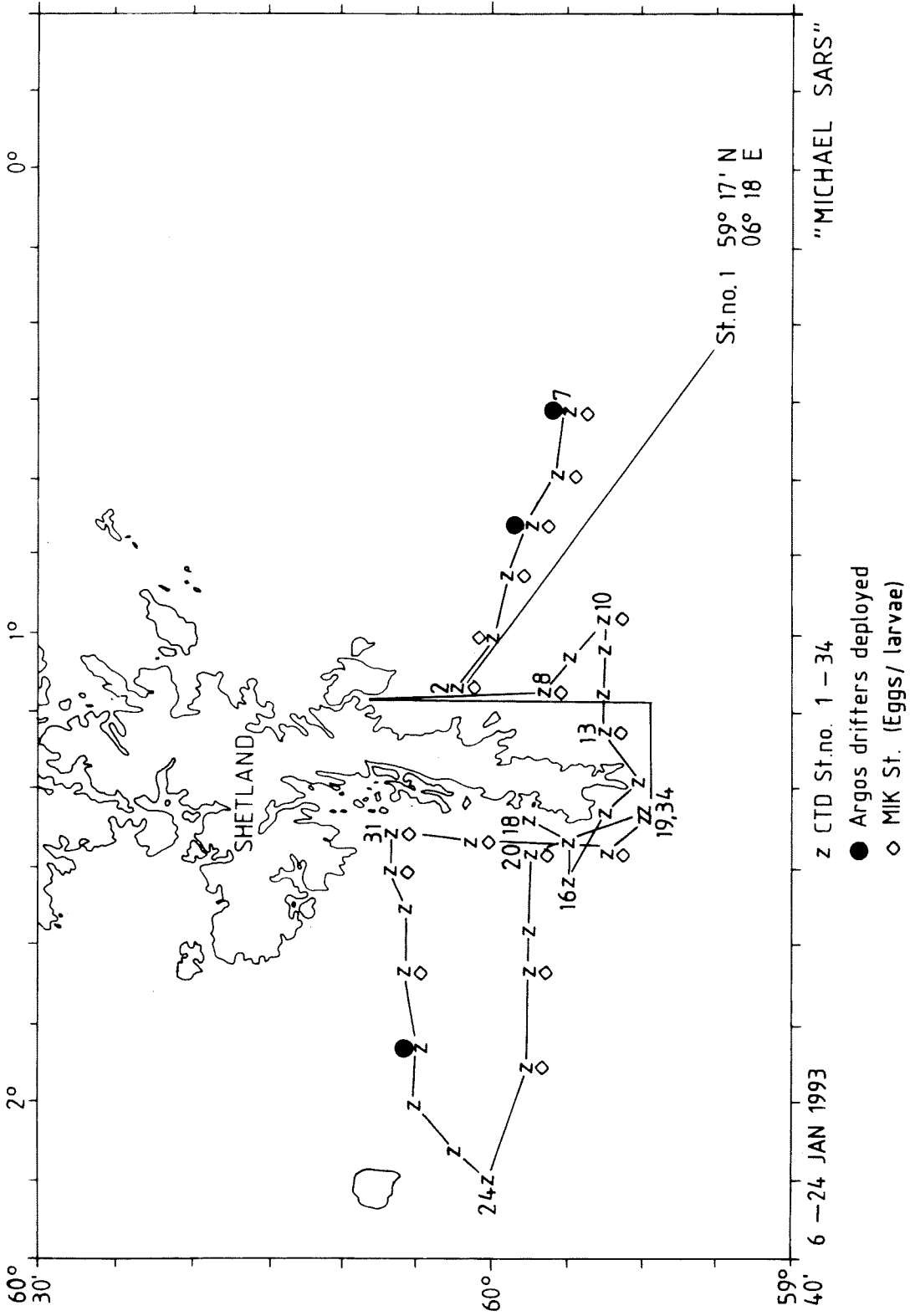




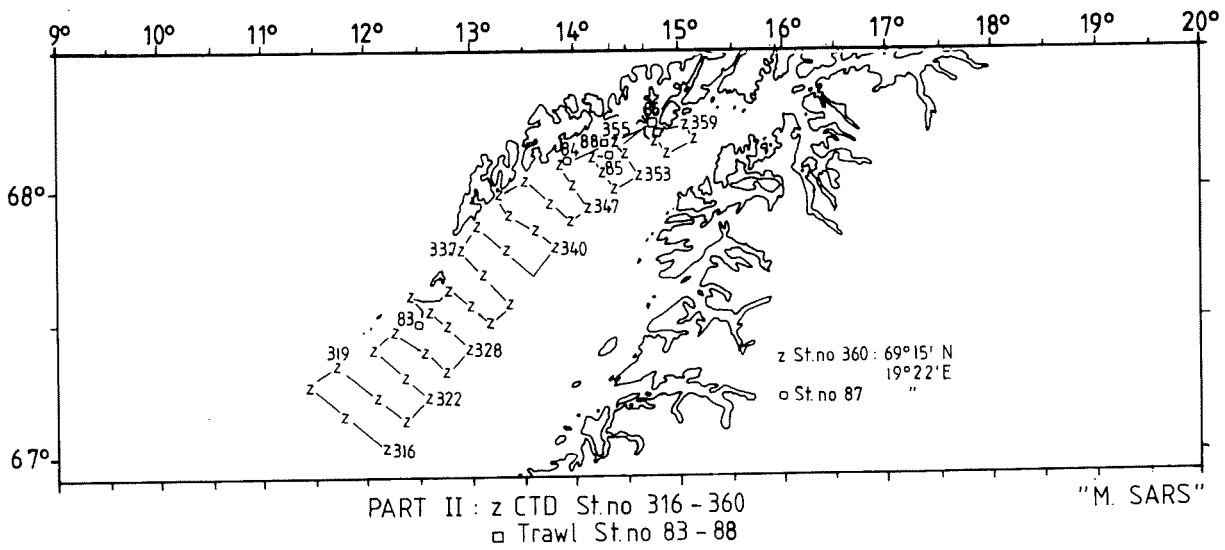
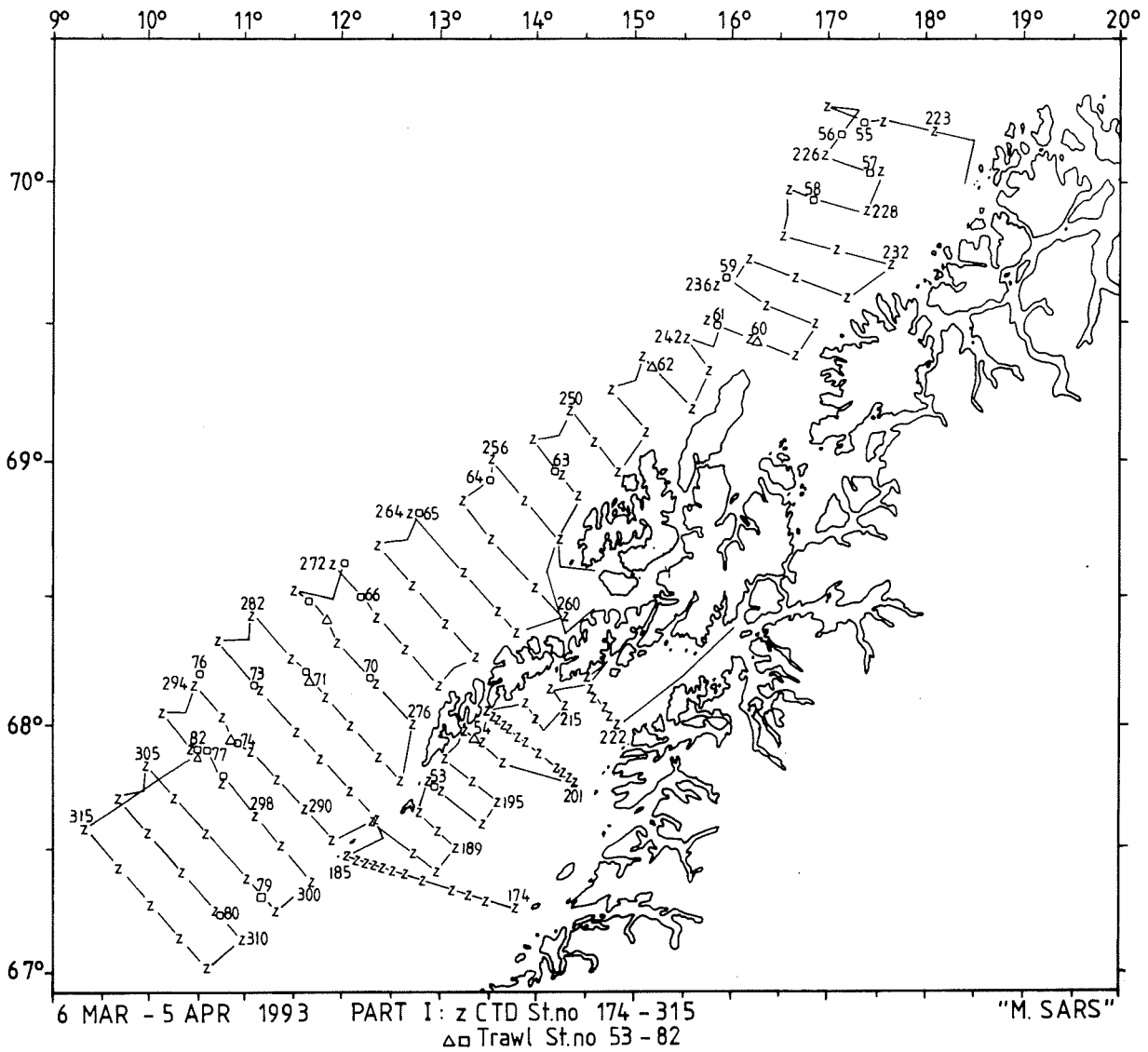


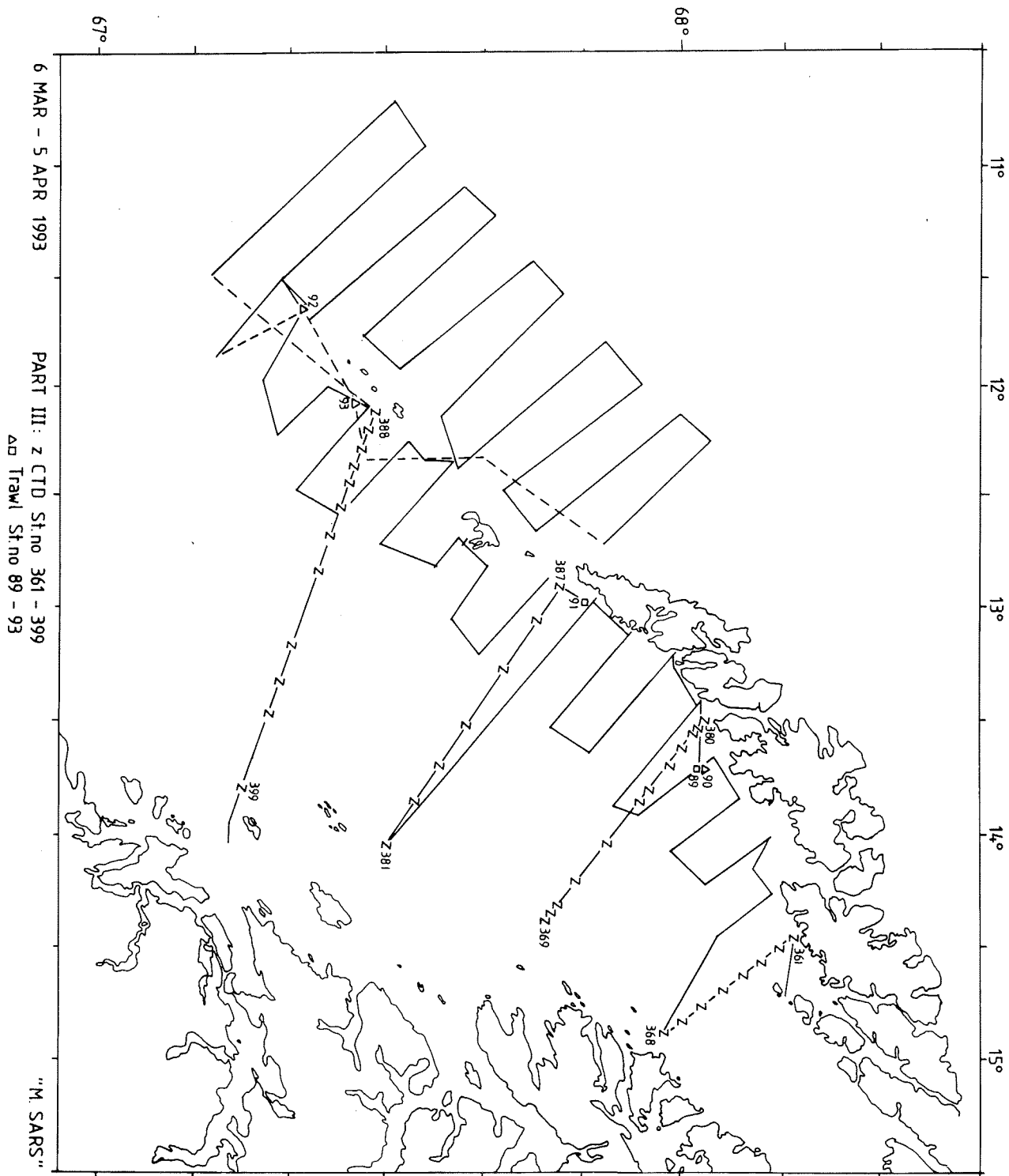




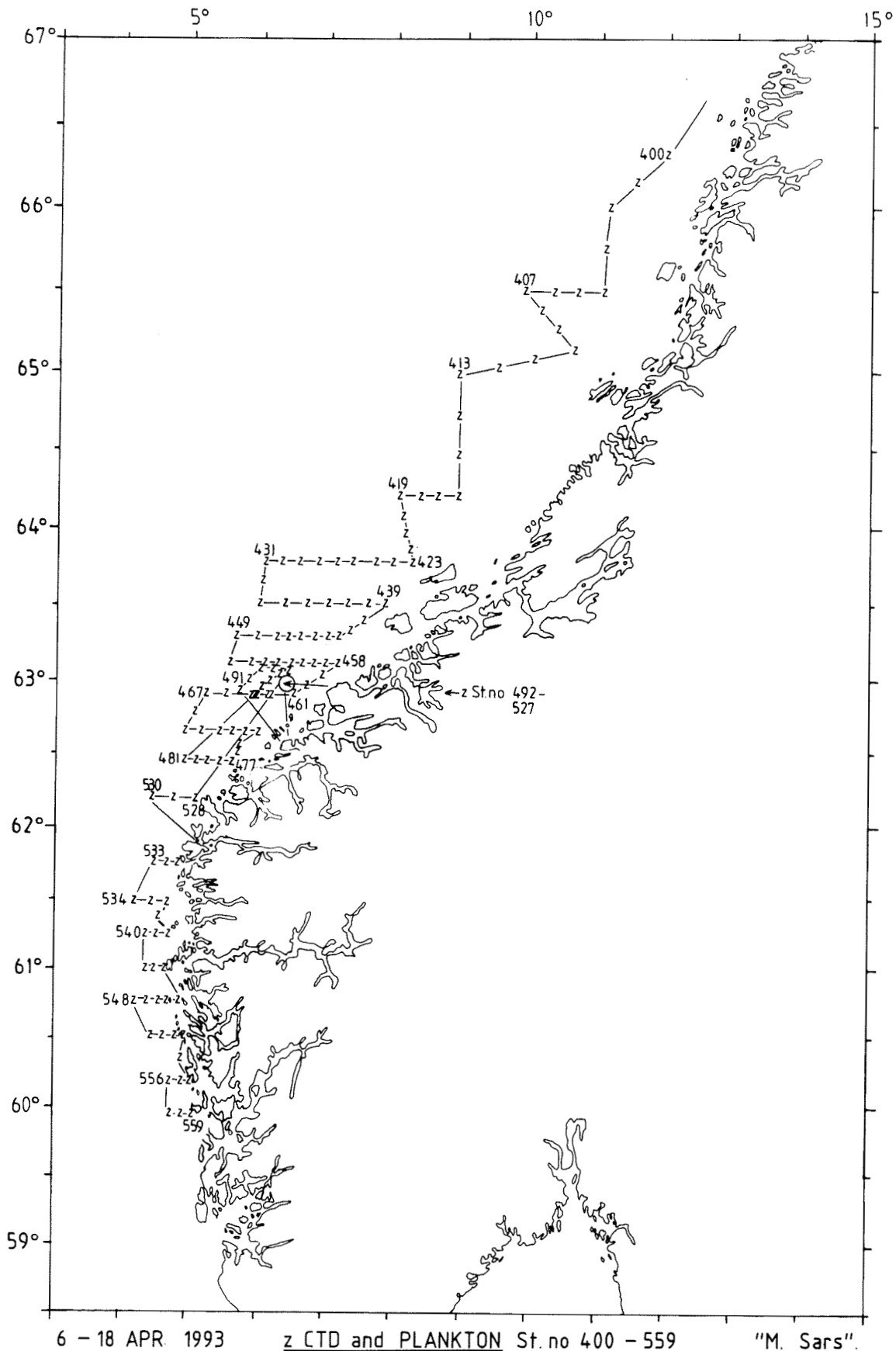


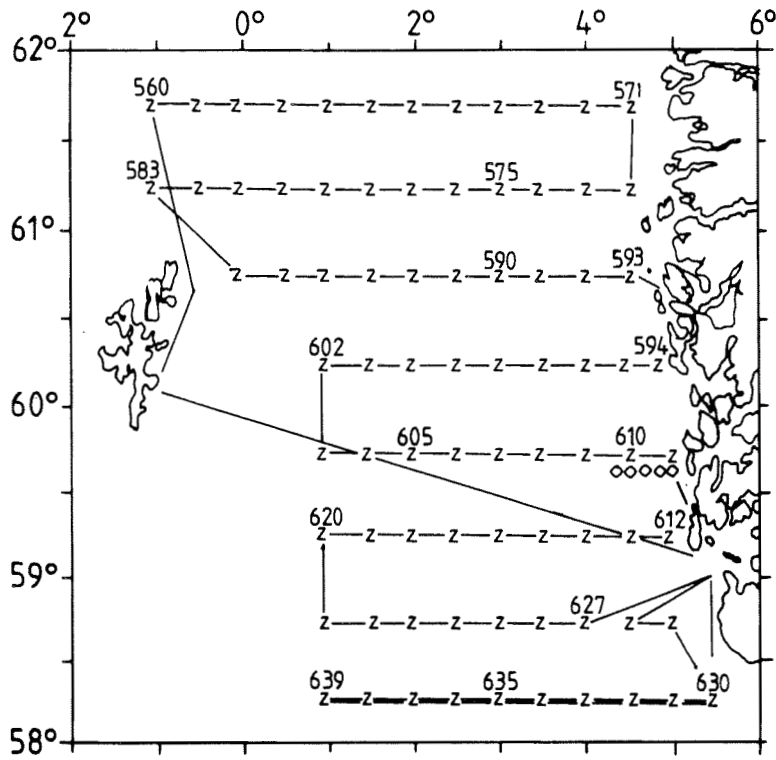




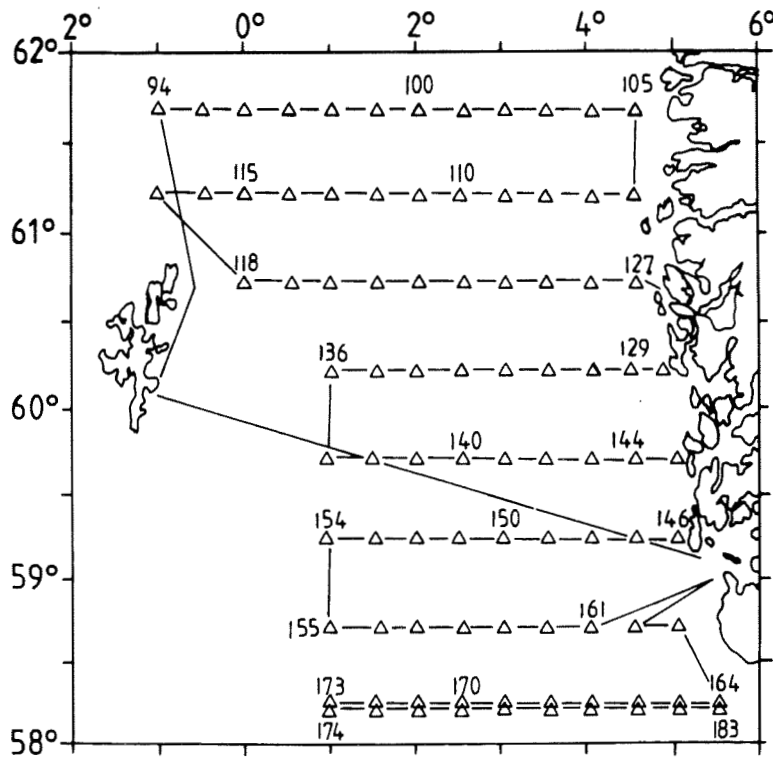




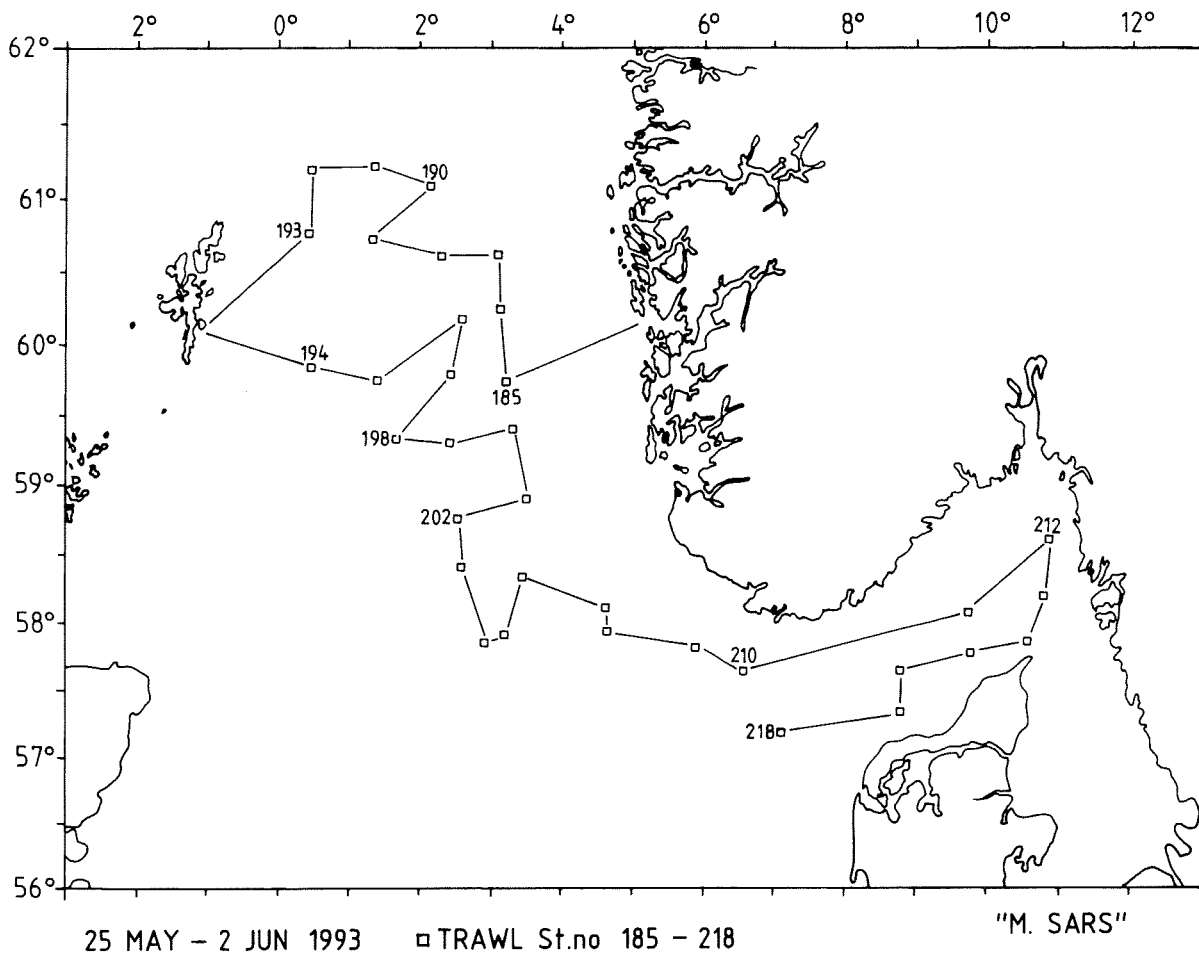


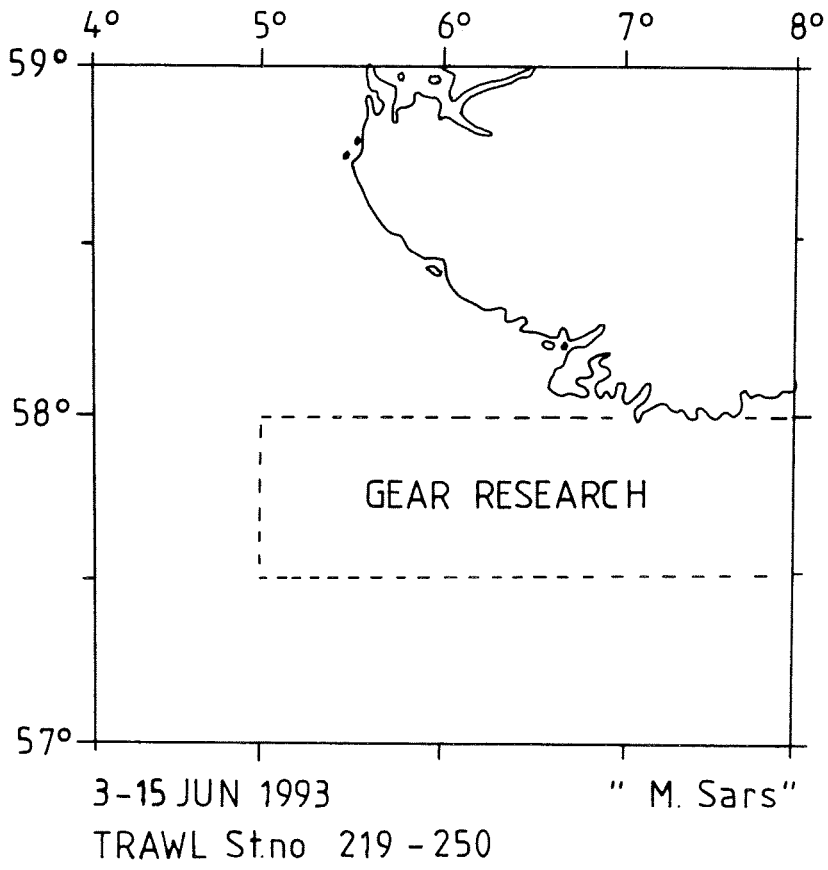


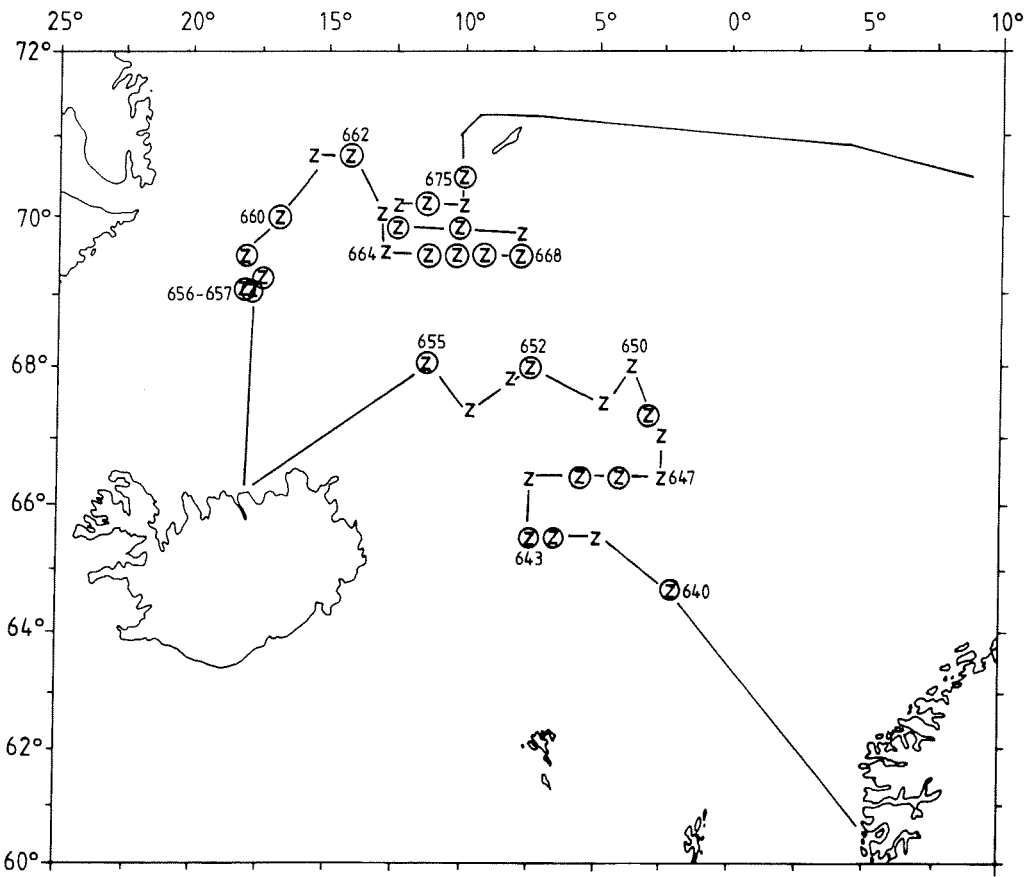
20 APR - 6 MAY 1993 "M. SARS"  
 z CTD St.no 560 - 639  
 o PLANKTON St.



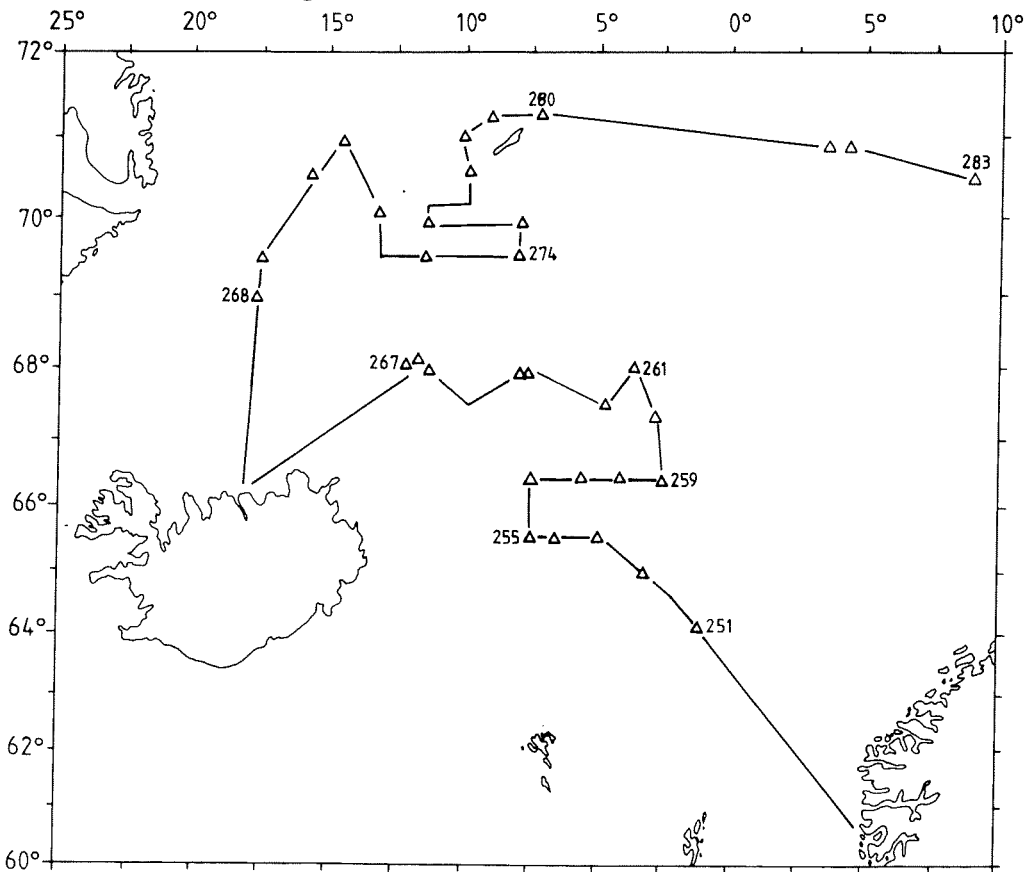
20 APR - 6 MAY 1993 "M. SARS"  
 Δ TRAWL St.no 94 - 183



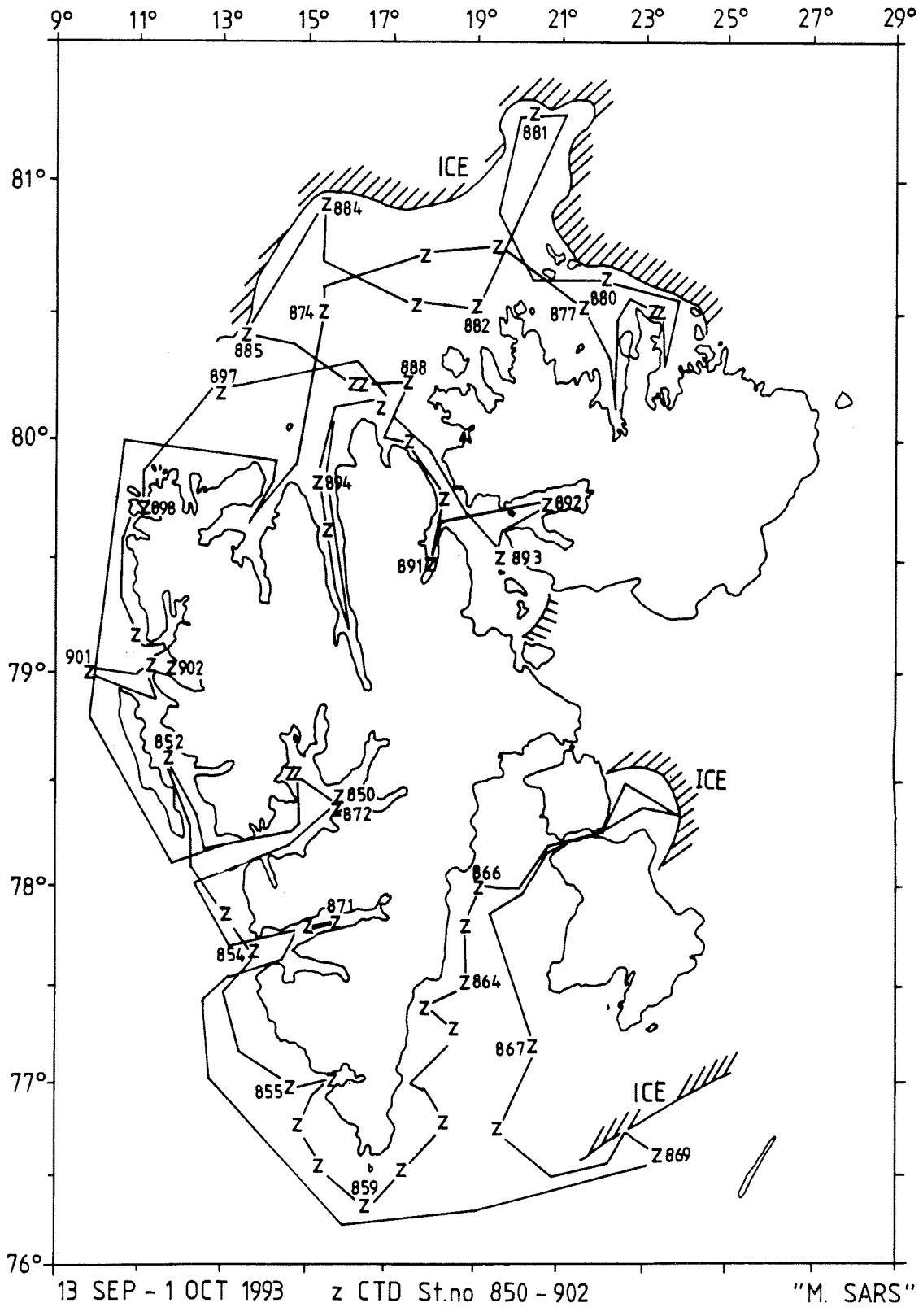


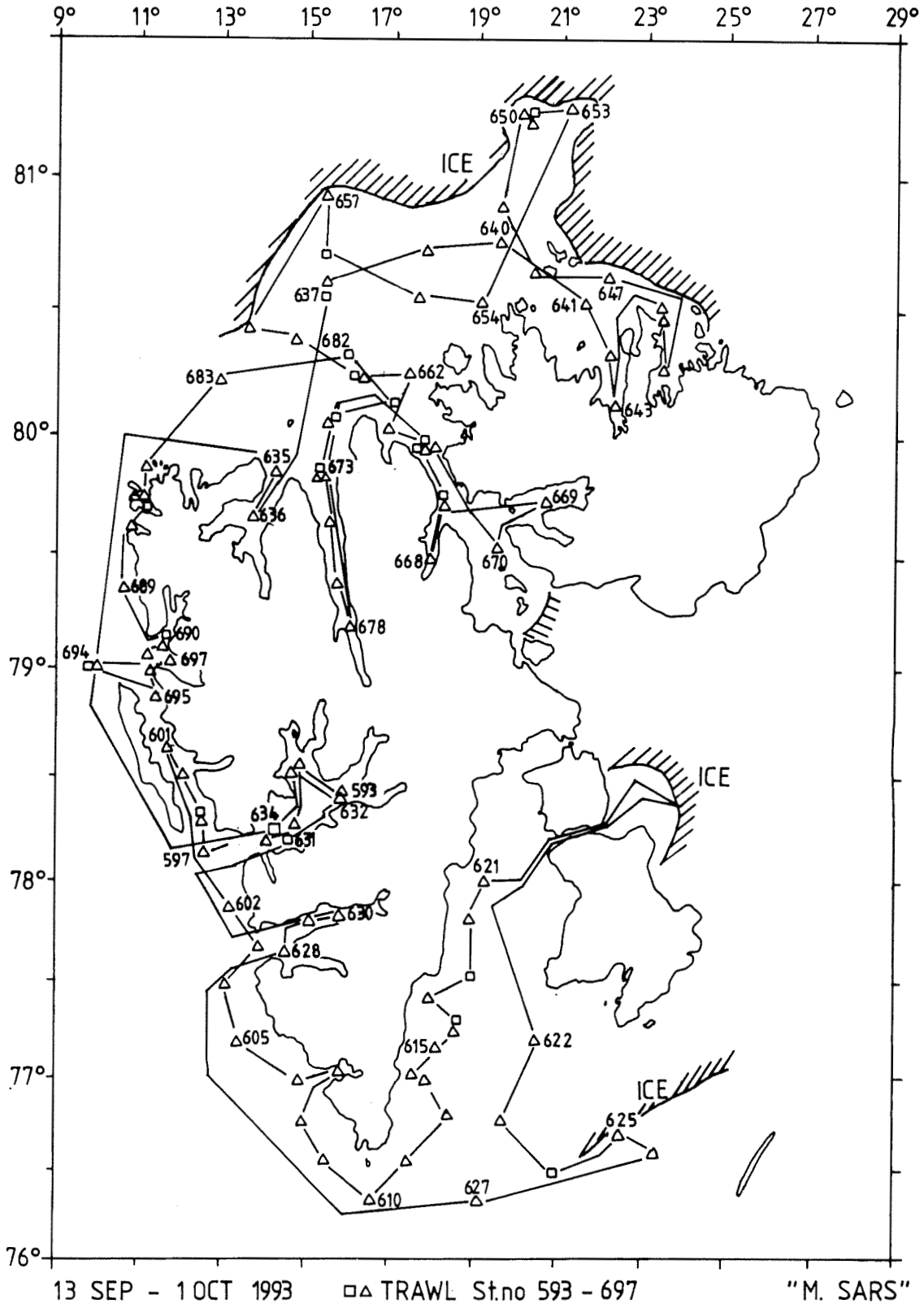


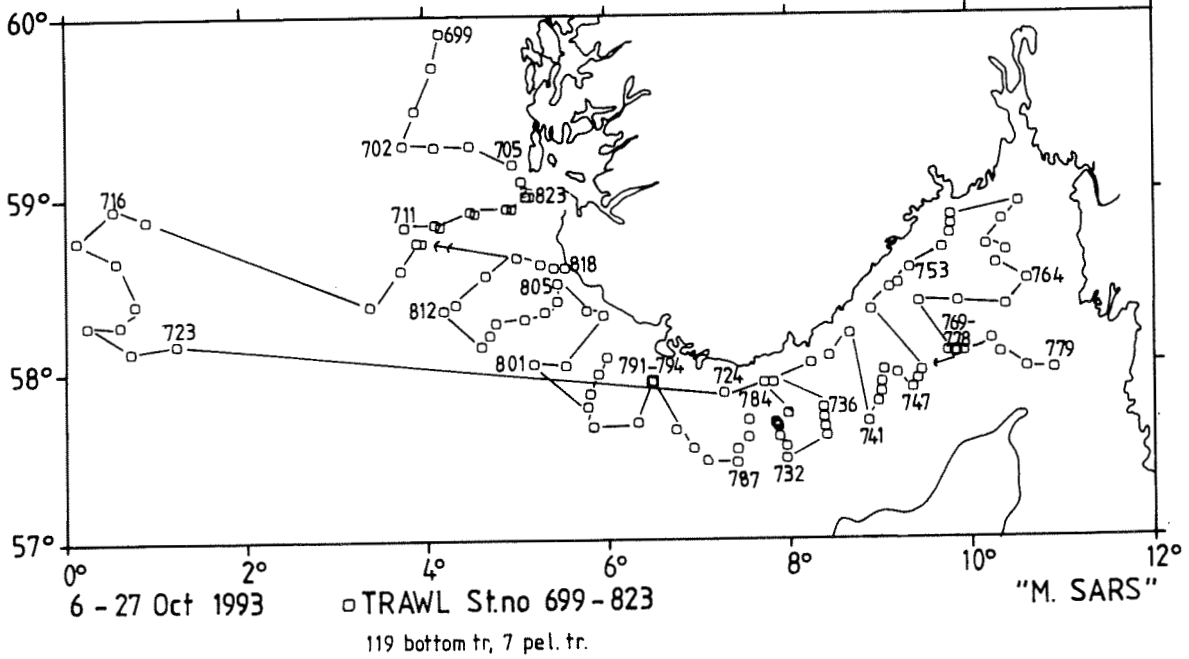
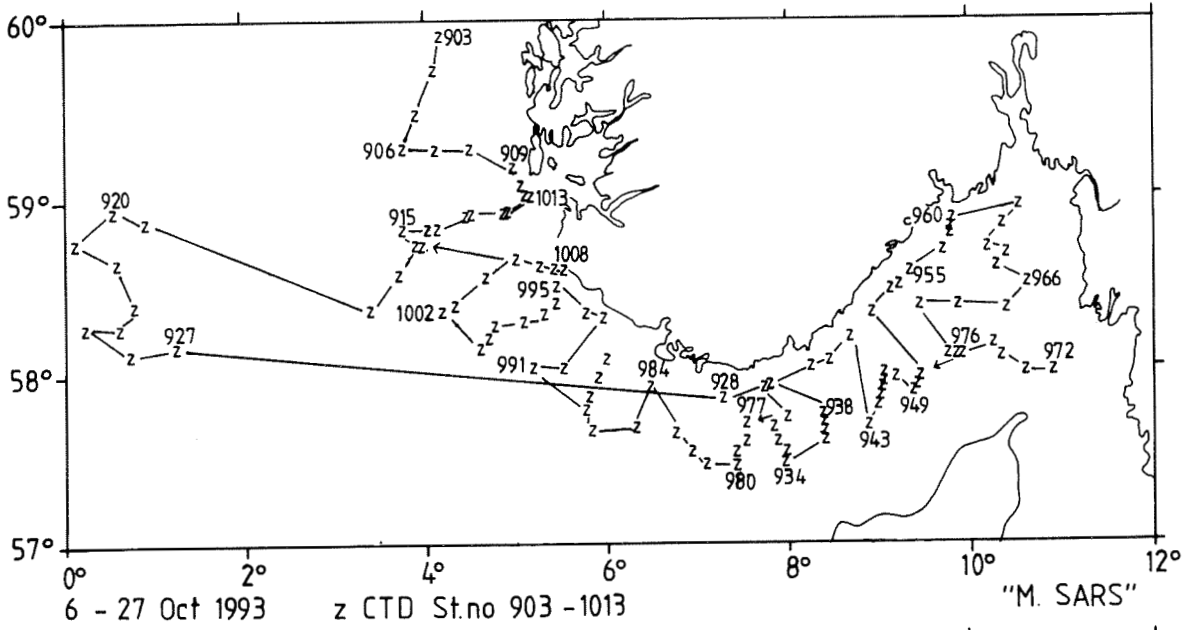
9 - 31 JUL 1993 z CTD St.no. 640 - 675 "M. SARS"  
 Ⓢ CTD and PLANKTON St.



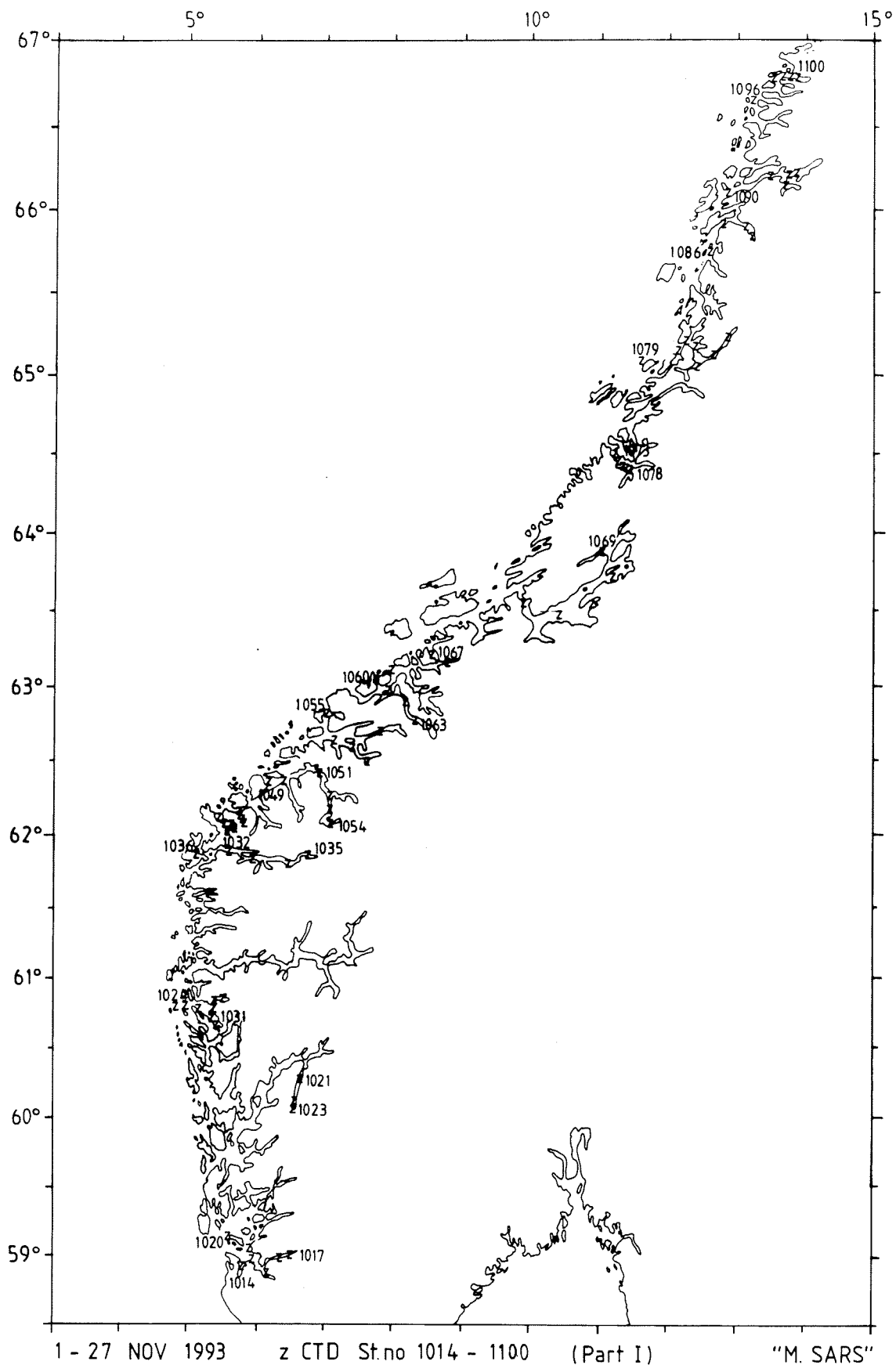
9 - 31 JUL 1993 Δ TRAWL St.no 251 - 283 "M. SARS"

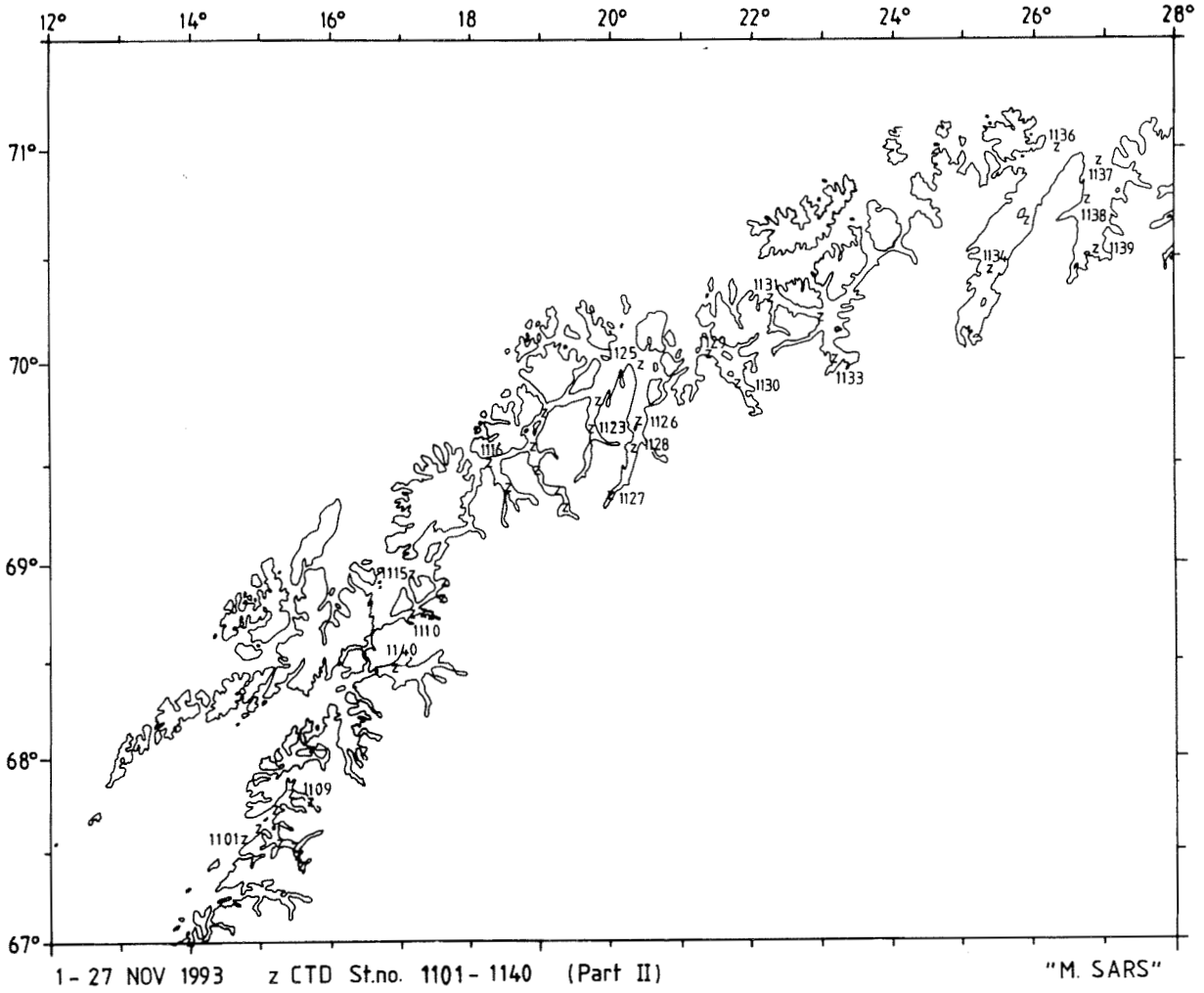


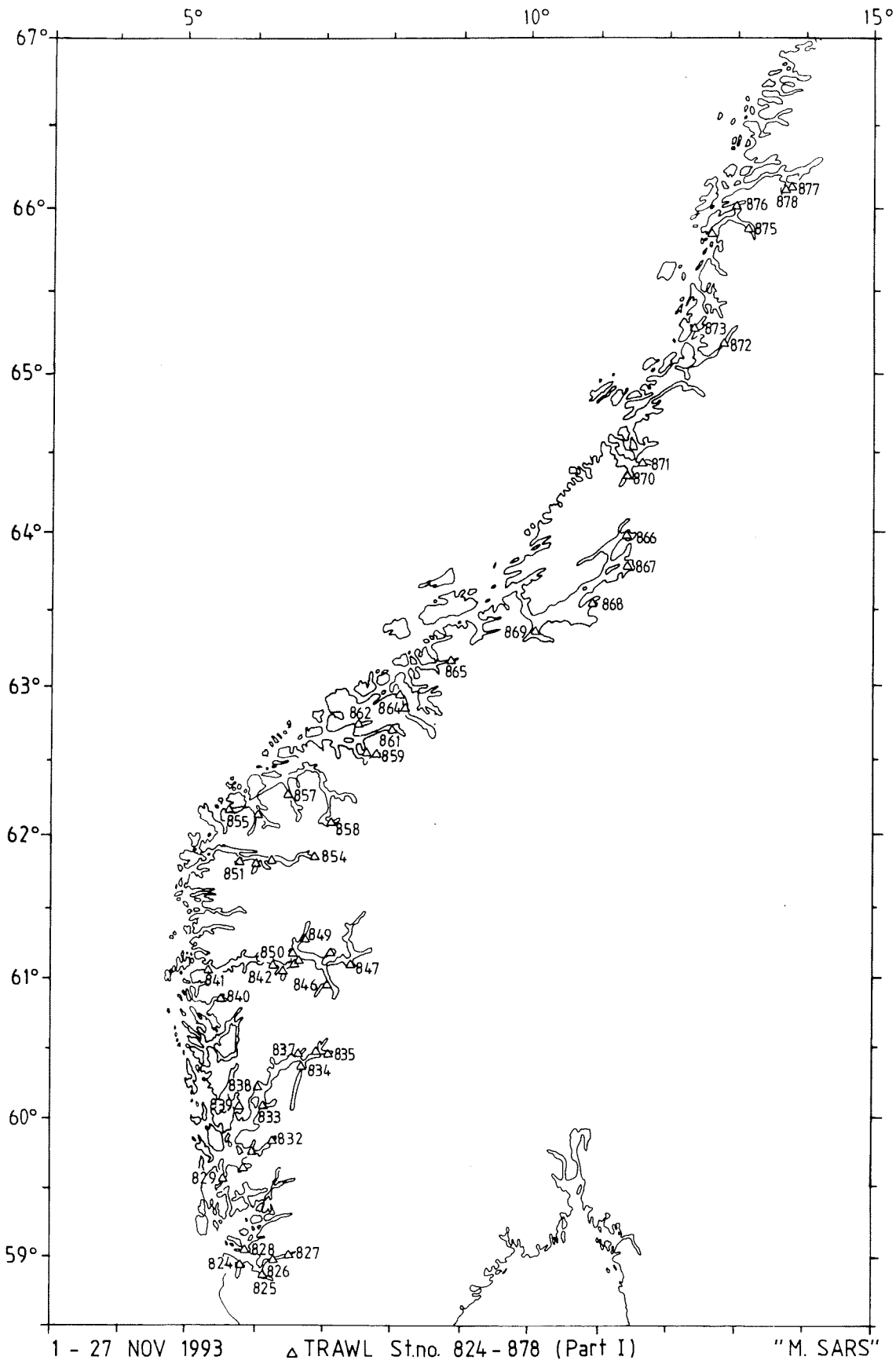


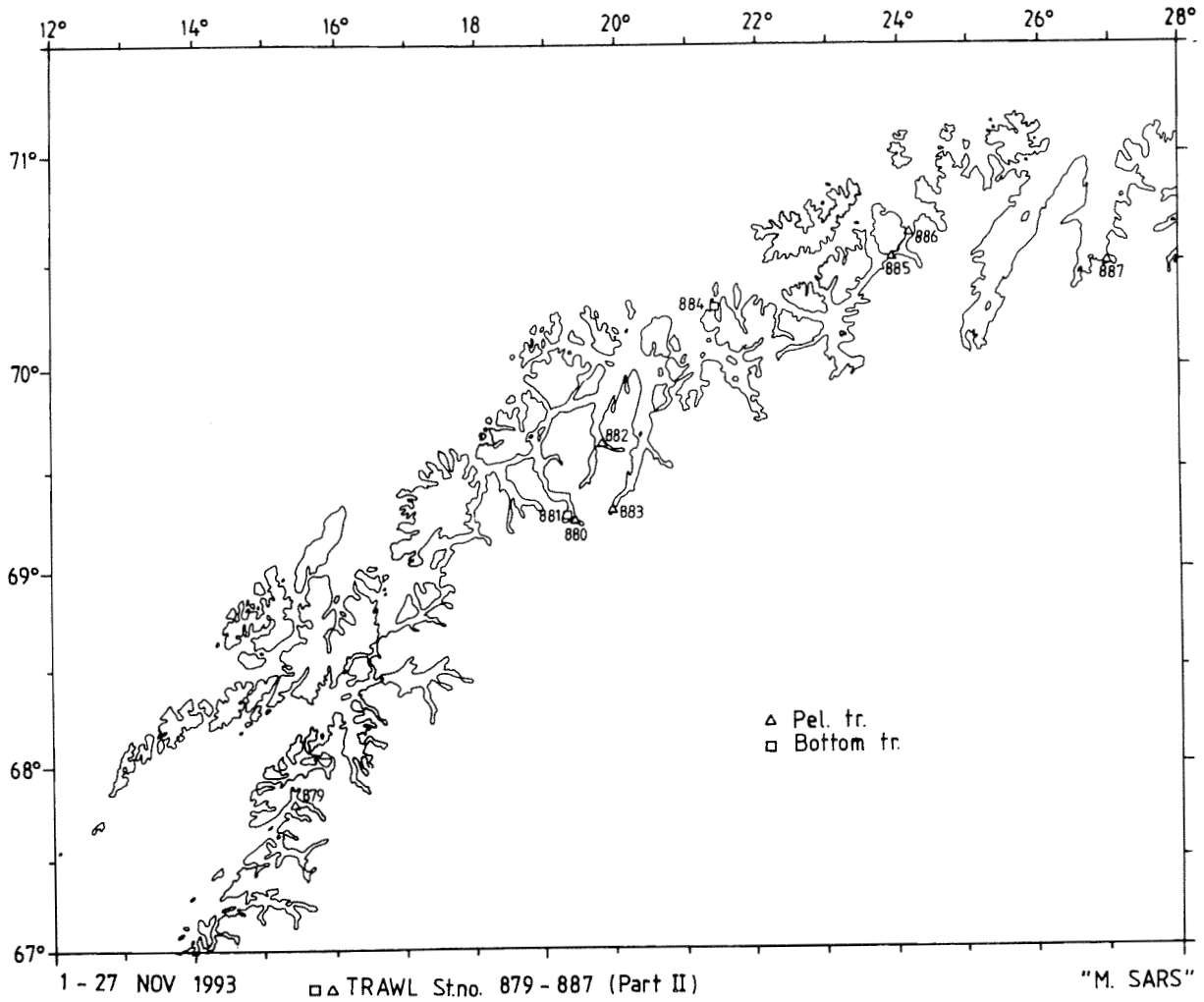






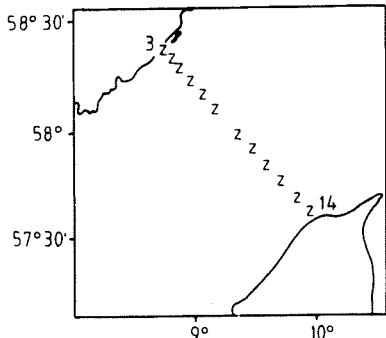




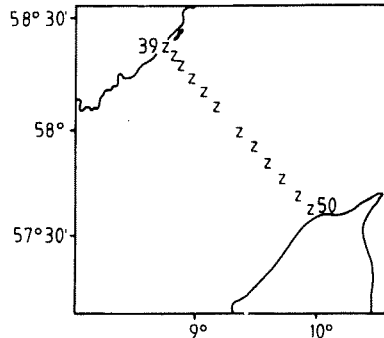


**TORUNGEN - HIRTSHALS**

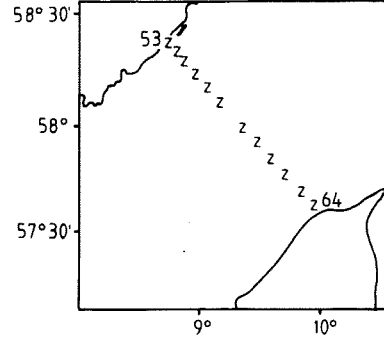
**"G.M. Dannevig"**



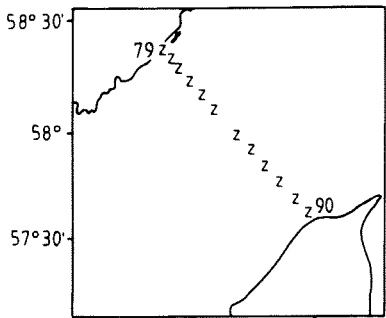
7 Jan 1993 z CTD St.no 3 - 14



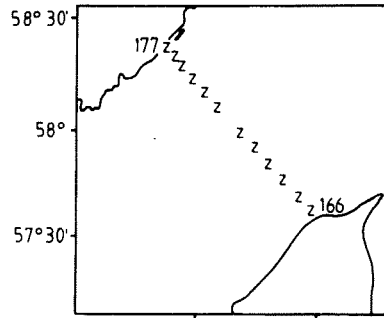
15 Feb 1993 z CTD St.no 39 - 50



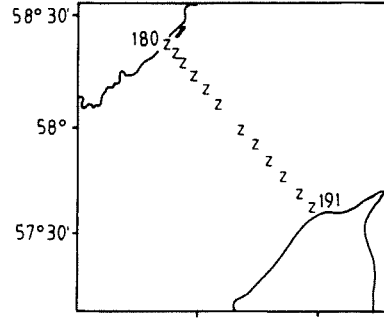
4 Mar 1993 z CTD St.no 53 - 64



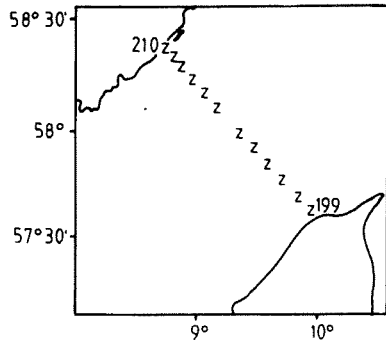
14 Apr 1993 z CTD St.no 79 - 90



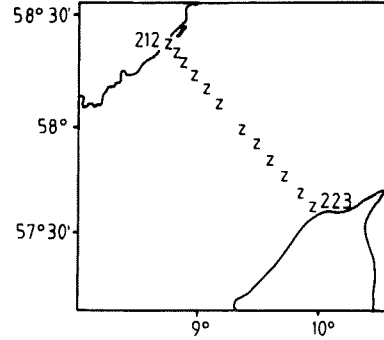
18 - 19 May 1993 z CTD St.no 166 - 177



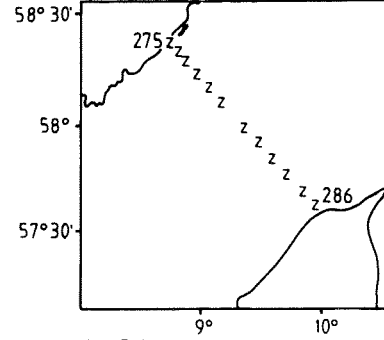
2 Jun 1993 z CTD St.no 180 - 191



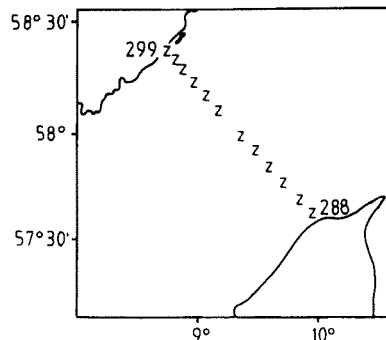
13 Jul 1993 z CTD St.no 199 - 210



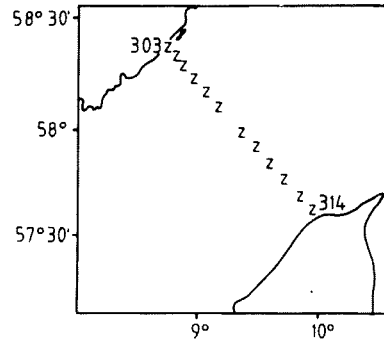
5 Aug 1993 z CTD St.no 212 - 223



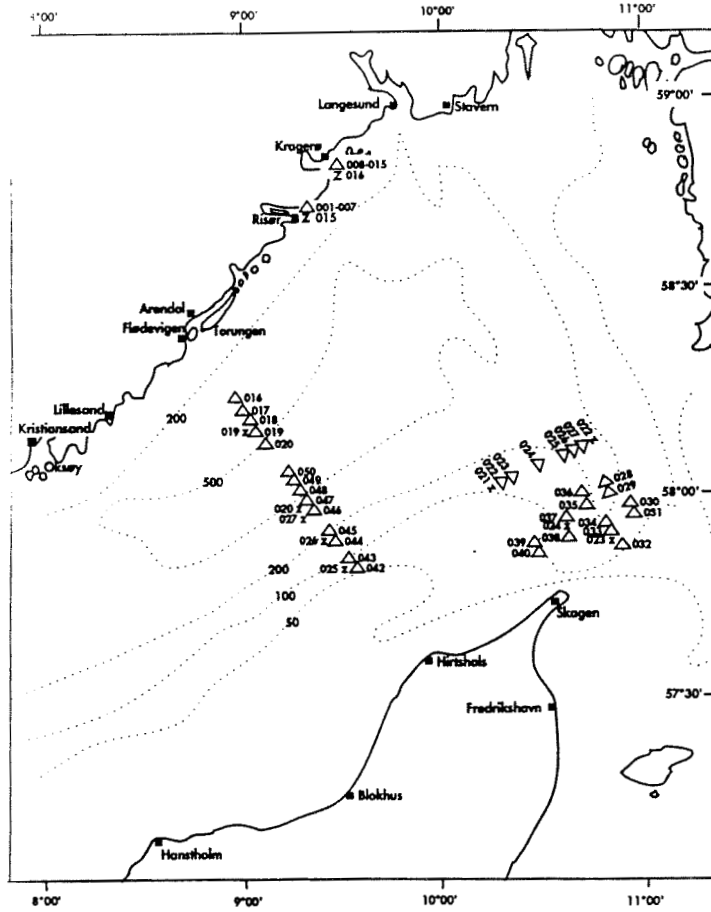
4 - 5 Oct 1993 z CTD St.no 275 - 286



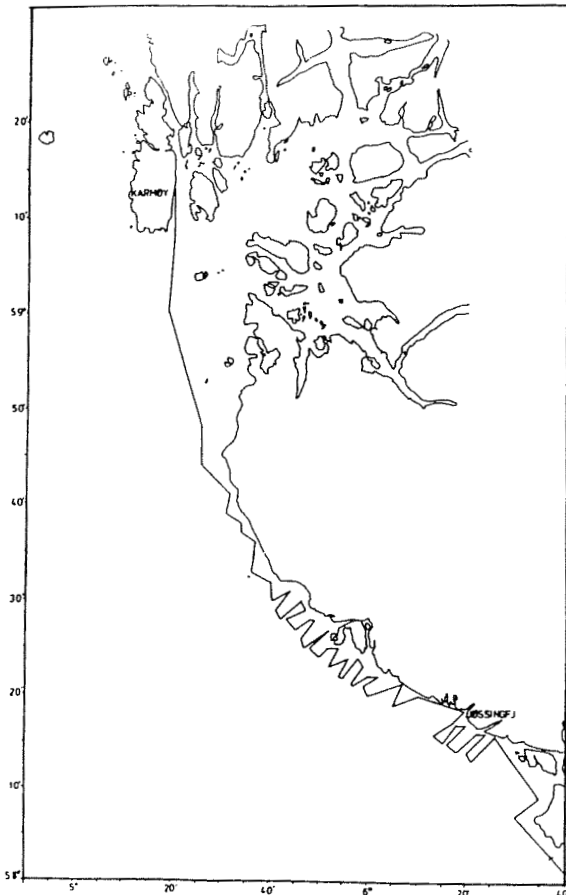
1 - 3 Nov 1993 z CTD St.no 288 - 299



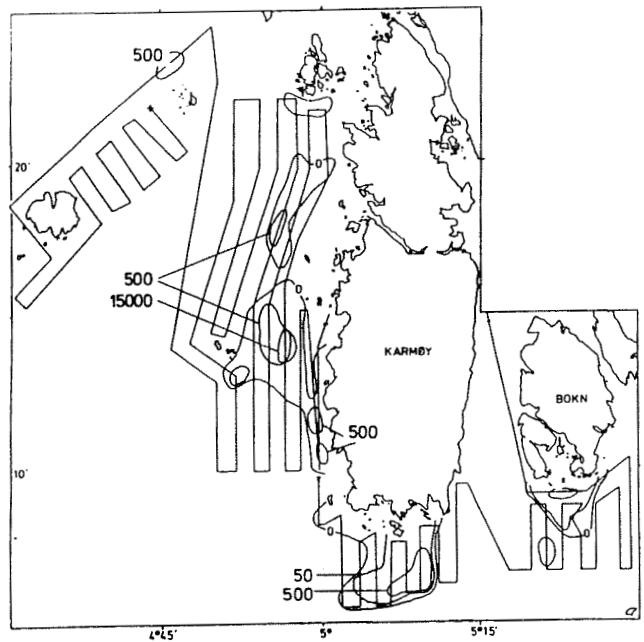
14 - 15 Dec 1993 z CTD St.no 303 - 314



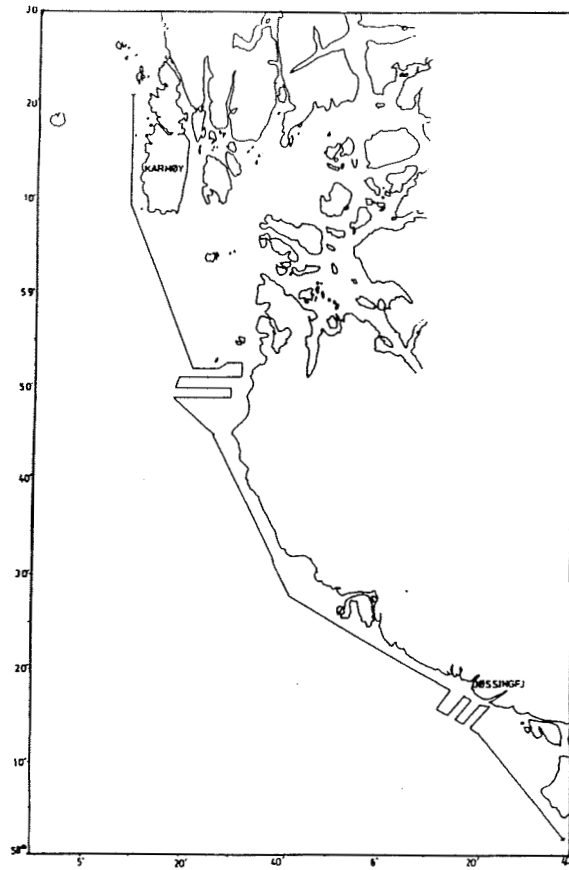
13 - 15 Jan 1993



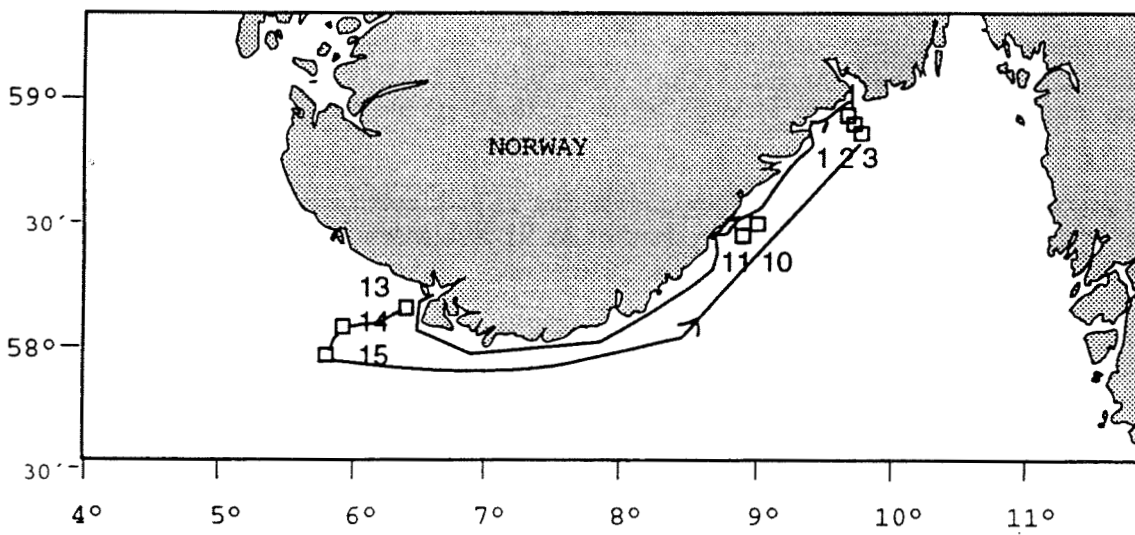
23 - 24 Feb 1993



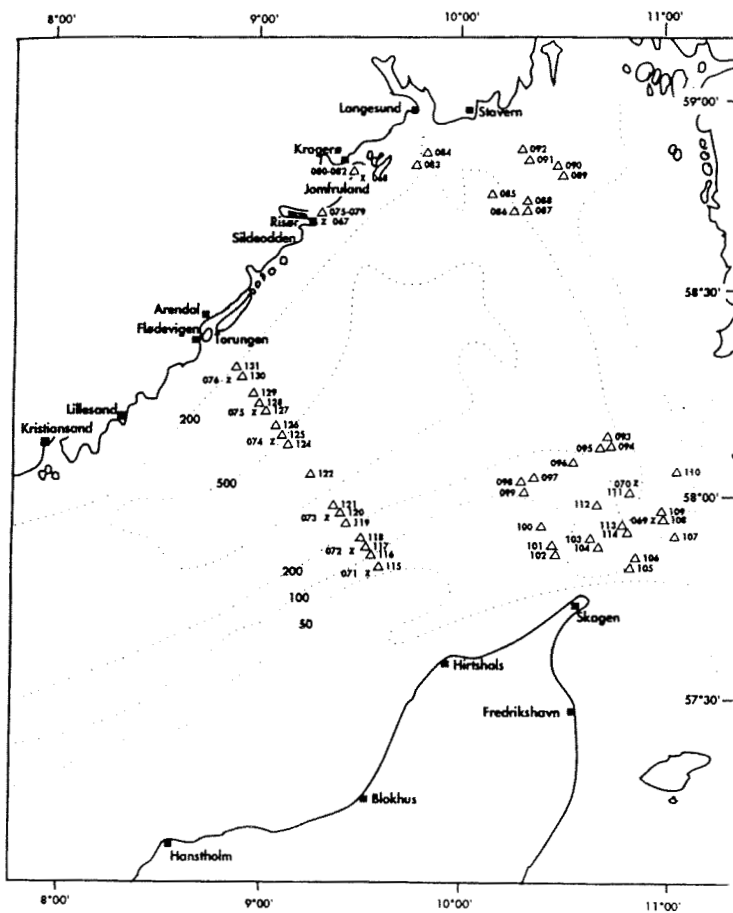
26 Feb - 1 Mar 1993



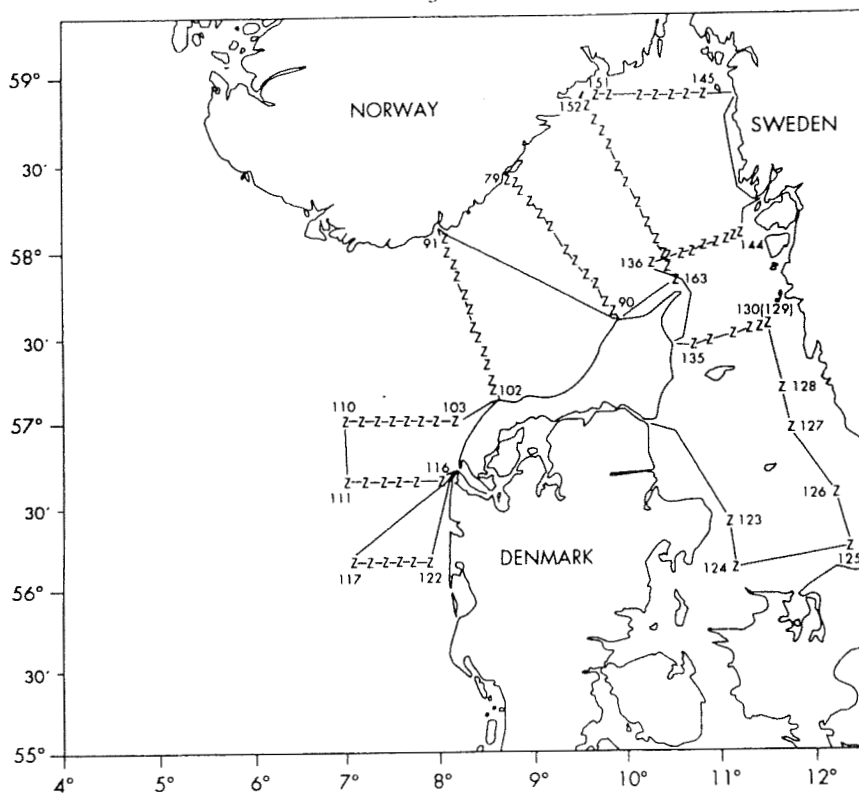
1 - 2 Mar 1993



13 - 20 Mar 1993

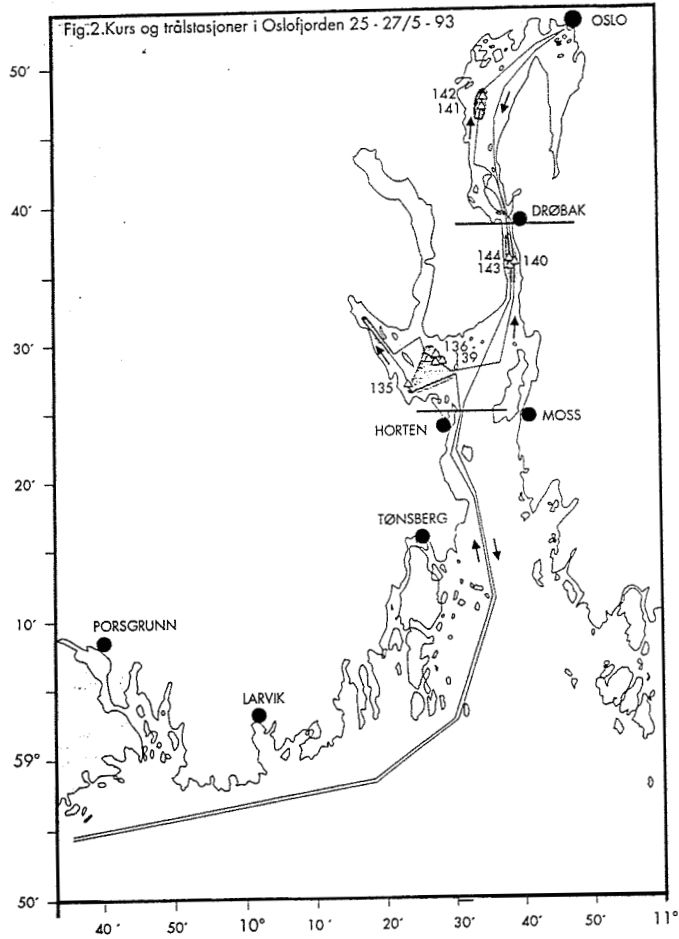


23 - 30 Mar 1993

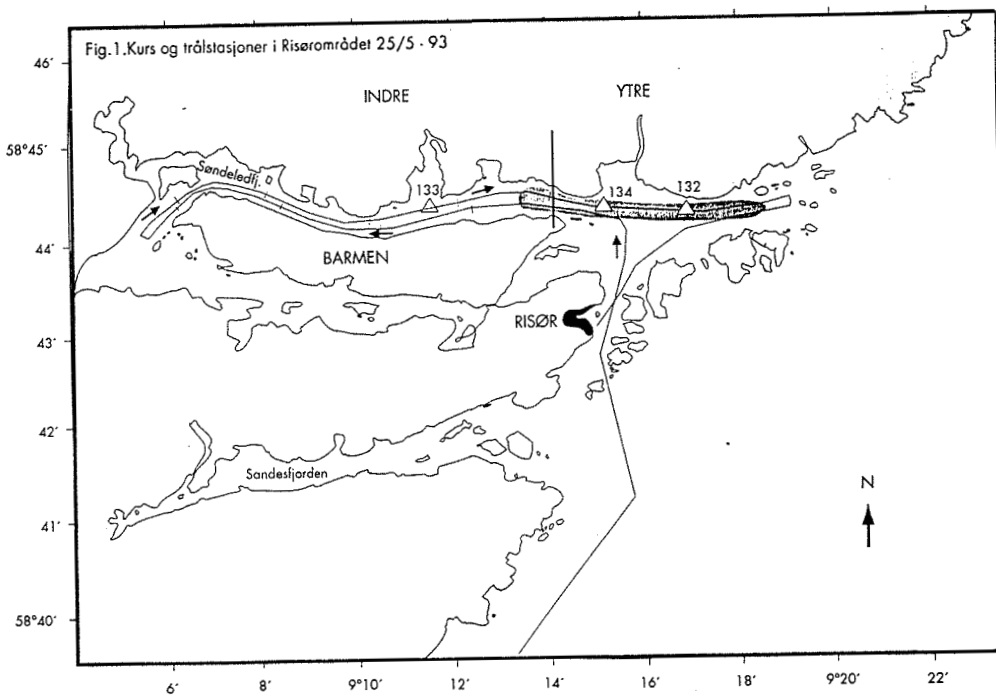


14 - 30 Apr 1993

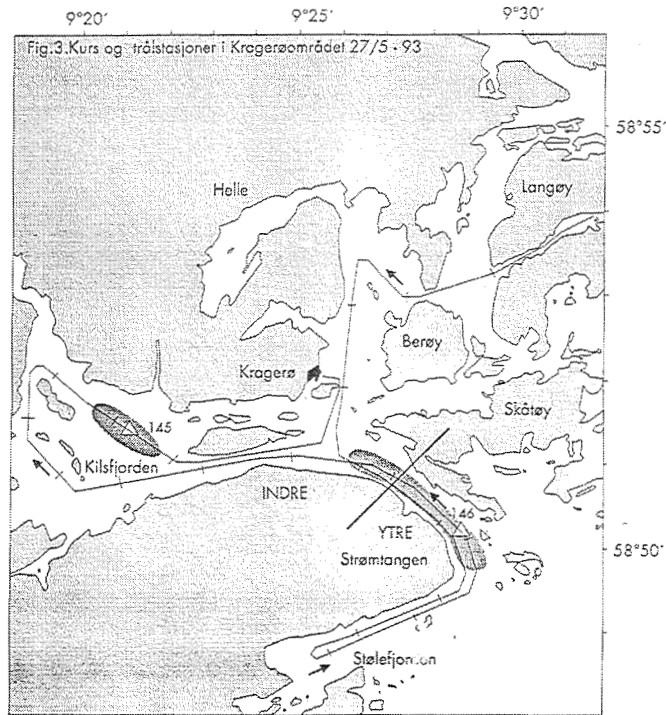




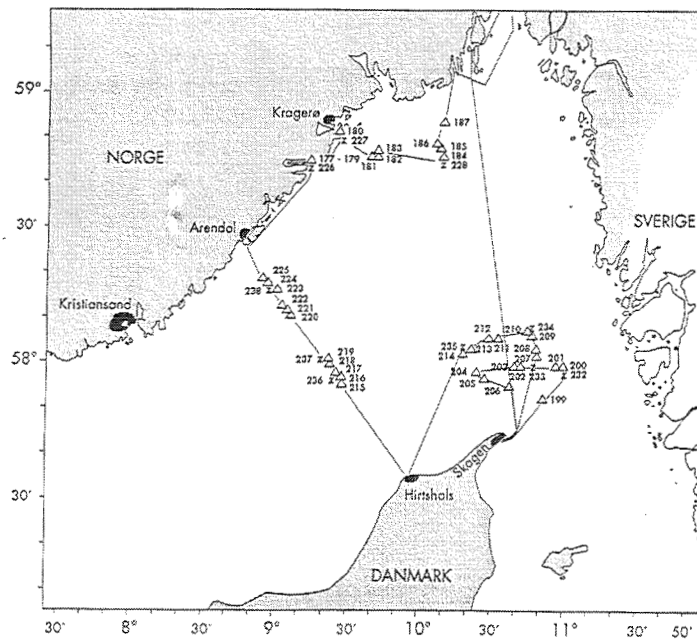
25 - 27 May 1993



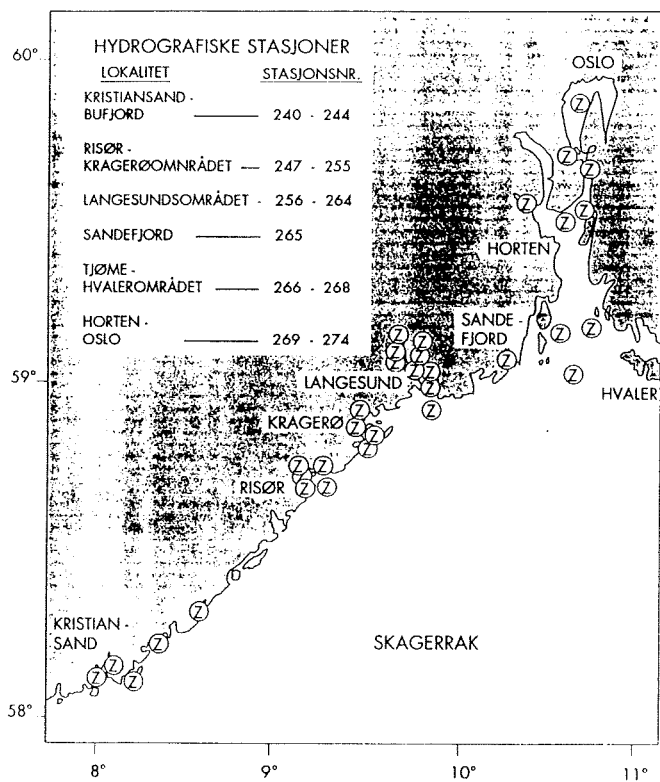
25 May 1993



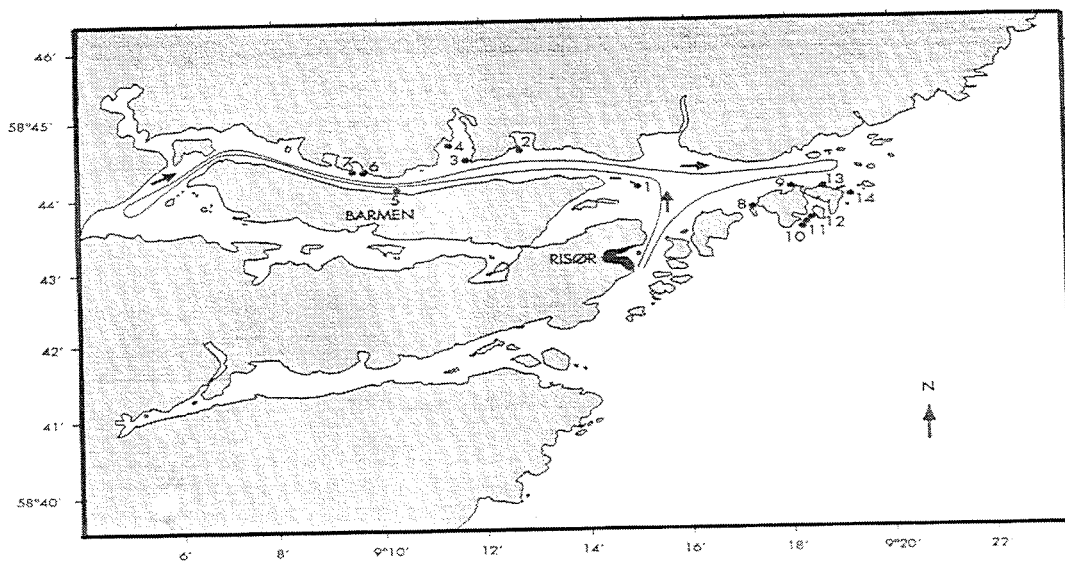
27 May 1993



11 - 19 Aug 1993



16 Sep - 4 Oct 1993



12 - 14 Oct 1993