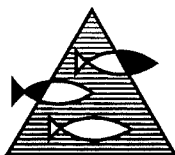


PROSJEKTRAPPORT

ISSN 0071-5638



HAVFORSKNINGSINSTITUTTET

MILJØ - RESSURS - HAVBRUK

Nordnesparken 2 Postboks 1870 5817 Bergen

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

Forskningsstasjonen

Flødevigen

4817 His

Tlf.: 37 05 90 00

Faks: 37 05 90 01

Austevoll

havbruksstasjon

5392 Storebø

Tlf.: 56 18 03 42

Faks: 56 18 03 98

Matre

havbruksstasjon

5984 Matredal

Tlf.: 56 36 60 40

Faks: 56 36 61 43

Distribusjon:

ÅPEN

HI-prosjektnr.:

920102

Oppdragsgiver(e):

Oppdragsgivers referanse:

Rapport:

FISKEN OG HAVET

NR. 8 - 1999

Tittel:

REPORT ON OCEANOGRAPHIC CRUISES
AND DATA STATIONS 1998

Senter:

Marint miljø

Seksjon:

Norsk Marint Datasenter

Forfatter(e):

Karen Gjertsen

Antall sider, vedlegg inkl.:

87

Dato:

11.02.99

Sammendrag:

Rapporten gir en oversikt over toktene til Havforskningsinstituttets forskningsfartøy "G.O. Sars", "Johan Hjord", "Michael Sars" og "G.M. Dannevig" i 1998. I tillegg vises kart for leiefartøy "Jan Mayen".

Først vises oversikt over tidsrom for tokt og tokt nr. For de fleste toktene vises kurs- og stasjonskart. Tabellene på side to og tre viser når de faste snittene er tatt og antall observasjoner pr måned for de faste stasjonene. På side fire vises dekning - CTD st. tatt i 1998.

Disse oversiktene er også innrapportert til Det internasjonale råd for havforskning (ICES) sammen med Summary Report.

Data fra toktene er tilgjengelig fra Havforskningsinstituttet. Rapporten kan brukes til å identifisere båt og stasjonsnummer man ønsker data for.

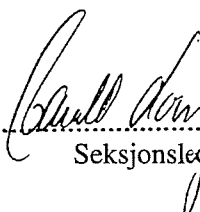
Emneord - norsk:

1. Kurskart
2. Stasjonskart

Emneord - engelsk:

1. Course track map
2. Stations map


.....
Prosjektleder


.....
Seksjonsleder

12 5866

	Page
CHART oceanographic stations and sections	1
STANDARD sections	2
STANDARD stations	3
CTD stations 1998	4

"G. O. SARS" 1998

(Ship no 15)

Cruise no	Period of cruises	Page of track chart
1998001	15 Jan - 29 Jan	5
1998002	31 Jan - 27 Feb	6-7
1998003	3 Mar - 12 Mar	8
1998004	18 Mar - 2 Apr	9-11
1998005	3 Apr - 6 Apr	12
1998006	6 Apr - 19 Apr	13
1998007	21 Apr - 21 May	14-15
1998008	23 May - 16 Jun	16
1998009	18 Jun - 26 Jun	17
1998010	27 Jun - 18 Jul	18-19
1998011	21 Jul - 27 Jul	20
1998012	28 Jul - 23 Aug	21-22
1998013	25 Aug - 9 Sep	23-24
1998014	10 Sep - 5 Oct	25-26
1998015	7 Oct - 14 Oct	27
1998016	14 Oct - 5 Nov	28-29
1998017	6 Nov - 10 Nov	30
1998018	28 Nov - 22 Dec	31-32

"JOHAN HJORT" 1998

(Ship no 12)

Cruise no	Period of cruises	Page of track chart
1998201	4 Jan - 29 Jan	33-34
1998202	31 Jan - 1 Mar	35-36
1998203	2 Mar - 22 Mar	37
1998204	24 Mar - 26 Apr	38-39
1998205	27 Apr - 3 May	40
1998206	4 May - 16 May	41
1998207	18 Jun - 28 Jun	
1998209	30 Jun - 29 Jul	42-43
1998210	1 Aug - 23 Aug	44
1998211	28 Aug - 9 Sep	45-46
1998212	10 Sep - 5 Oct	47-48
1998213	9 Oct - 18 Oct	49-50
1998214	19 Oct - 26 Nov	51-52
1998215	28 Nov - 22 Dec	53-54

"MICHAEL SARS" 1998

(Ship no 11)

Cruise no	Period of cruises	Page of track chart
1998101	23 Jan - 14 Feb	55-56
1998102	17 Feb - 23 Mar	57
1998103	25 Mar - 1 Apr	58
1998104	6 Apr - 24 Apr	59-60
1998105	27 Apr - 9 May	61
1998106	11 May - 25 May	62
1998115	27 May - 30 May	63
1998116	3 Jun - 8 Jun	64
1998107	17 Jun - 28 Jun	65-66
1998108	30 Jun - 21 Jul	67-68
1998109	30 Jul - 22 Aug	69-70

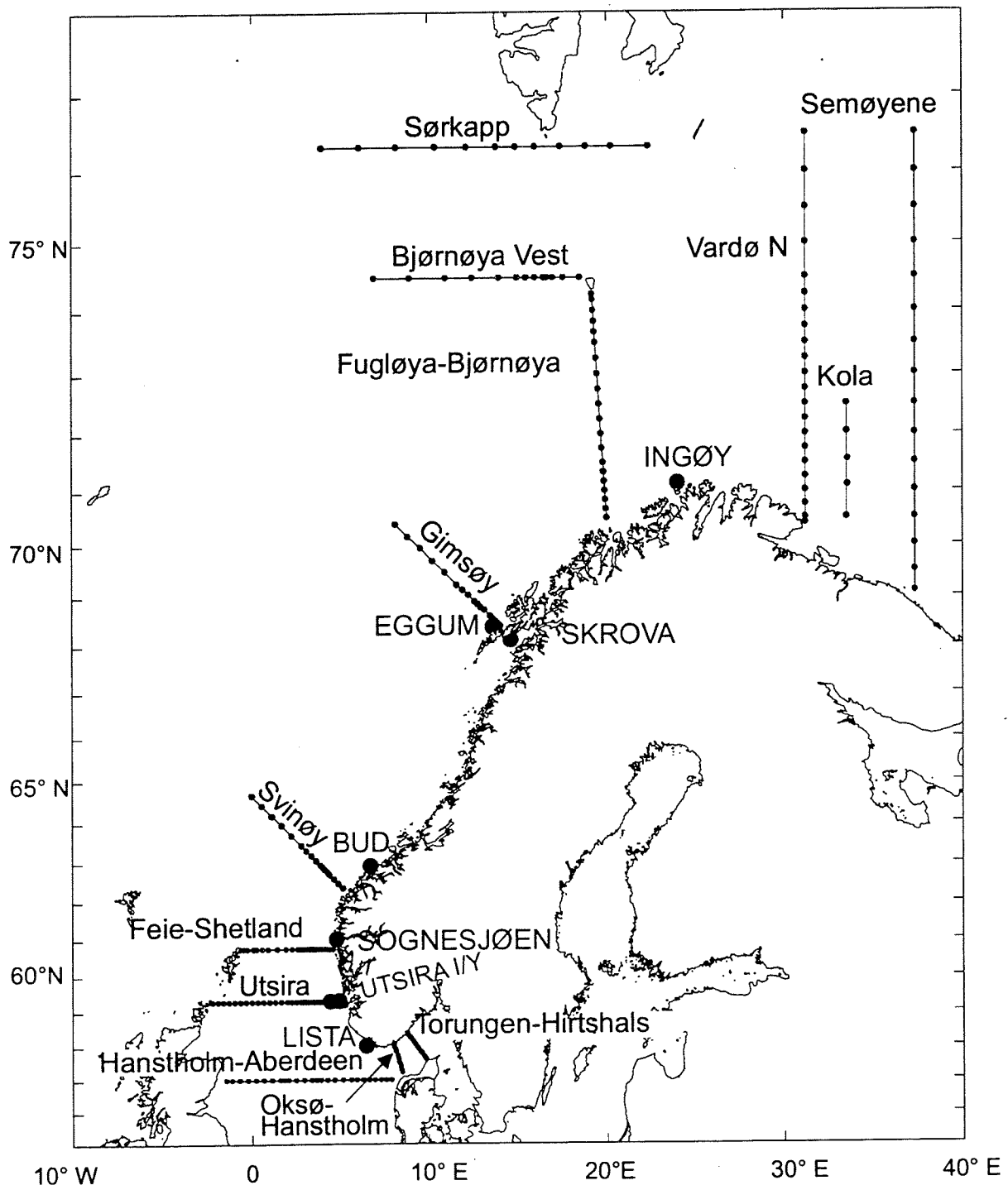
1998110	24 Aug - 10 Sep	71-72
1998111	14 Sep - 27 Sep	
1998112	28 Sep - 5 Oct	73-74
1998113	7 Oct - 27 Oct	75
1998114	28 Oct - 10 Dec	76-77

"JAN MAYEN" 1998

(Ship no19)

Cruise no	Period of cruises	Page of track chart
1998825	31 Jan - 24 Feb	78

"G .M .Dannevig"		1998		Page of	
(Ship no 16)		CTD	TRAWL		
Cruise no	Period of cruises	st.no	st.no	track	chart
1998301	21 Jan - 21 Jan	2-3		(79)	
1998302	21 Jan	1-11		79	
1998304	2 Feb	12		80	
1998303	2 Feb - 4 Feb	13-21		81	
	4 Feb - 6 Feb		1-6	87	
1998306	24 Feb	22-33		79	
1998305	24 Feb	31-32		(79)	
1998307	25 Feb - 27 Feb	34-42		81	
1998308	2 Mar	43		80	
1998309	3 Mar - 10 Mar		7-27	83	
1998310	16 Mar - 18 Mar	56-66		81	
1998311	18 Mar	65-66		80	Part of cr.1998310
1998312	13 - 14 Mar	44-55		79	
1998313	19 Mar - 22 Mar				
1998314	24 Mar - 2 Apr			82	
1998315	5 - 6 Apr	71-80		81	
1998316	6 Apr	80		80	Part of cr.1998315
1998317	8 - 27 Apr	81-194		84	
1998318	27 Apr	193-194		80	Part of cr.1998317
1998319	25 - 27 Apr			81	Part of cr.1998317
1998320	30 Apr - 9 May	195-241	28-67		
	10 May - 17 May	242-324		79	
1998321	17 May	323		(79)	
1998323	22 May - 2 Jun	324-356	68-118		
1998324	3 Jun			80	
1998326	12 Jun	357-368		79	
1998327	12 Jun	367		(79)	
1998328	13 Jun - 14 Jun	369-377		81	
1998329	19 Jun - 26 Jun	378	119-141	85	
1998330	29 Jun	379		80	
1998331	30 Jun - 6 Jul				
1998333	7 - 9 Jul	380-388		81	
1998332	10 Jul - 11 Jul	389-400		79	
1998334	10 Jul	390		(79)	
1998335	21 Jul - 30 Jul			81	
1998336	3 Aug	402		(79)	
1998337	3 Aug - 4 Aug	401-412		79	
1998338	5 Aug - 7 Aug	413-421		81	
1998339	10 Aug	422-426		80	
1998340	18 Aug - 27 Aug		142-143		
1998341	11 Aug - 16 Aug				
1998342	28 Aug	427		80	
1998343	30 Aug - 8 Sep			82	
1998344	9 Sep	429-430		(79)	
1998345	9 - 10 Sep	428-439		79	
1998347	15 Sep - 3 Oct	440-479		86	
		449		80	Part of cr.1998347
1998348	5 Oct	480-482			
1998349	6 Oct	483-494		79	
1998350	8 Oct - 10 Oct	495-503		81	
1998352	22 Oct	504-505		80	
1998353	12 Oct - 21 Oct			82	
1998356	16 Nov	506-507		80	
1998357	17 Nov - 18 Nov	508-519		79	
1998358	17 Dec	521-522		(79)	
1998359	7 Dec - 8 Dec	520-531		79	



**STANDARD
SECTIONS**

1998

Cruise no/ship

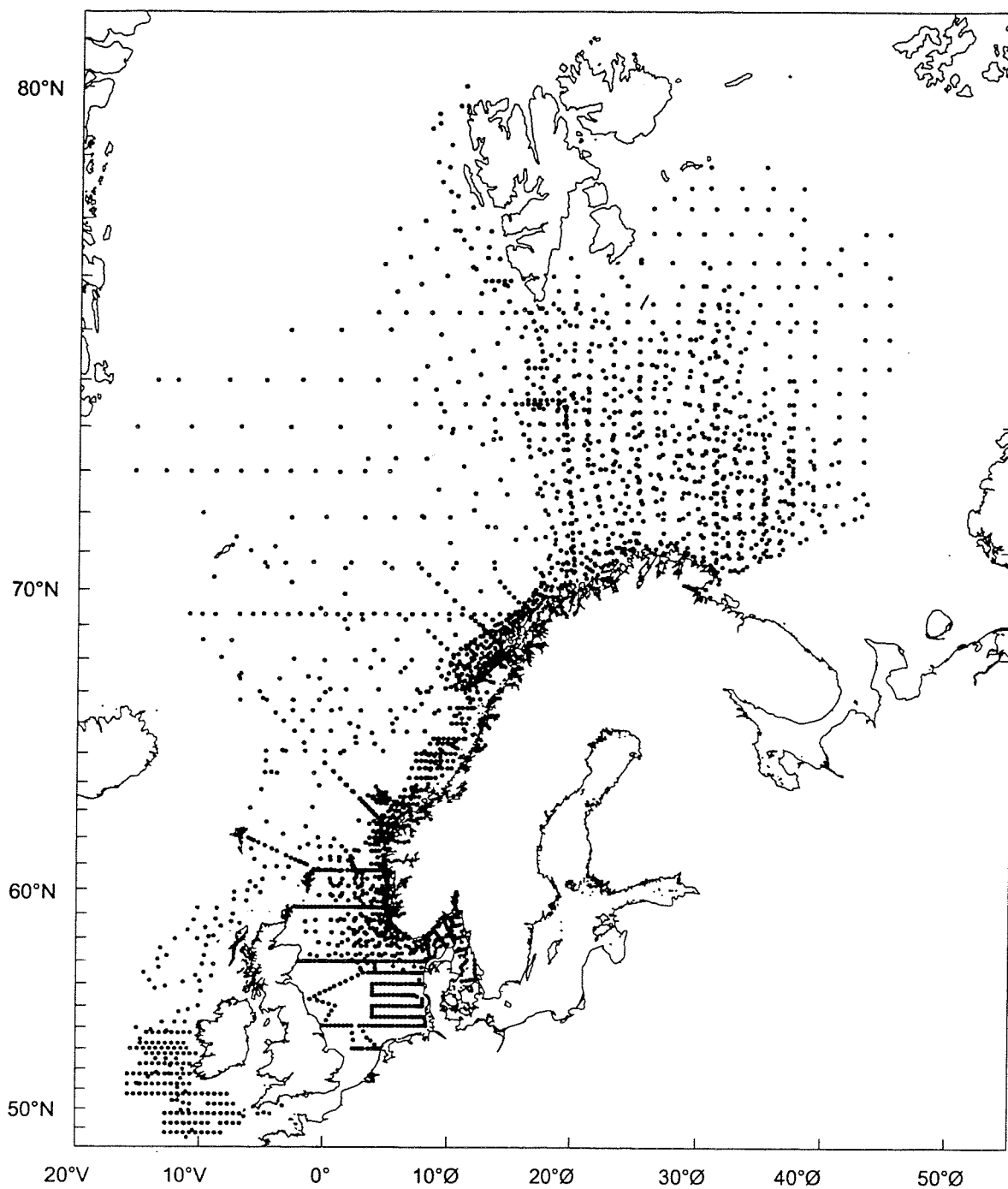
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	No
Torungen - Hirtshals	Page 79 shows this section taken by "G.M. Dannevig"											12	
Oksø - Hanstholm		1998101MS				1998010GS					1998214JH		3
Hanstholm - Aberdeen		1998101MS	1998103MS			1998010GS					1998214JH		4
Utsira West	1998101MS		1998103MS				1998010GS			1998214JH			4
Feie - Shetland	1998101MS		1998204JH				1998010GS			1998214JH			4
Svinøy - North/West	1998001GS		1998203JH	1998005GS 1998007GS	1998007GS		1998011GS 1998209JH		1998110MS		1998018GS		9
Gimsøy - North/West	1998001GS		1998203JH				1998011GS 1998108MS	1998210JH		1998015GS		1998018GS	7
Sørkapp									1998211JH				1
Fugløya - Bjørnøya	1998001GS		1998203JH 1998203JH	1998104MS		1998107MS	1998108MS	1998211JH		1998015GS			8
Bjørnøya West			1998203JH										1
Vardø - North	1998001GS		1998203JH						1998013GS				3
Sem. Island - North													

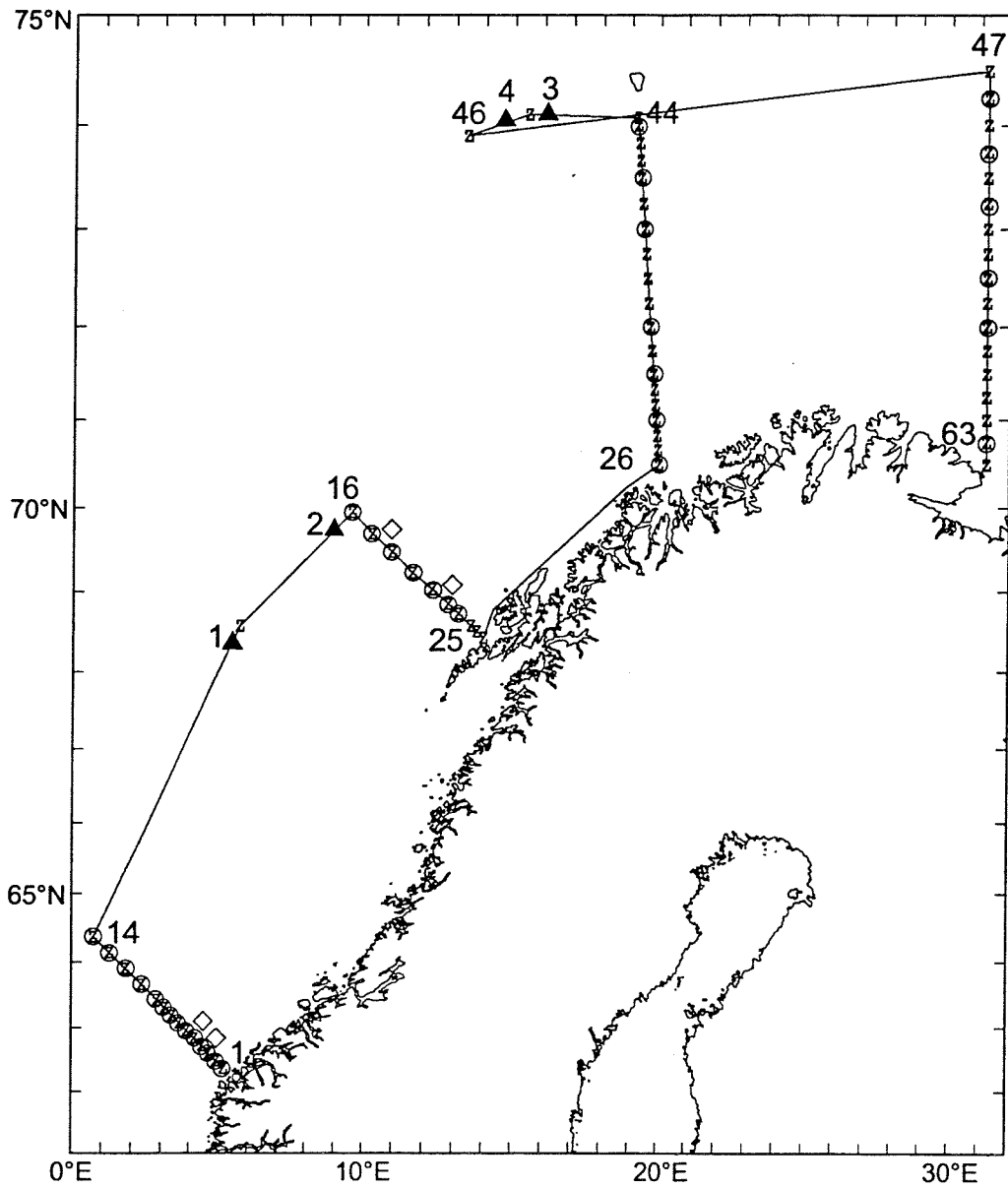
No of observations in 1998

**STANDARD
STATIONS**

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
LISTA													
N58 01 E06 32	3	3	3	3	6	3	4	3	3	1	4	2	38
UTSIRA Y													
N59 19 E04 44	3	2	3	3	3	3	2	3	3	2	3	3	33
UTSIRA I													
N59 19 E04 59	3	2	3	3	3	3	2	3	3	2	3	3	33
SOGNESJØEN													
N61 01 E04 50	1	2	1	2	2	3	3	2	3	3	1	2	25
BUD													
N62 56 E 06 47	3	1	3	3	1	3	2	3	2	3	3	1	28
SKROVA													
N68 07 E14 39	2	4	3	3	2	3	3	4	3	3	3	3	36
EGGUM													
N 68 23 E13 38	3	3	3	2	3	3	4	2	3	3	3	4	36
INGØY													
N71 08 E 24 01	3	3		3	4	1		1	4	4	4	3	30

Overview CTD stations in 1998





15 - 29 Jan 1998

Cruise no 1998001

z CTD st.no 1-63

"G.O.Sars"

⊗ CTD and PLANKTON st. (WP II-net)

◇ MOCNESS st.

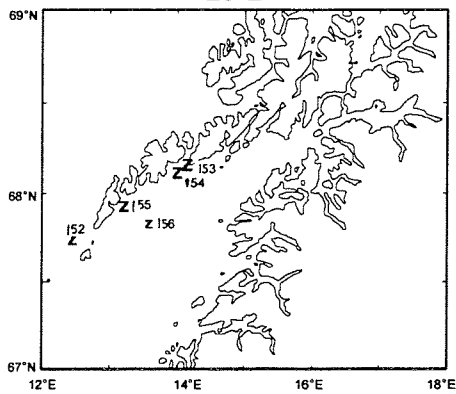
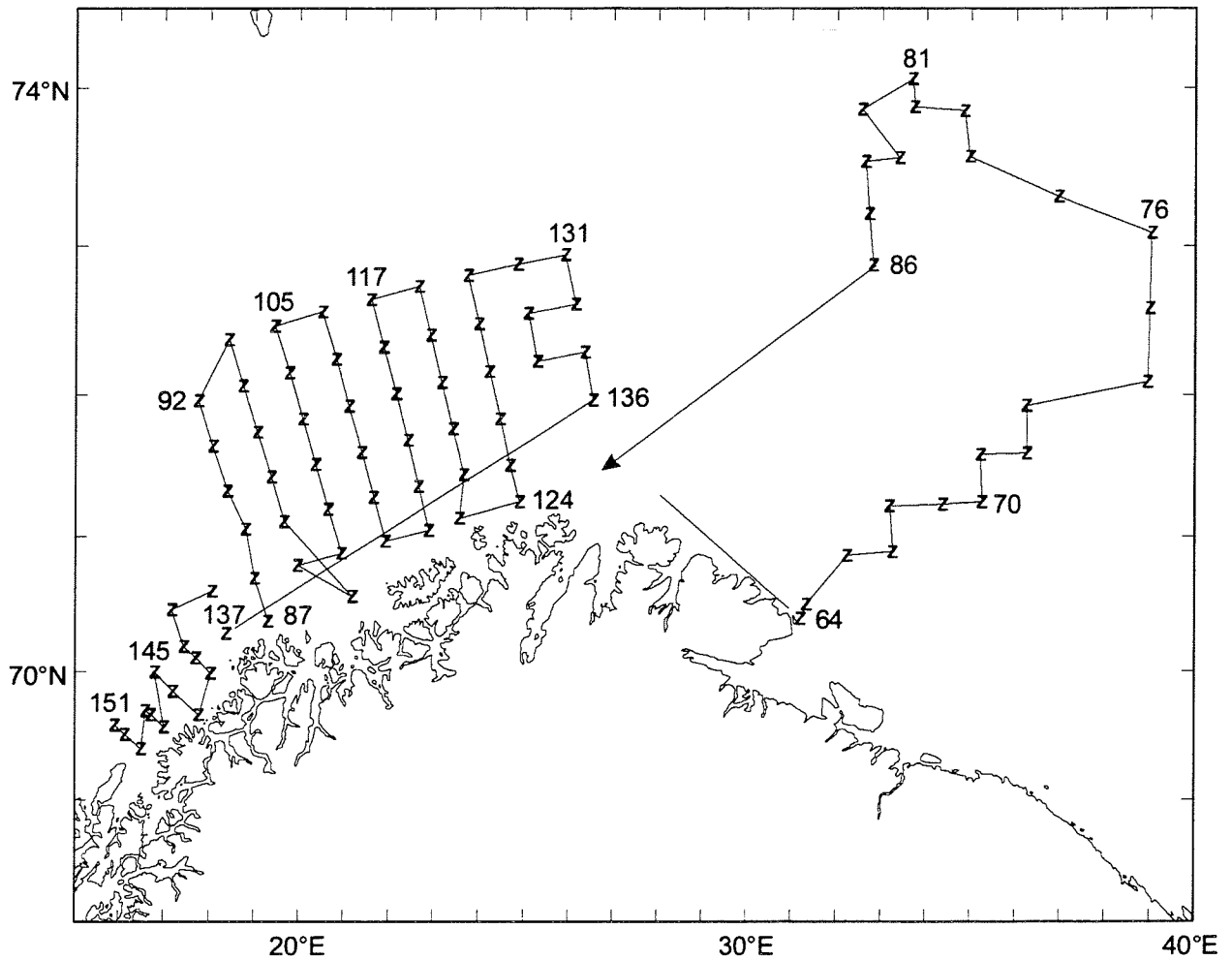
▲ Pel TRAWL st.no 1-4

Standard sections: Svinøy NW: st.no 1-14

Gimsøy NW: st.no 16-25

Fugløya -Bjørnøya: st.no 26-44

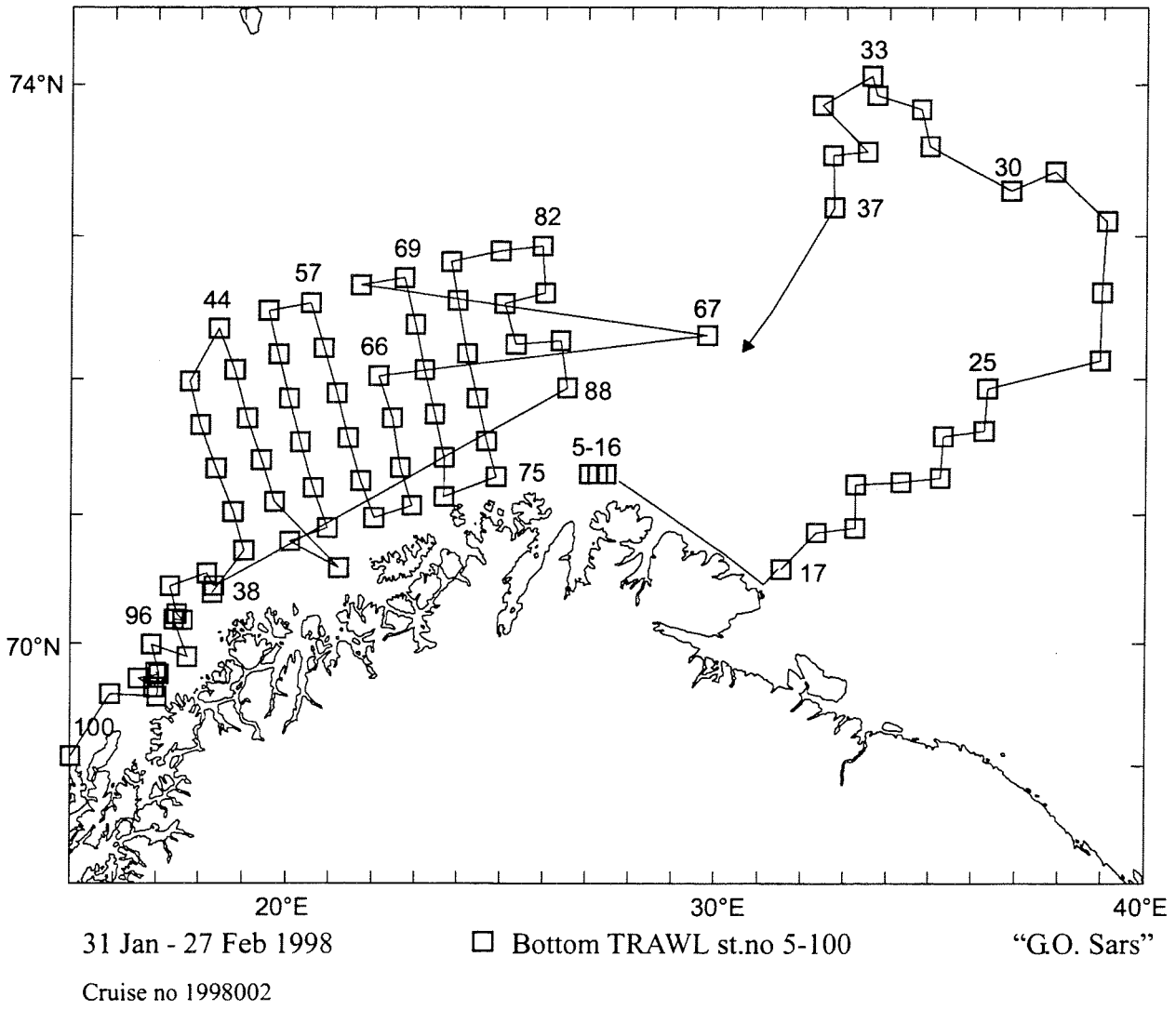
Vardø N: st.no 47-63

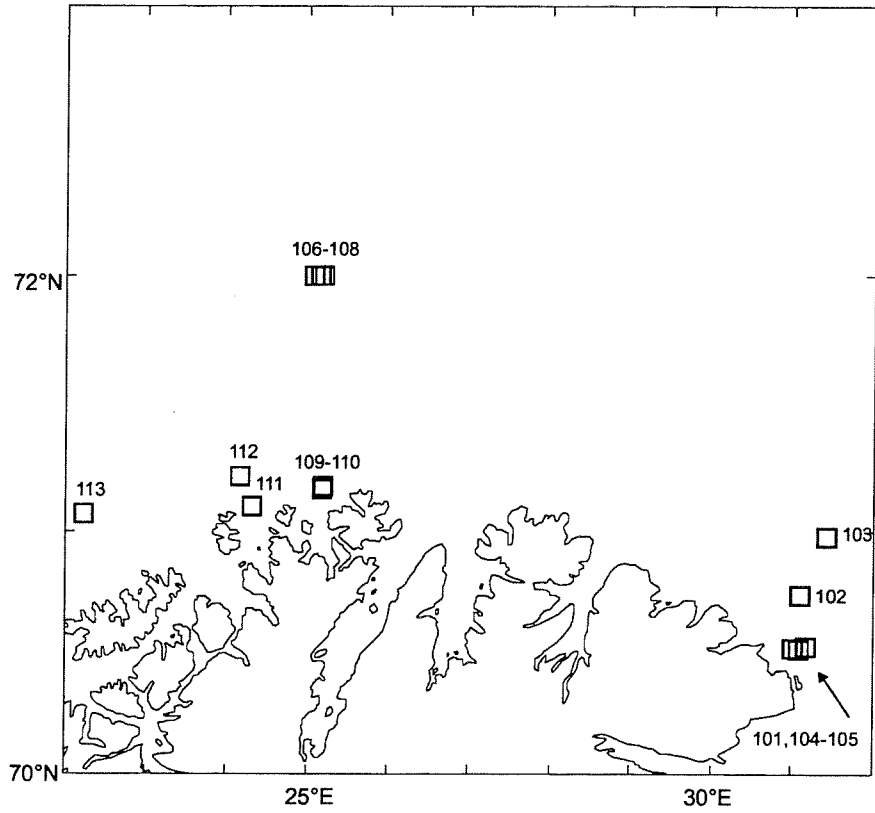


31 Jan - 27 Feb 1998
Cruise no 1998002

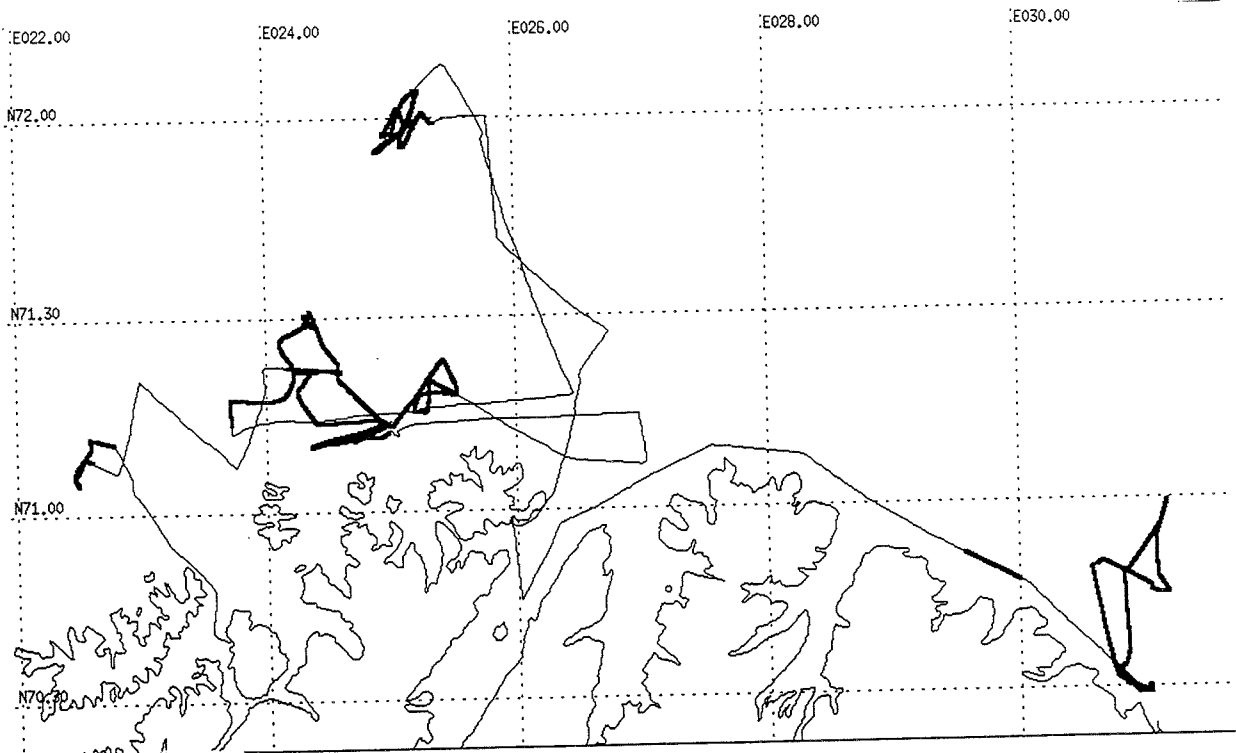
z CTD St.no 64-156

“G.O.Sars”

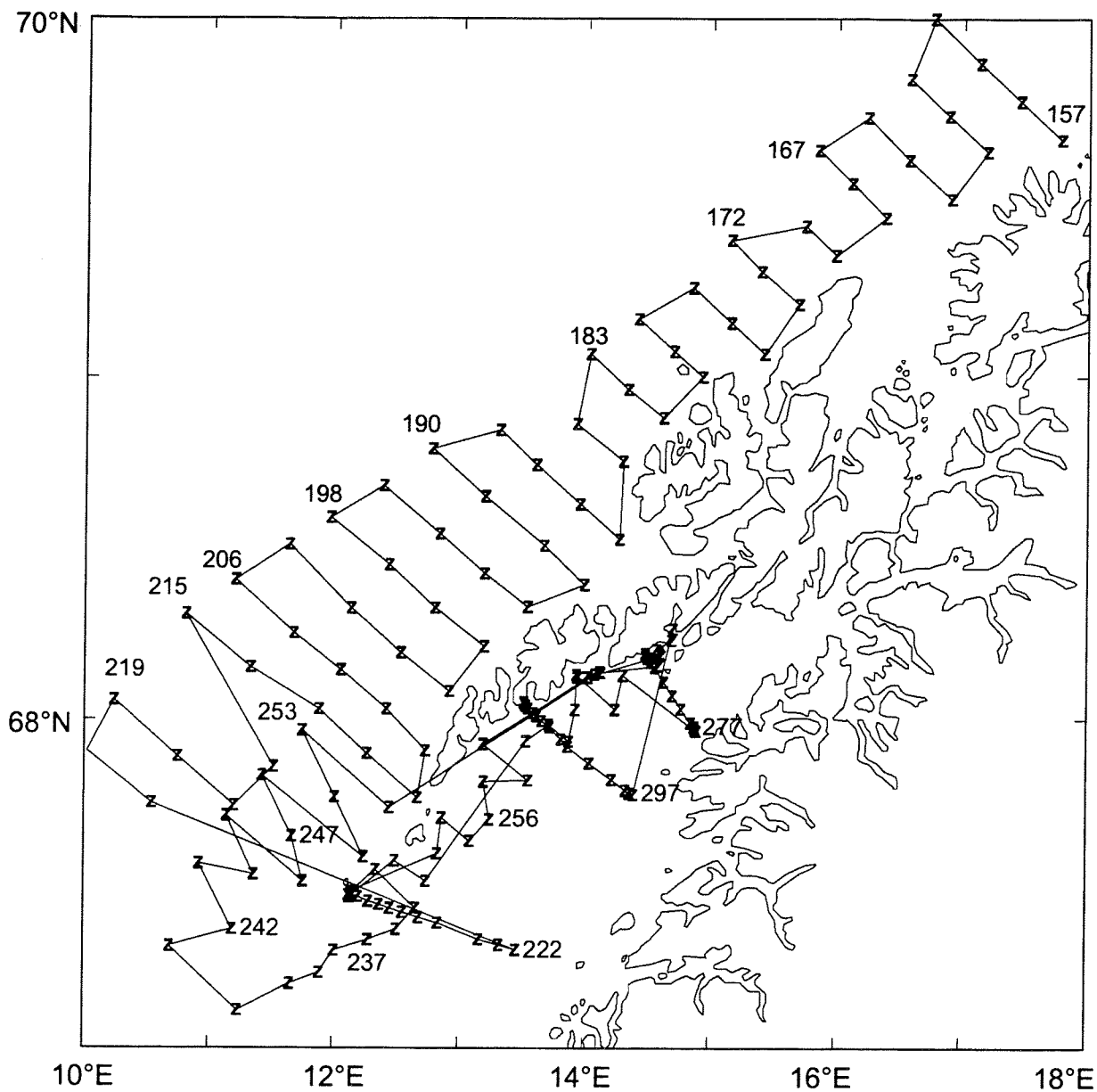




3-12 Mar 1998 Bottom TRAWL st.no 101-113 "G.O. Sars"
 Cruise no 1998003



Track chart

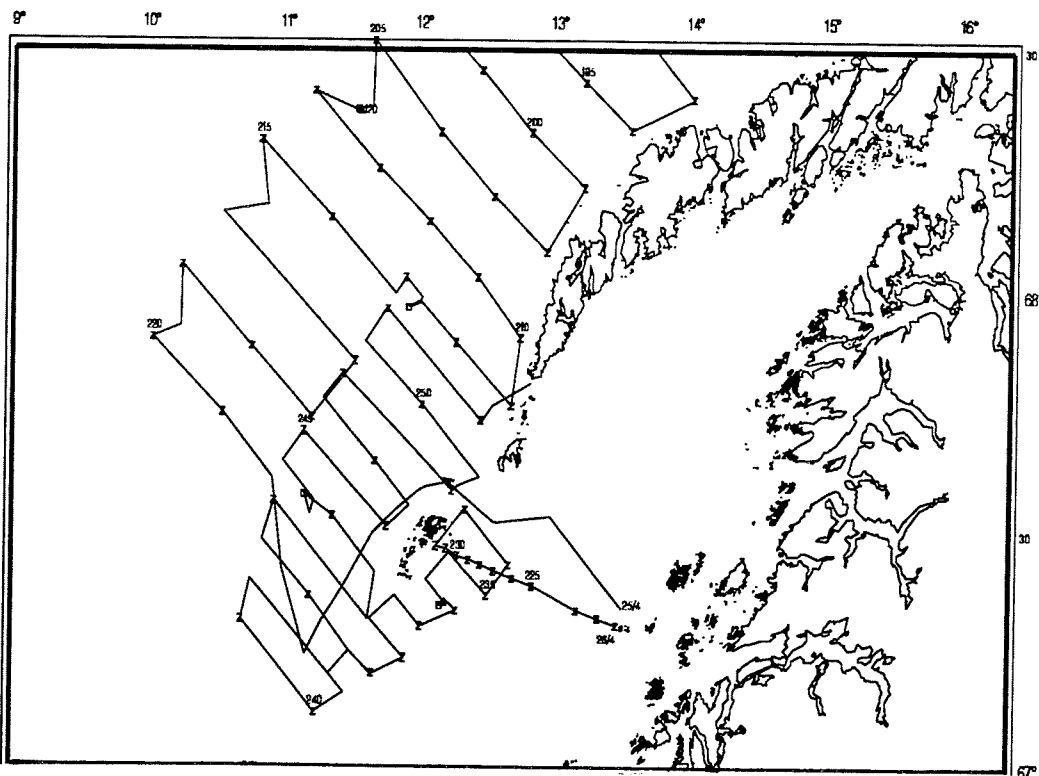
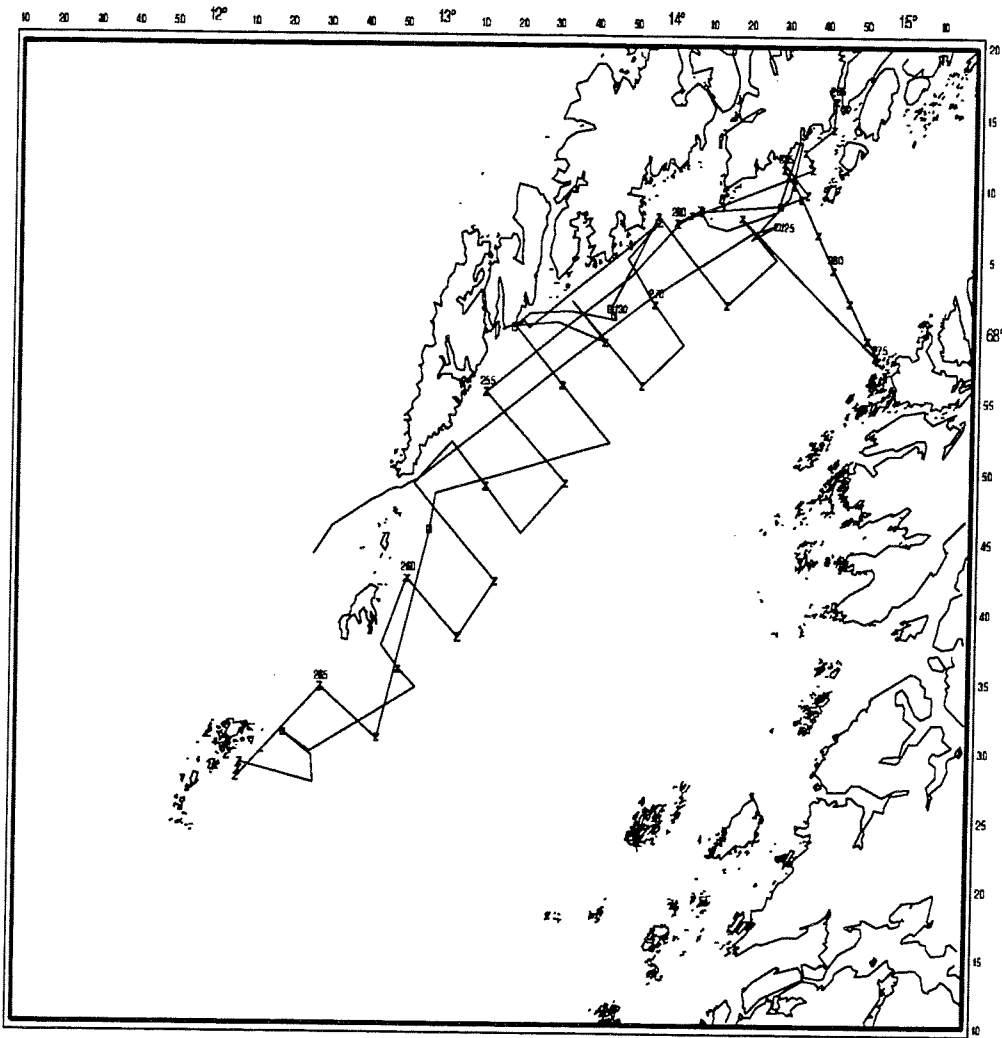


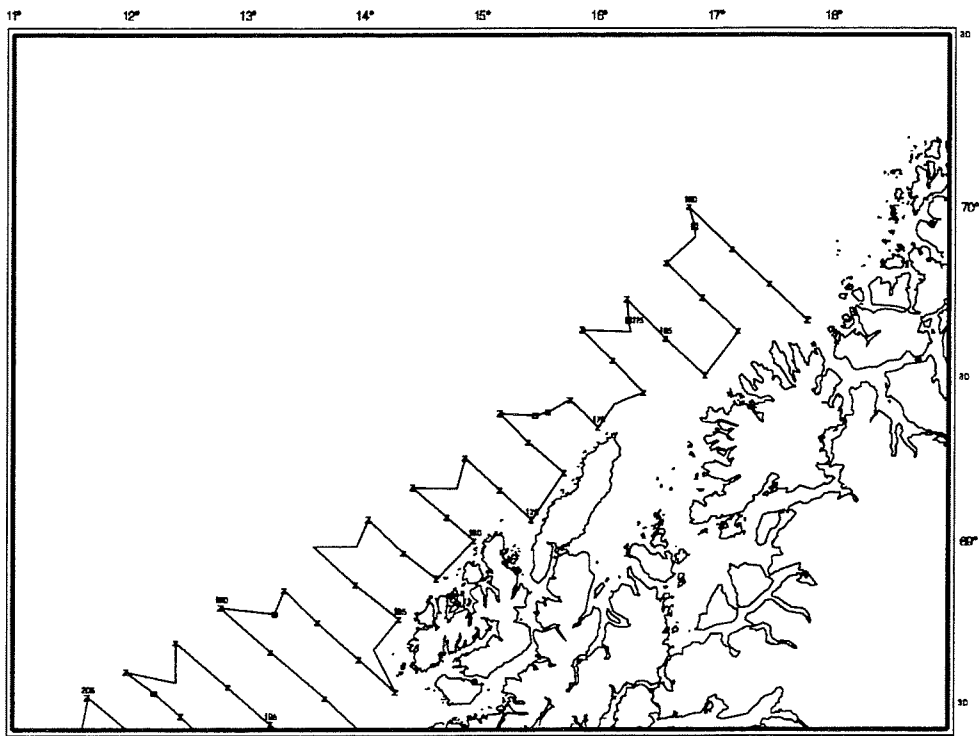
18 Mar - 2 Apr 1998

z CTD st.no 157-310

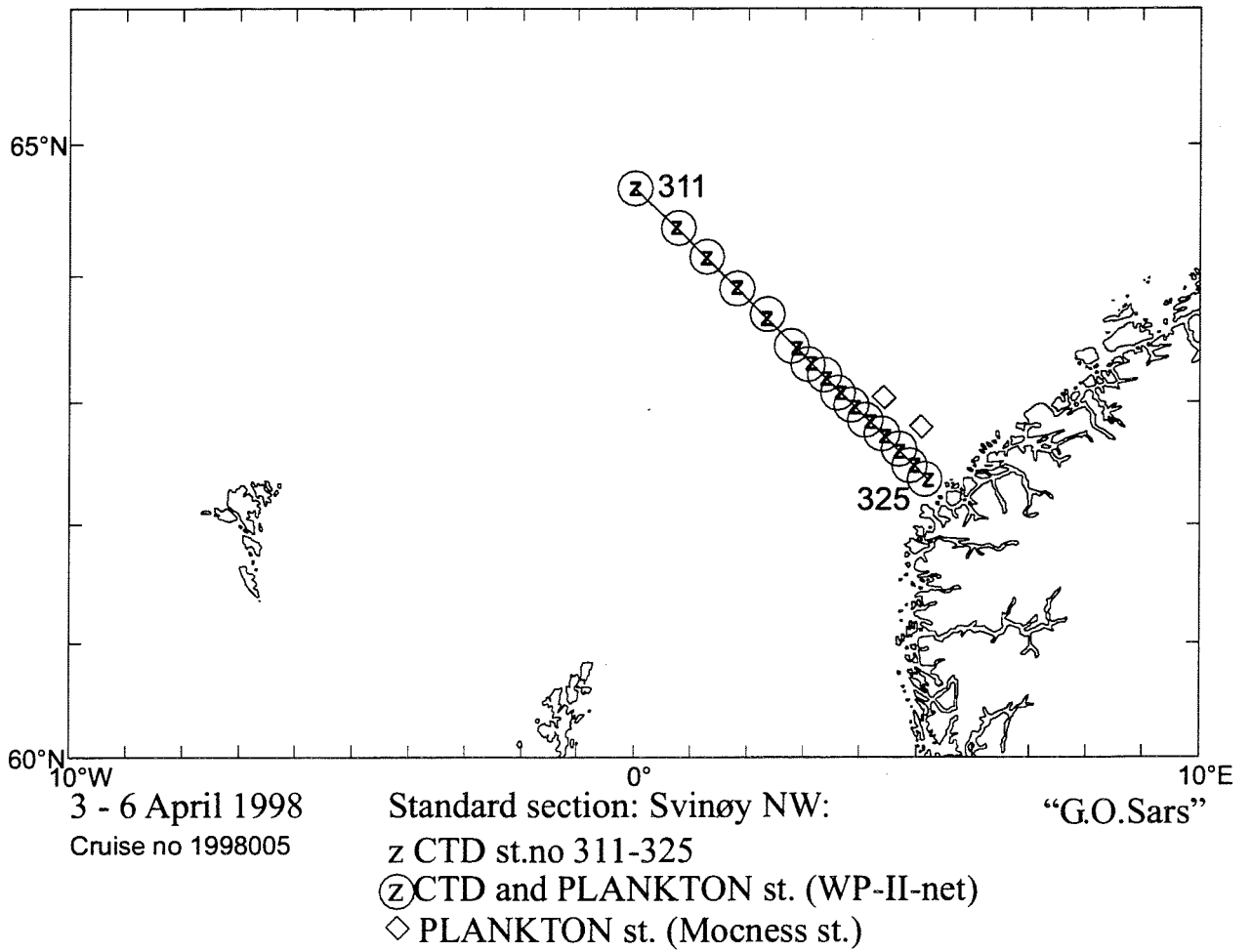
"G.O. Sars"

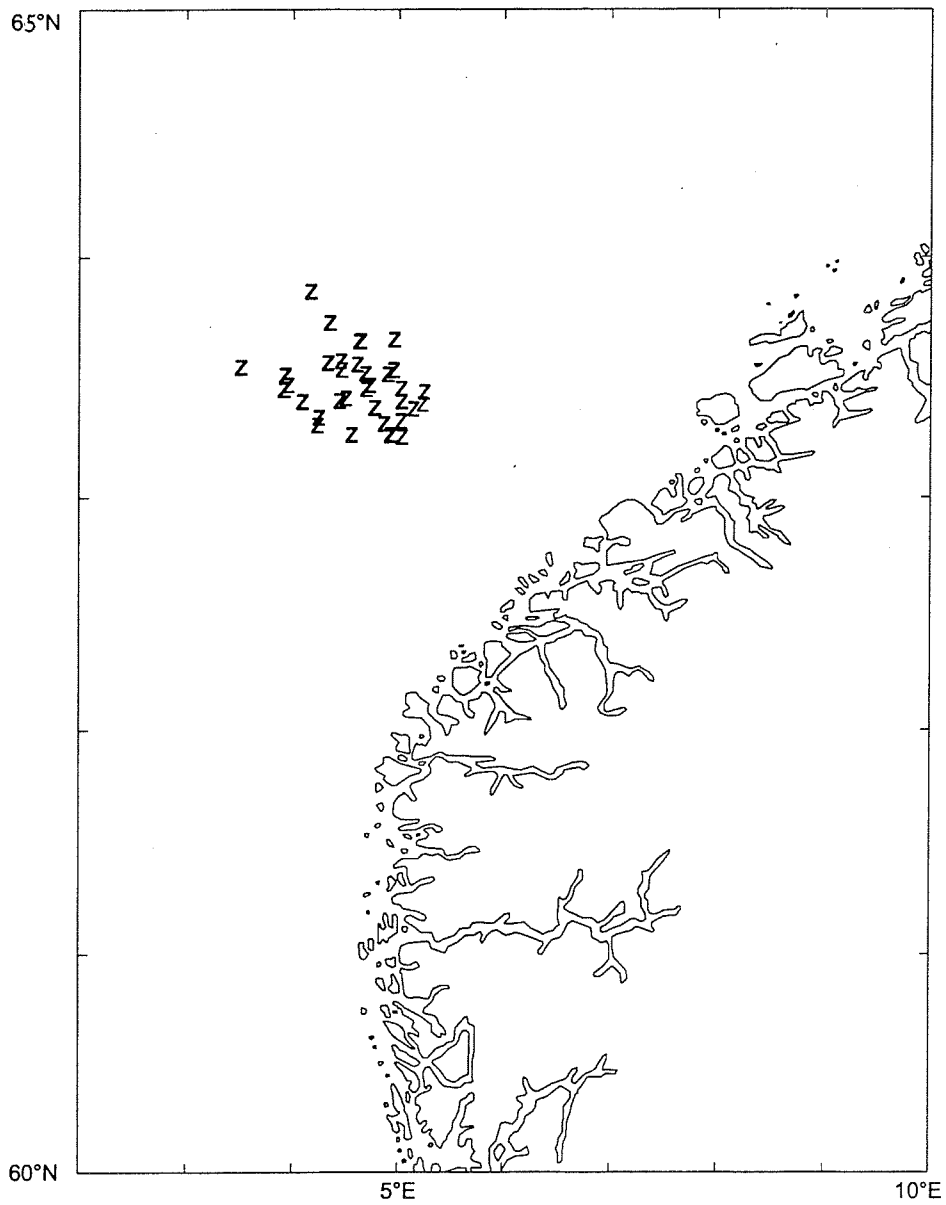
Cruise no 1998004





Базисная линия. Географические координаты: 27.24 88.11 51

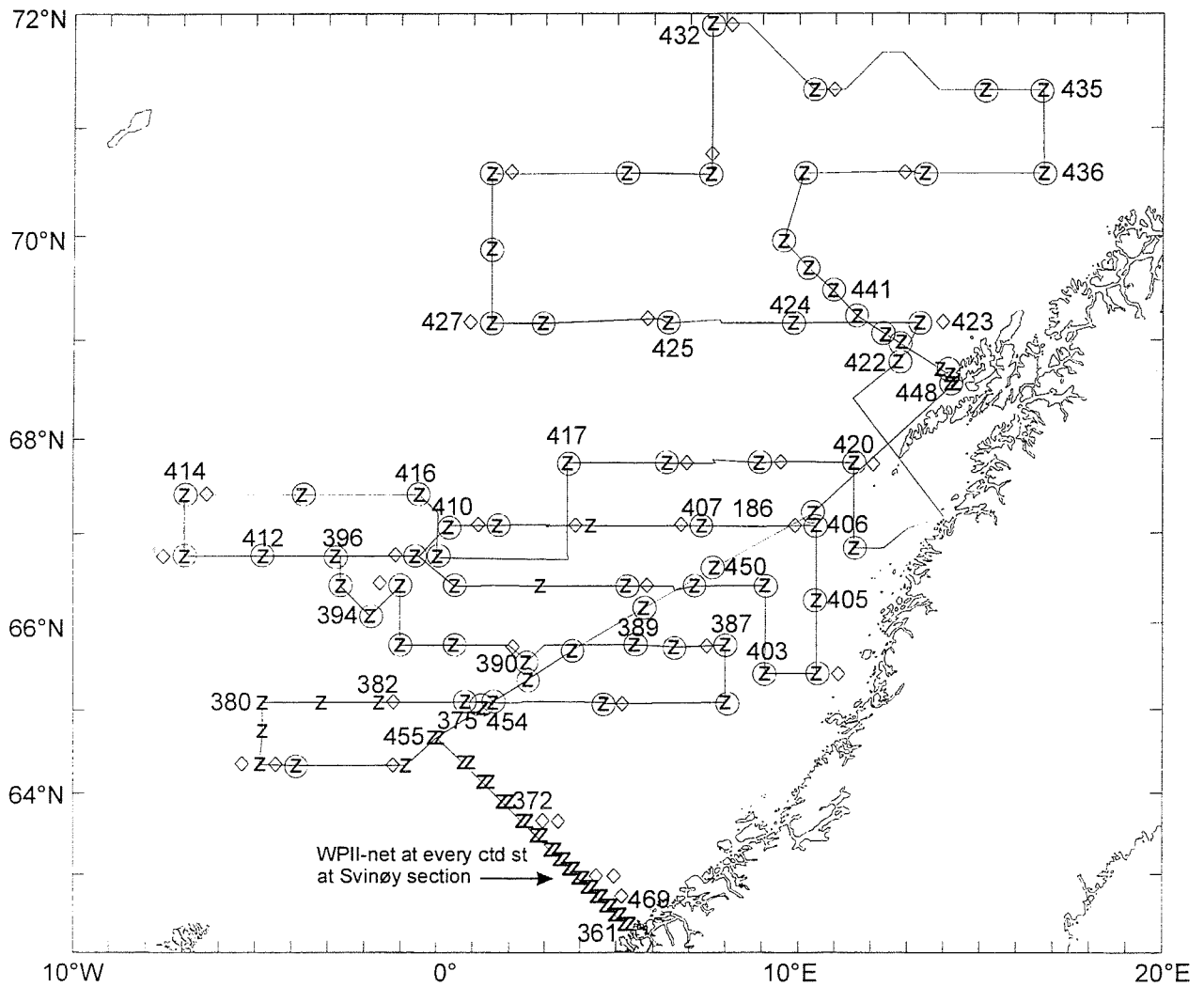




6-19 Apr 1998
 Cruise no 1998006

z CTD st.no 326-360
 Pel. TRAWL st. 132-166 and 2 plankton hauls
 in the same area (not shown).

"G.O.Sars"



21 Apr - 21 May 1998
Cruise no 1998007

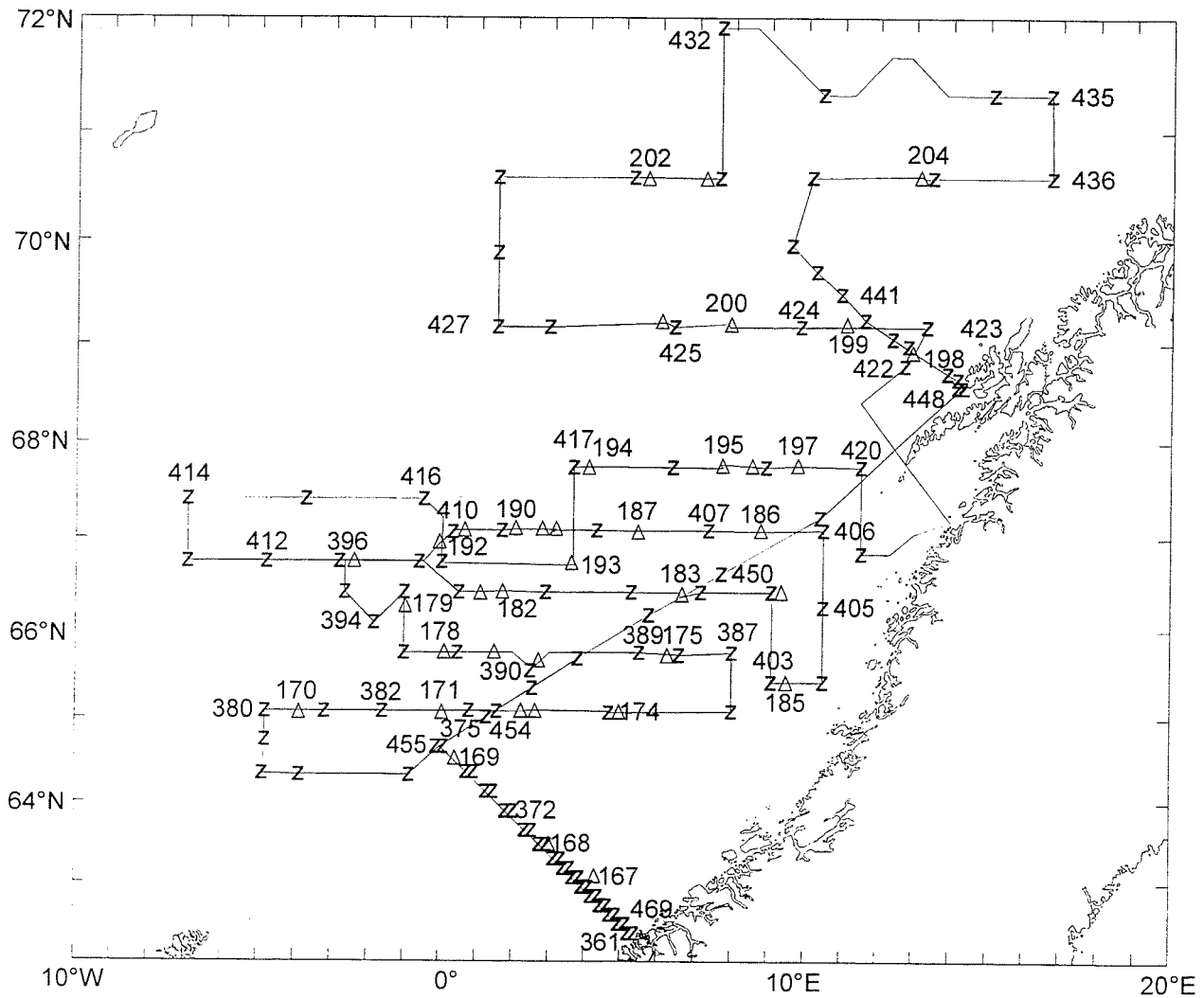
z CTD st.no 361-469

“G.O. Sars”

z PLANKTON st. (WP-II net)

◇ MOCNESS st.

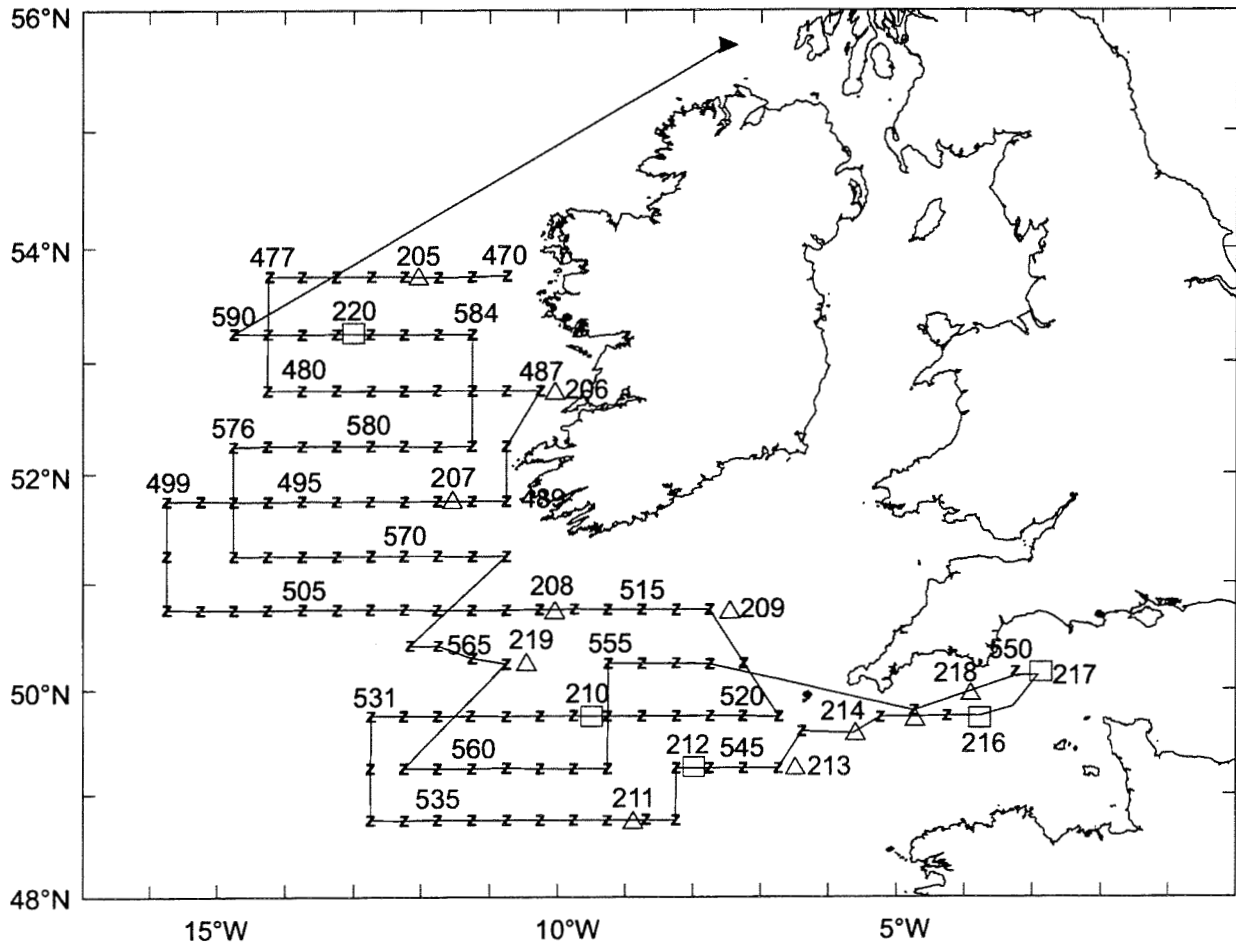
Standard section: Svinøy NW: st.no 361-375
and 455-469



21 Apr - 21 May 1998
 Cruise no 1998007

z CTD st.no 361-469
 Δ Pel. TRAWL st.no 167-204

“G.O. Sars”



23 May - 16 Jun 1998

Cruise no 1998008

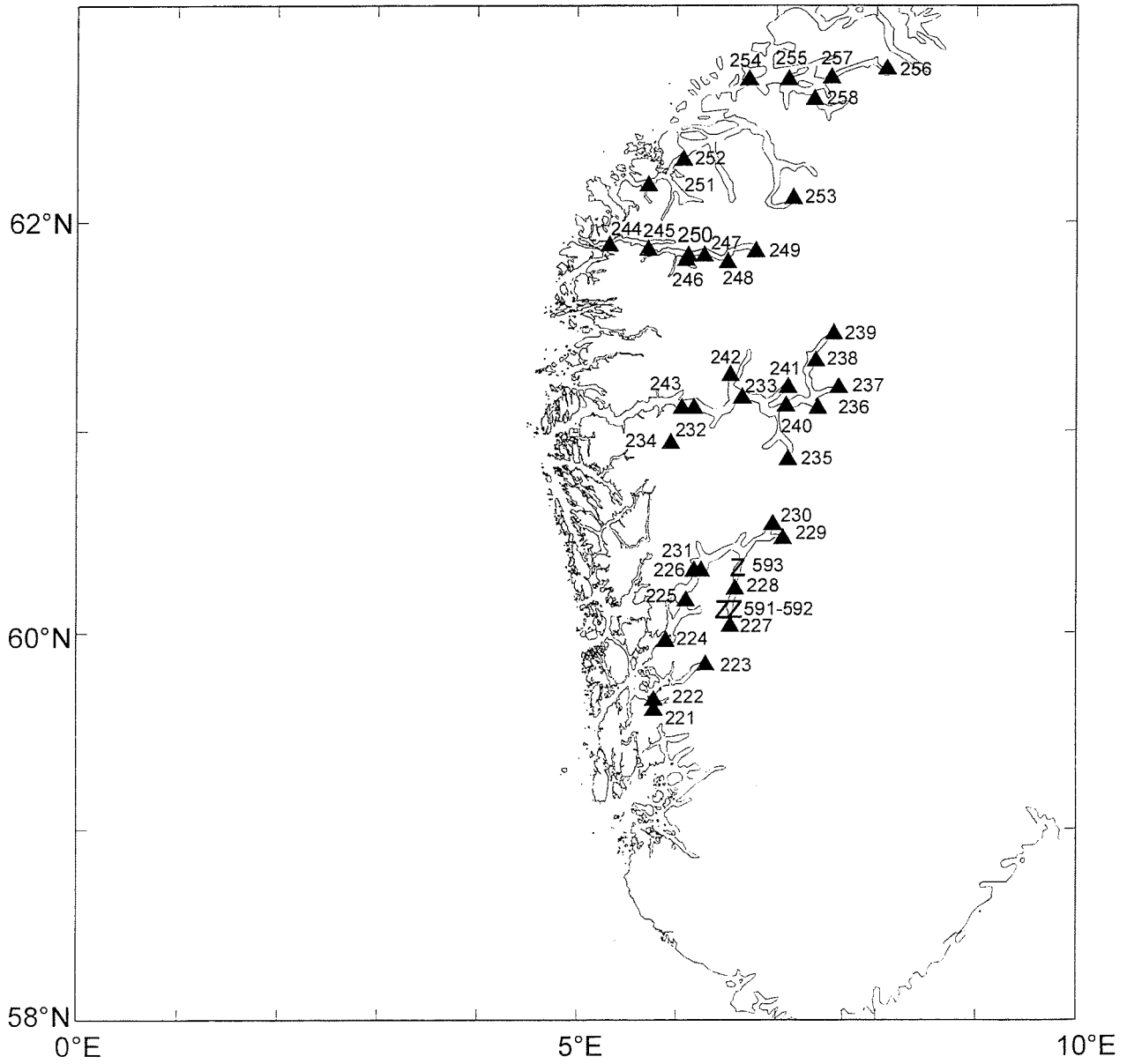
z CTD st.no 470-590

△□ TRAWL st.no 205-220

△ Pel Trawl

□ Bottom trawl

"G.O. Sars"



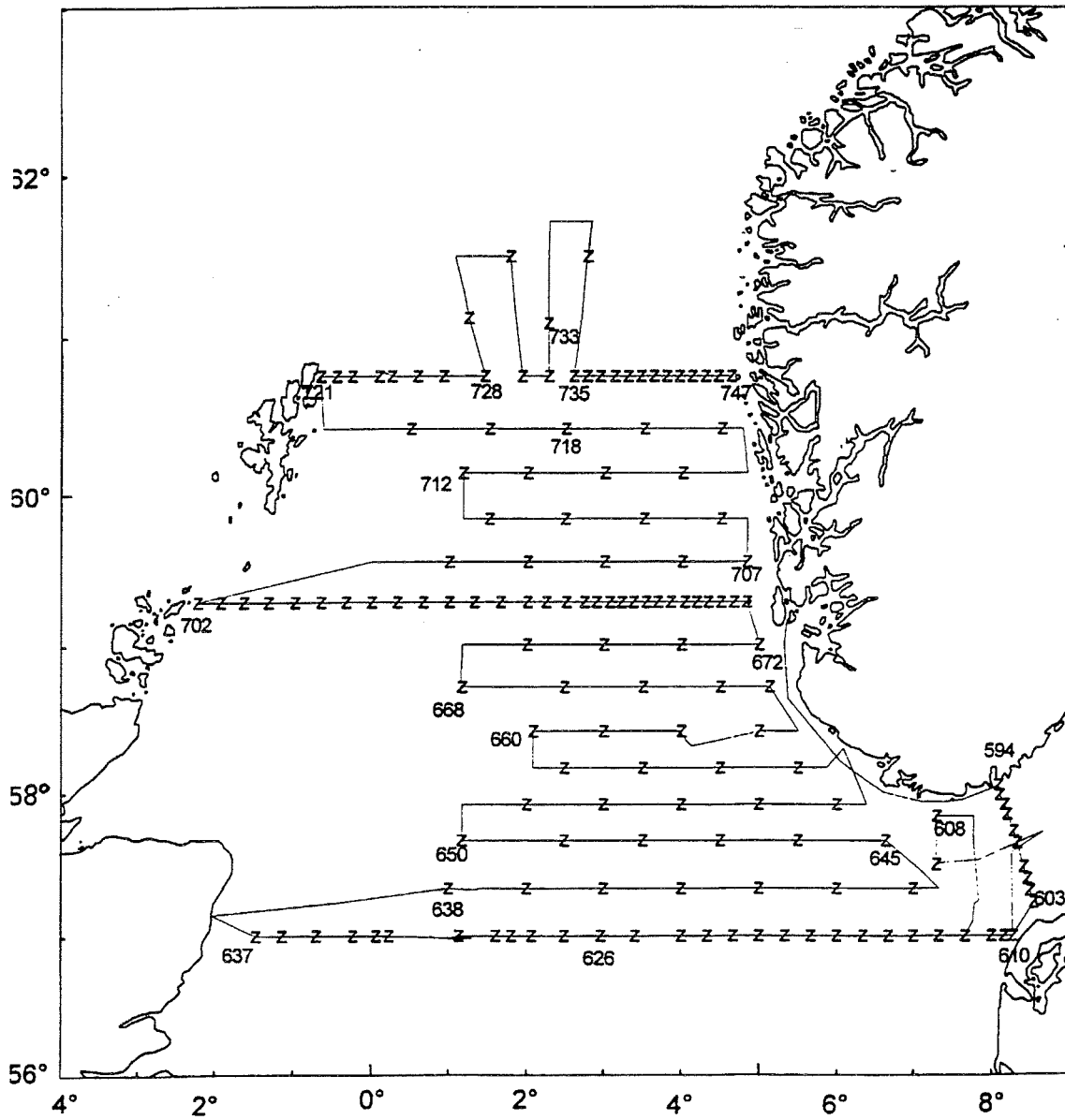
18-26 June 1998

z CTD st.no 591-593

“G. O. Sars”

Cruise no 1998009

▲ Pel. TRAWL st.no 221-258



27 Jun - 18 Jul 1998 Z CTD st.no 594-747

"G.O. Sars"

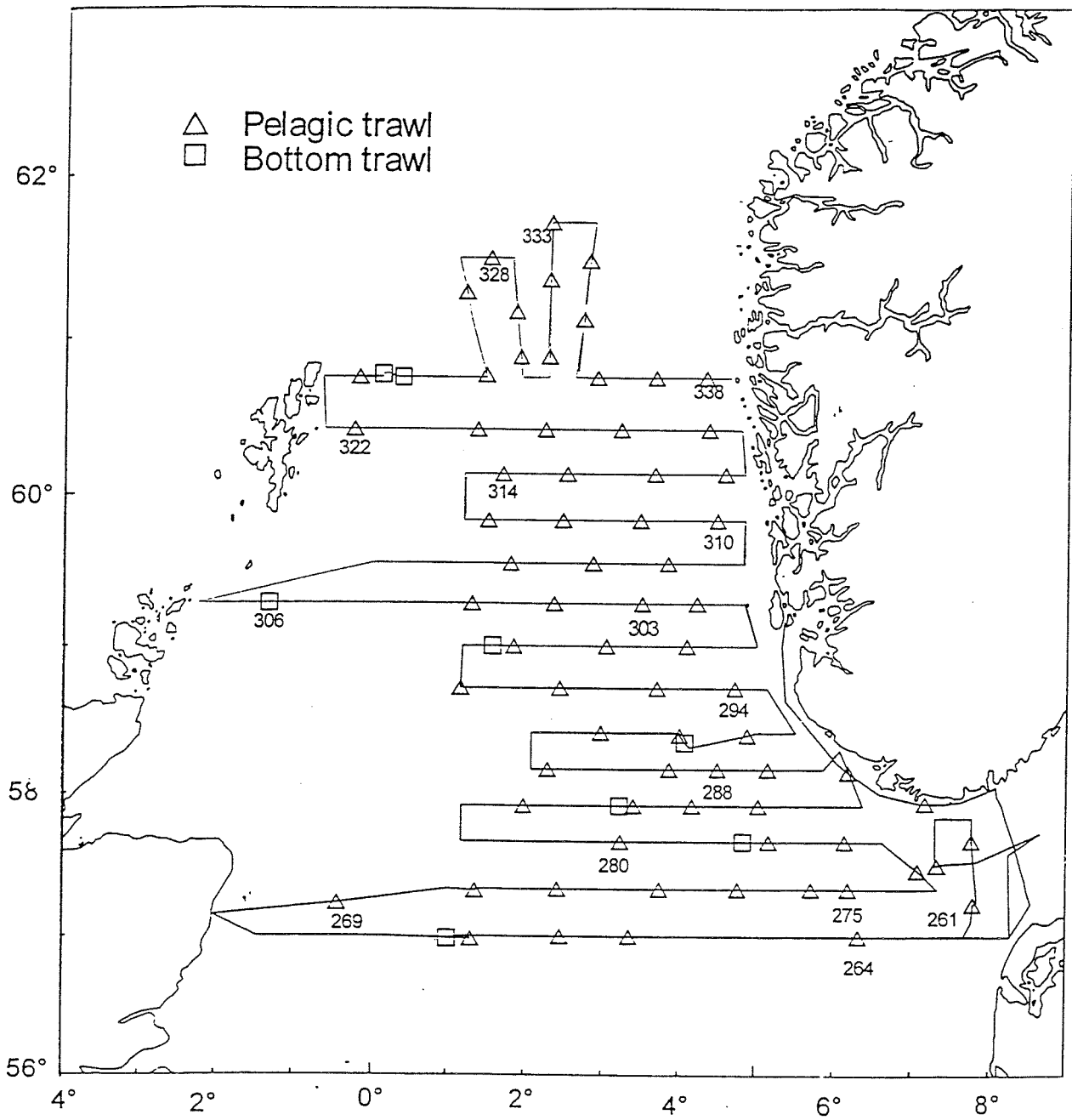
Cruise no 1998010

Standard sections: Feie Shetland st.no 721-747

Utsira W st.no 673-702

Hanstholm-Aberdeen st.no 610-637

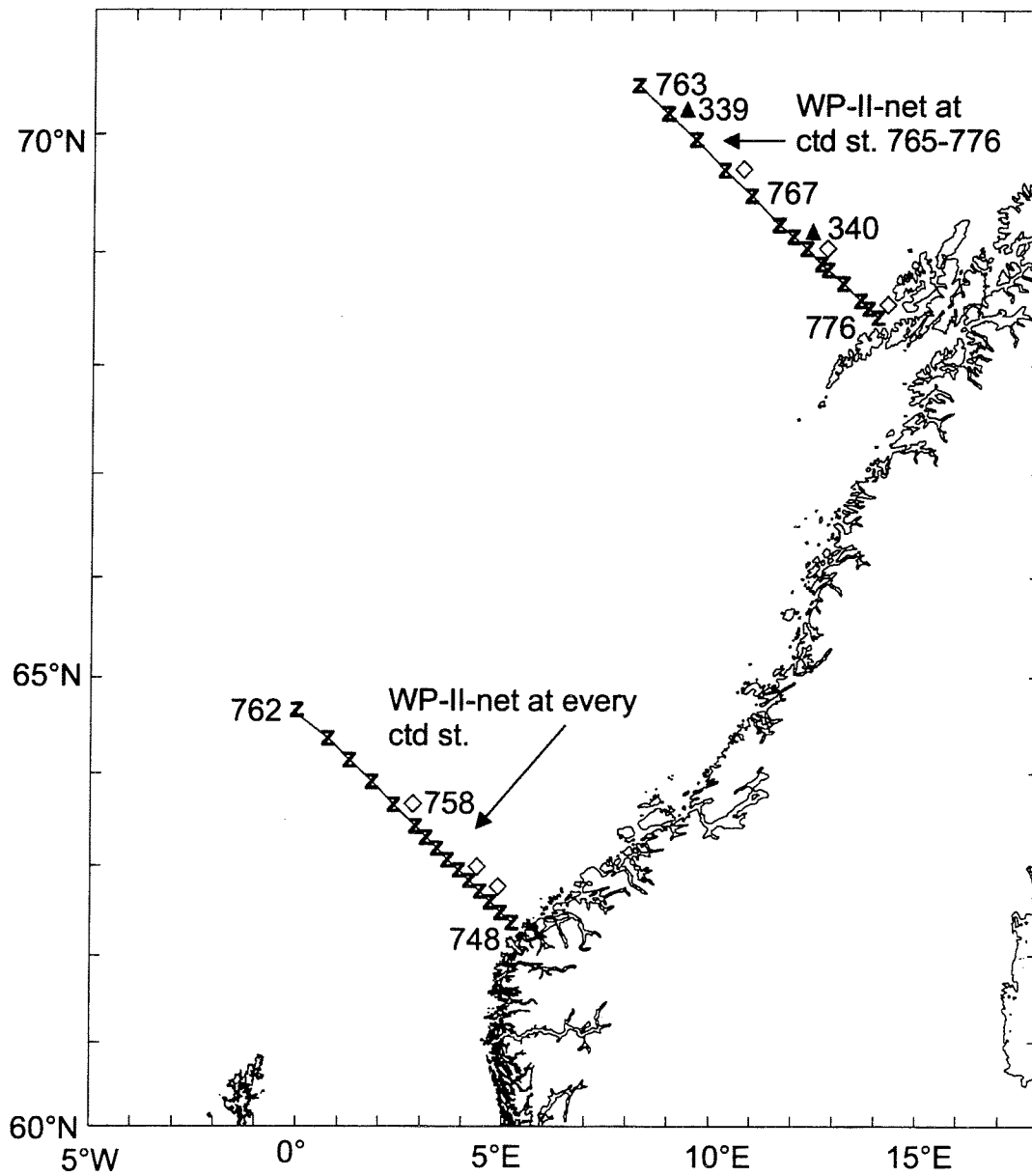
Oksøy-Hanstholm st.no 594-603



27 Jun - 18 Jul 1998 TRAWL st.no 259-338

Cruise no 1998010

"G.O. Sars"



21 - 27 July 1998
 Cruise no 1998011

z CTD st. no 748-776

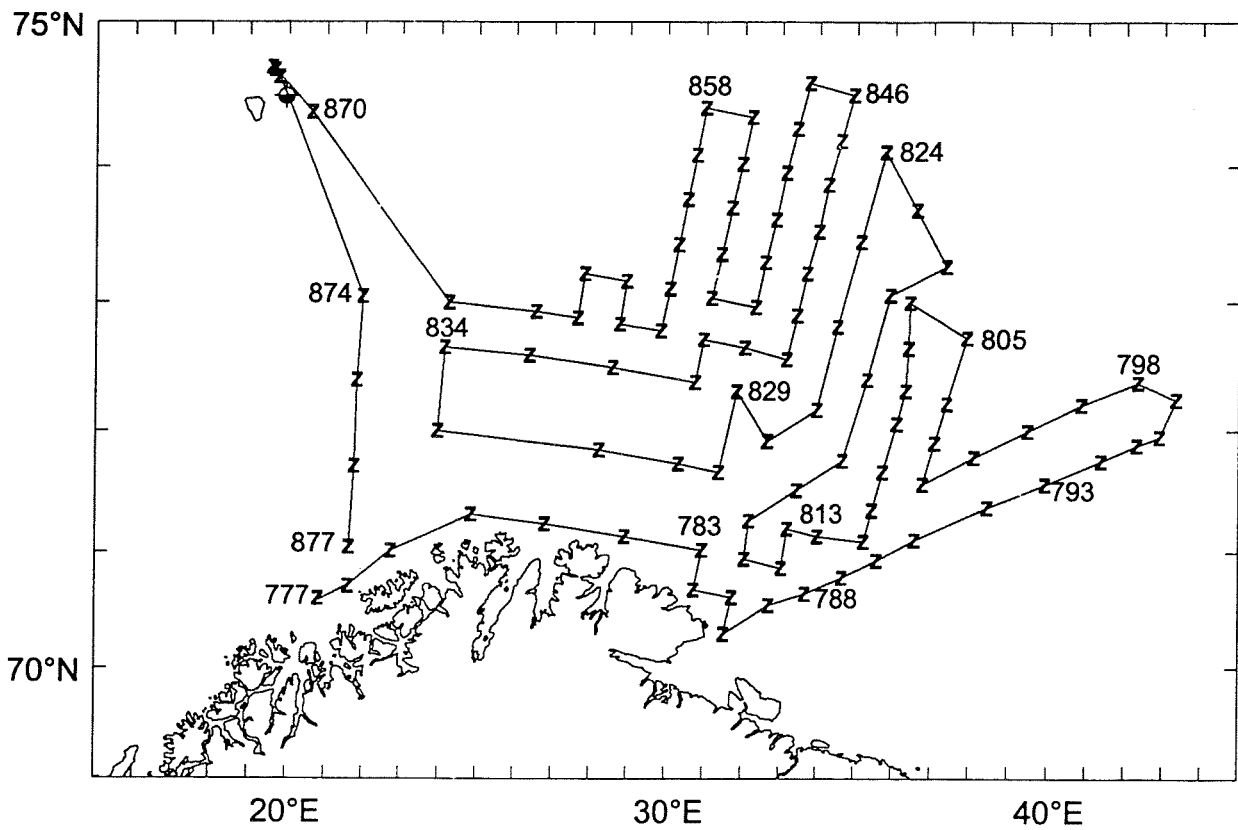
“G. O. Sars”

◇ MOCNESS st.

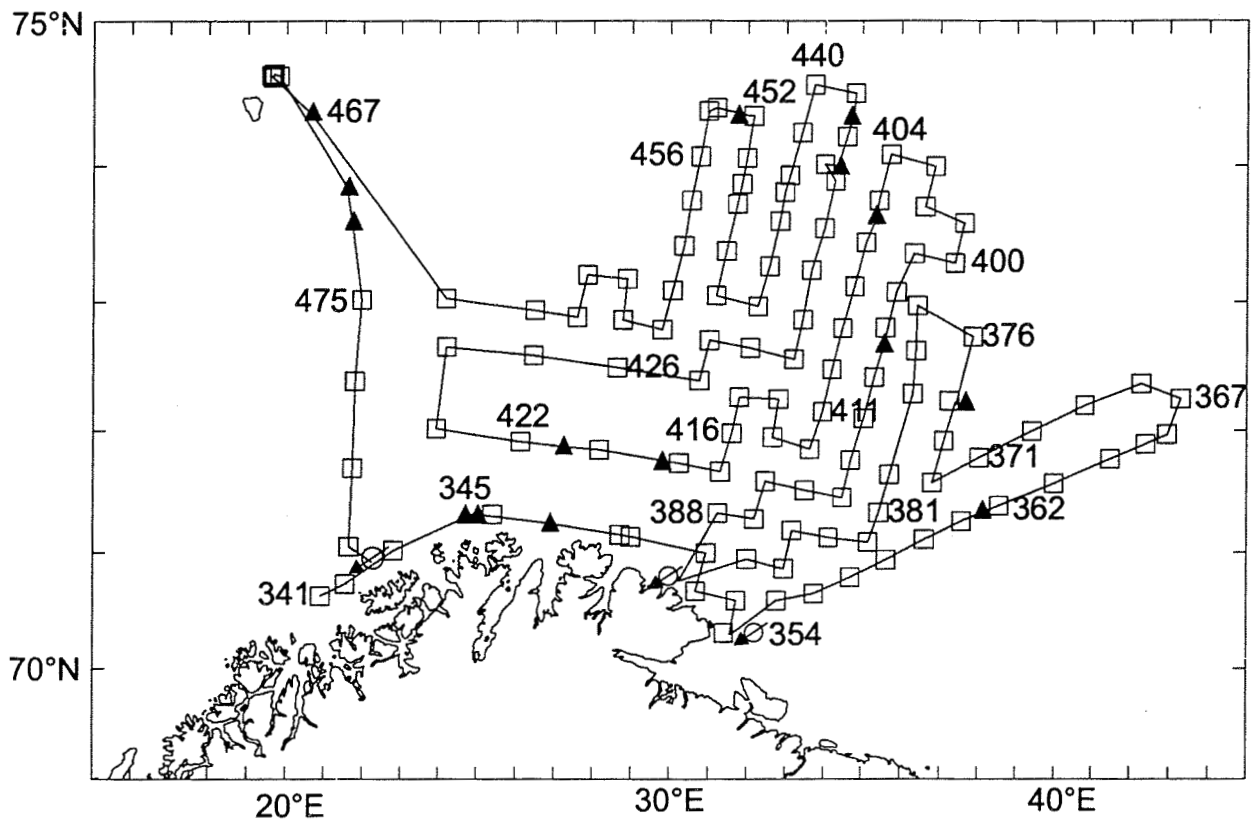
▲ Pel. TRAWL st.no 339-340

Standard sections: Svinøy NW st.no 748-762

Gimsøy NW st.no 763-776

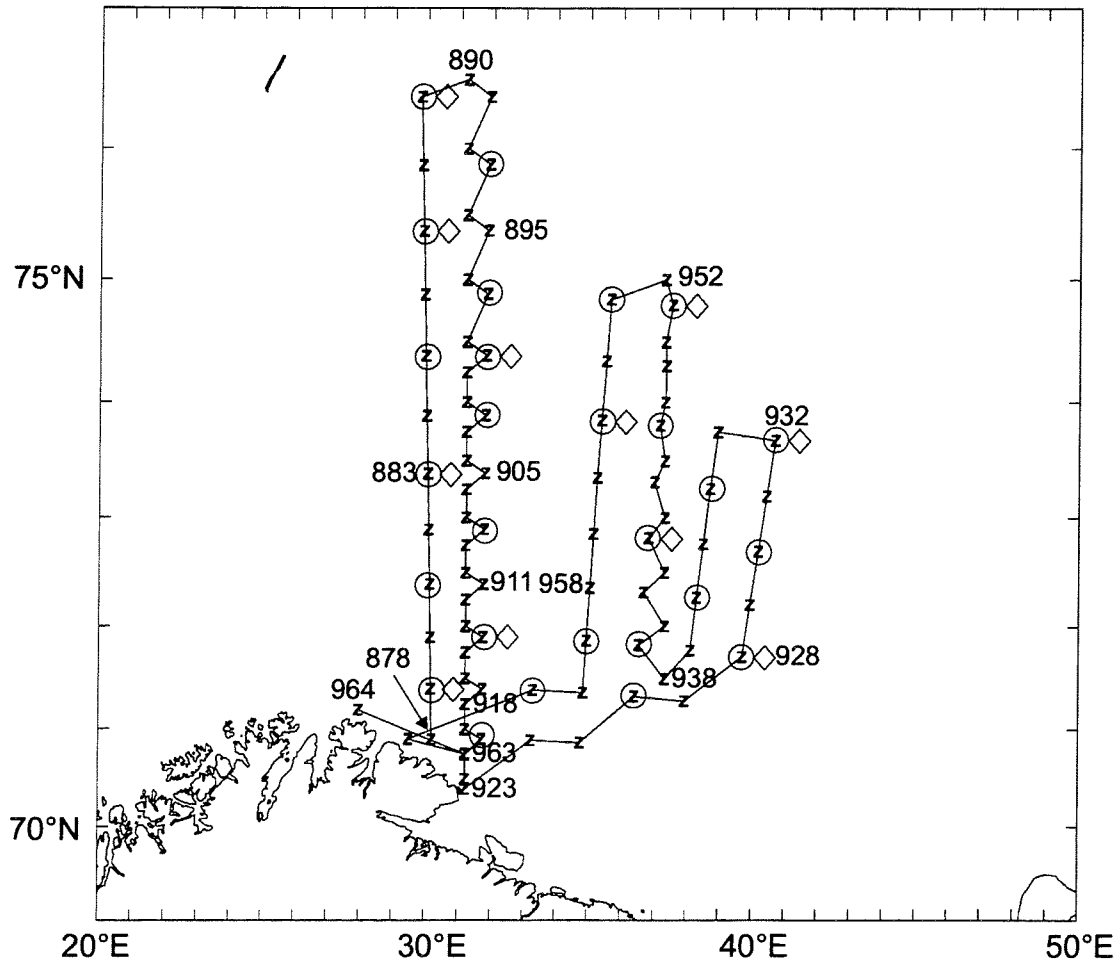


28 Jul - 23 Aug 1998 z CTD st.no 777-877 "G.O.Sars"
 Cruise no 1998012 ♦ Echo sounder buoy, drifting



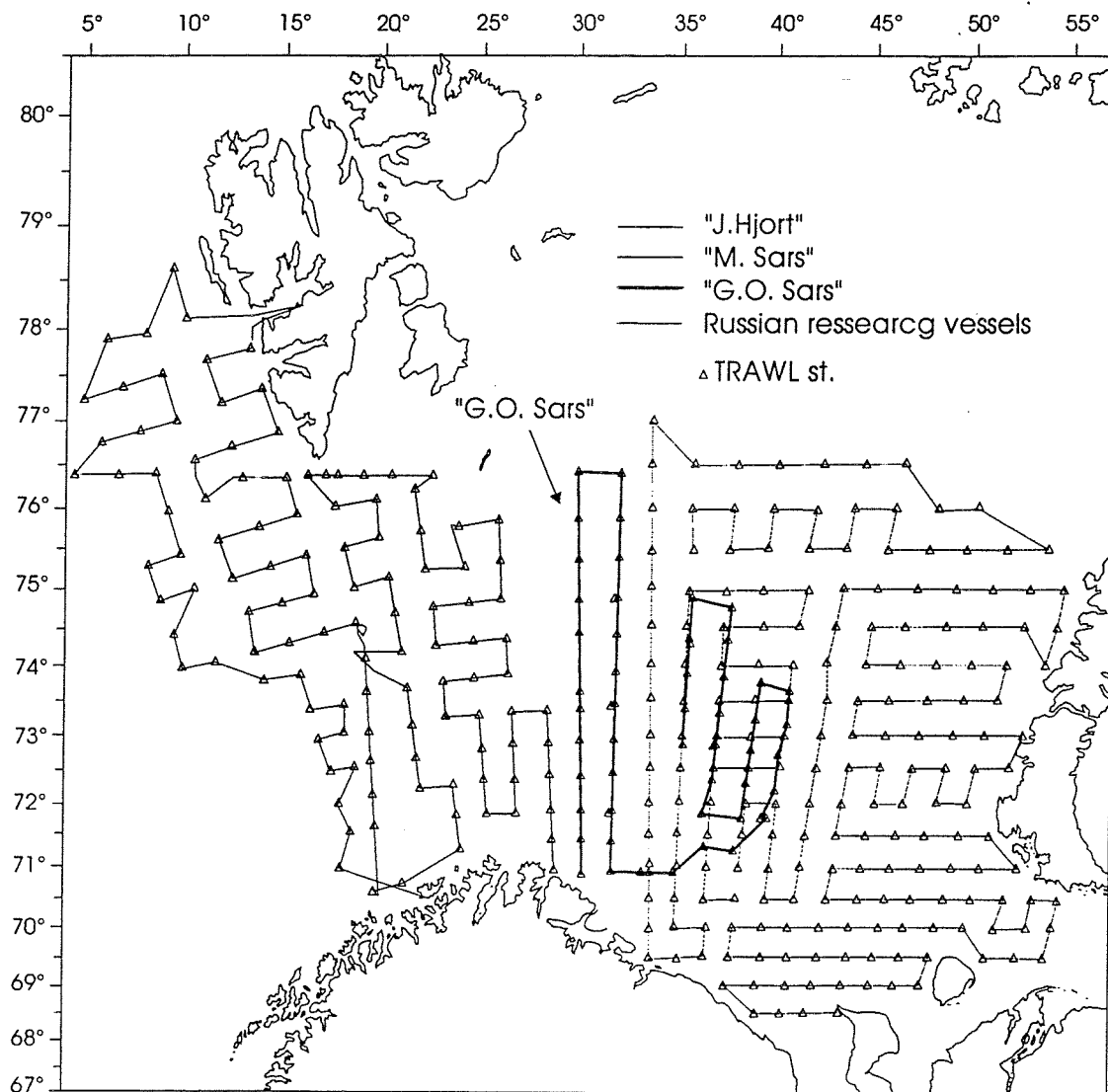
28 Jul -23 Aug 1998
 Cruise no 1998012

TRAWL st.no 341-479 "G.O. Sars"
 □ Bottom tr.
 ▲ Pel. tr.
 ◉ Hand line (st.no 354,387,479)



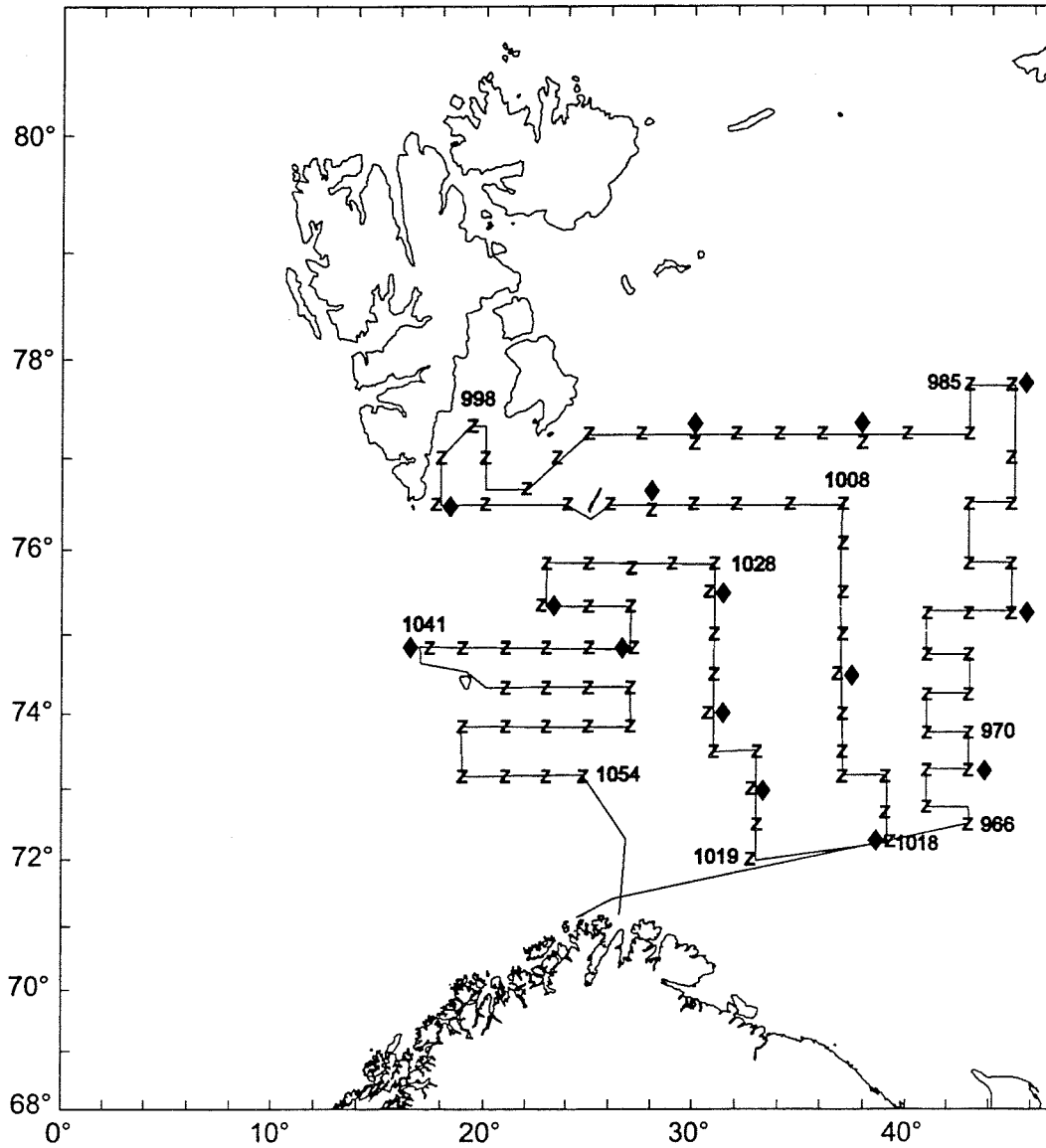
25 Aug - 9 Sep 1998
Cruise no 1998013

z CTD st.no 878-964 "G.O.Sars"
 ⊗ CTD and PLANKTON st. (WP II-net)
 ◇ MOCNESS st.
 Standard section: VardøN: st.no 890-923



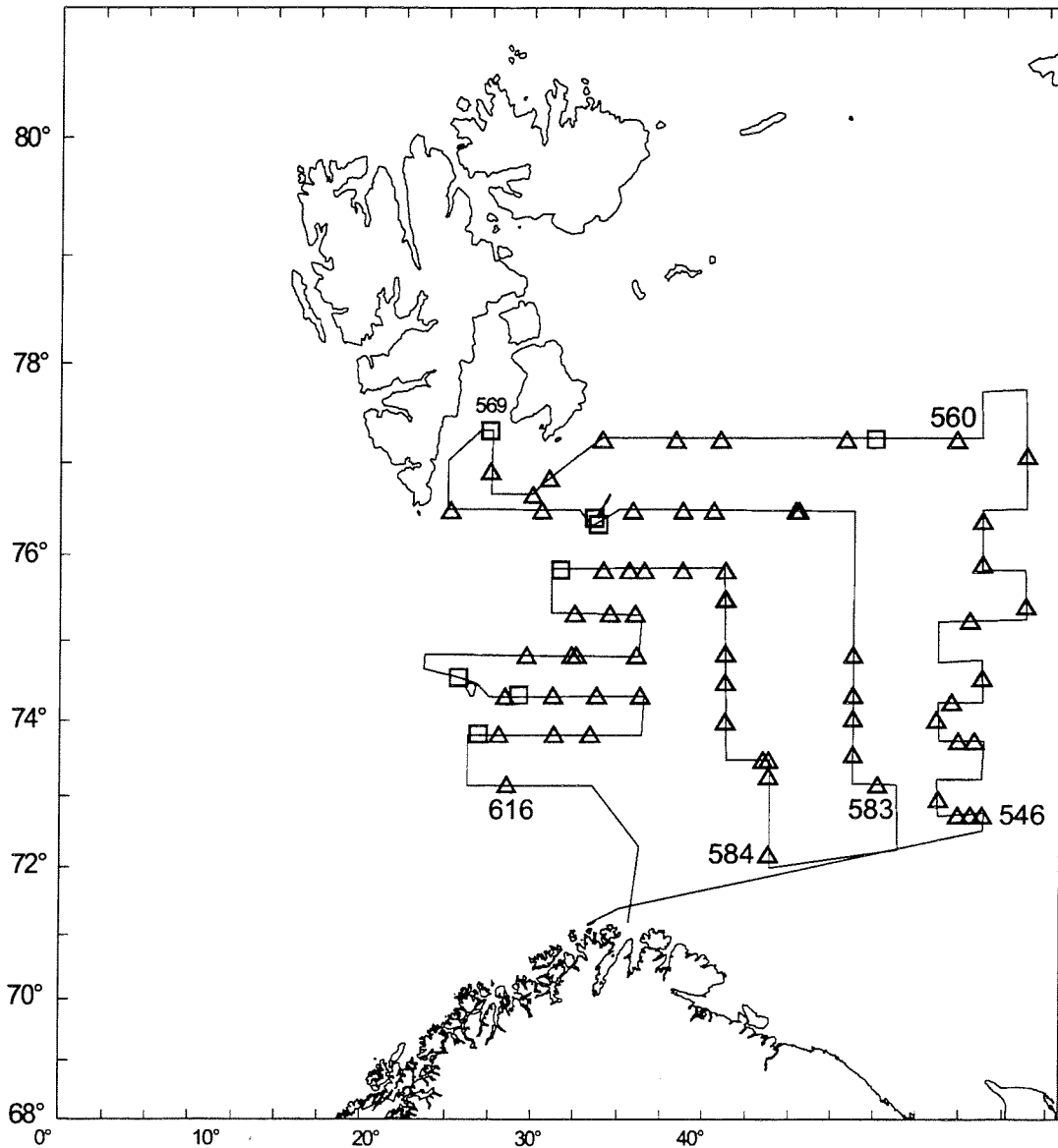
25 Aug - 9 Sep 1998
Cruise no 1998013

△ Pel. TRAWL st. 480-539 "G.O. Sars"

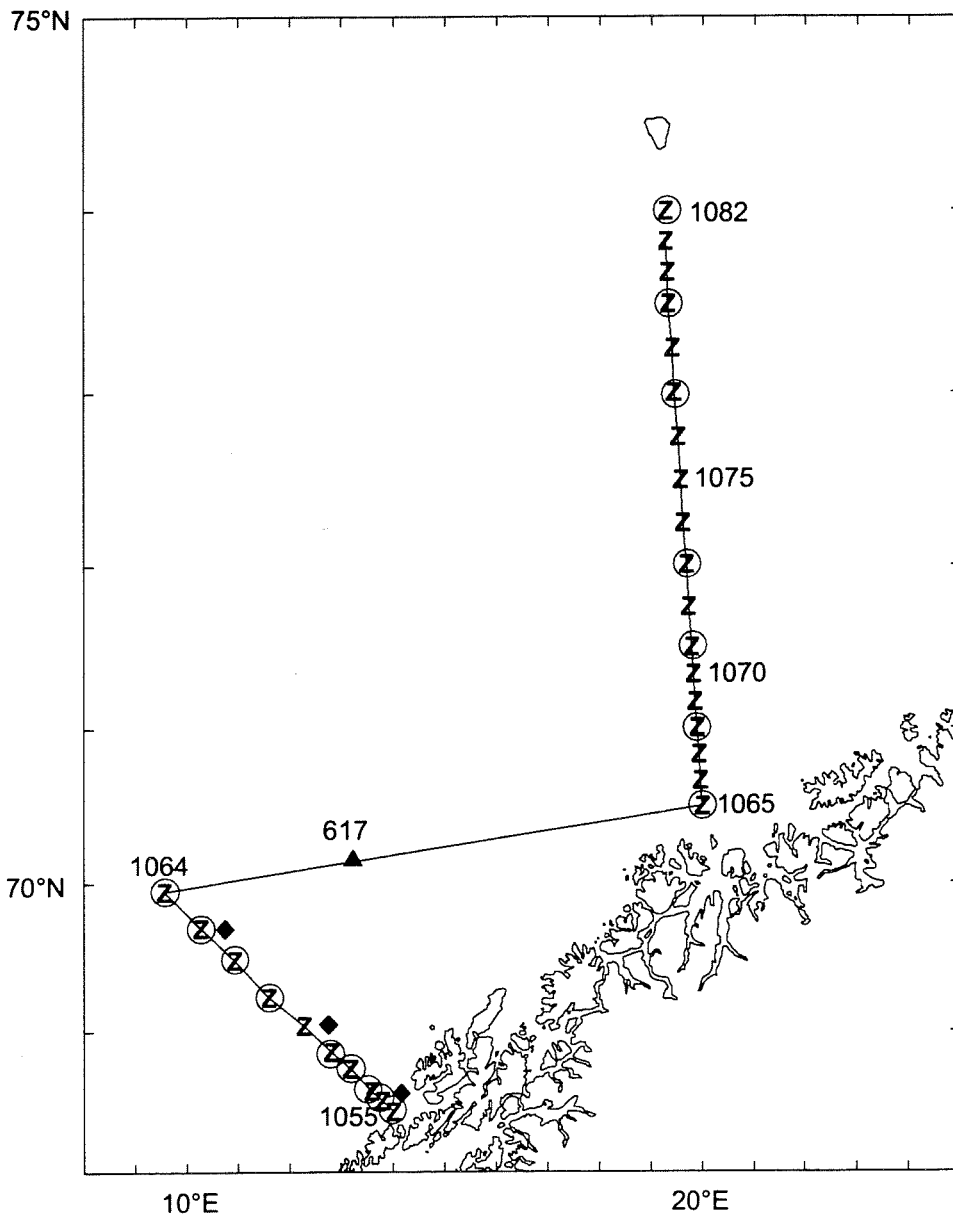


10 Sep - 5 Oct 1998
 Cruise no 1998014

z CTD st.no 966-1054 "G.O. Sars"
 PLANKTON (WpII-net) at every
 ctd st - except st 1005,1050,1052-1054
 ♦ Mocness st.

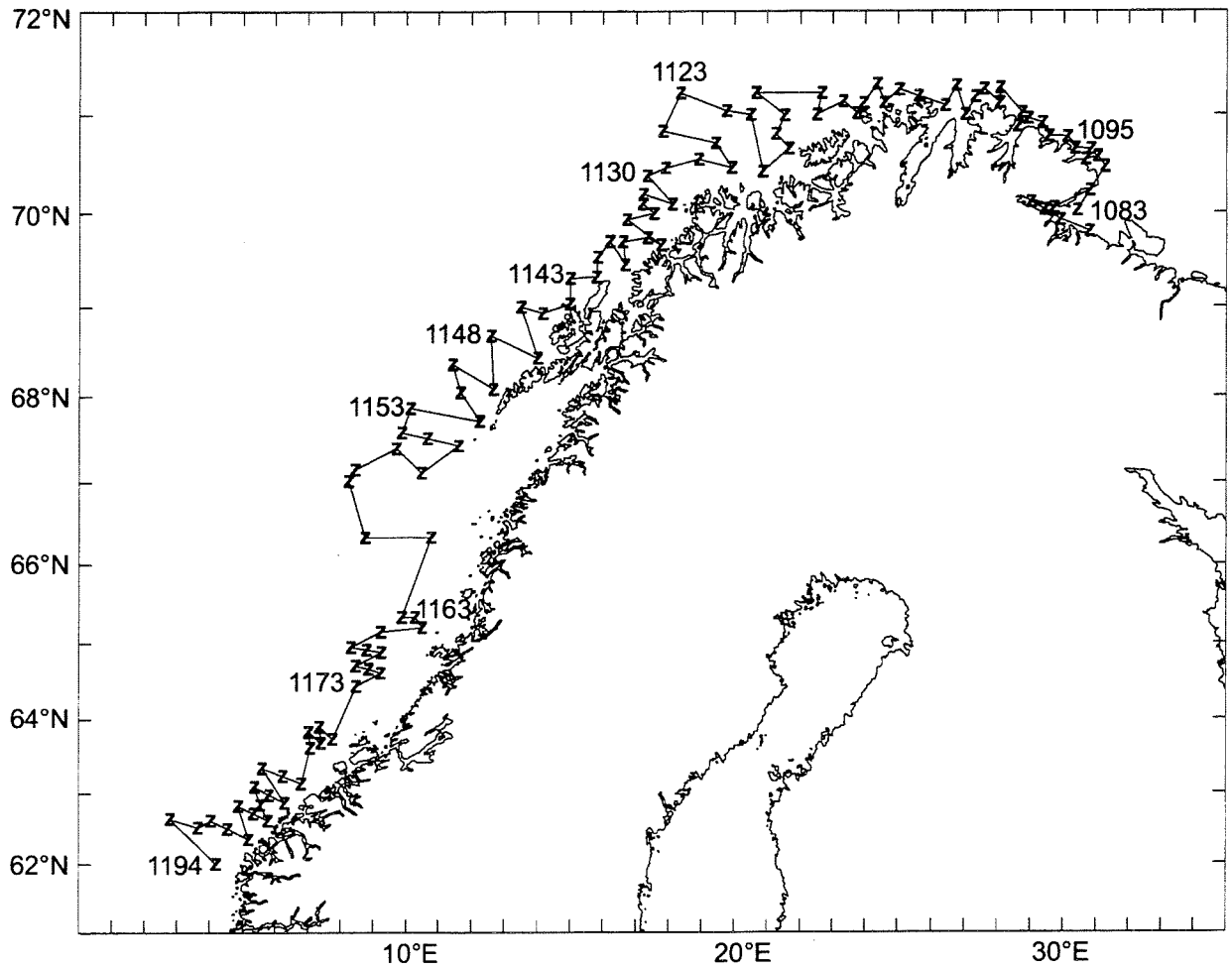


10 Sep - 5 Oct 1998 □ △ TRAWL st.no 546-616 "G.O. Sars"
 Cruise no 1998014 △ Pel tr.
 □ Bottom tr.



7 - 14 Oct 1998
Cruise no 1998015

- z CTD st.no 1055-1082 "G.O. Sars"
- ⊗ CTD and PLANKTON st. (WPII-net)
- ◆ MOCNESS st.
- ▲ Pel TRAWL no 617
- Standard section Gimsøy NW: st.no 1055-1064
- Fugløya-Bjørnøya: st.no 1065-1082

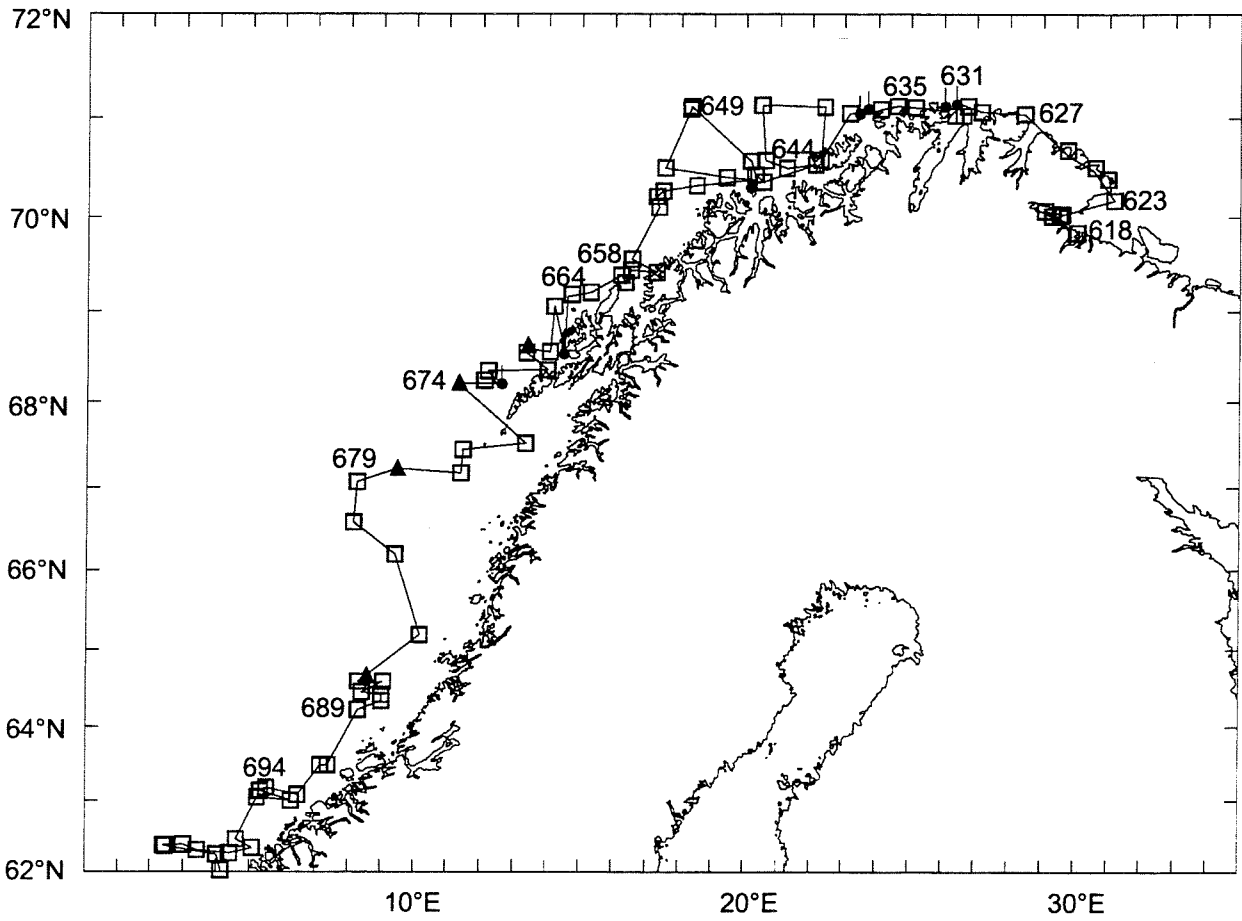


14 Oct - 5 Nov 1998

z CTD st.no 1083-1194

"G.O. Sars"

Cruise no 1998016



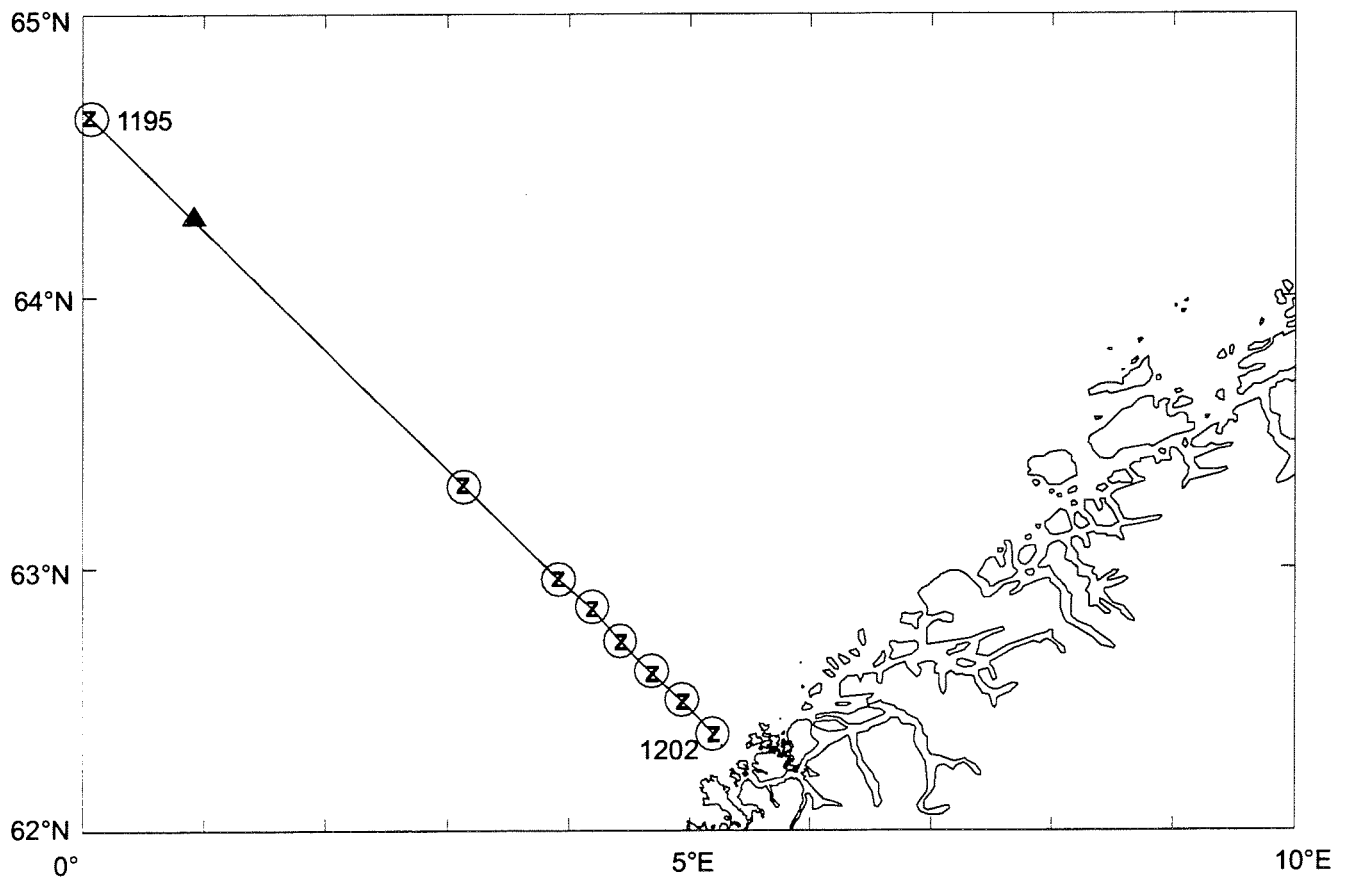
14 Oct - 5 Nov 1998

TRAWL st.no 618-705

“G.O. Sars”

Cruise no 1998016

- Bottom trawl
- ▲ Pel. trawl
- Hand line



6-10 Nov 1998

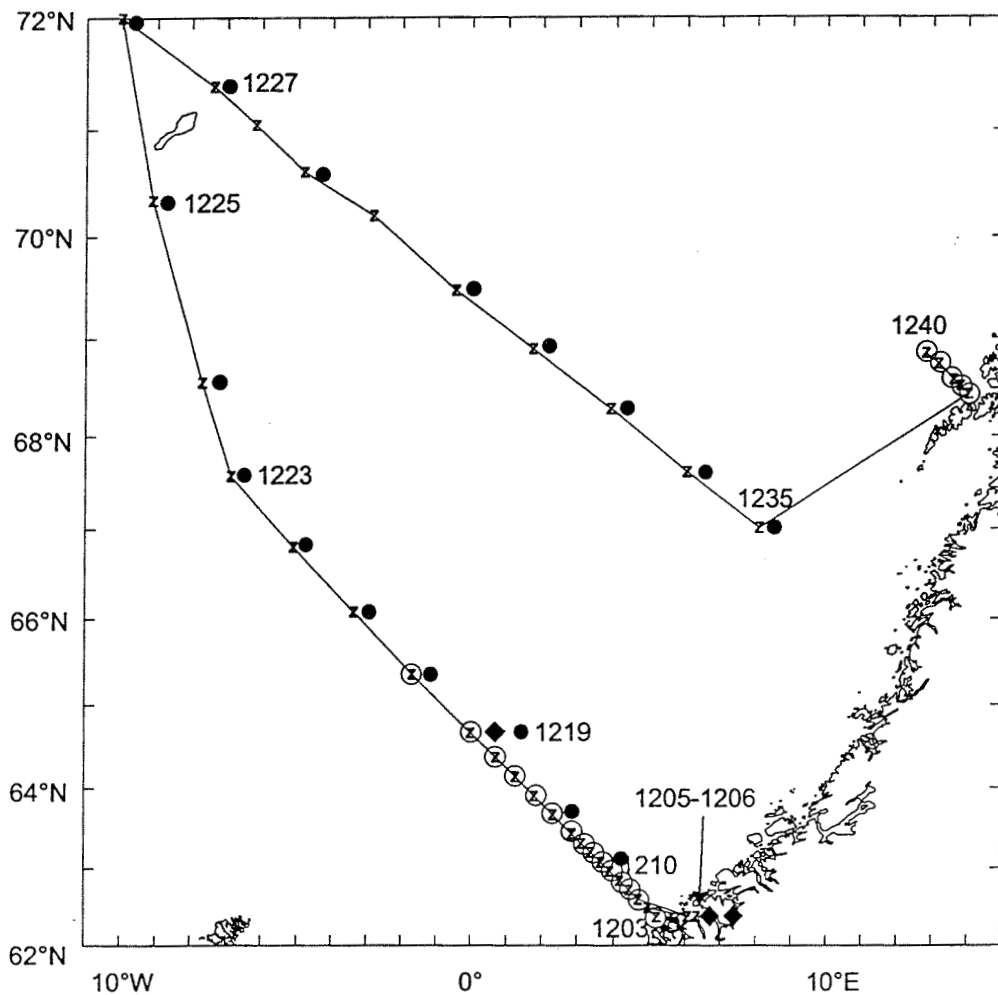
Standard section Svinøy NW:

“G.O. Sars”

Cruise no 1998017

⓪ CTD and PLANKTON st. (WP-II-net) st.no 1195-1202

▲ Pel. TRAWL st.



28 Nov - 22 Dec 1998 z CTD st.no 1203-1240 "G.O. Sars"

Cruise no 1998018

⊗ WP-II net

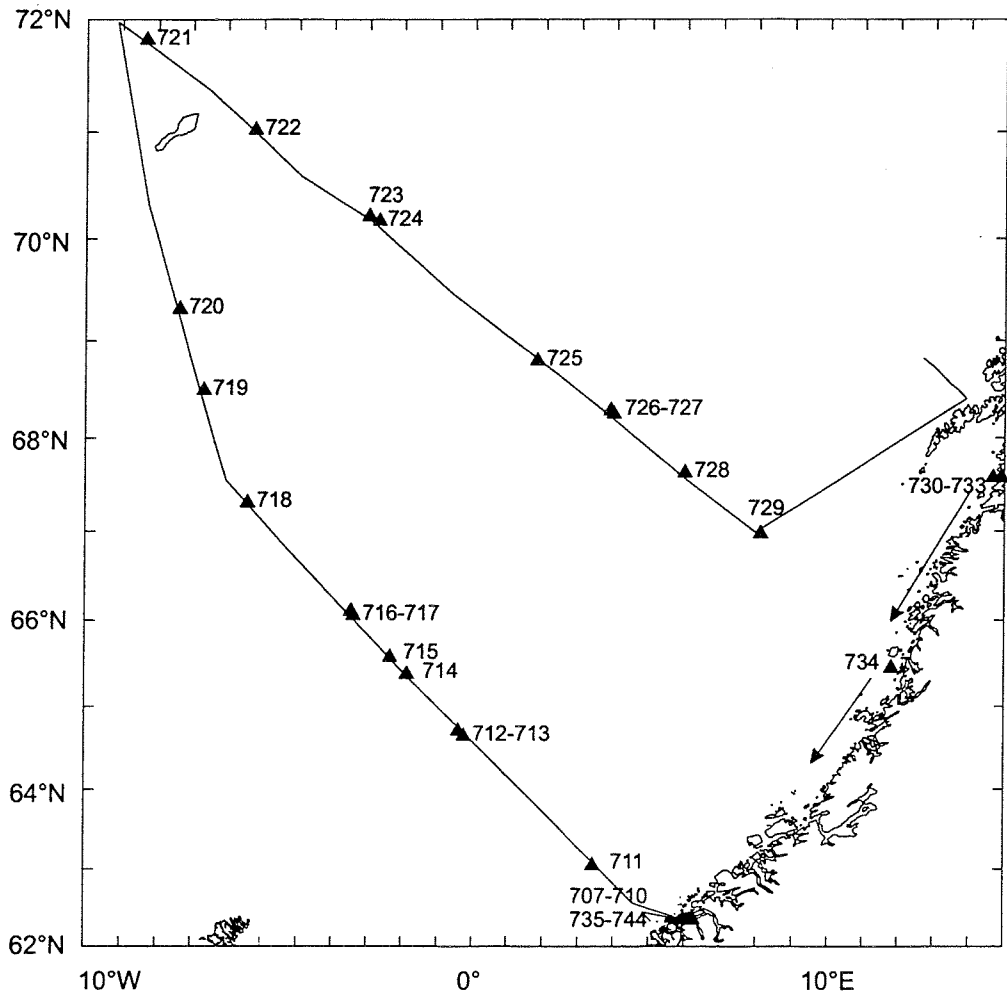
◆ Mocness st.

● Multinet

Standard section:

Svinøy NW st.no 1203-1204, 1207-1219

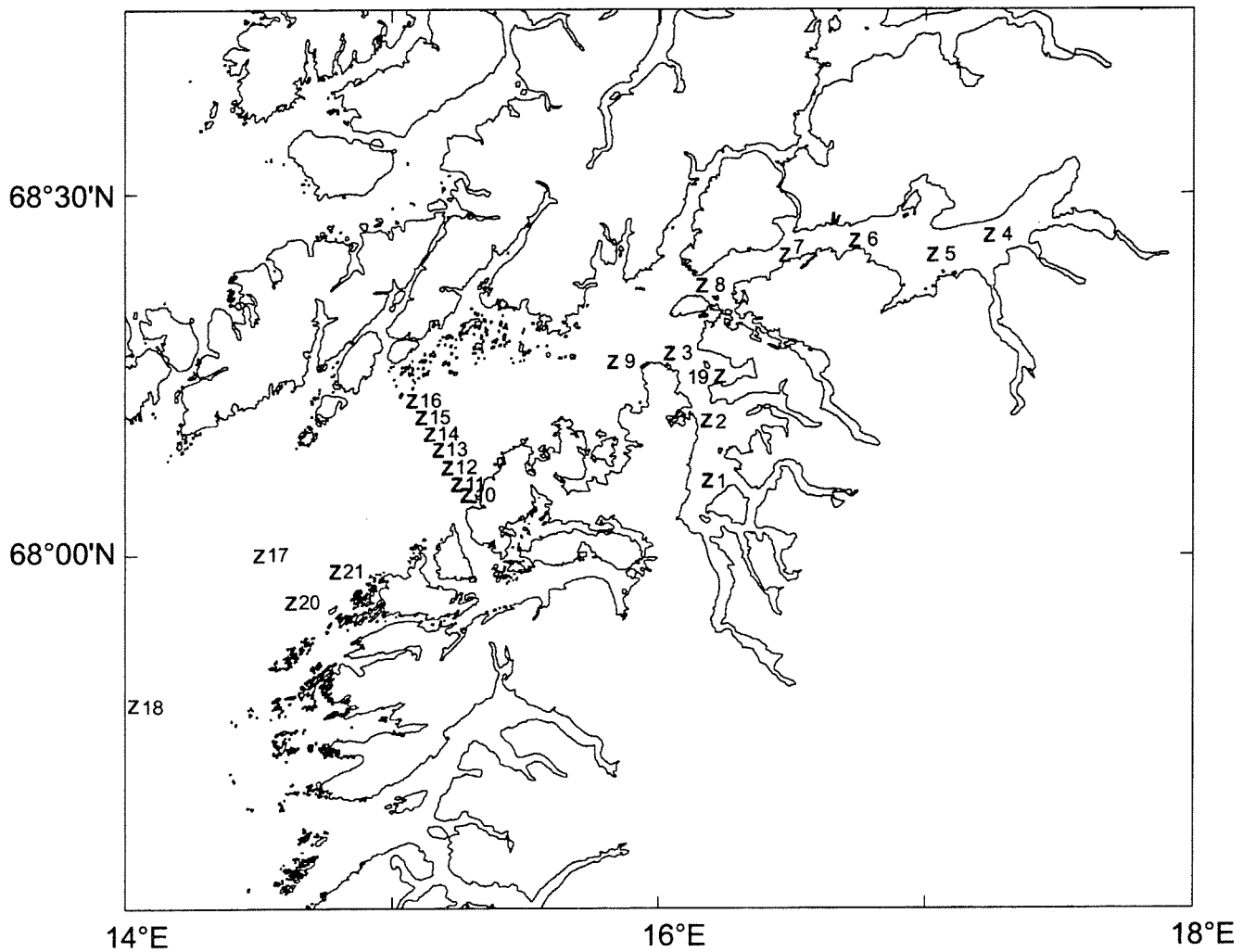
Gimsøy NW st.no 1236-1240



28 Nov - 22 Dec 1998
 Cruise no 1998018

▲ Pel TRAWL st.no 707-744

“G.O. Sars”

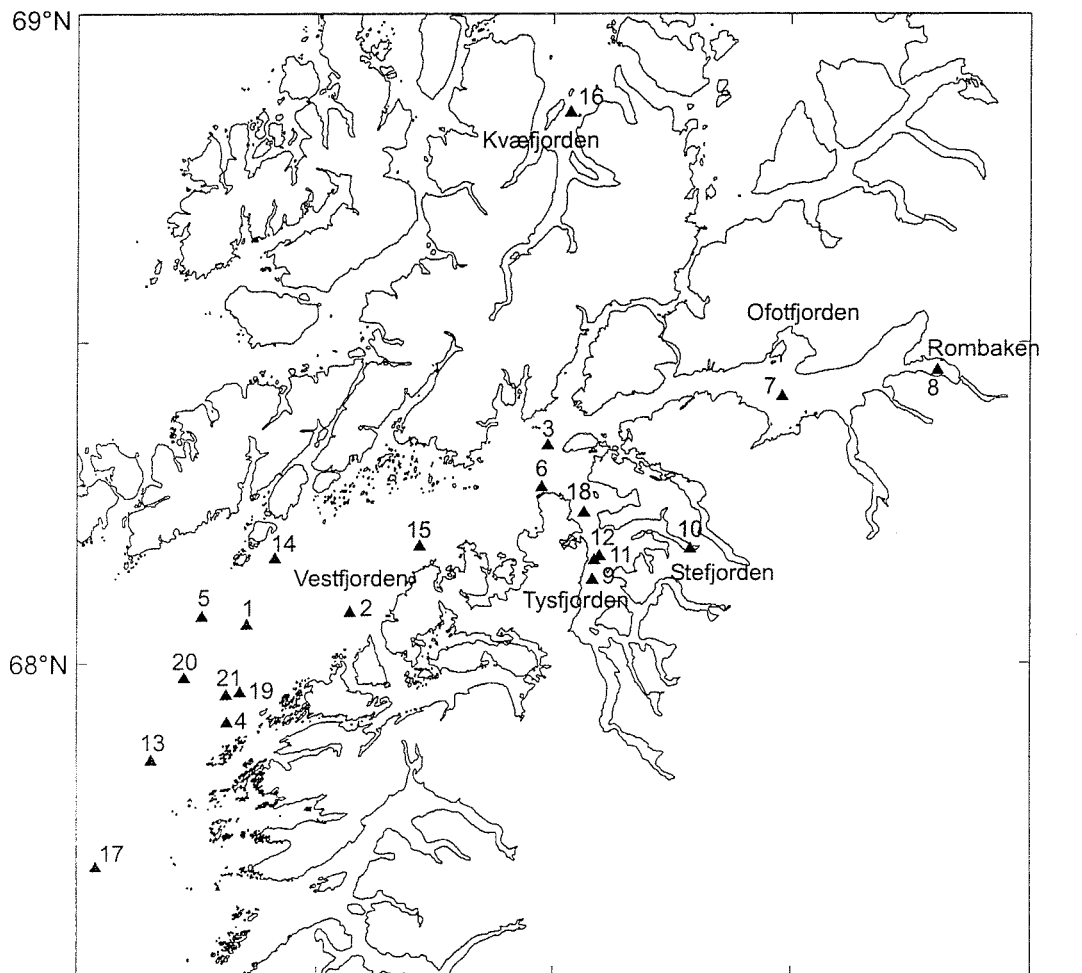


4 - 29 Jan 1998

z CTD st.no 1-21

“Johan Hjort”

Cruise no 1998201



14°E

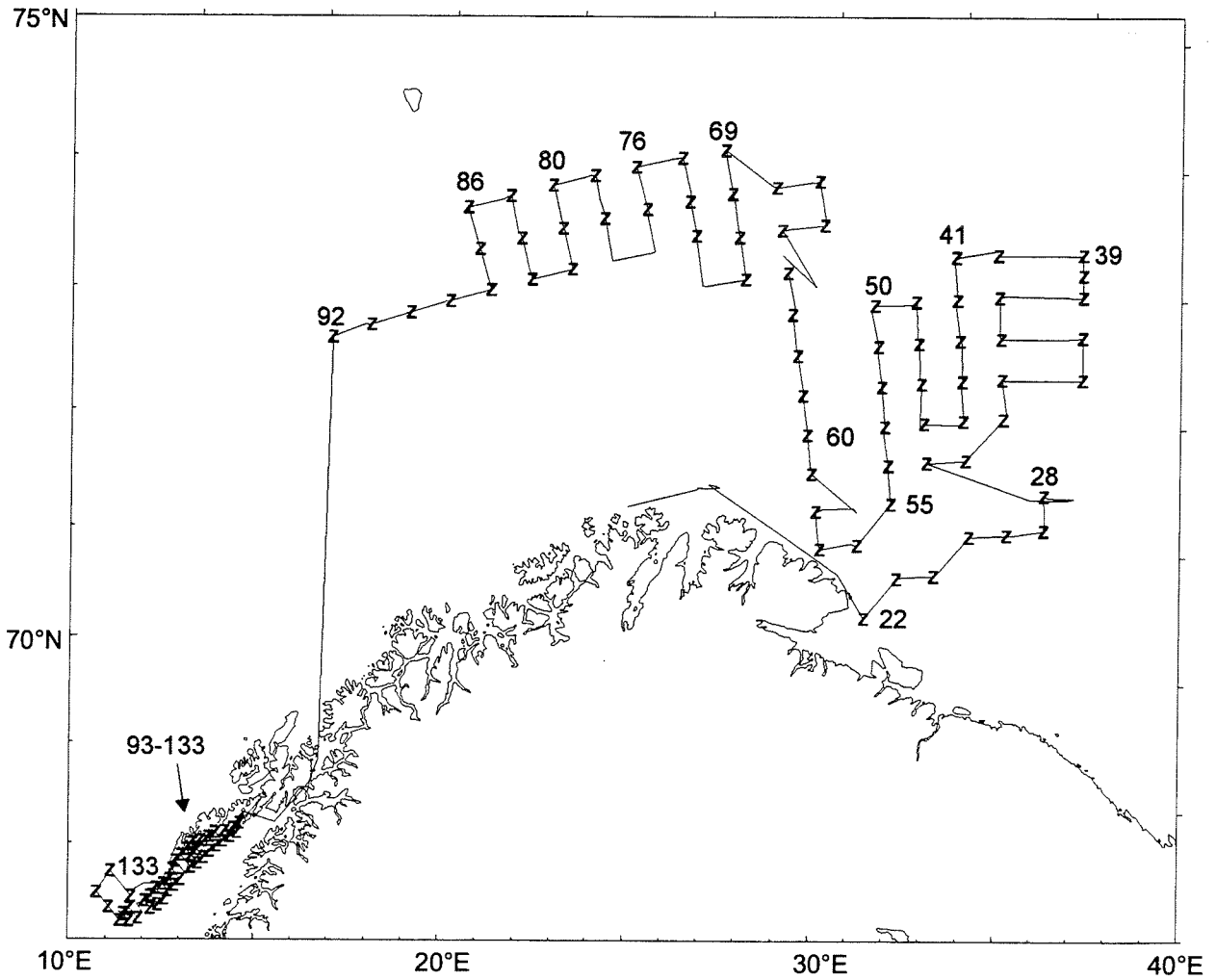
16°E

18°E

4 - 29 Jan 1998 ▲ Pel. TRAWL st.no 1-21

“Johan Hjort”

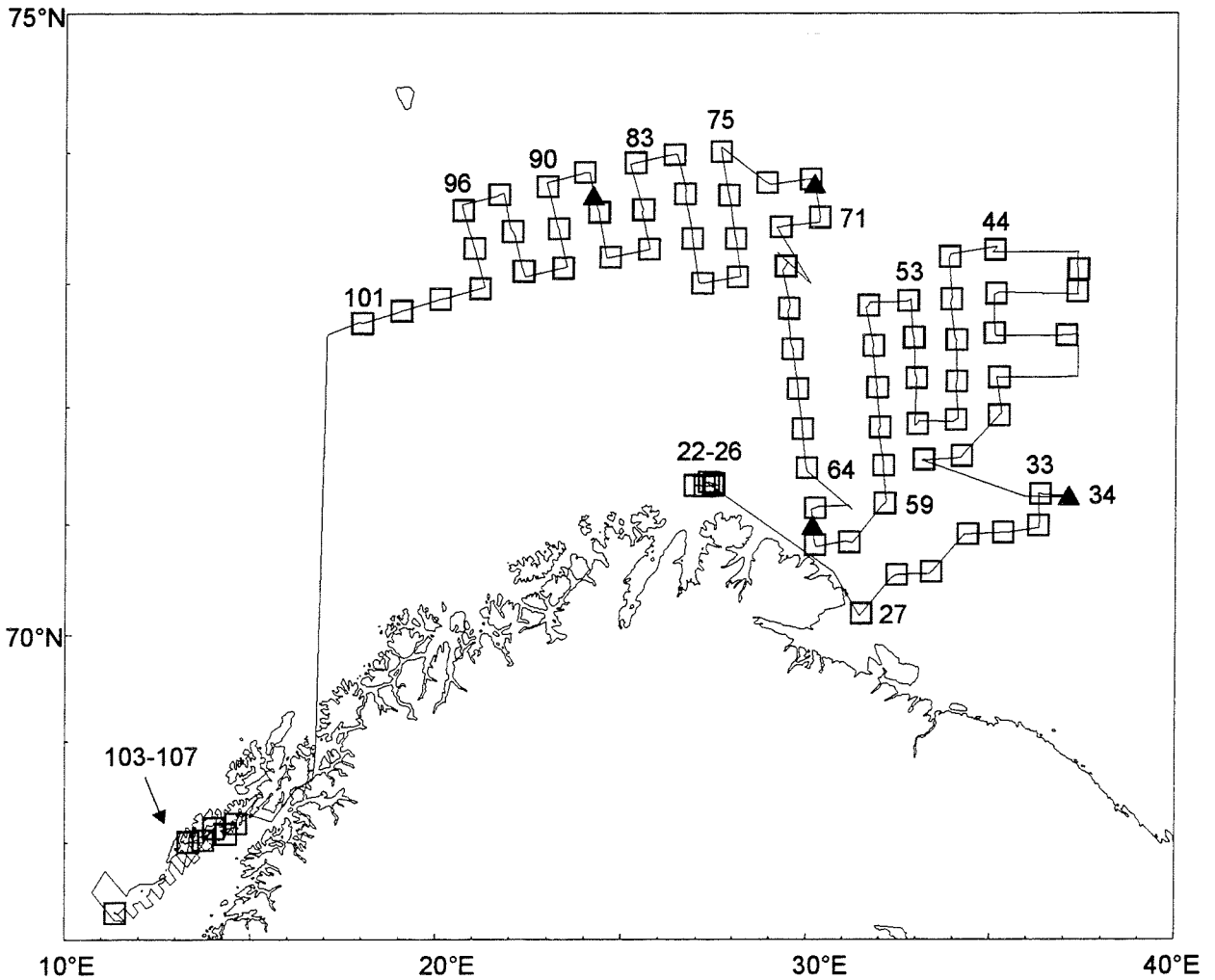
Cruise no 1998201



31 Jan - 1 Mar 1998
Cruise no 1998202

z CTD st.no 22-133

"Johan Hjort"

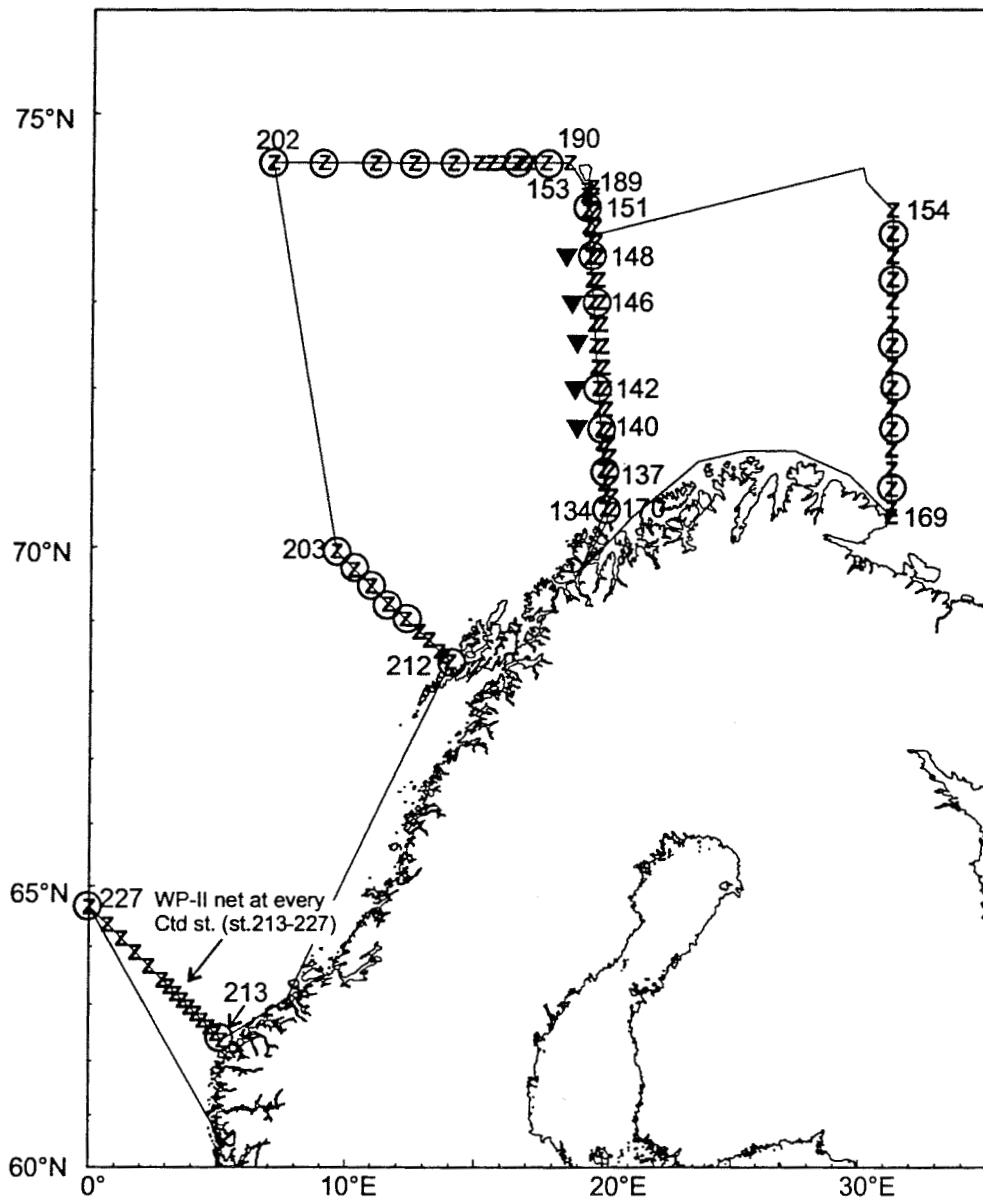


31 Jan - 1 Mar 1998
 Cruise no 1998202

TRAWL st.no 22-107

"Johan Hjort"

- Bottom tr.
- ▲ Pel tr.



2 - 22 Mar 1998

Cruise no 1998203

z CTD st.no 134-227

"Johan Hjort"

⊗ CTD and PLANKTON st. (WP-II-net)

▼ Deployment and recovery of current moorings

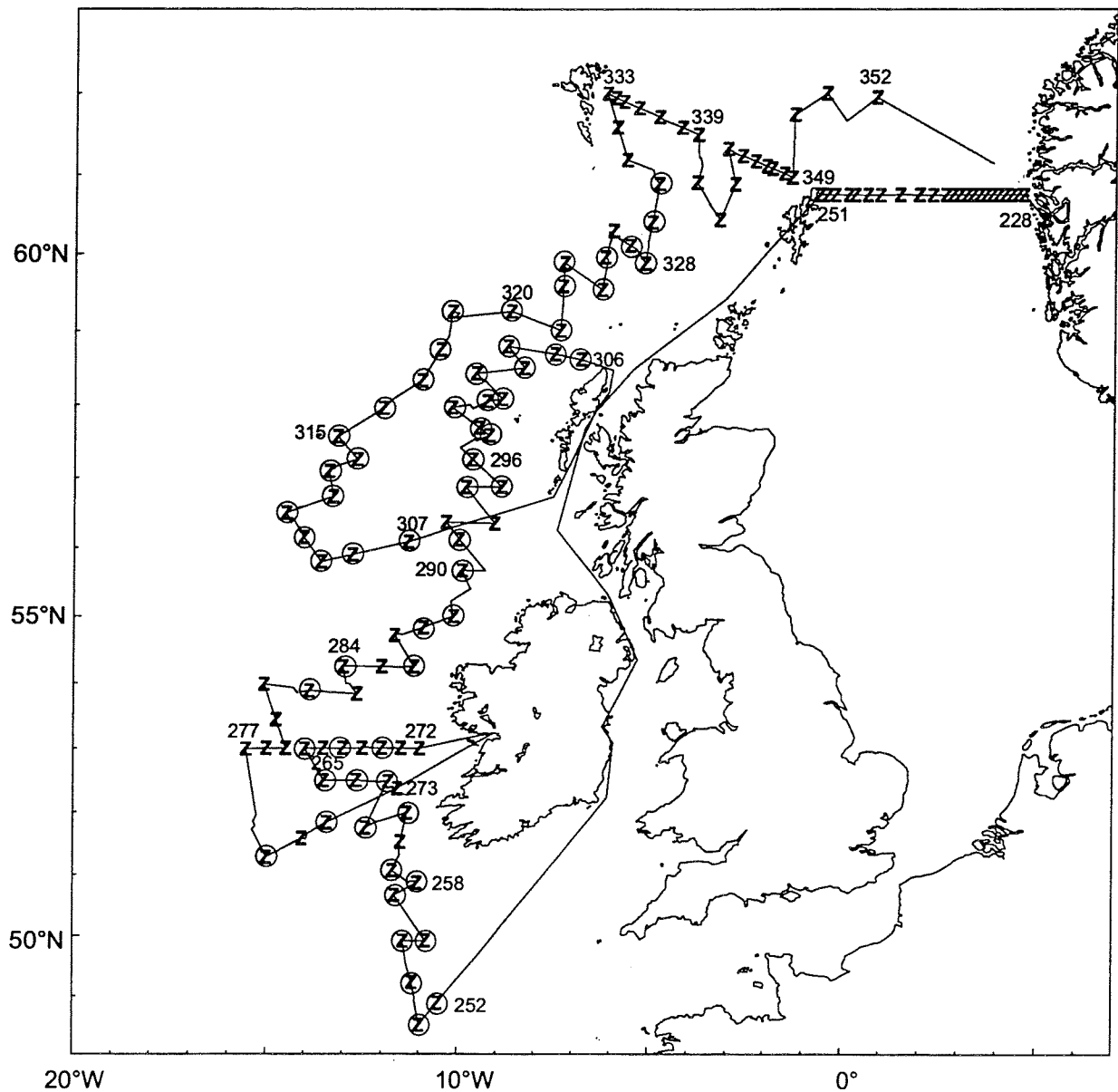
Standard section: Vardø N: st.no 154-169

Fugløya-Bjørnøya: st.no 134-153,170-189

Bjørnøya W: st.no 190-202

Gimsøy NW: st.no 203-212

Svinøy NW: st.no 213-227



24 Mar - 26 Apr 1998

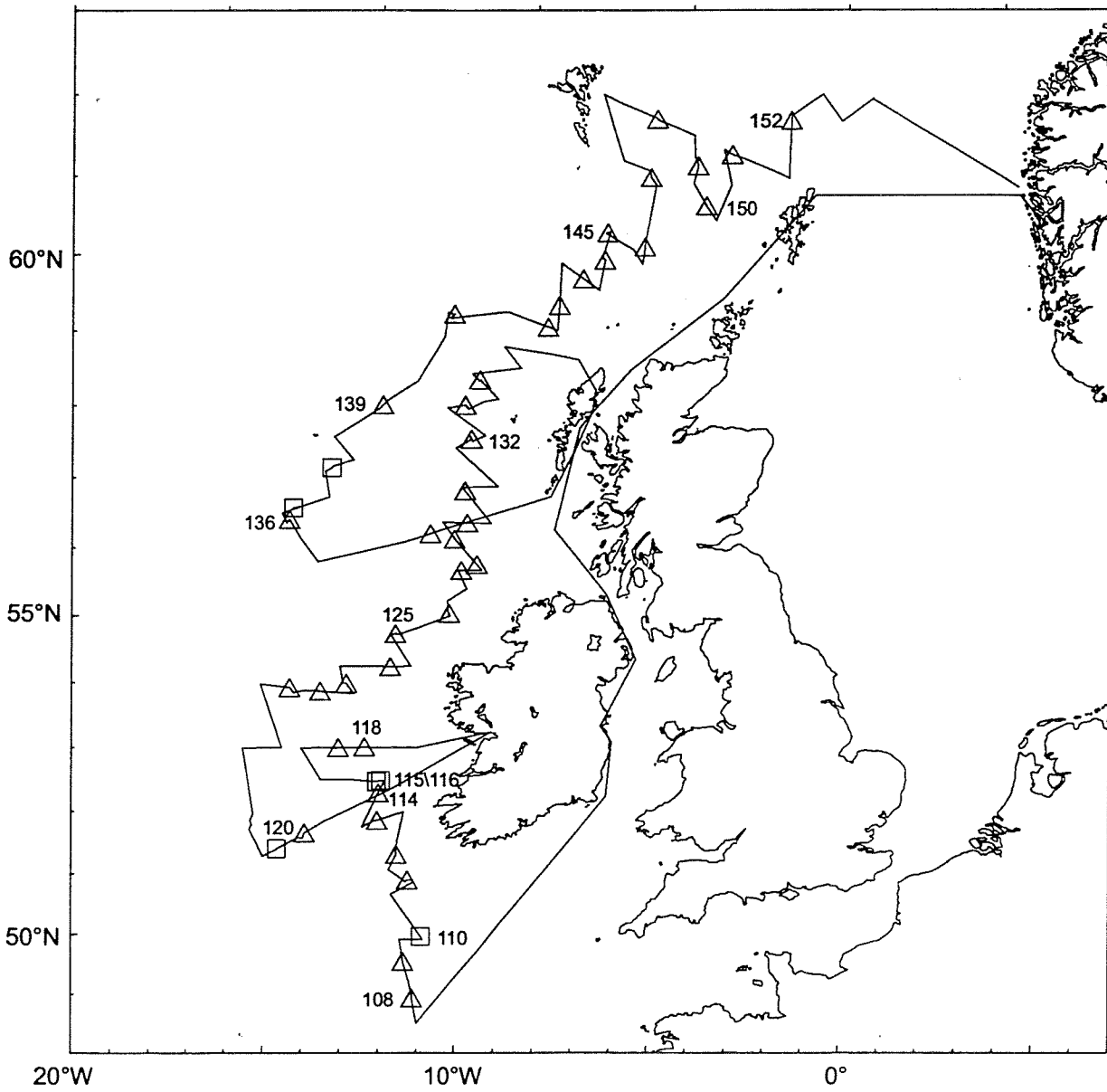
z CTD st.no 228-352

“Johan Hjort”

Cruise no 1998204

⓪ CTD and PLANKTON st. (Juday-net)

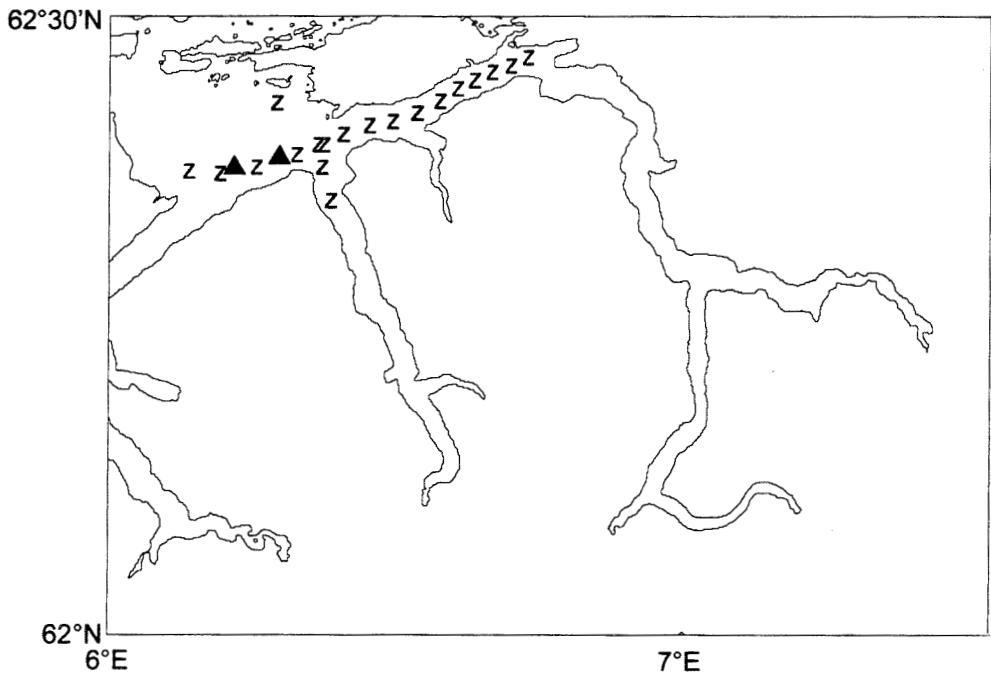
Standard section Feie-Shetland: st.no 229-251



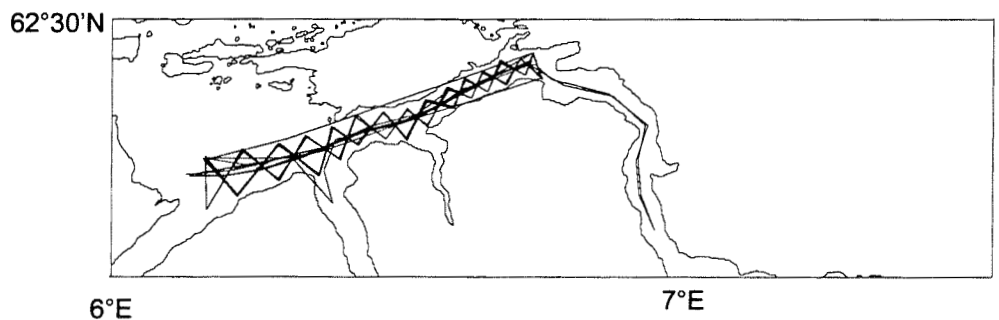
24 Mar - 26 Apr 1998
 Cruise no 1998204

□△ TRAWL st.no 108-152
 △ Pel.tr.
 □ Bottom tr.

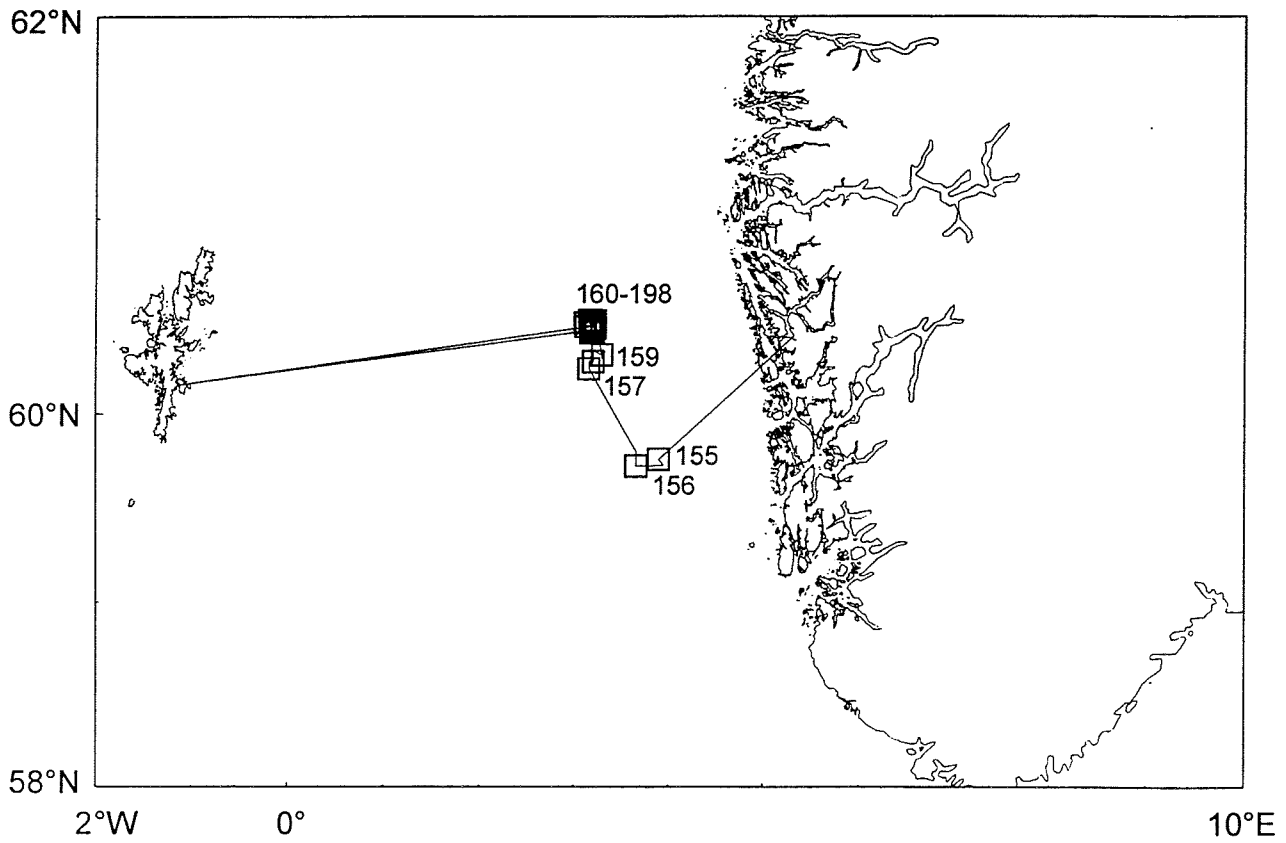
“Johan Hjort”



27 Apr - 3 May 1998 z CTD st.no 353-374 "Johan Hjort"
 Cruise no 1998205 ▲ Pel TRAWL st.no 153-154



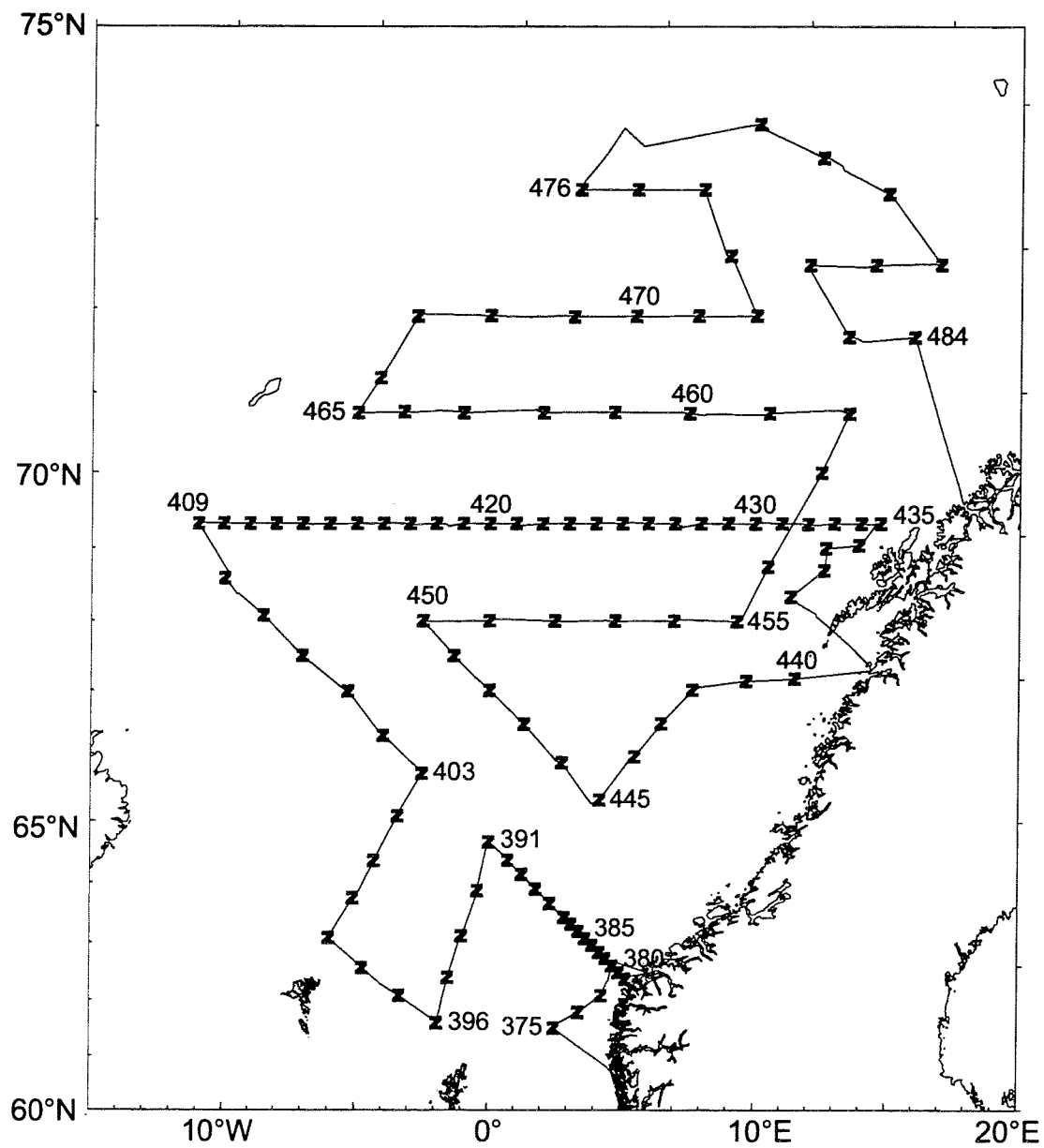
27 Apr - 3 May 1998 Cruise tracks in Storfjorden "Johan Hjort"
 Cruise no 1998205



4 - 16 May 1998
 Cruise no 1998206

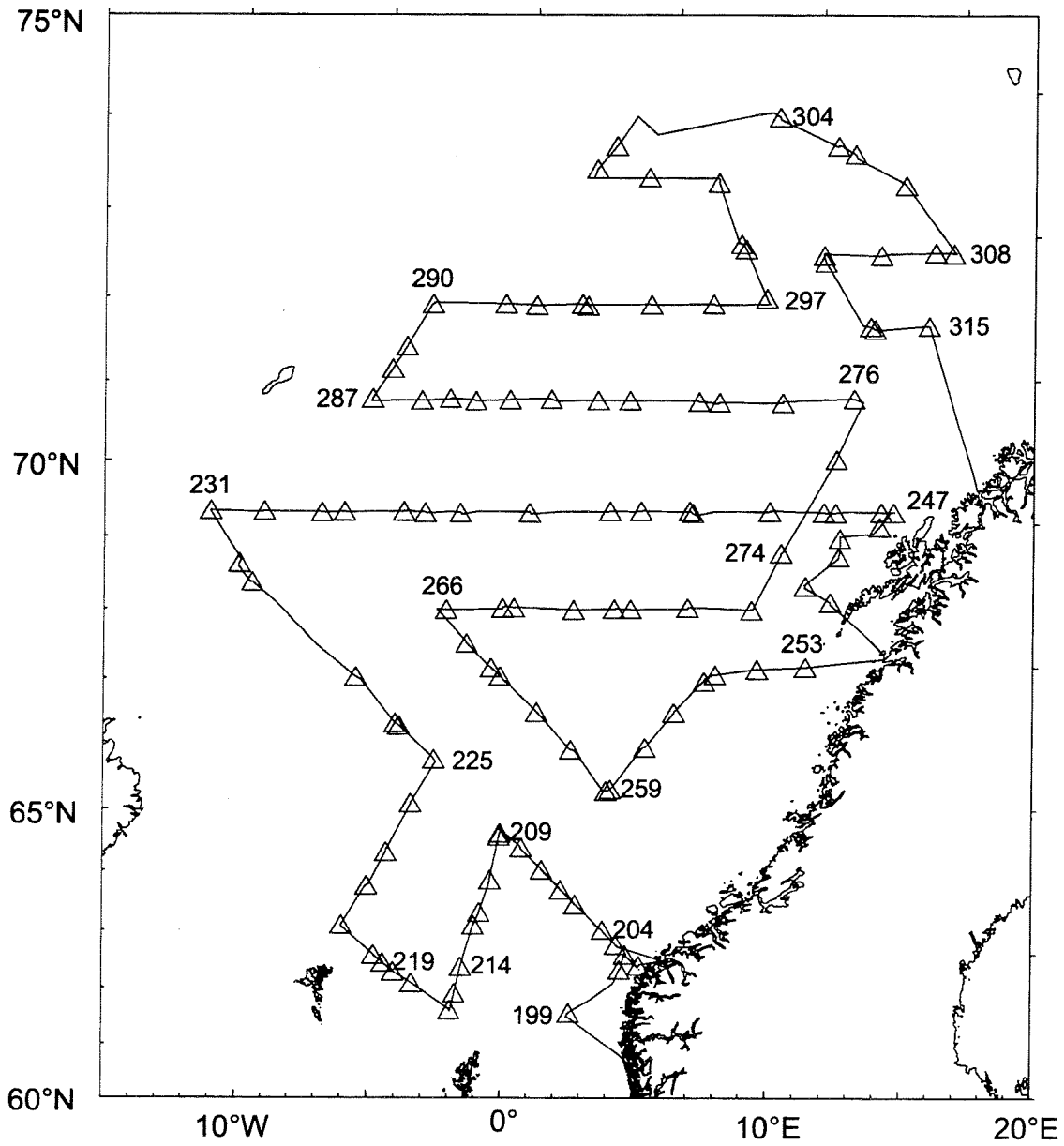
□ TRAWL st. 155-198
 Bottom tr.: 155-174, 177-198
 Pel tr.: 175-176

“Johan Hjort”

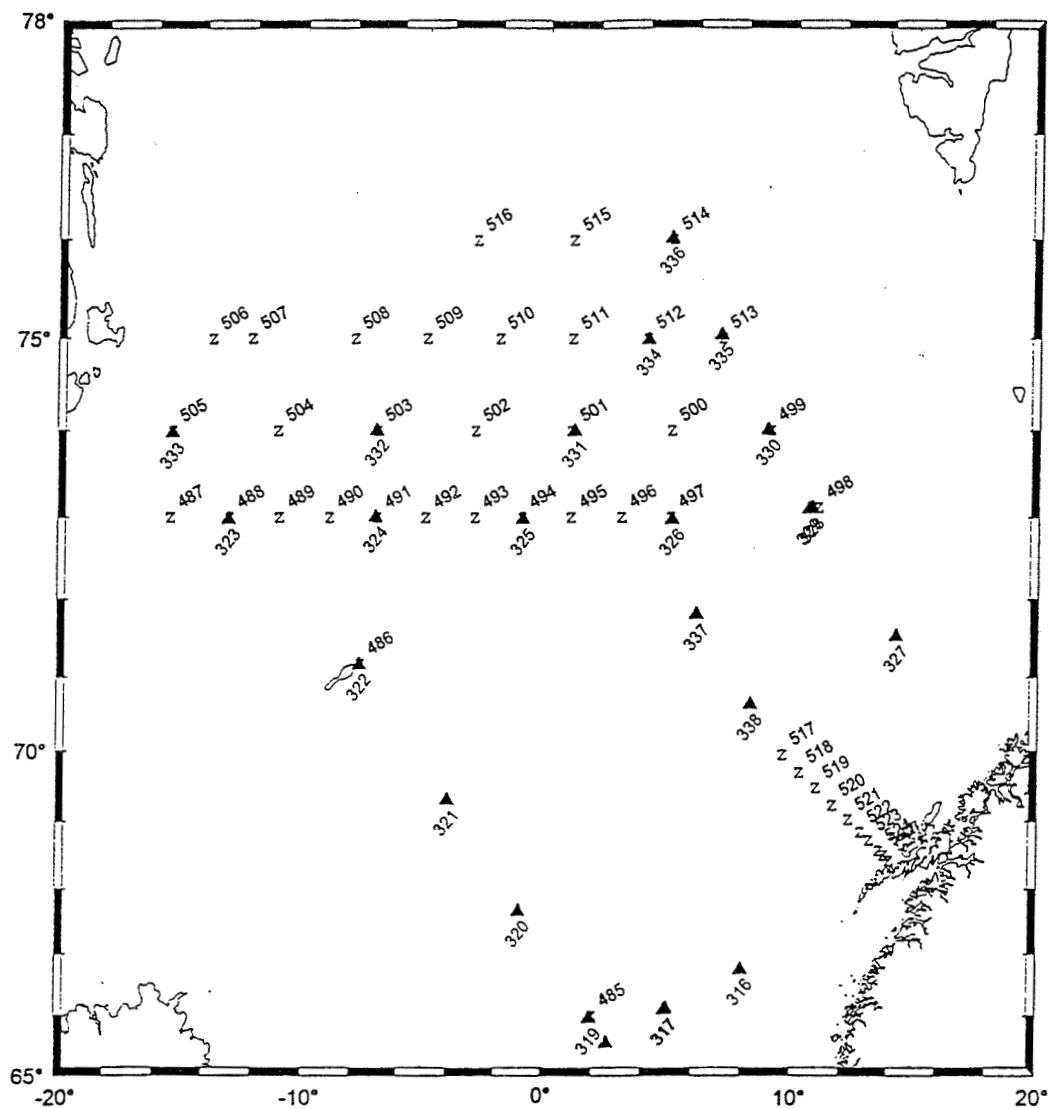


30 June -29 July 1998
Cruise no 1998209

z CTD st.no 375-484 "Johan Hjort"
Standard section Svinøy NW: st.no 378-391



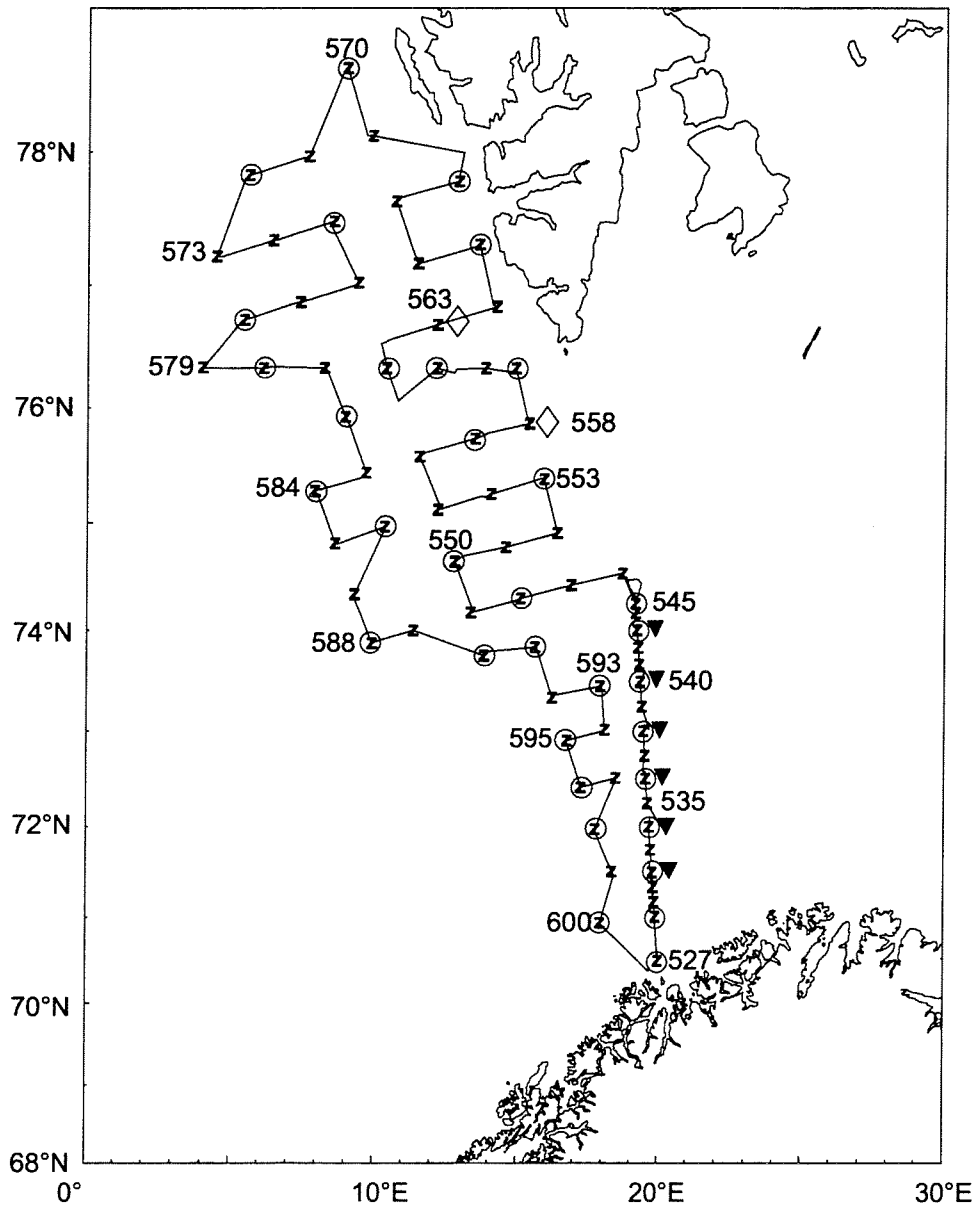
30 June - 29 July 1998 △ Pel. TRAWL St.no 199-315 "Johan Hjort"
 Cruise no 1998209



1 - 23 Aug 1998
Cruise no 1998210

z CTD st.no 485-526
▲ TRAWL st.no 316-338
Standard section Gimsøy NW st.no 517-526

“Johan Hjort”



28 Aug-9 Sep 1998 z CTD st.no 527-600 "Johan Hjort"

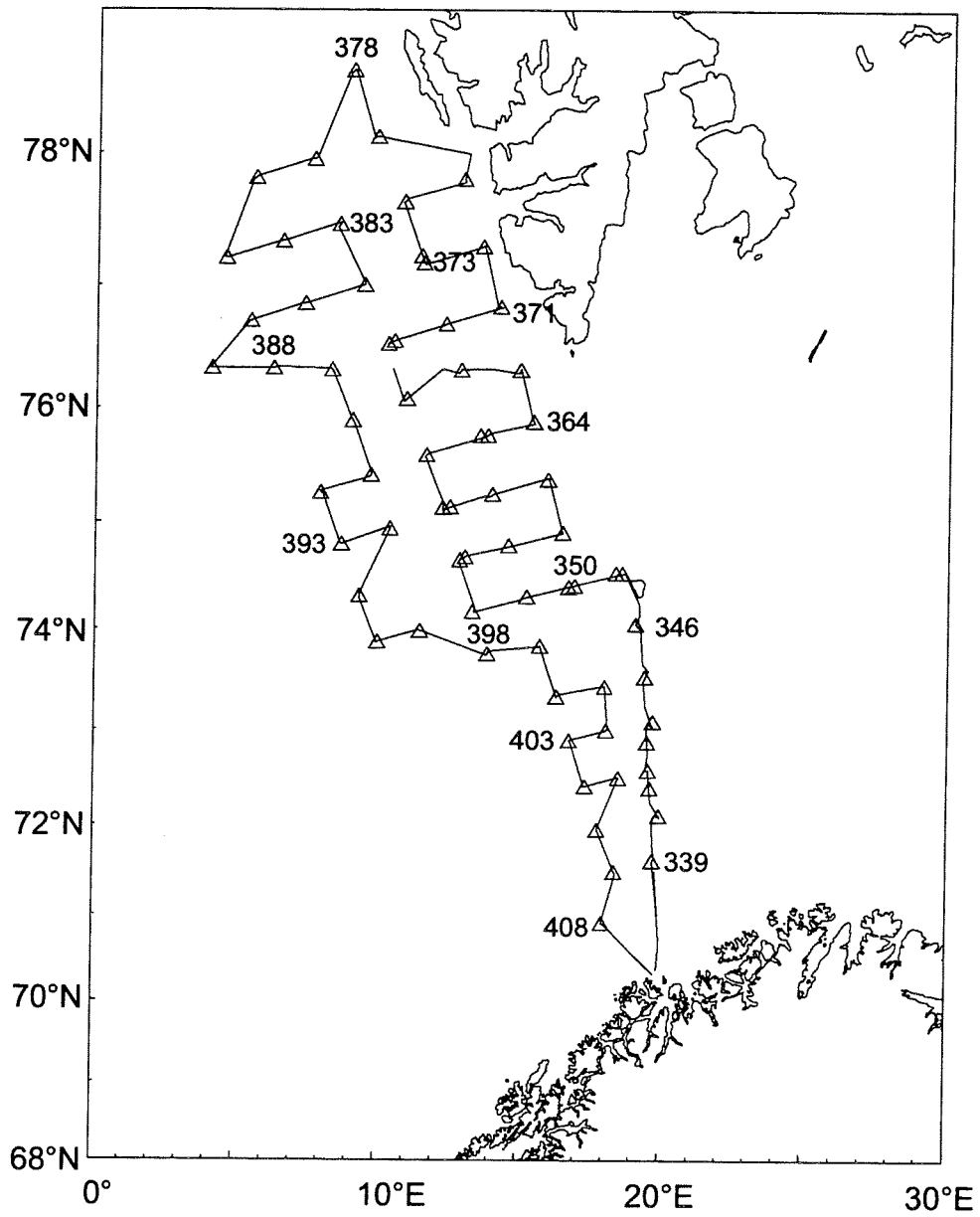
Cruise no 1998211 z CTD and PLANKTON st. (WP-II-net)

◇ MOCNESS st.

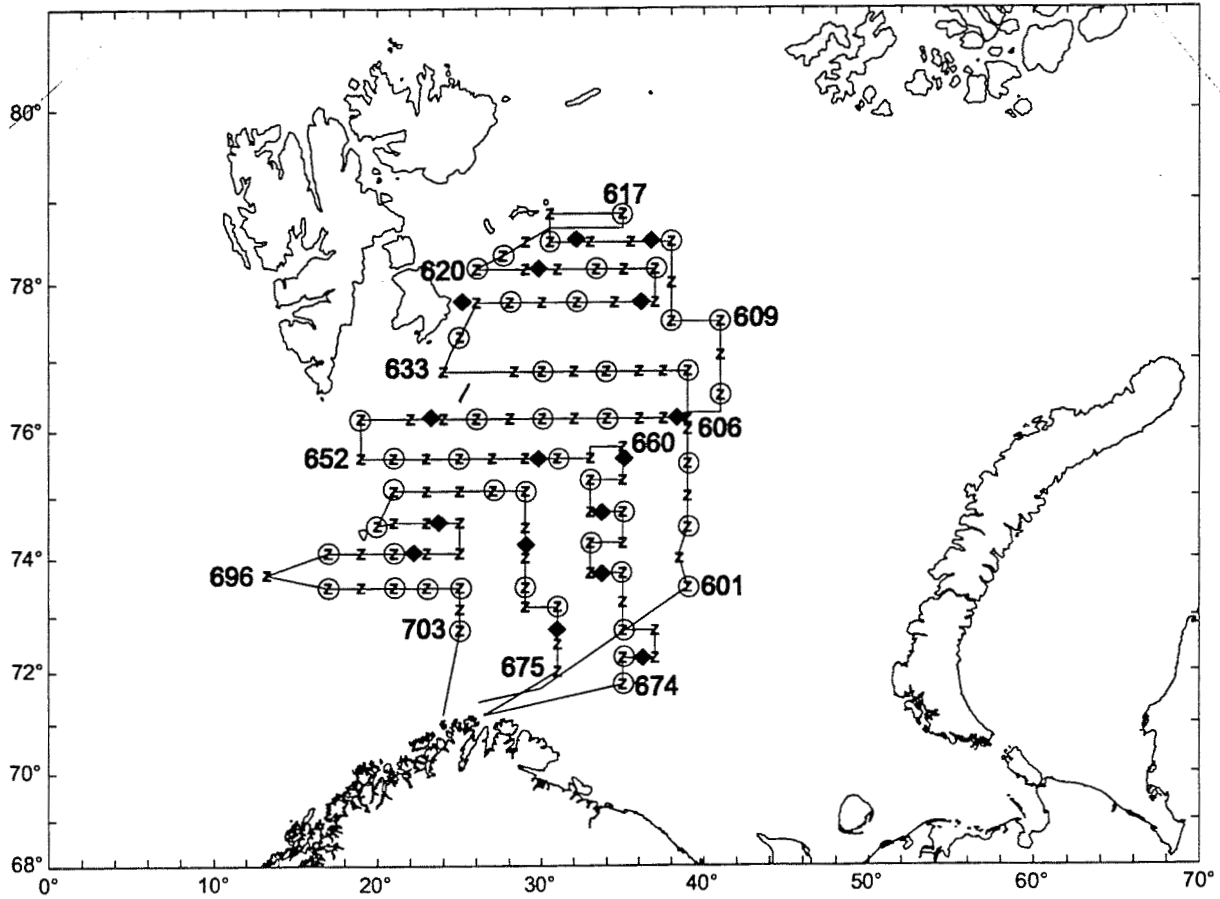
▼ Current meters deployed

Standards section: Fugløya Bjørnøya: st.no 527-545

Sørkapp: st.no 559-562 and 579-581



25 Aug-9 Sep 1998 \triangle Pel TRAWL st.no 339-408 "Johan Hjort"
 Cruise no 1998211



10 Sep - 5 Oct 1998

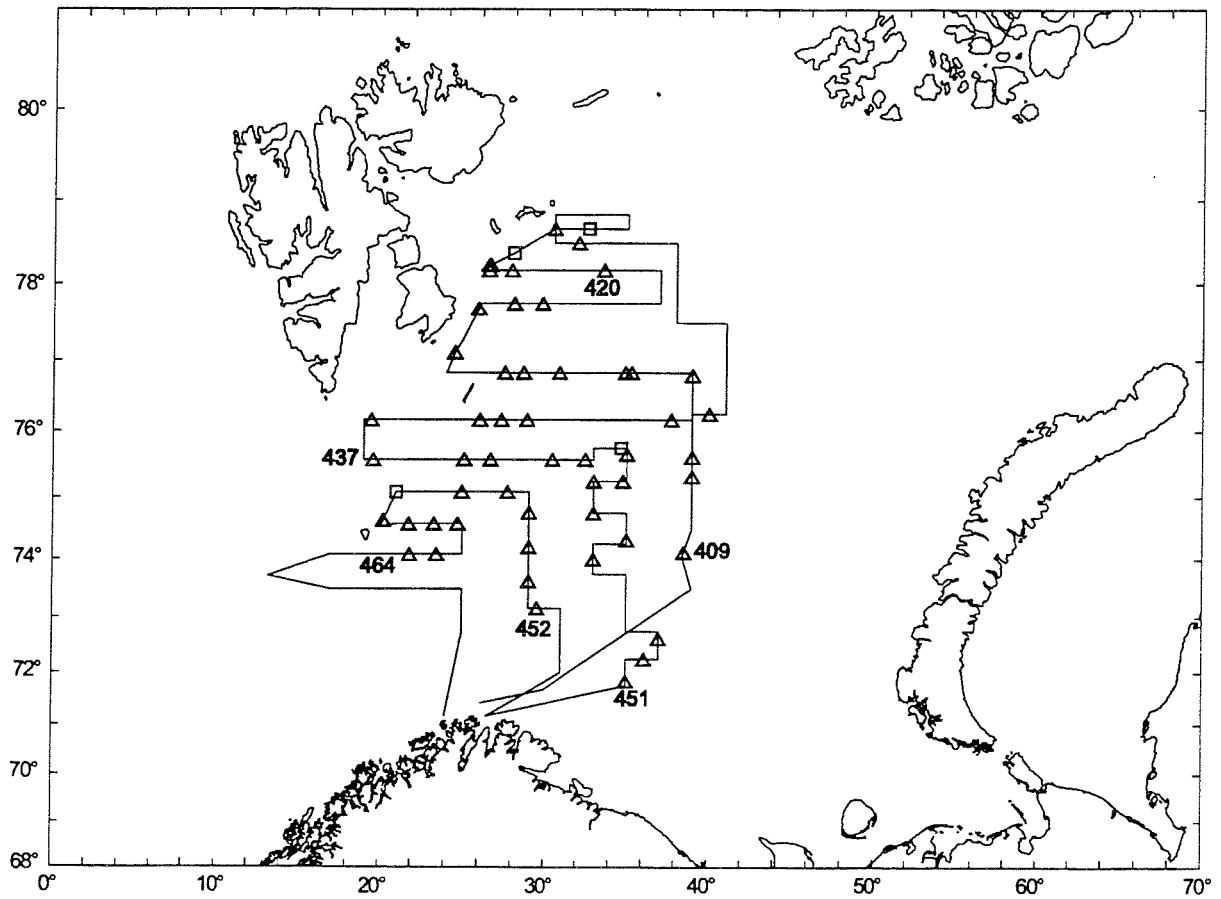
z CTD st.no 601-703

"Johan Hjort"

Cruise no 1998212

⓪ CTD and PLANKTON st. (WP-II-net)

◆ Mocness st.



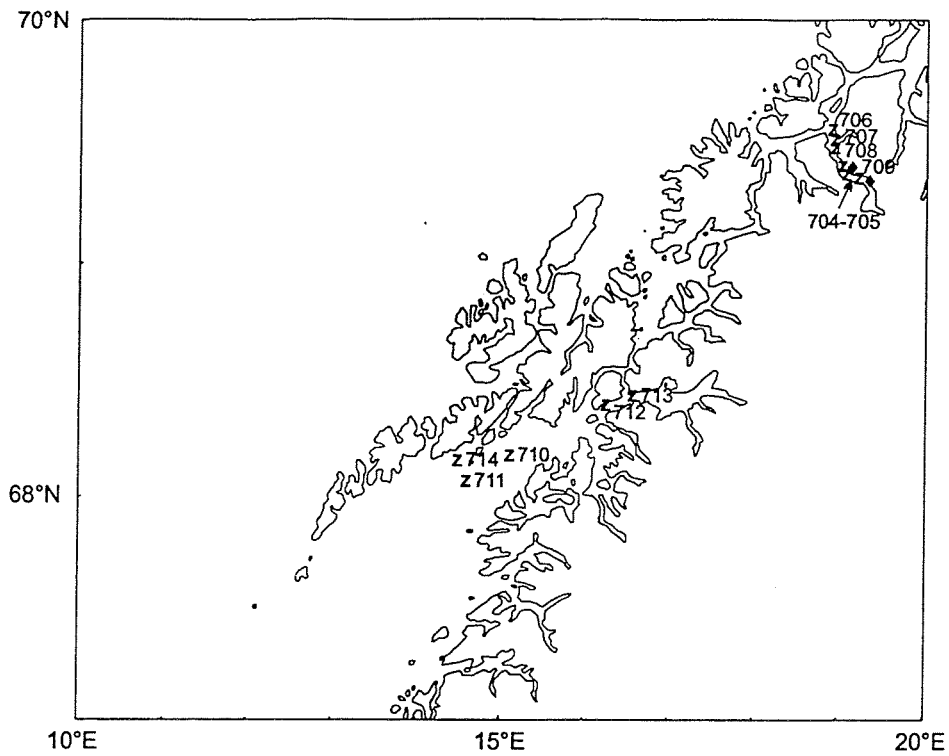
10 Sep - 5 Oct 1998

△ □ TRAWL st.no 409-464

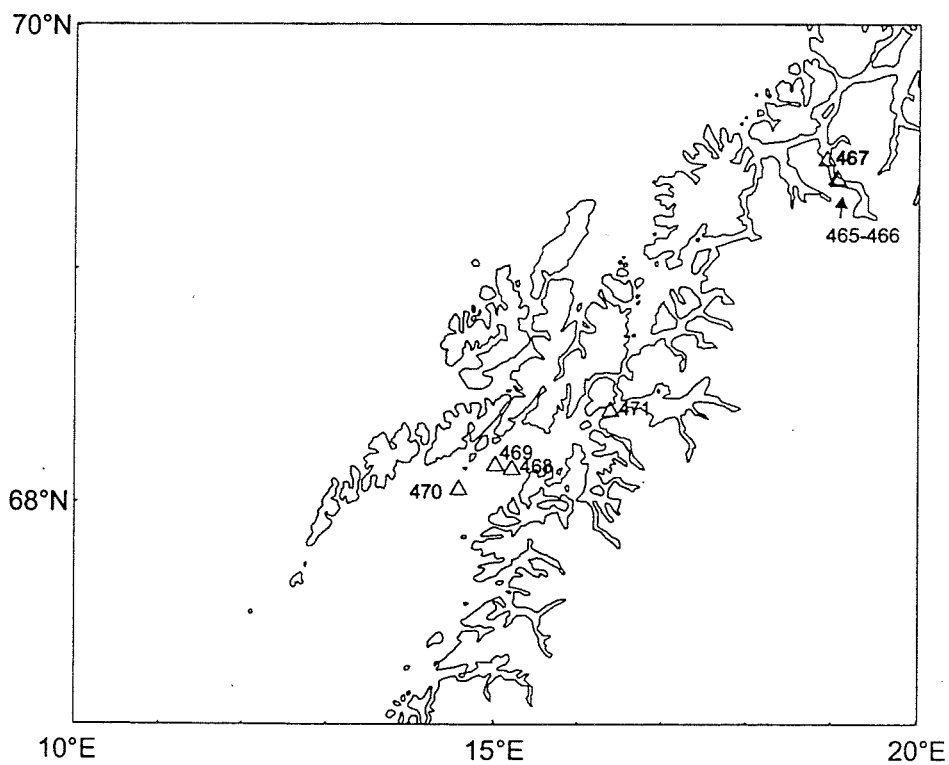
“Johan Hjort”

△ Pel. tr.

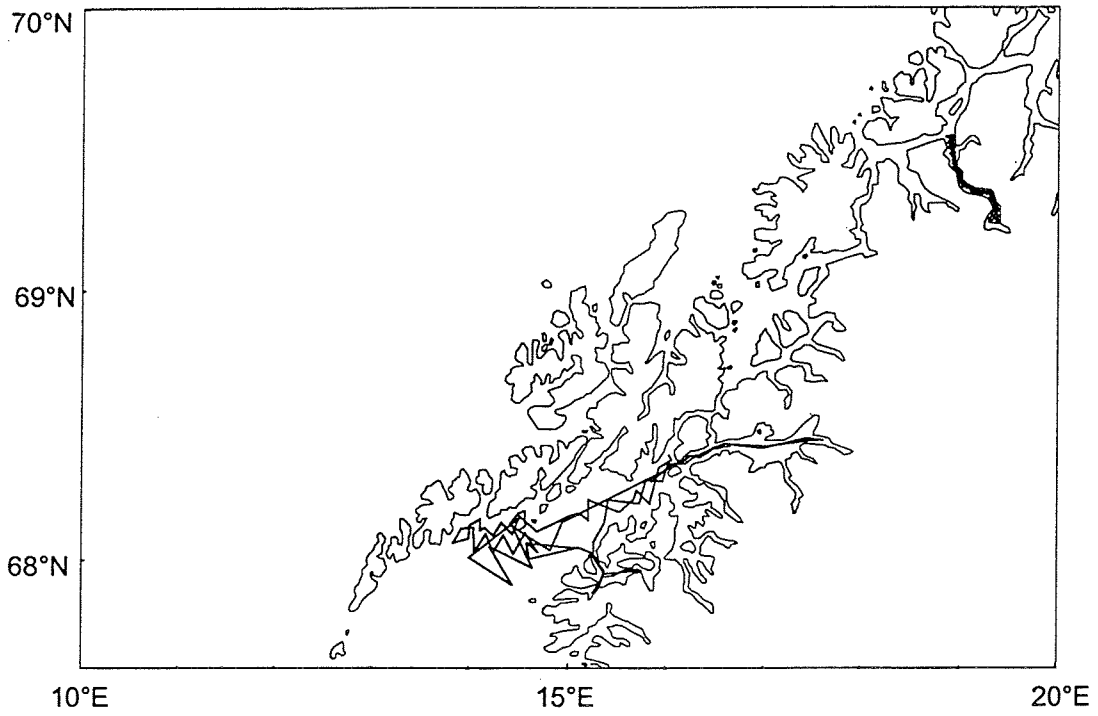
□ Bottom tr.



9 - 18 October 1998 z CTD st.no 704-715 "Johan Hjort"
 Cruise no 1998213 (st.715:62°41'N07°00'E)
 ♦ Mocness st.(at ctd st.705 and 709)



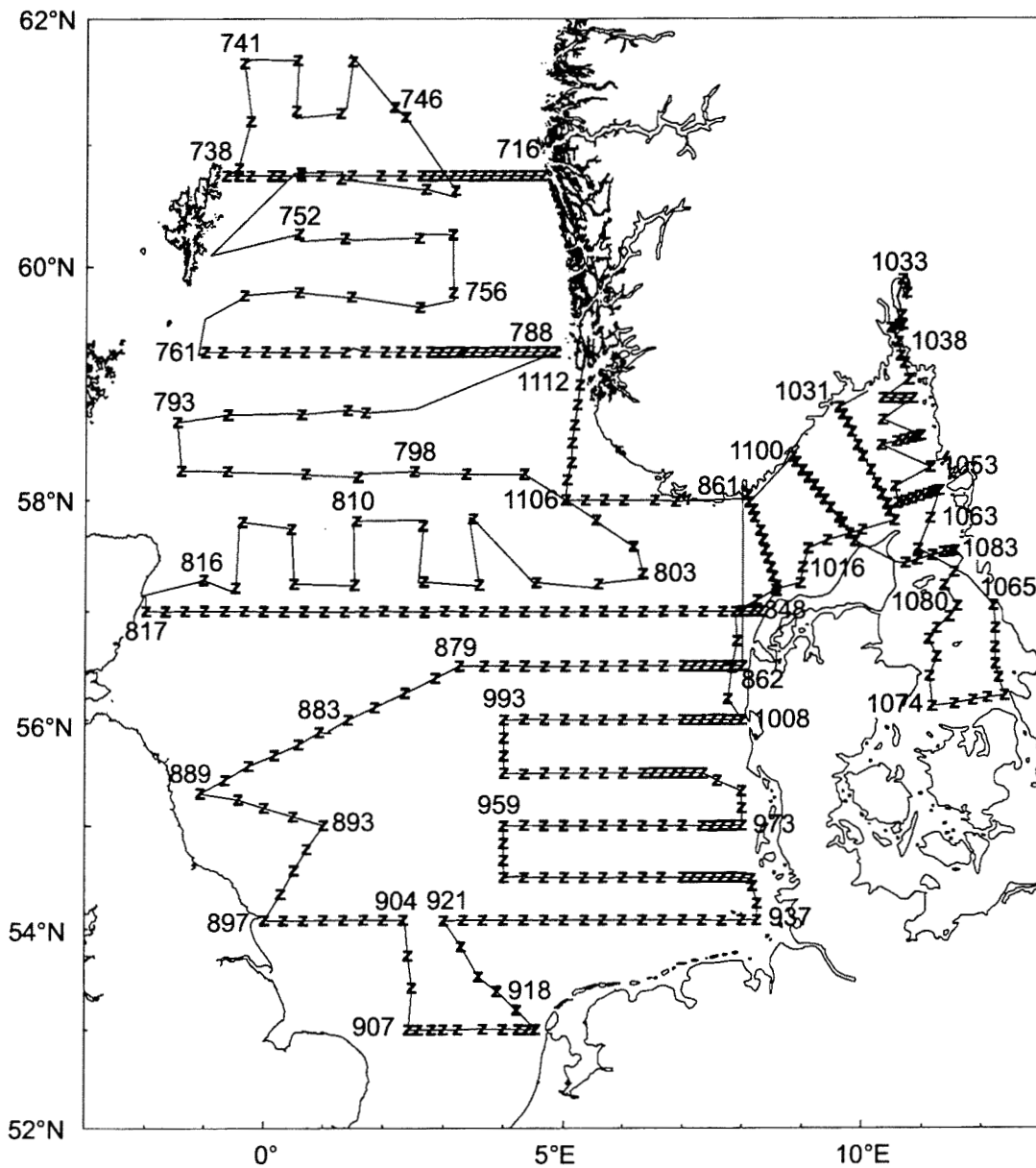
△ Pel. TRAWL no 465-471



9-18 October 1998
Cruise no 1998213

Track chart

"Johan Hjort"



19 Oct - 26 Nov 1998

z CTD st.no 716-1112

“Johan Hjort”

Cruise no 1998214

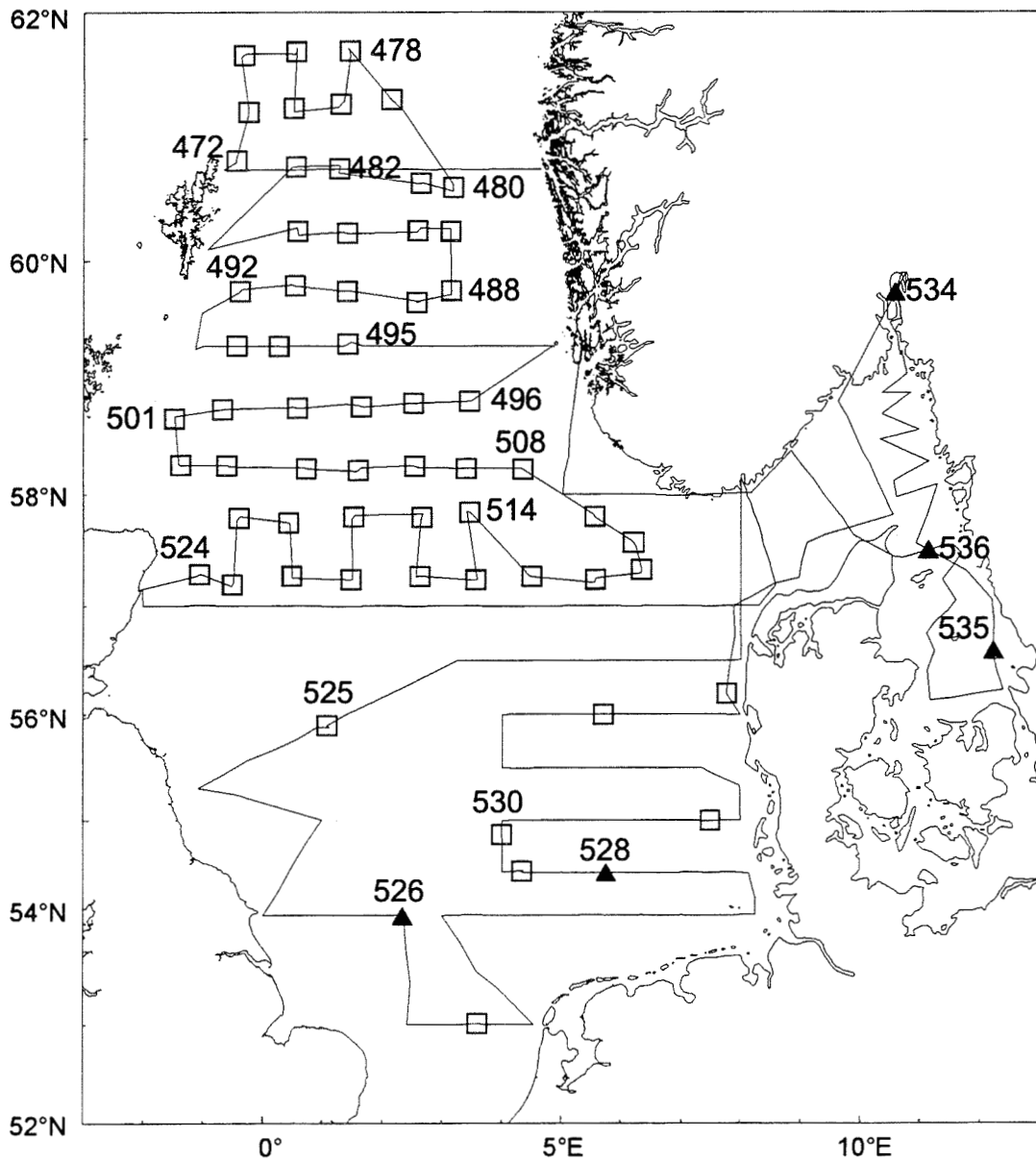
Standard sections Feie - Shetland st.no 716-738

Utsira W st.no 761-788

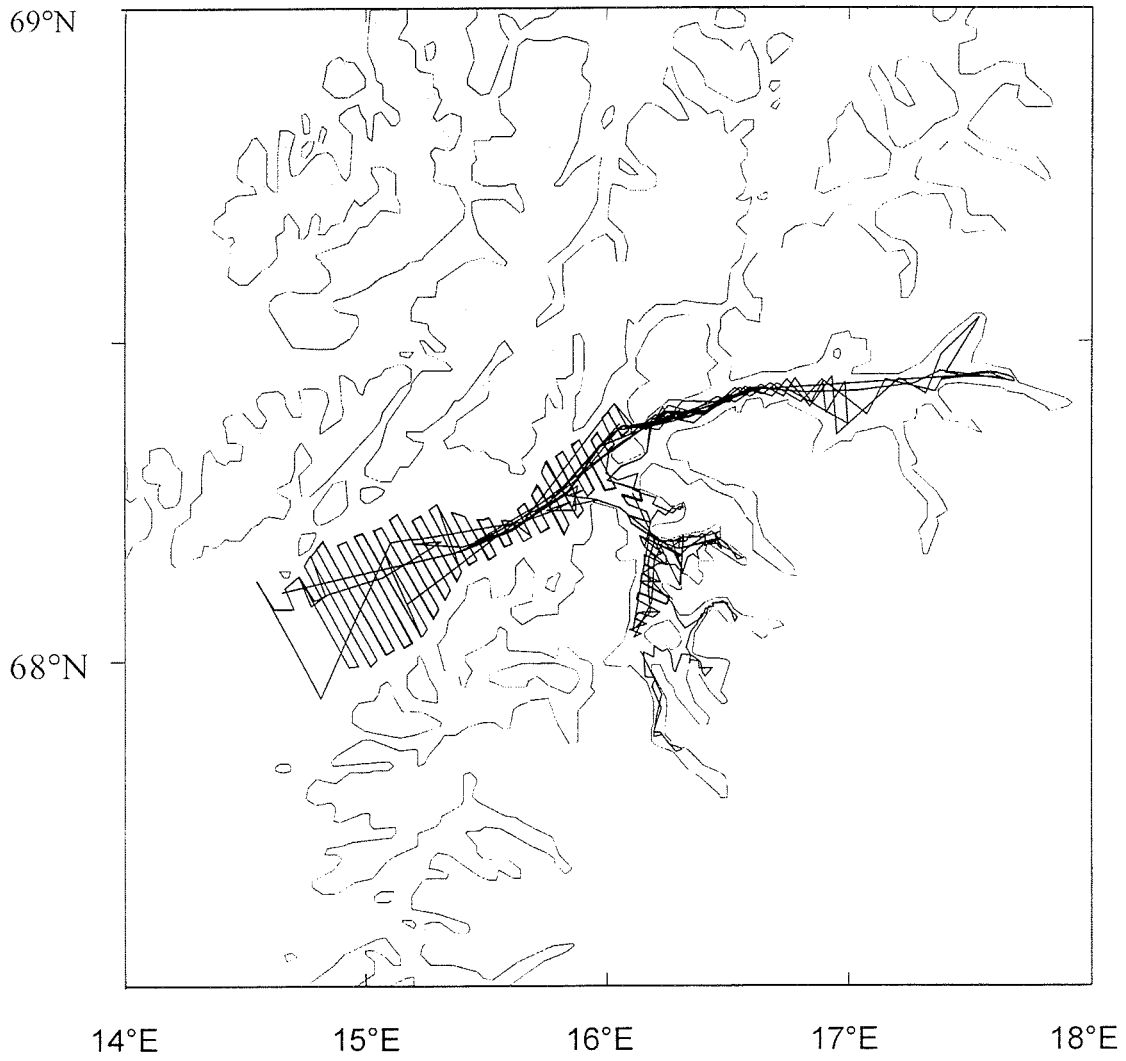
Hanstholm-Aberdeen st.no 817-848

Øksø - Hanstholm st.no 849-862

Torungen - Hirtshals st.no 1089-1100



19 Oct - 26 Nov 1998 □ ▲ TRAWL st.no 472-536 “Johan Hjort”
 Cruise no 1998214 □ Bottom trawl
 ▲ Pelagic trawl

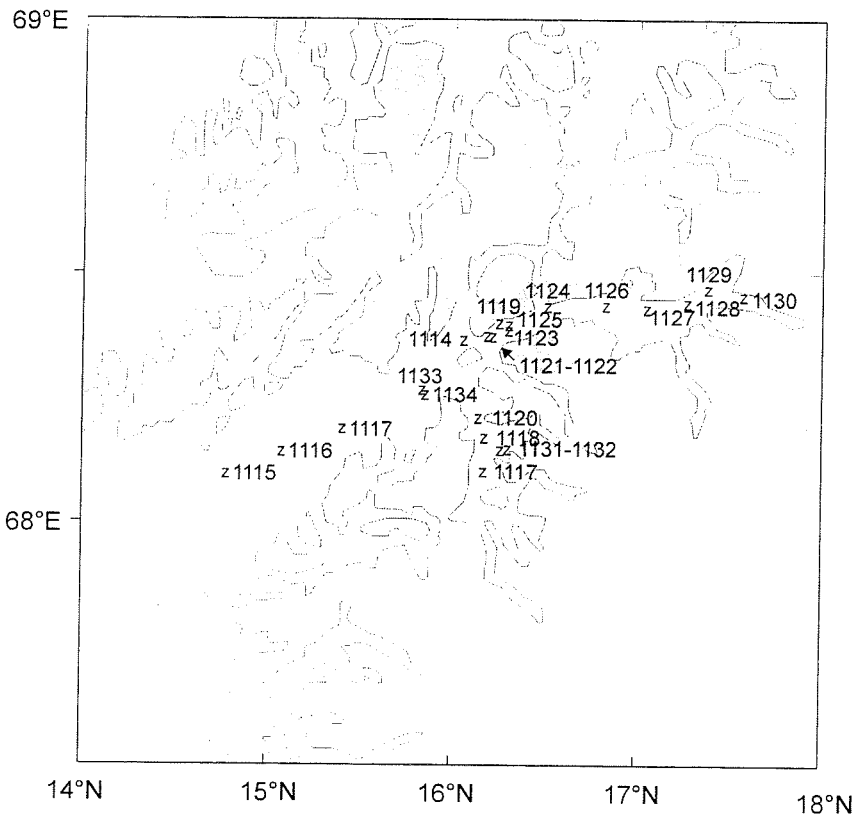


28 Nov - 22 Dec 1998

Cruise track

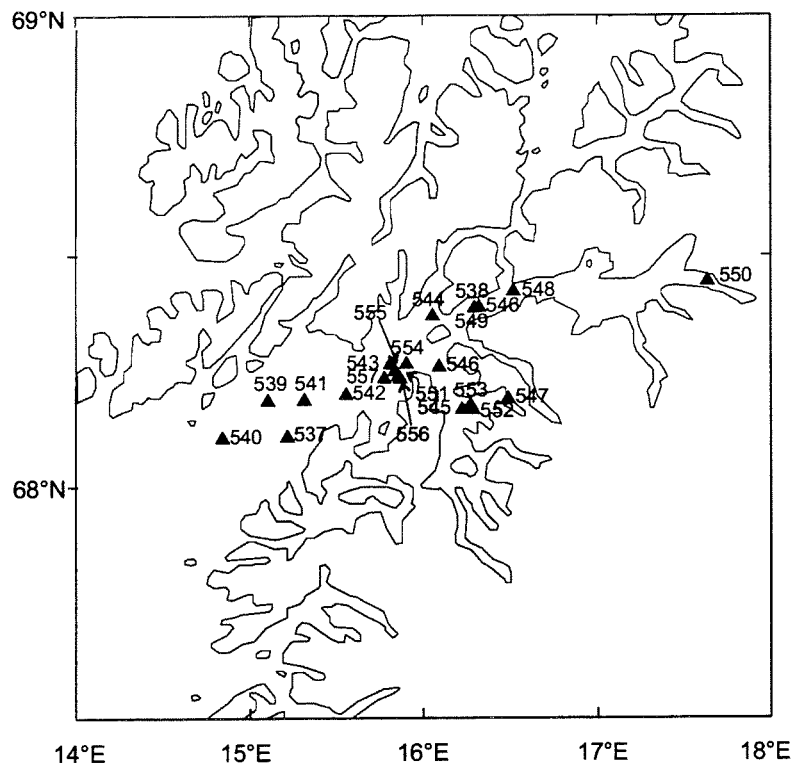
"Johan Hjort"

Cruise no 1998215



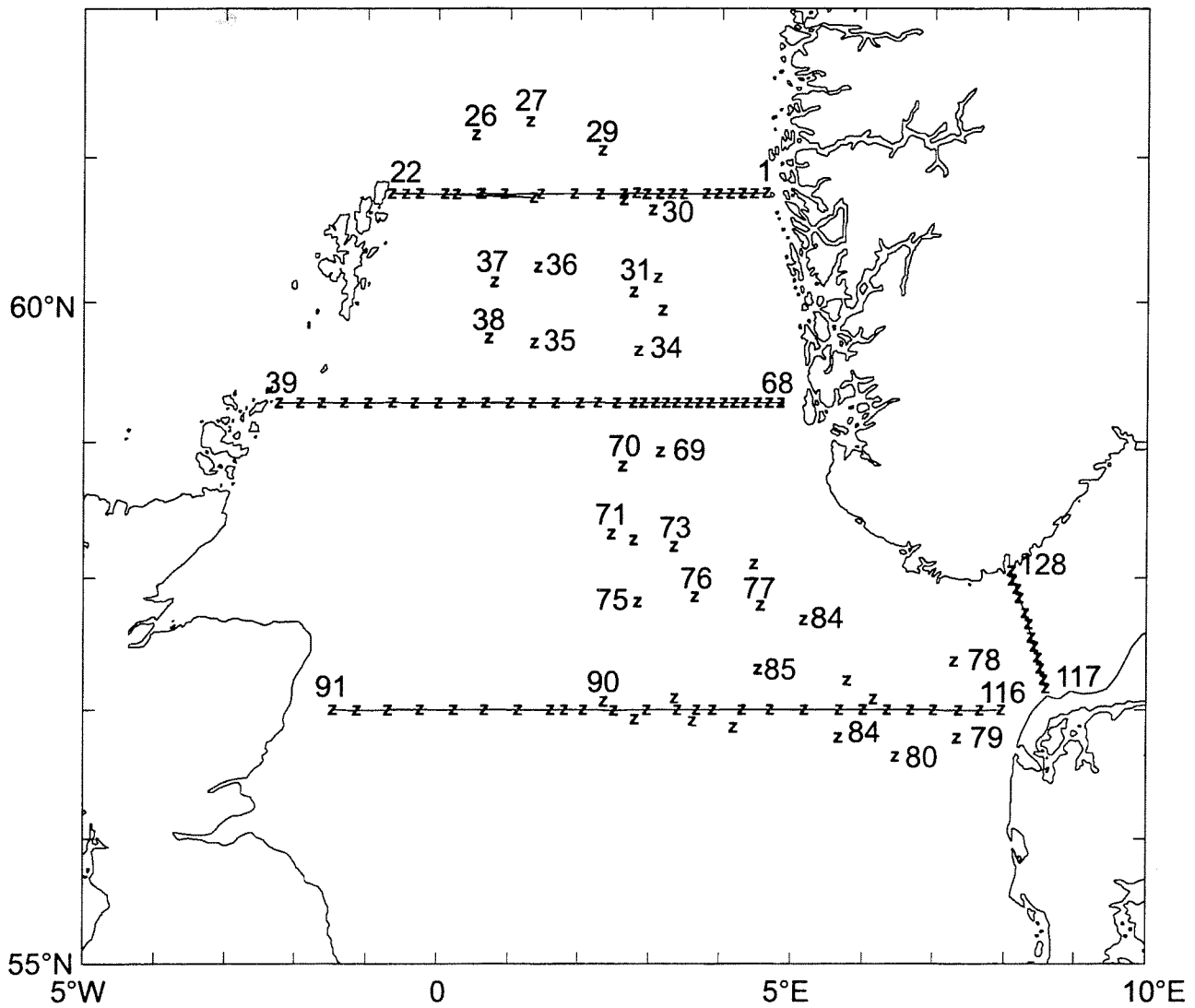
28 Nov - 22 Dec 1998 z CTD st.no 1113-1134 "Johan Hjort"

Cruise no 1998215 (st. 1113: 62°26'N 6°16'E)



28 Nov - 22 Dec 1998 ▲ Pel. TRAWL St.no 537-557 "Johan Hjort"

Cruise no 1998215



23 Jan - 14 Feb 1998

Cruise no 1998101

z CTD st.no 1-128

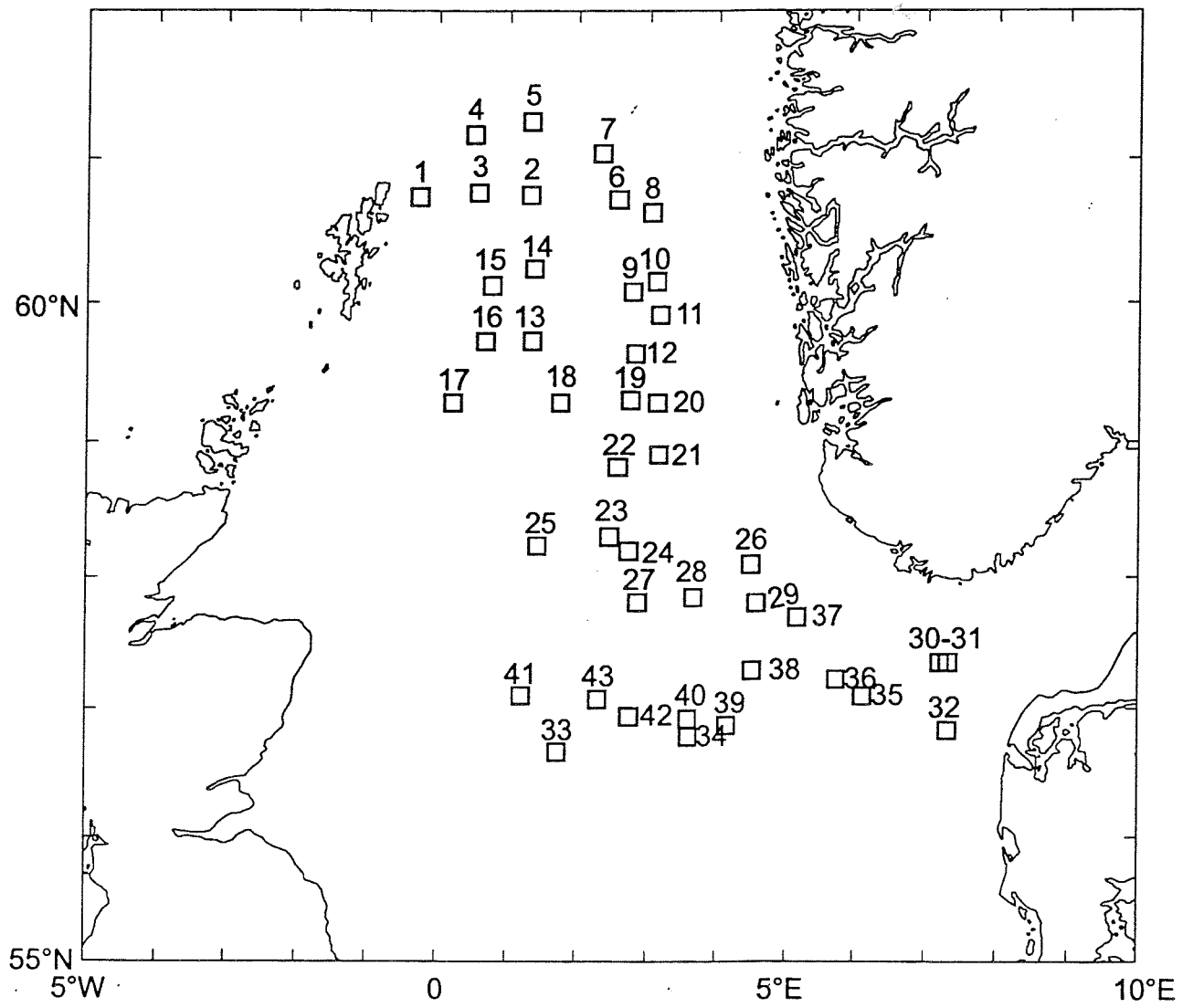
Standard sections: Feie-Shetland: St.no 1-22

Utsira-Start Point: St.no 39-68

Hanstholm-Aberdeen: St.no 91-116

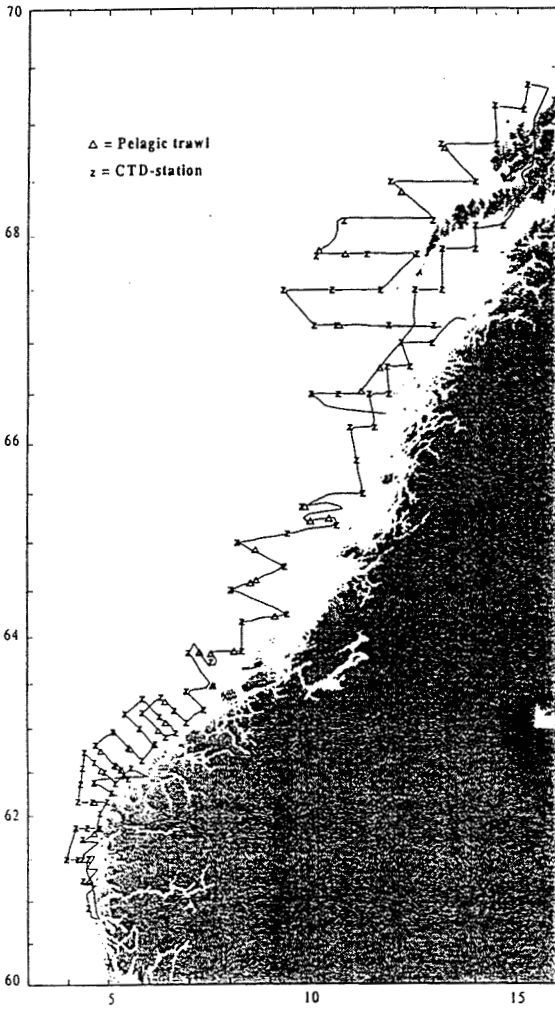
Hanstholm-Oksøy: st.no 117-128

“Michael Sars”



23 Jan - 14 Feb 1998
 Cruise no 1998101

□ Bottom TRAWL st.no 1-41 "Michael Sars"



17 Feb - 23 Mar 1998 Cruise no 1998102

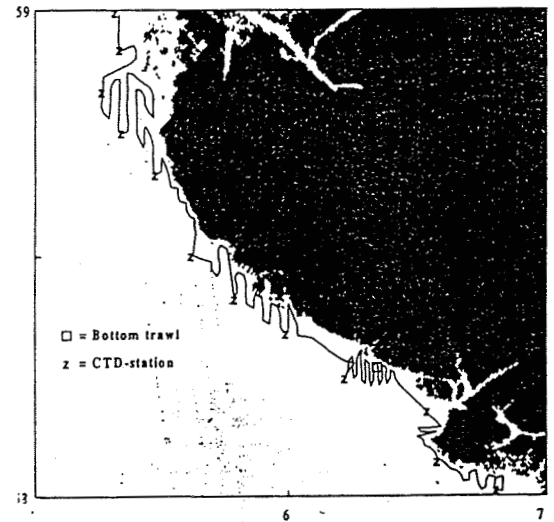
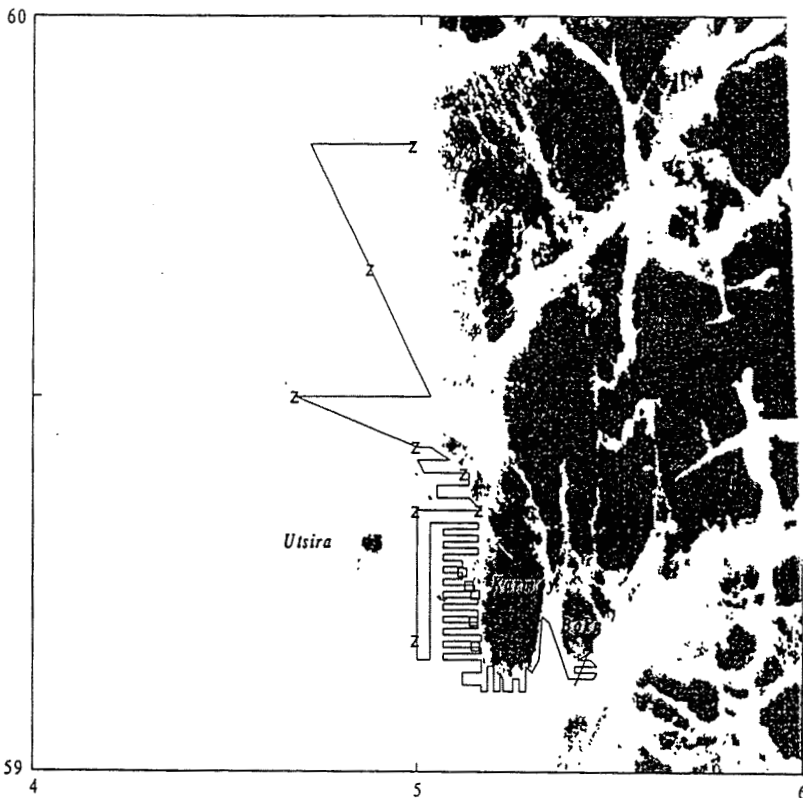
CTD st.no 129 - 257

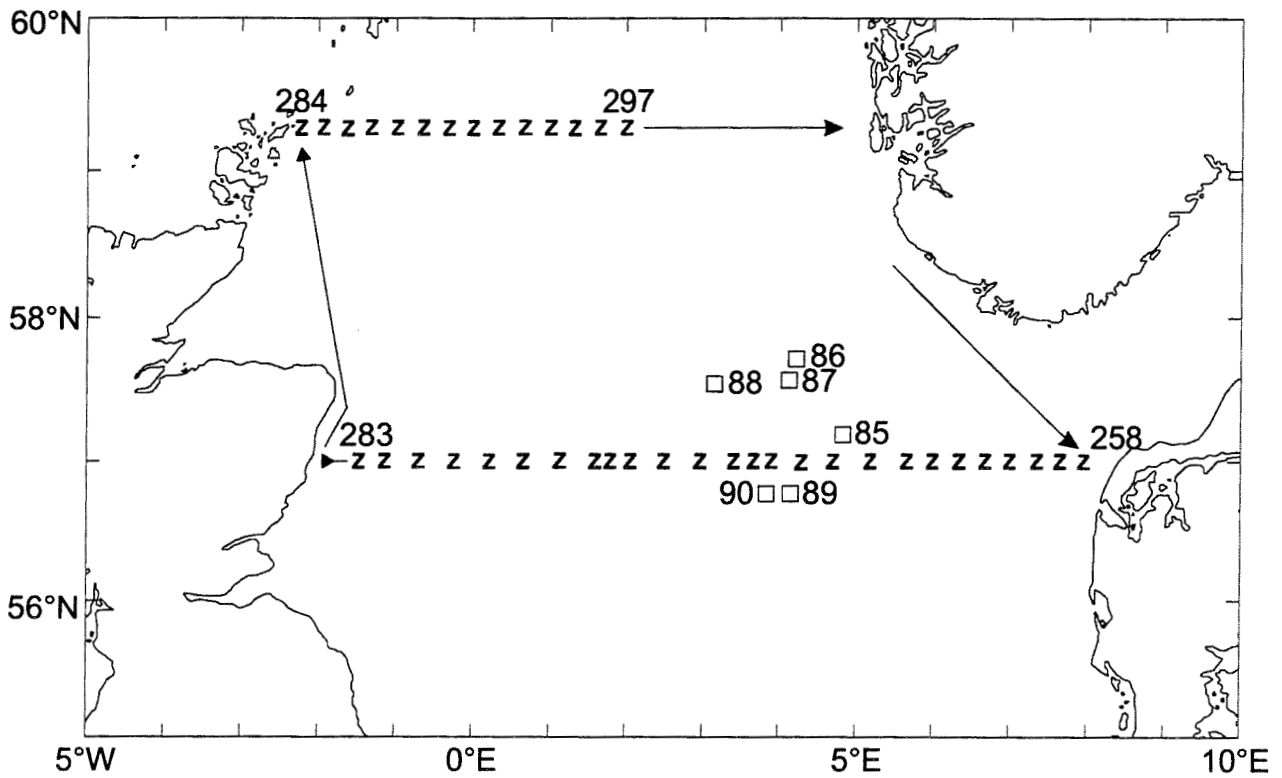
TRAWL st.no 44- 84

(Pel.trawl: 44-71,73-76,78,82

Bottom trawl: st.no 72,77,79-81,83-84)

“Michael Sars”





25 Mar - 1 Apr 1998
Cruise no 1998103

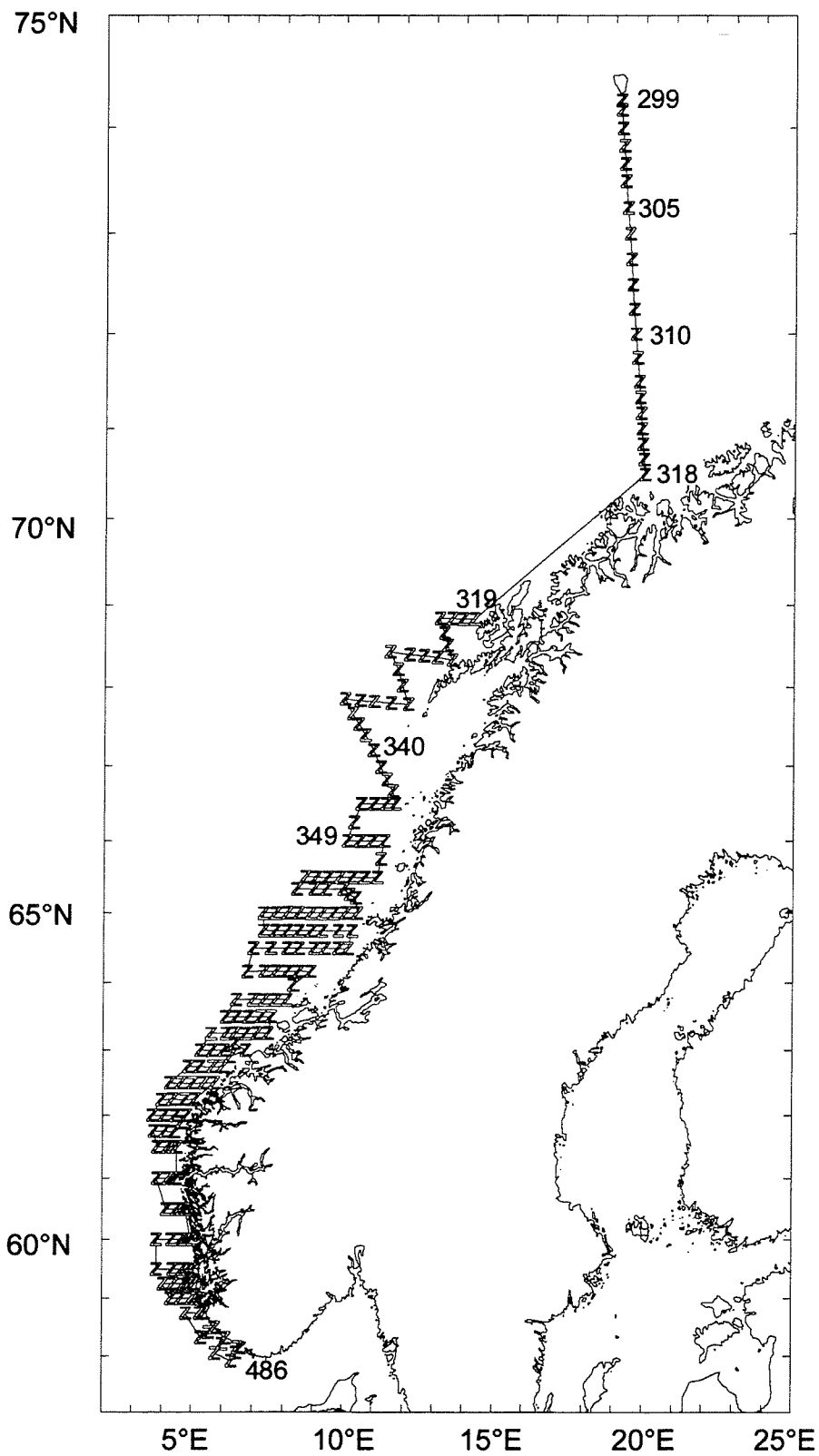
z CTD st.no 258-297

“Michael Sars”

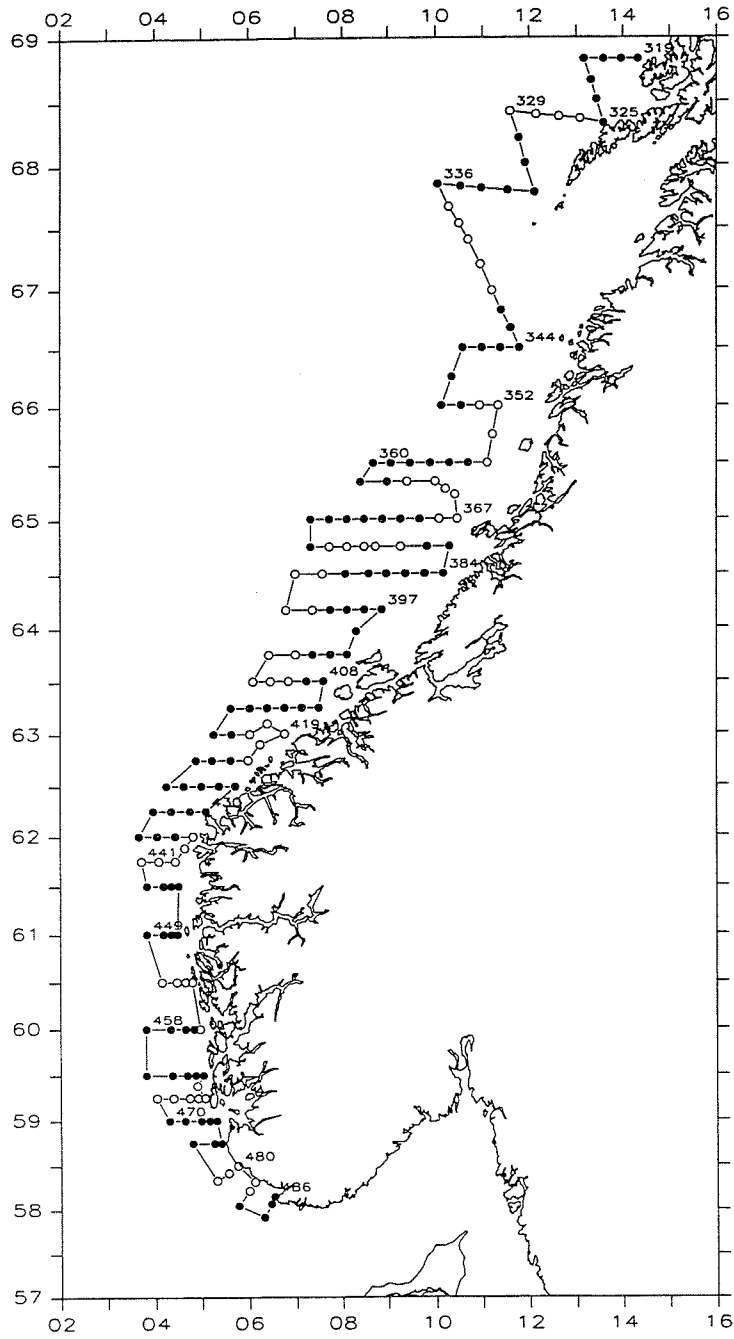
□ Bottom TRAWL st.no 85-90

Standard section Hanstholm-Aberdeen st.no 258-283

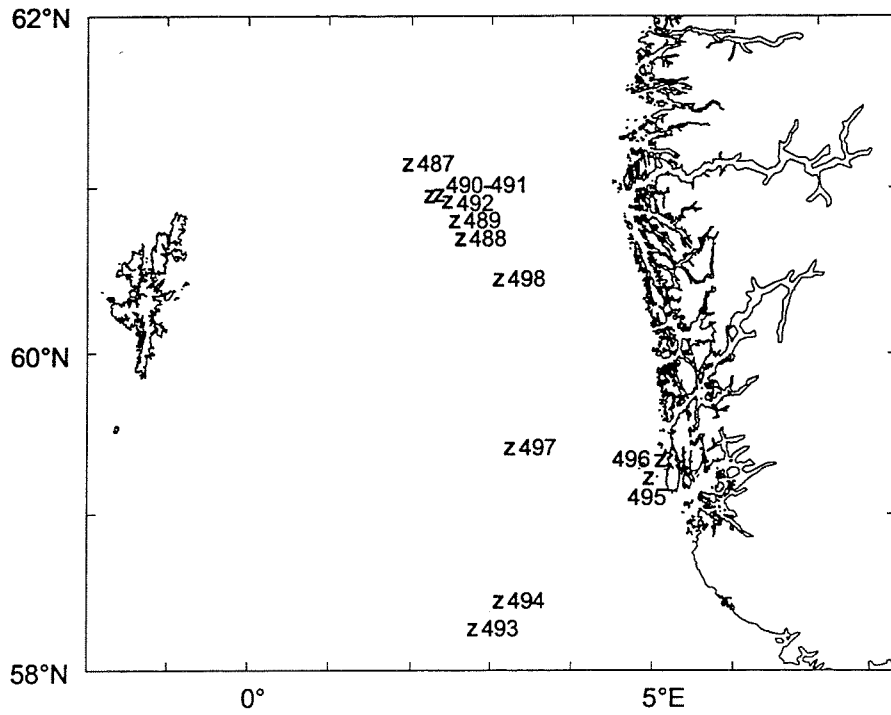
Utsira W st.no 284-297



6 - 24 April 1998 z CTD st.no 299-486 "Michael Sars"
 Cruise no 1998104 Standard section Fugløya- Bjørnøya: st.no 299-318

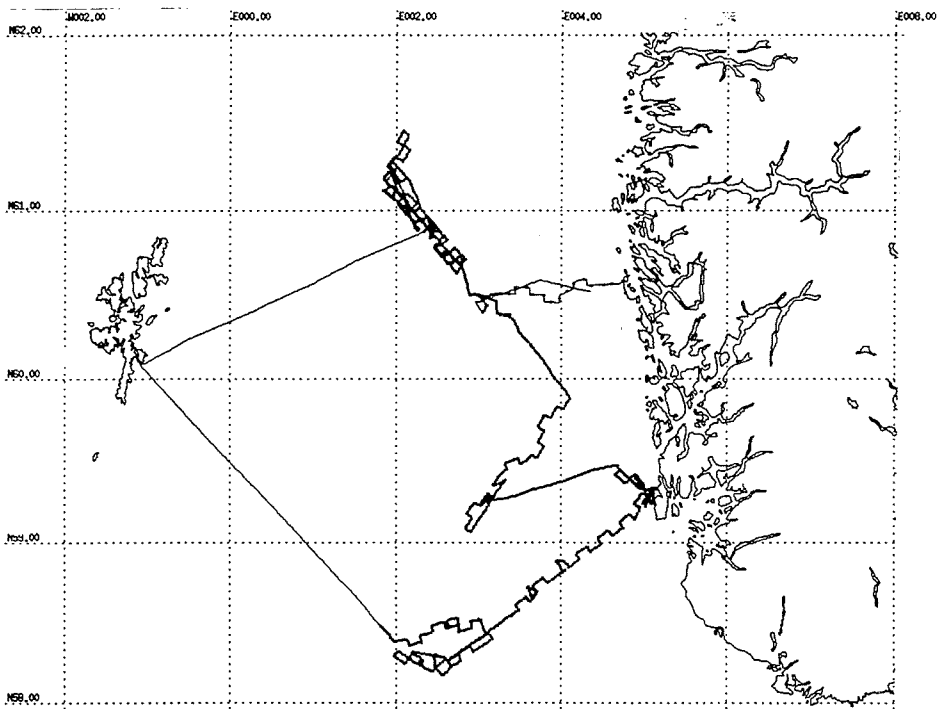


6 - 24 April 1998 ● Gulf III "Michael Sars"
○ Plankton net

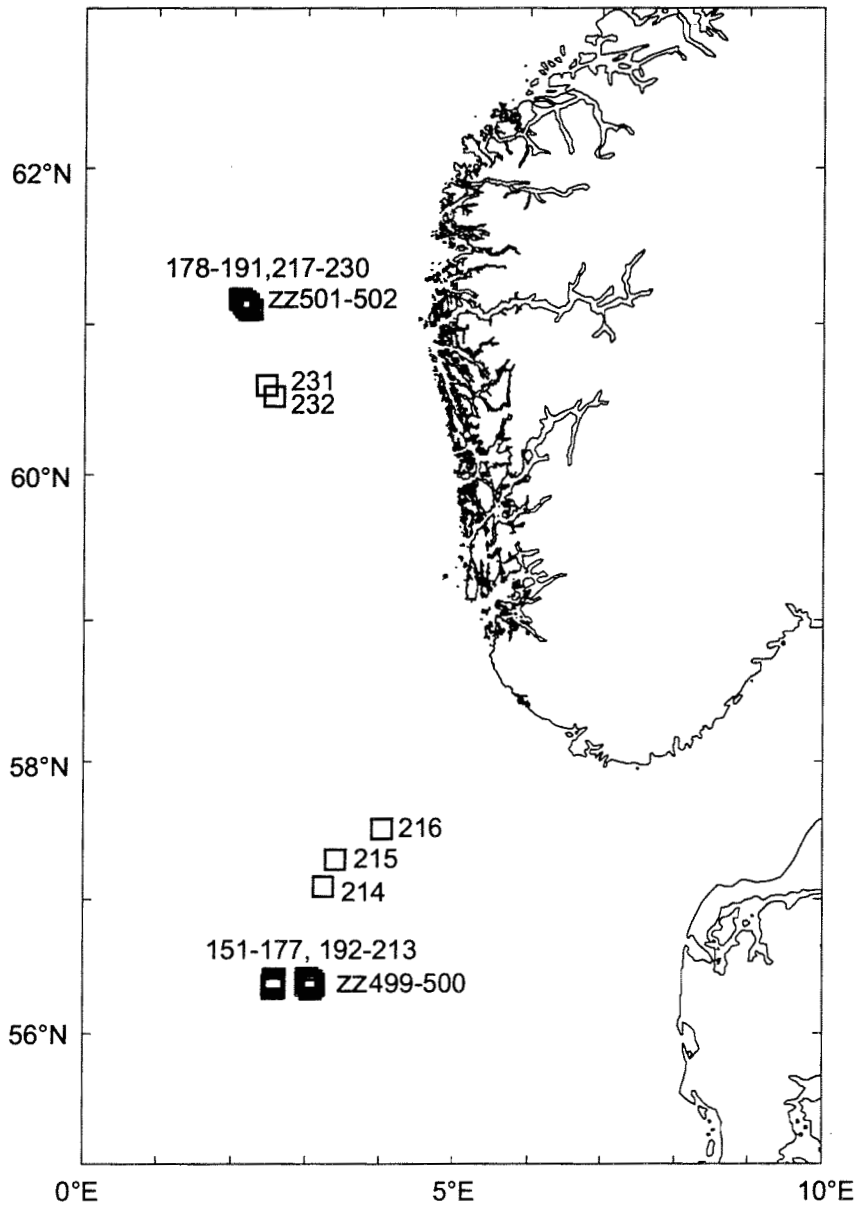


27 Apr - 9 May 1998
Cruise no 1998105

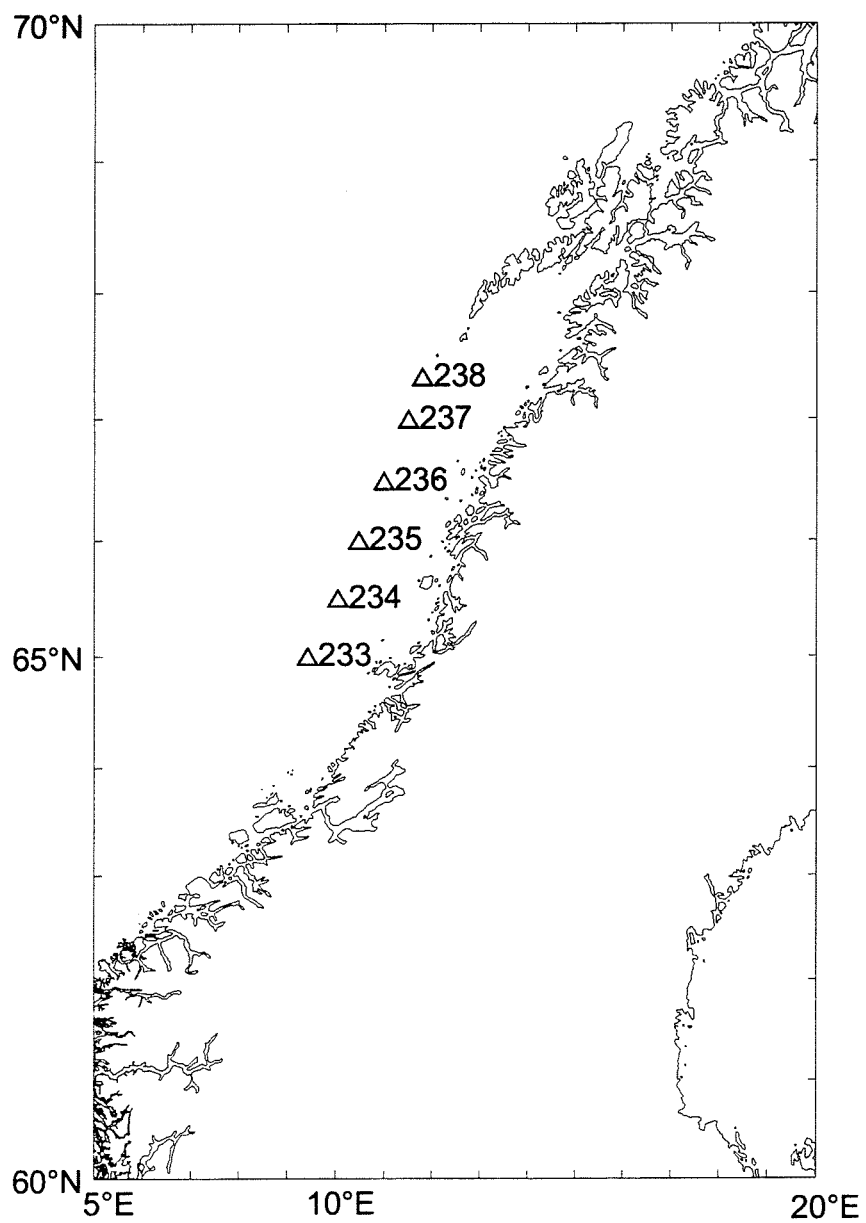
z CTD st.no 487-498 "Michael Sars"
Bottom TRAWL st.no 91-150 (not shown)



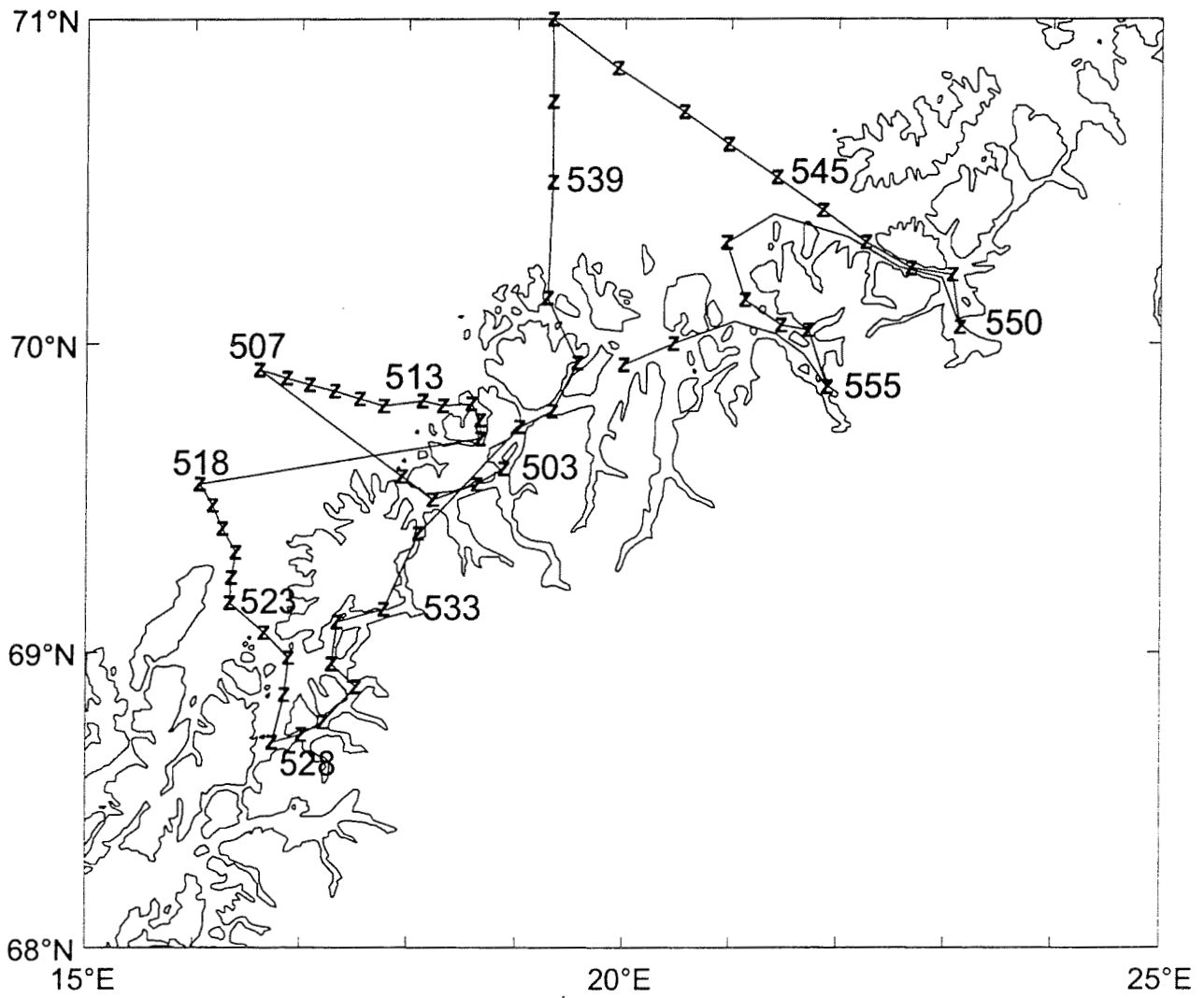
Track chart



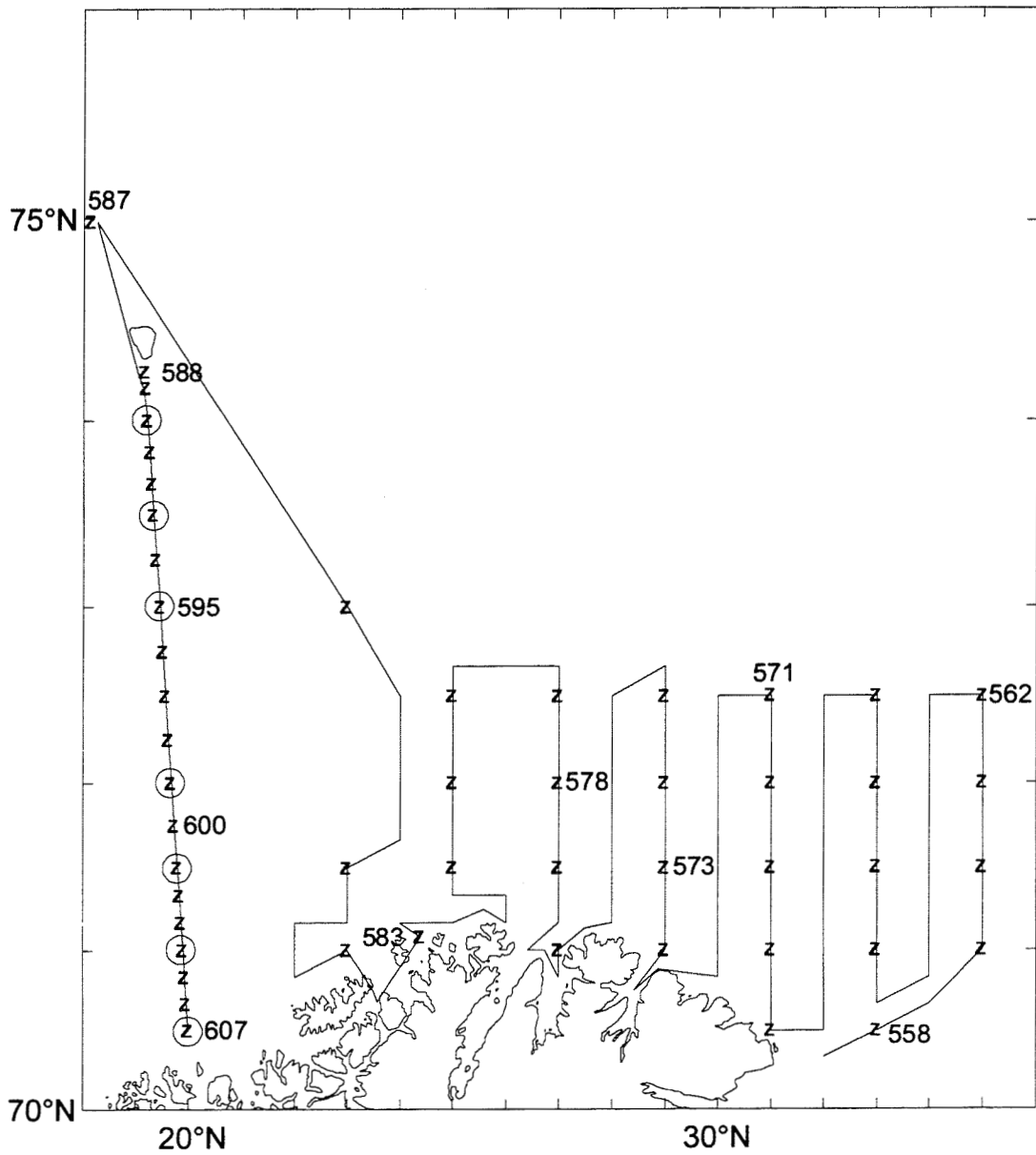
11 - 25 May 1998 □ Bottom TRAWL st.no 151-232 "Michael Sars"
 Cruise no 1998106 z CTD st.no 499-502



27 - 30 May 1998 \triangle Pel. TRAWL st.no 233-238 "Michael Sars"
Cruise no 1998115



3-8 June 1998 z CTD st.no 503-557 "Michael Sars"
 Cruise no 1998116



17 - 28 June 1998

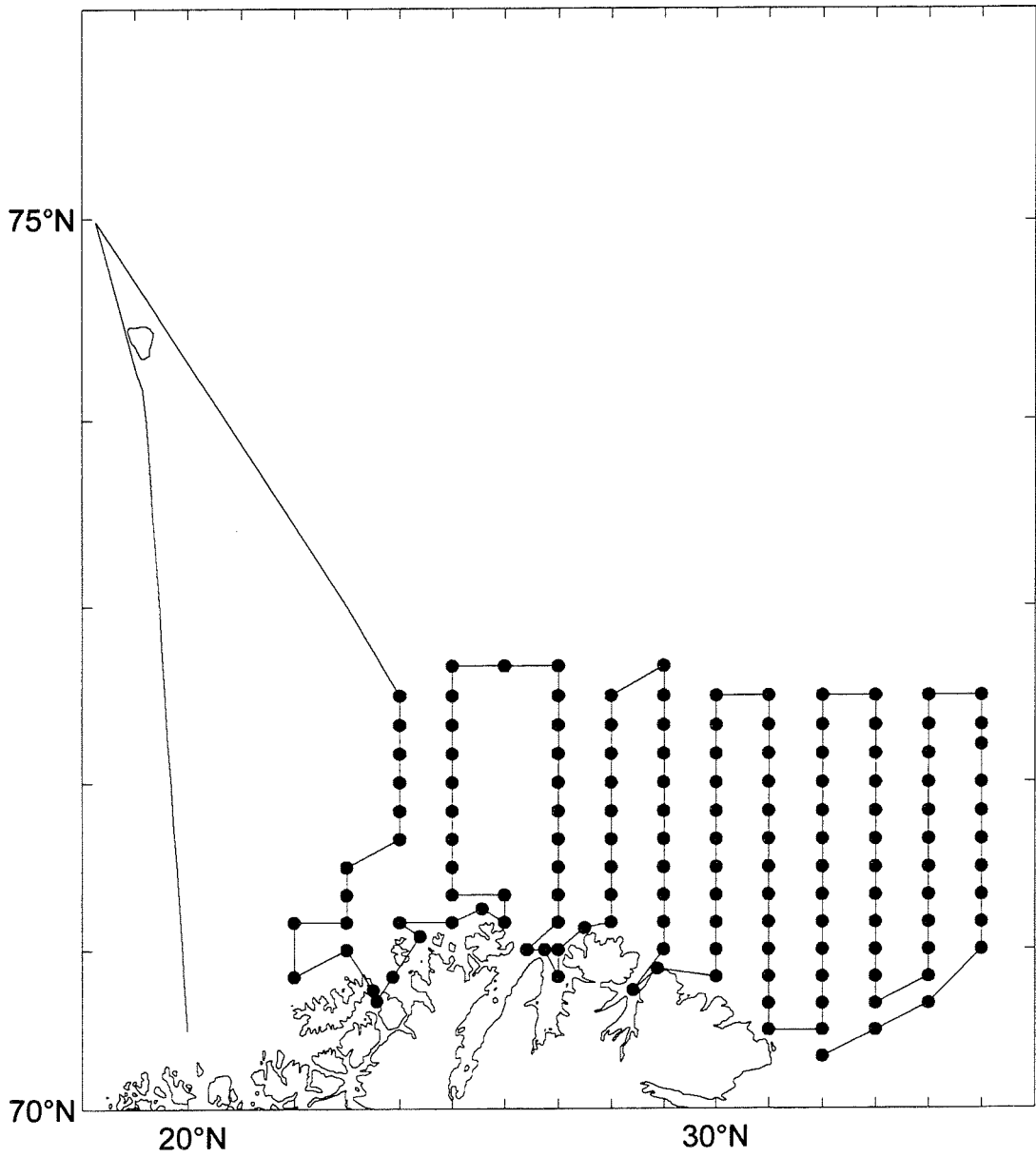
z CTD st.no 558-607

“Michael Sars”

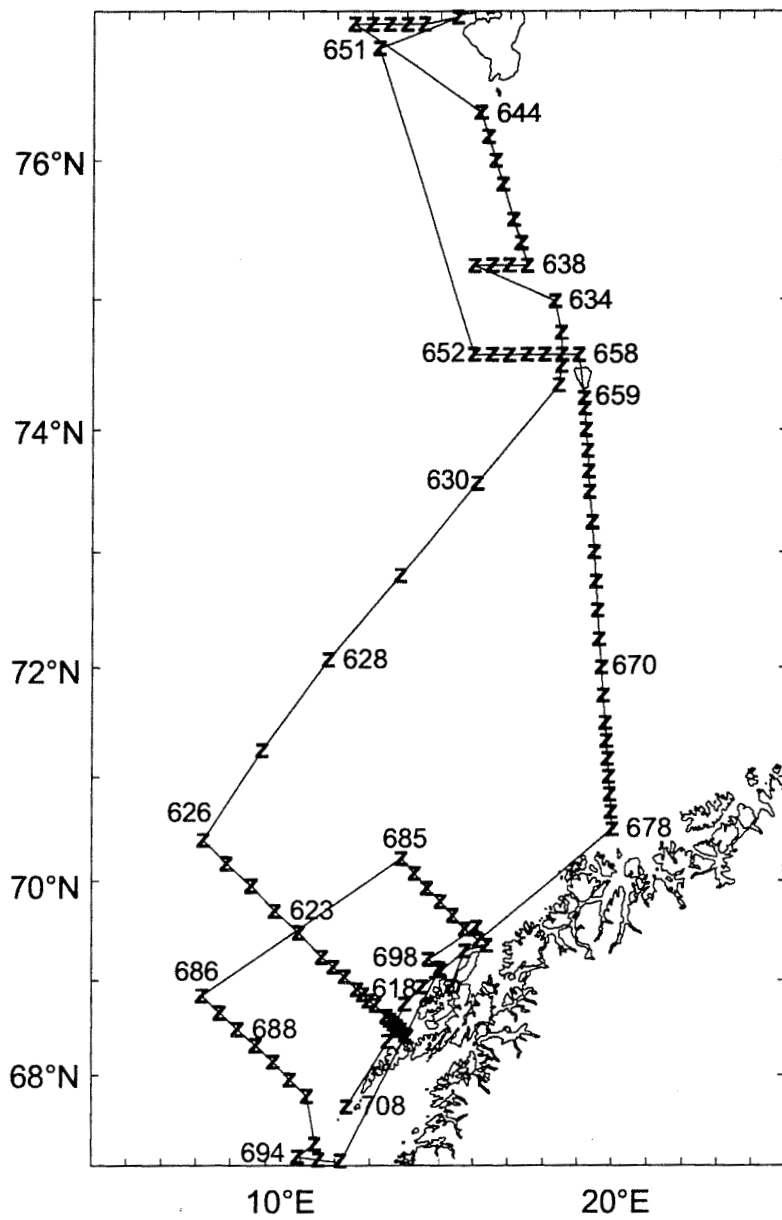
Cruise no 1998107

⓪ CTD and PLANKTON st. (WP-II-net)

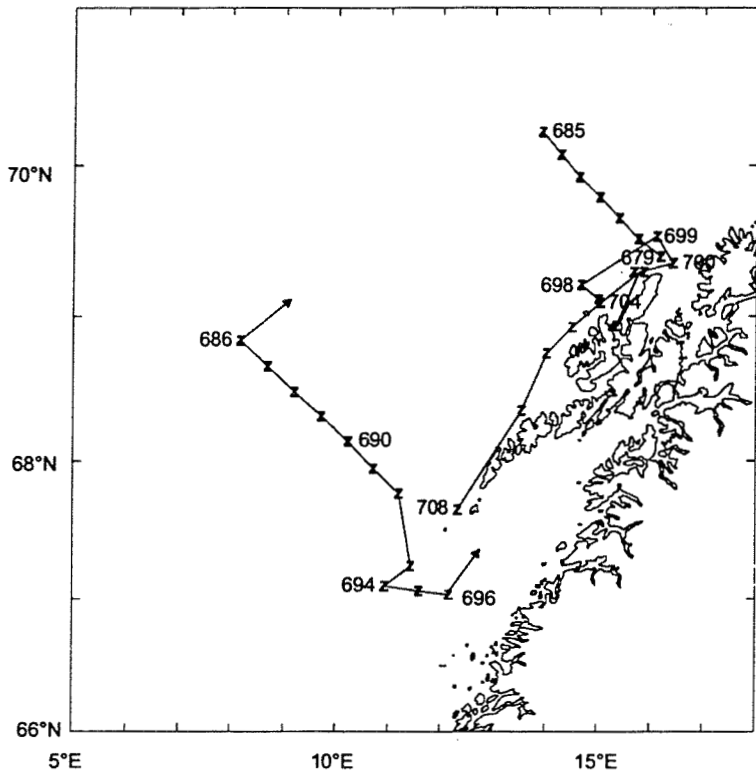
Standard section Fugløya-Bjørnøya: st.no 558-607



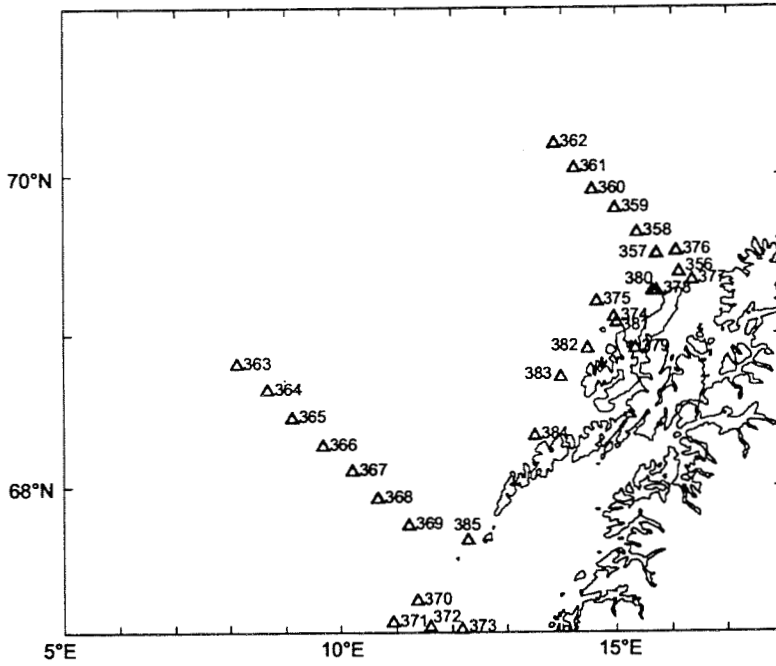
17 - 28 June 1998 • Gulf III - Plankton sampler "Michael Sars"
 Cruise no 1998107



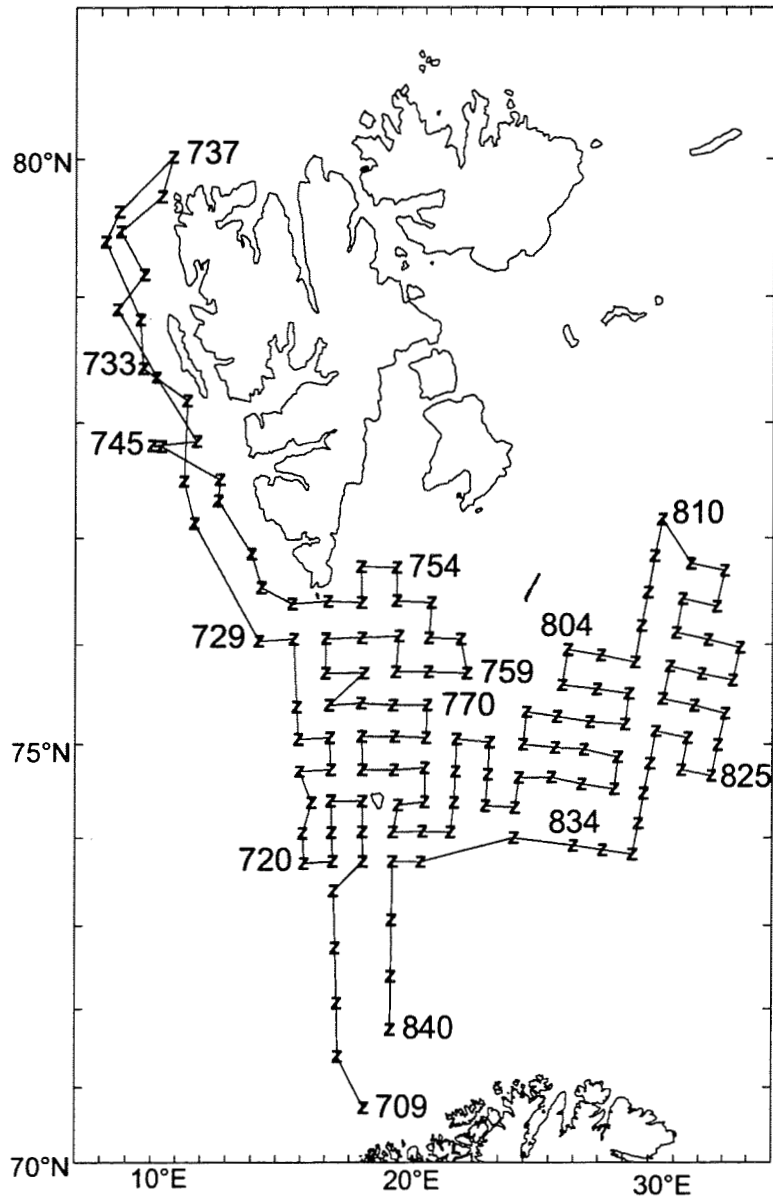
30 Jun - 21 Jul 1998 z CTD st.no 608-709 "Michael Sars"
 Cruise no 1998108 Standard sections Gimsøy NW st.no 608-626
 Fugløya - Bjørnøya st.no 659-678



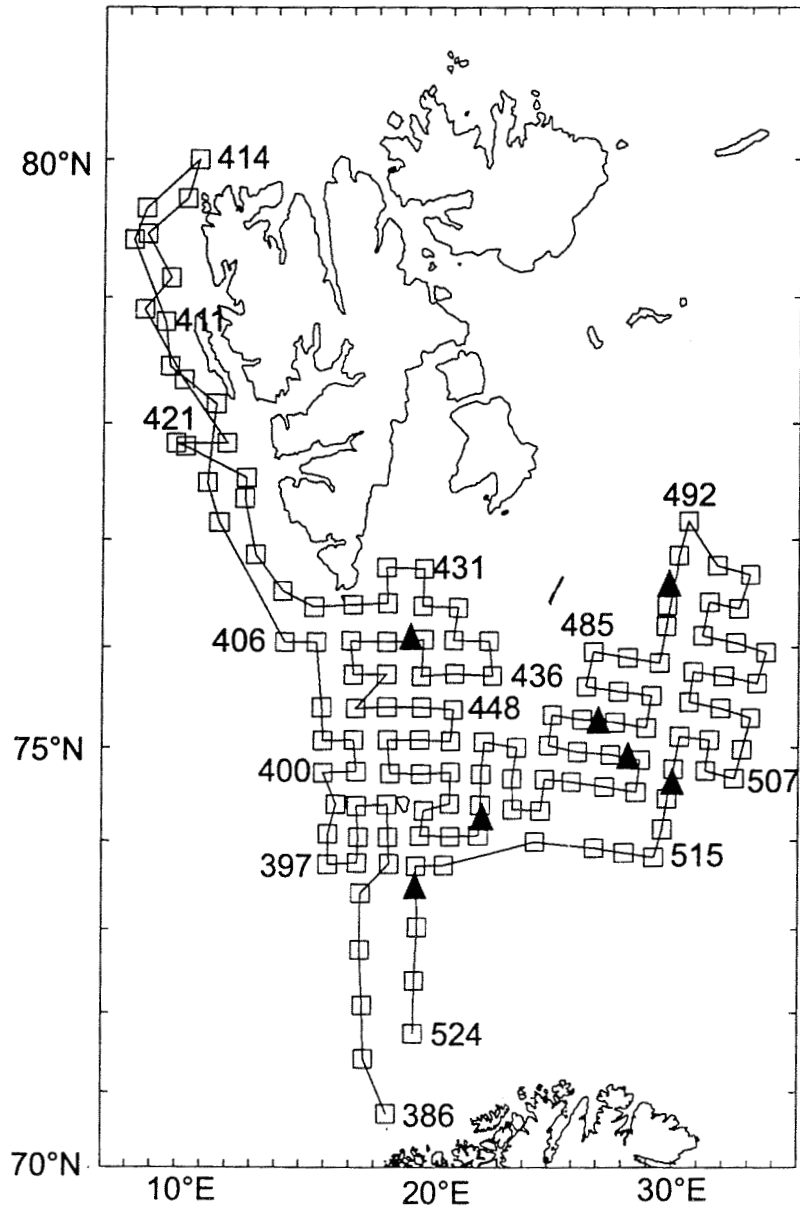
10-21 July 1998 z CTD St.no 679-708 "Michael Sars"
 Part II
 Cruise no 1998108



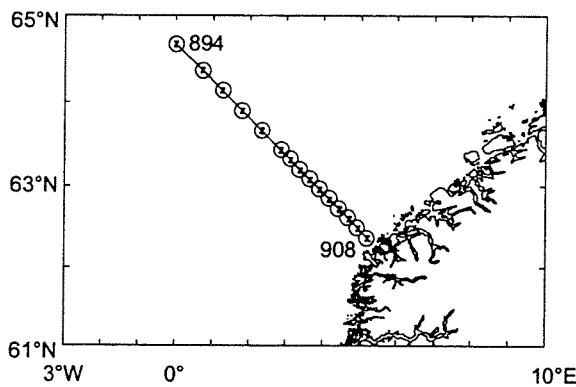
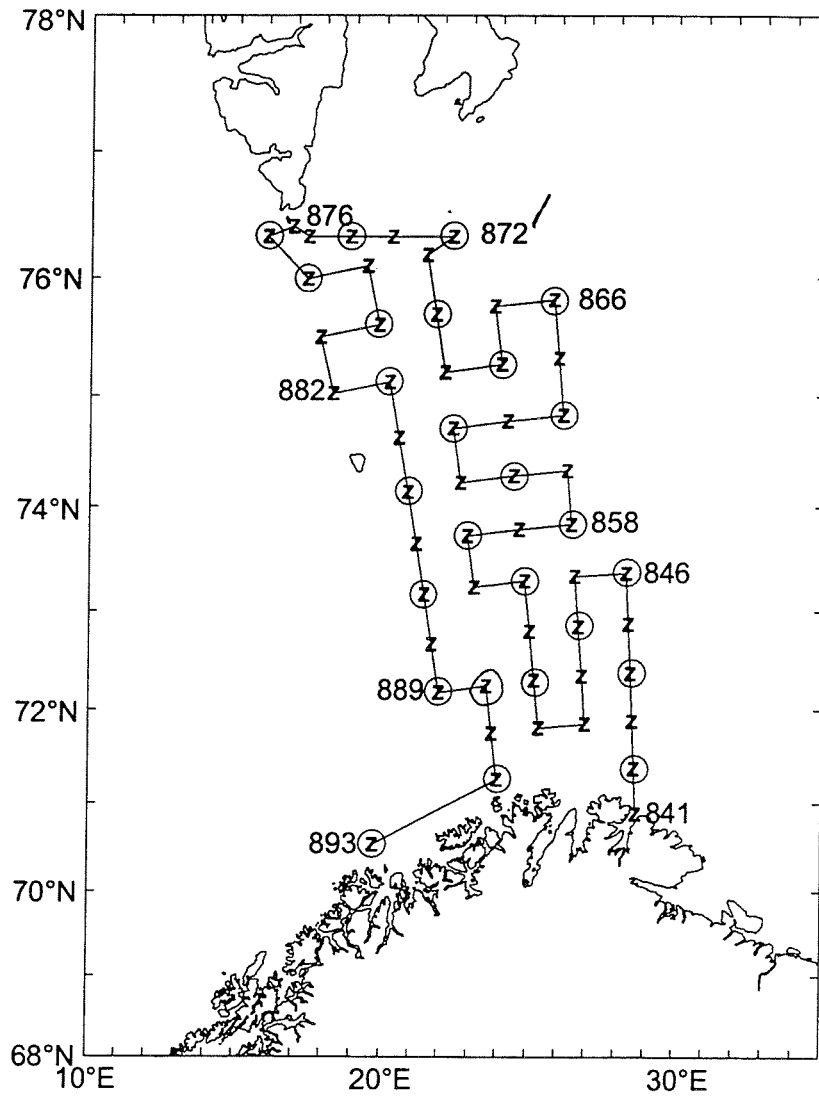
10 - 21 July 1998 Δ Pel.TRAWL no 356-385 "Michael Sars"
 (Part II)
 Cruise no 1998108



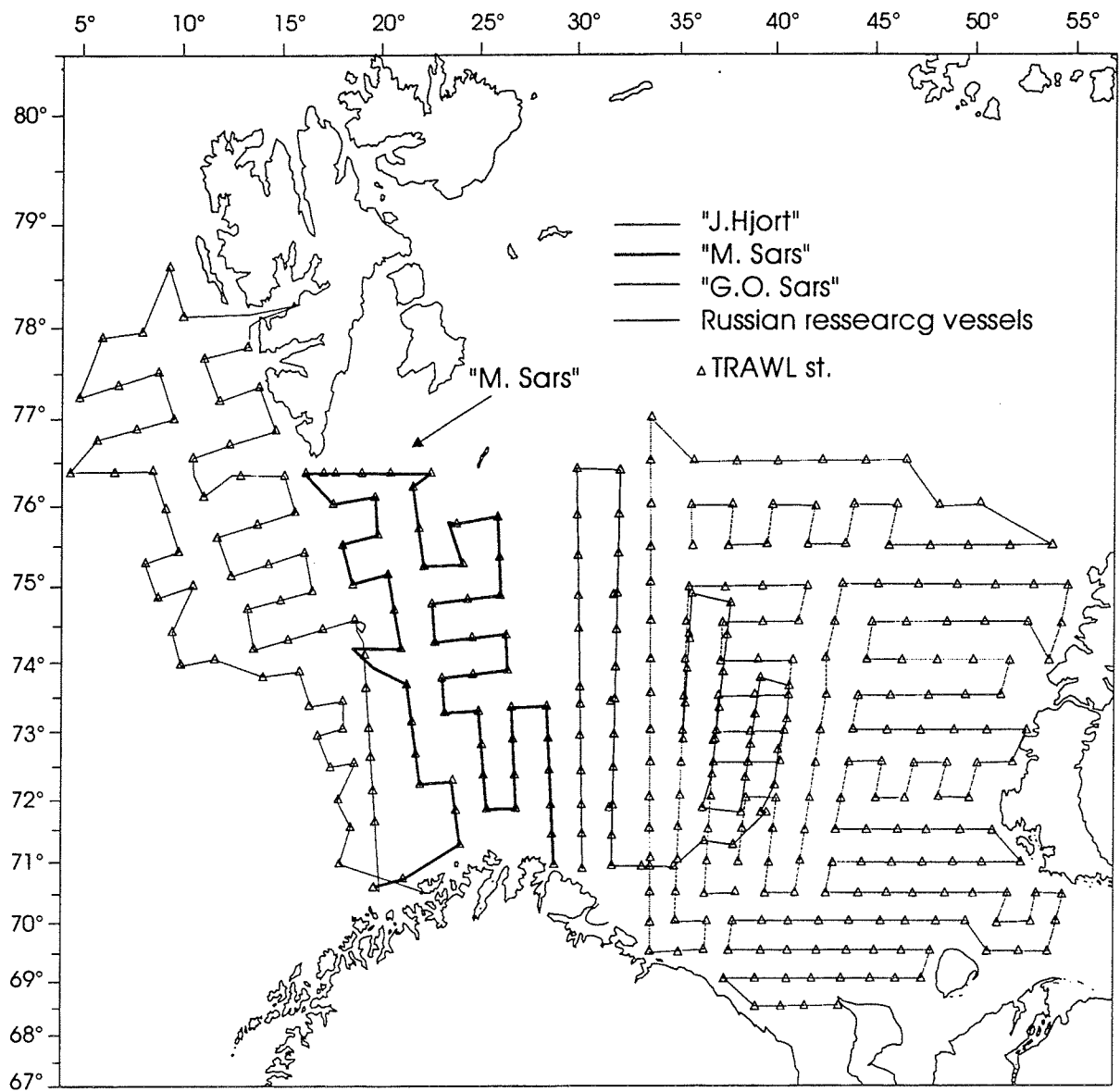
30 Jul - 22 Aug 1998 z CTD st.no 709-840 "Michael Sars"
 Cruise no 1998109



30 Jul - 22 Aug 1998 TRAWL st.no 386-524 "Michael Sars"
 Cruise no 1998109 □ Bottom tr.
 ▲ Pel tr.

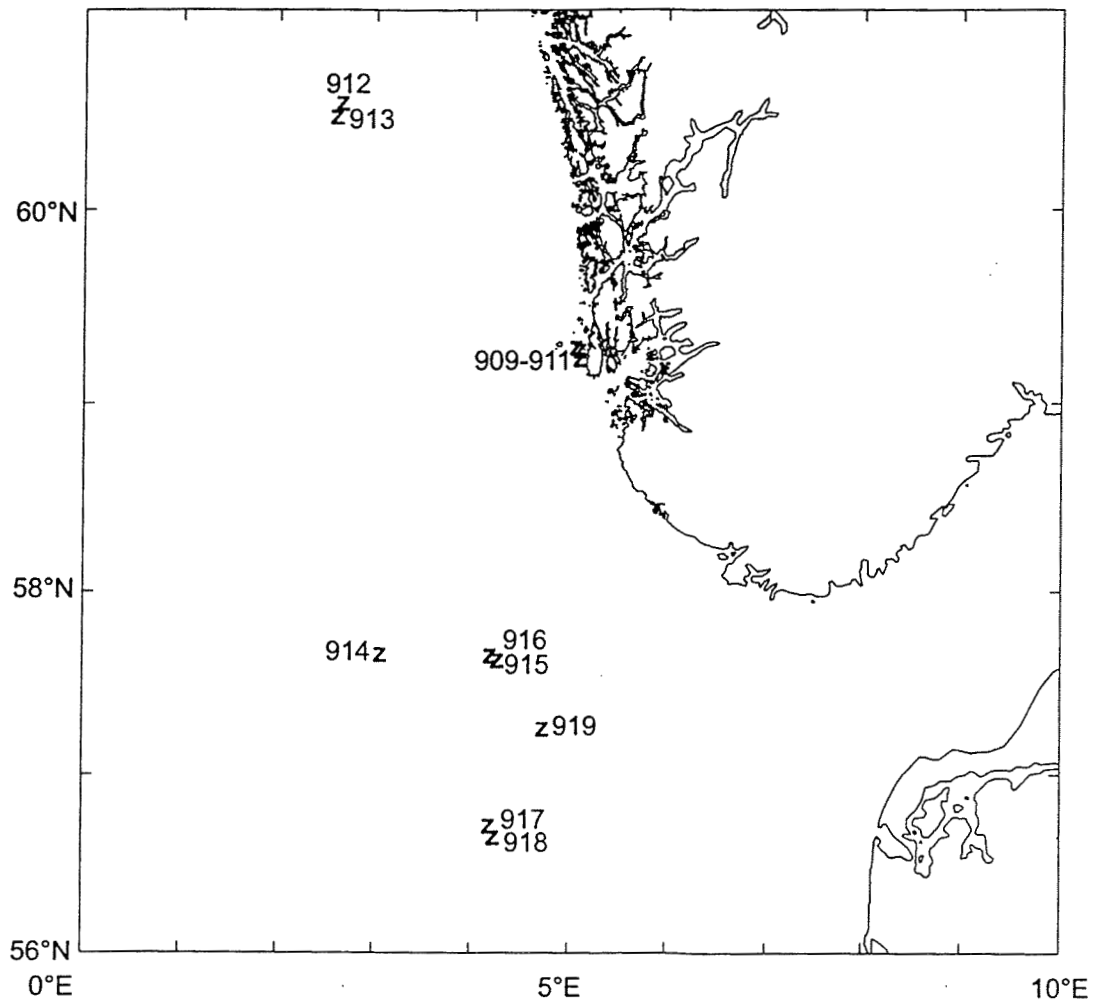


24 Aug - 10 Sep 1998 z CTD st.no 841-908 "Michael Sars"
 Cruise no 1998110 ⊗ CTD and PLANKTON st. (WPII-net)
 Standard section Svinøy NW st.no 894-908



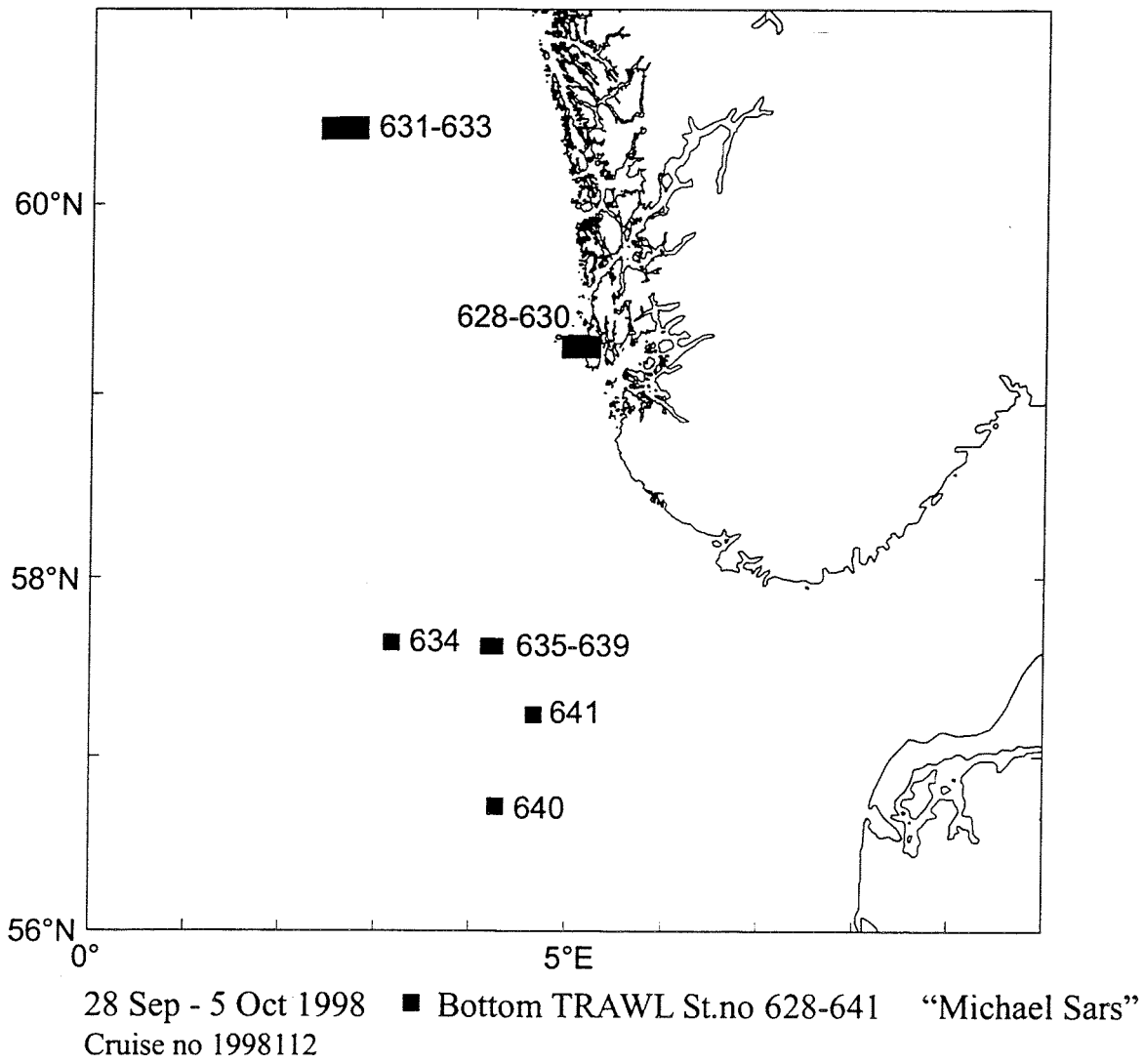
25 Aug - 9 Sep 1998
Cruise no 1998110

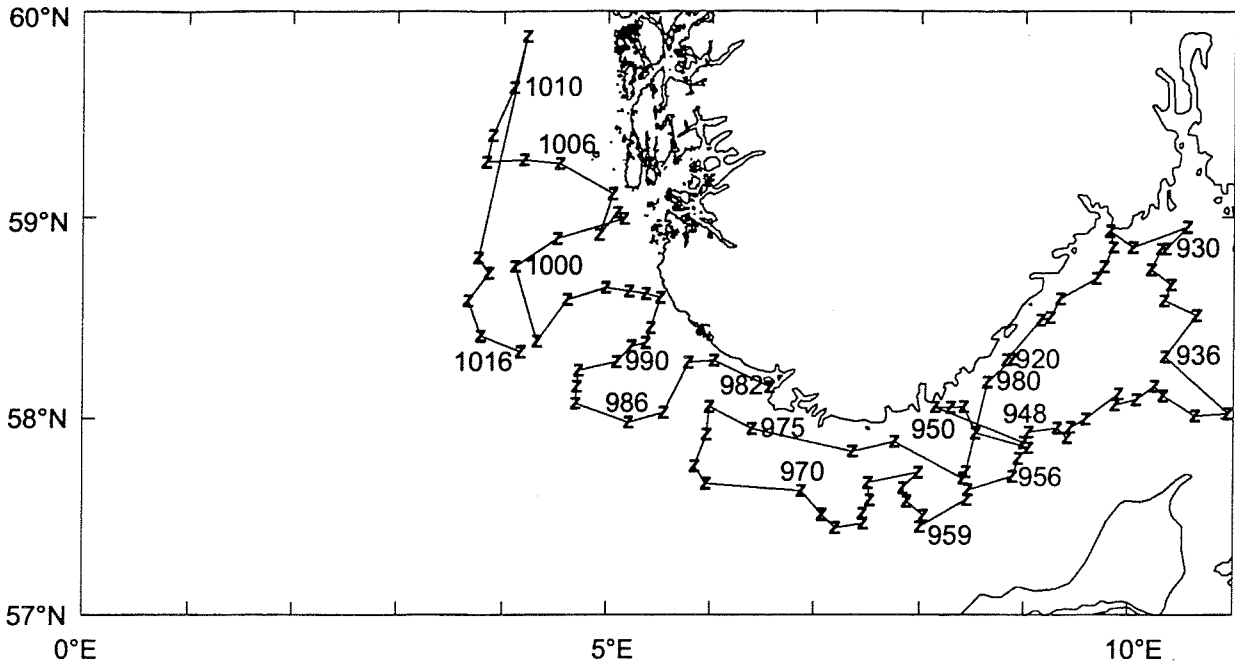
△ Pel. TRAWL st. 525-595 "Michael Sars"



28 Sep - 5 Oct 1998 z CTD st.no 909-919
Cruise no 1998112

“Michael Sars”

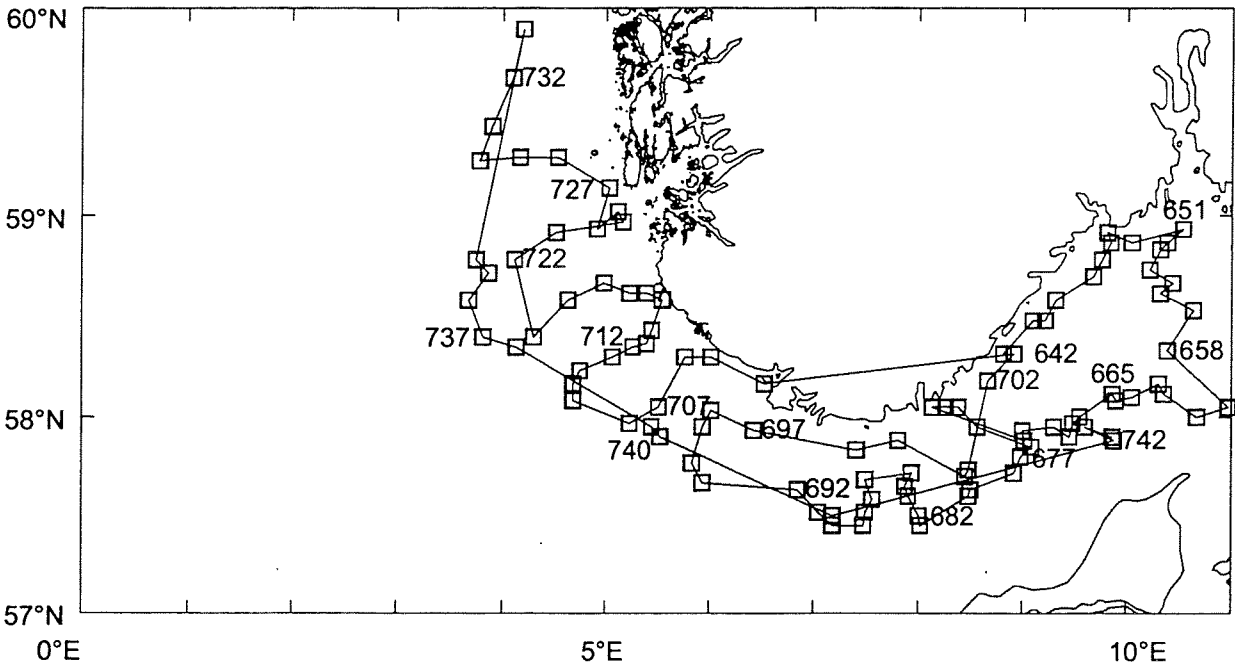




7 - 27 Oct 1998
Cruise no 1998113

z CTD st.no 920-1016

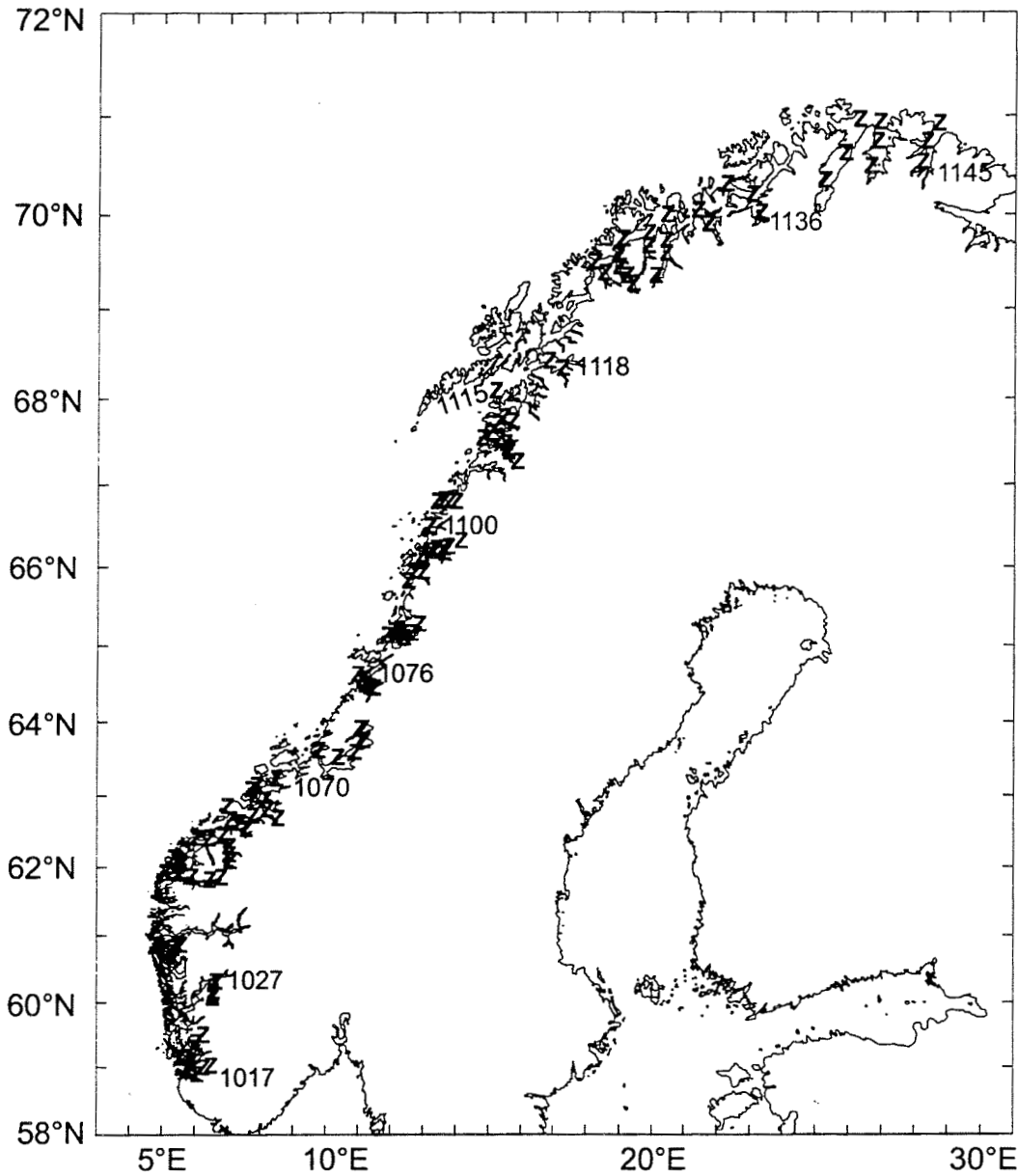
“Michael Sars”



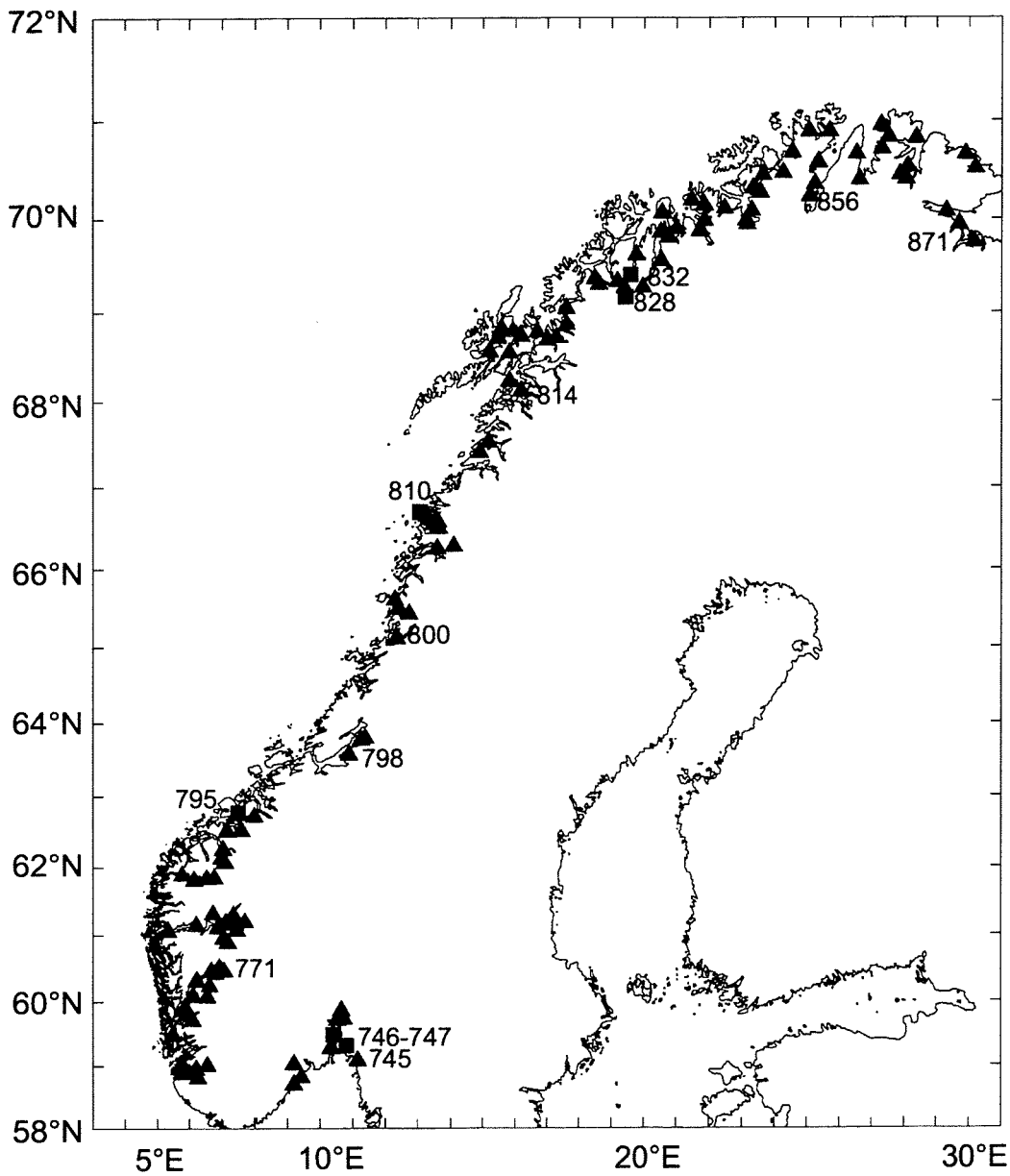
7 - 27 Oct 1998
Cruise no 1998113

□ Bottom TRAWL st.no 642-744

“Michael Sars”

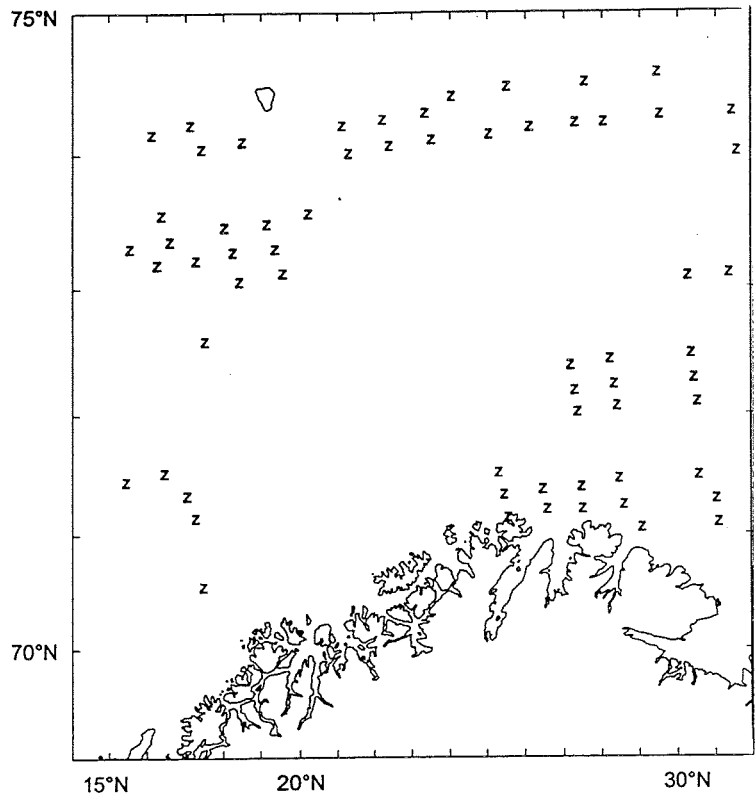


28 Oct - 10 Dec 1998 z CTD St.no 1017-1145 Michael Sars"
Cruise no 1998114

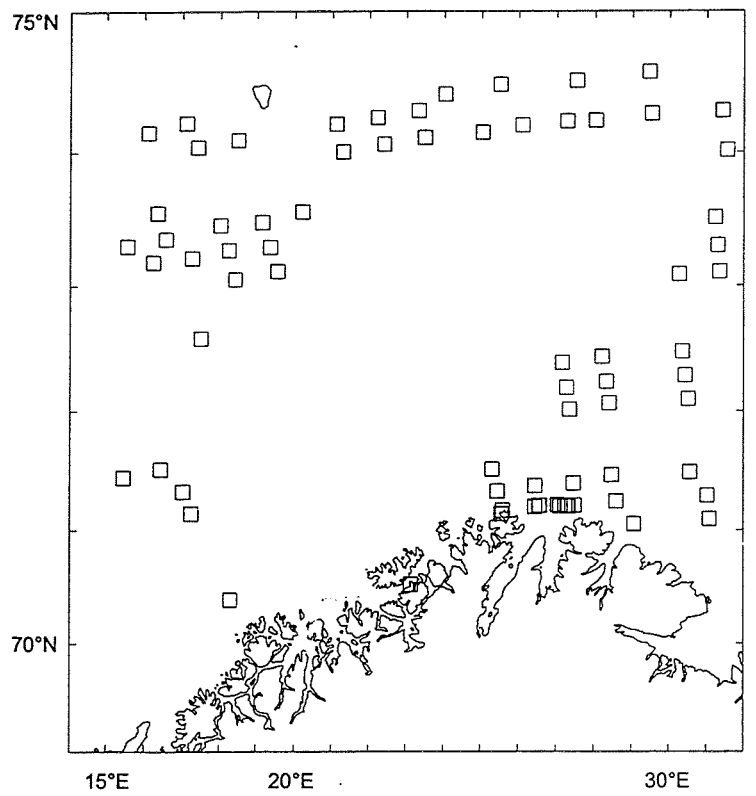


28 Oct - 10 Dec 1998
Cruise no 1998114

TRAWL st.no 745-871 "Michael Sars"
 ▲ Pel. trawl
 ■ Bottom trawl (St.no 746,747,795,810,828,832)

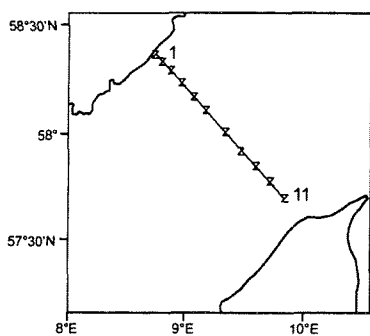


31 Jan - 24 Feb 1998 z CTD "Jan Mayen"

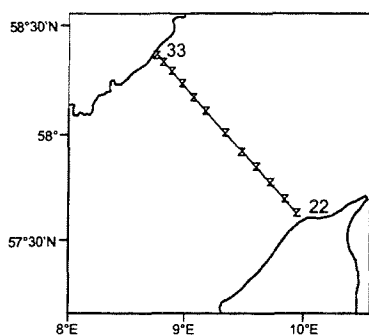


31 Jan - 24 Feb 1998 □ Bottom trawl "Jan Mayen"

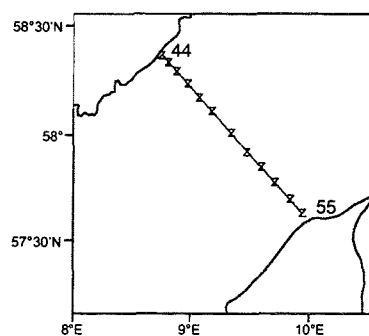
TORUNGEN - HIRTSHALS - 1998



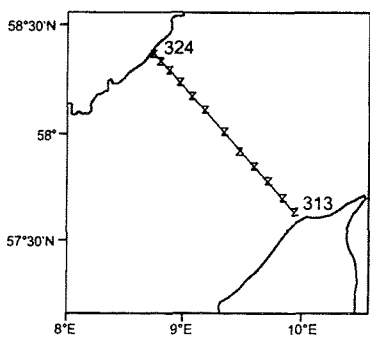
21 Jan z CTD st.no 1-11



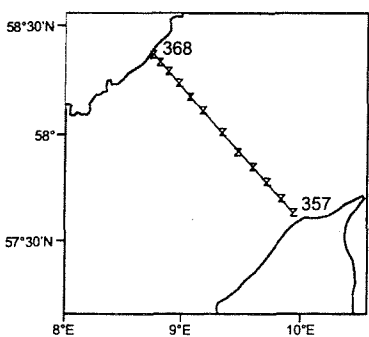
24 Feb z CTD st.no 22-33



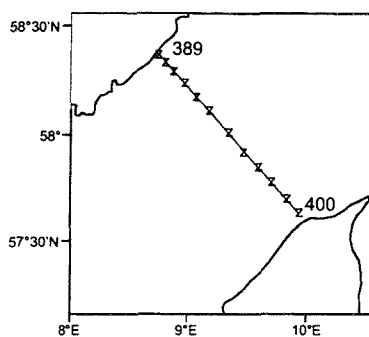
13 Mar z CTD st.no 44-55



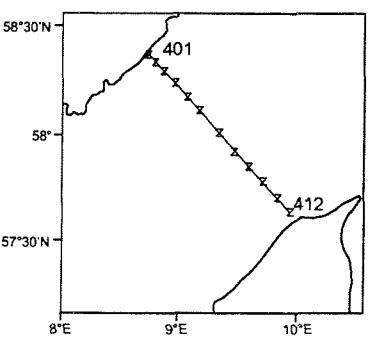
17 May z CTD st.no 313-324



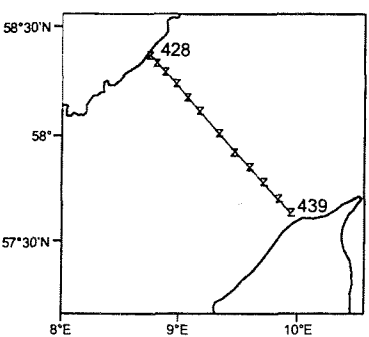
12 Jun z CTD st.no 368-357



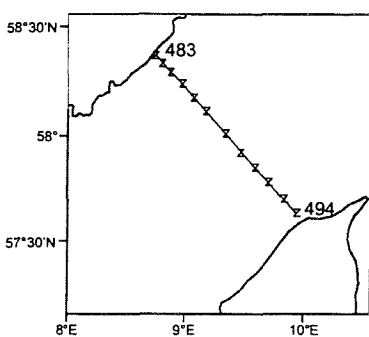
10 Jul z CTD st.no 389-400



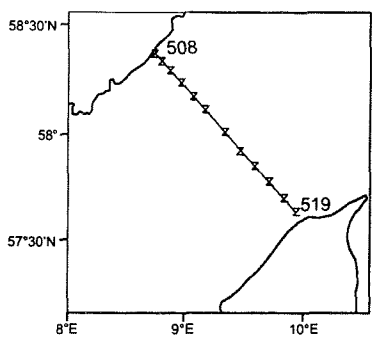
3 Aug z CTD st.no 401-412



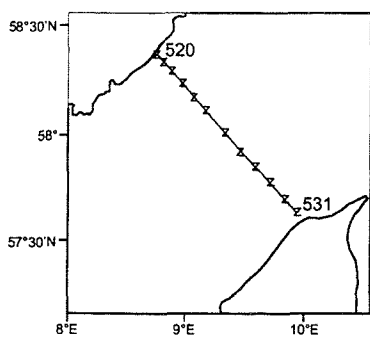
9 Sep z CTD st.no 428-439



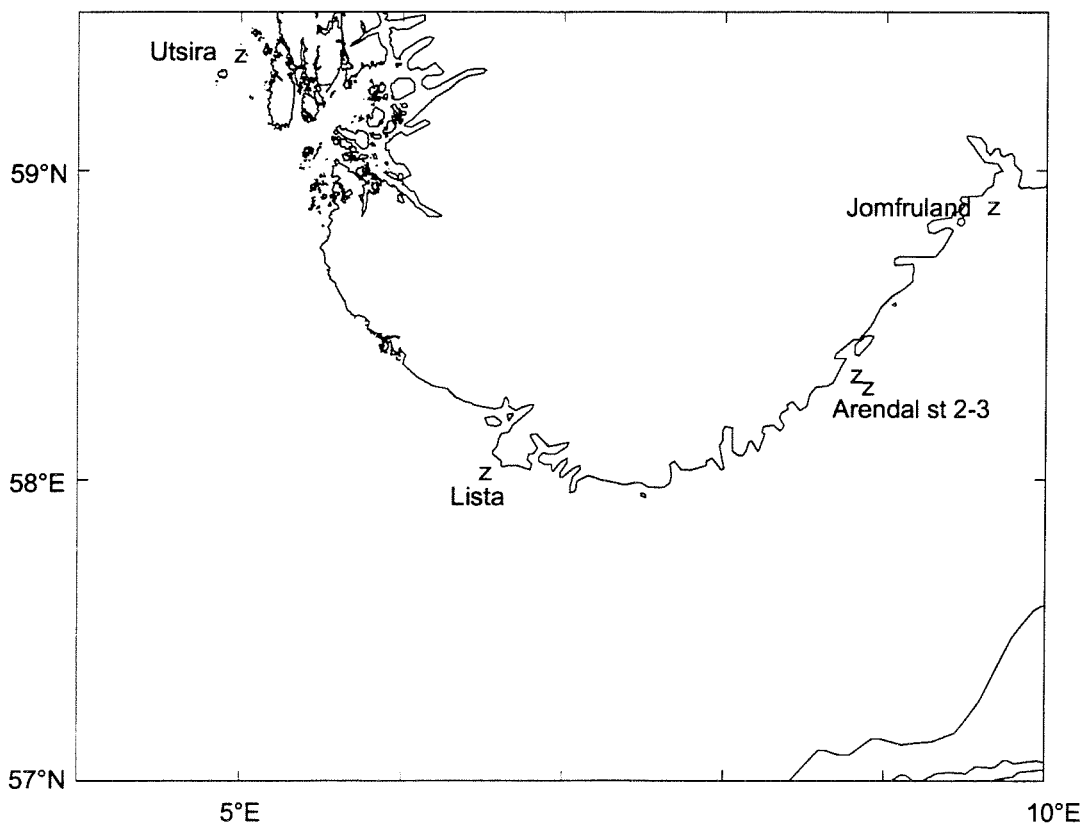
6 Oct z CTD st.no 483-494



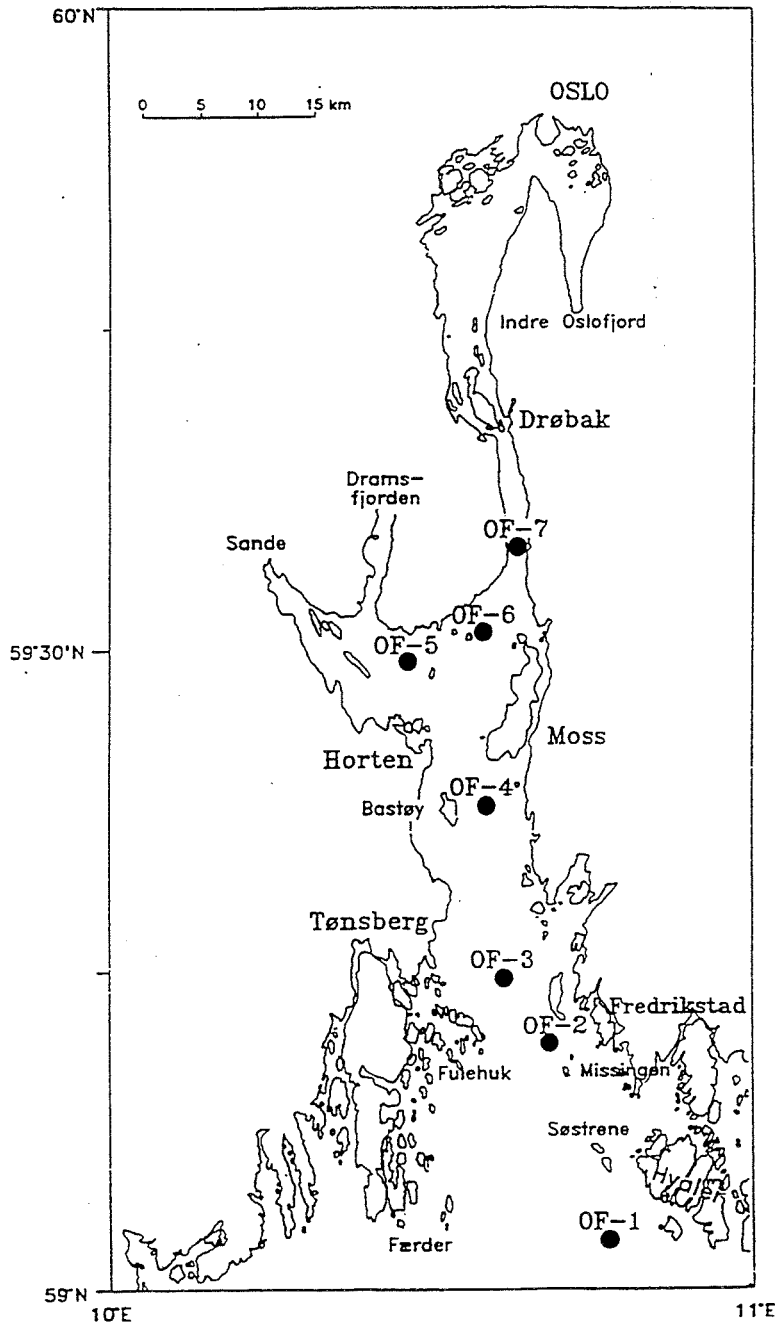
17-18 Nov z CTD st.no 508-519



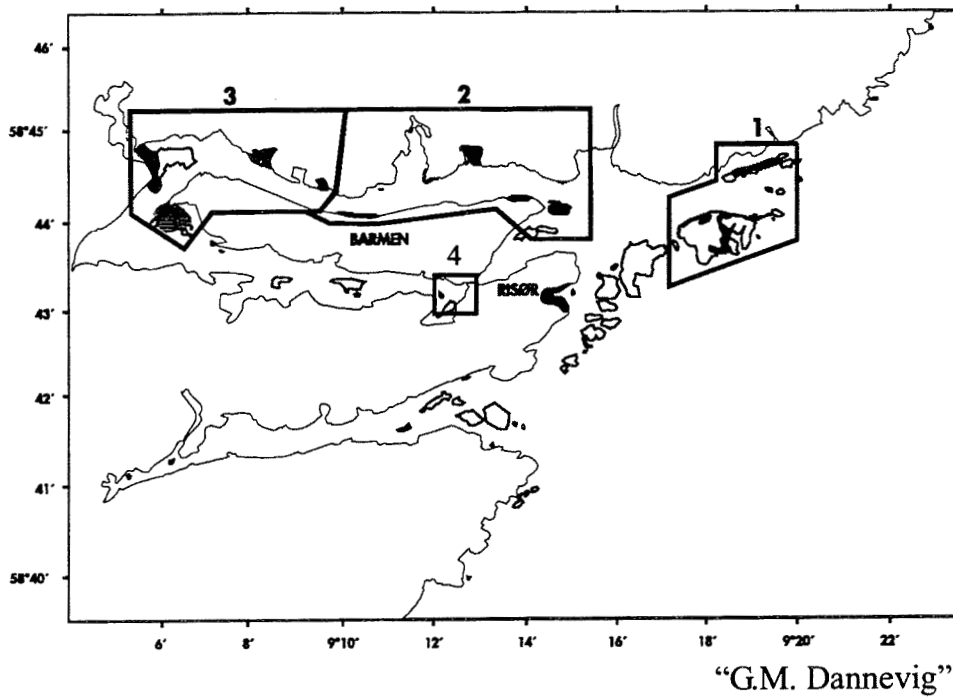
7-8 Dec z CTD st.no 520-531



Coastal monitoring program



Monitoring of the marine environment in Ytre Oslofjord

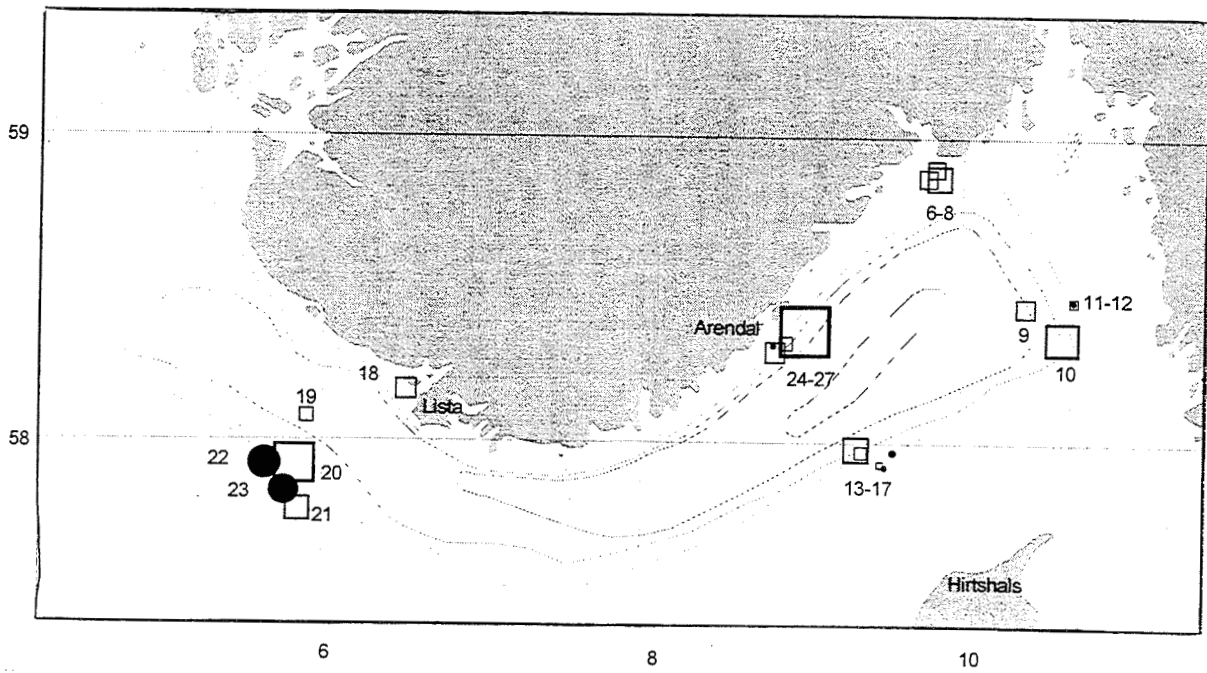


Cruise no 1998314: 24 Mar - 2 Apr 1998

Cruise no 1998343: 30 Aug - 8 Sep 1998

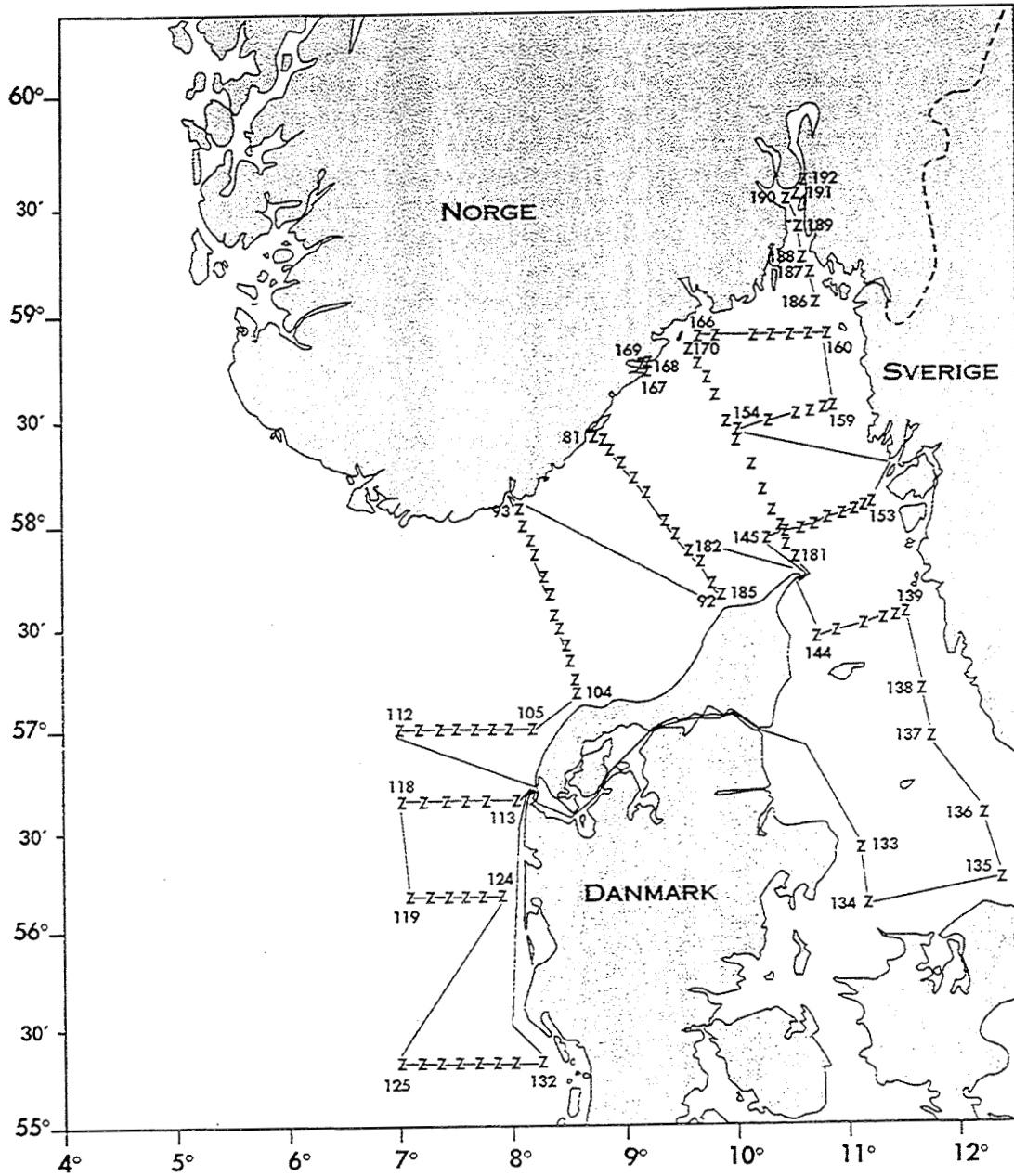
Cruise no 1998353: 12 - 21 Oct 1998

Fishpots have been placed in four areas



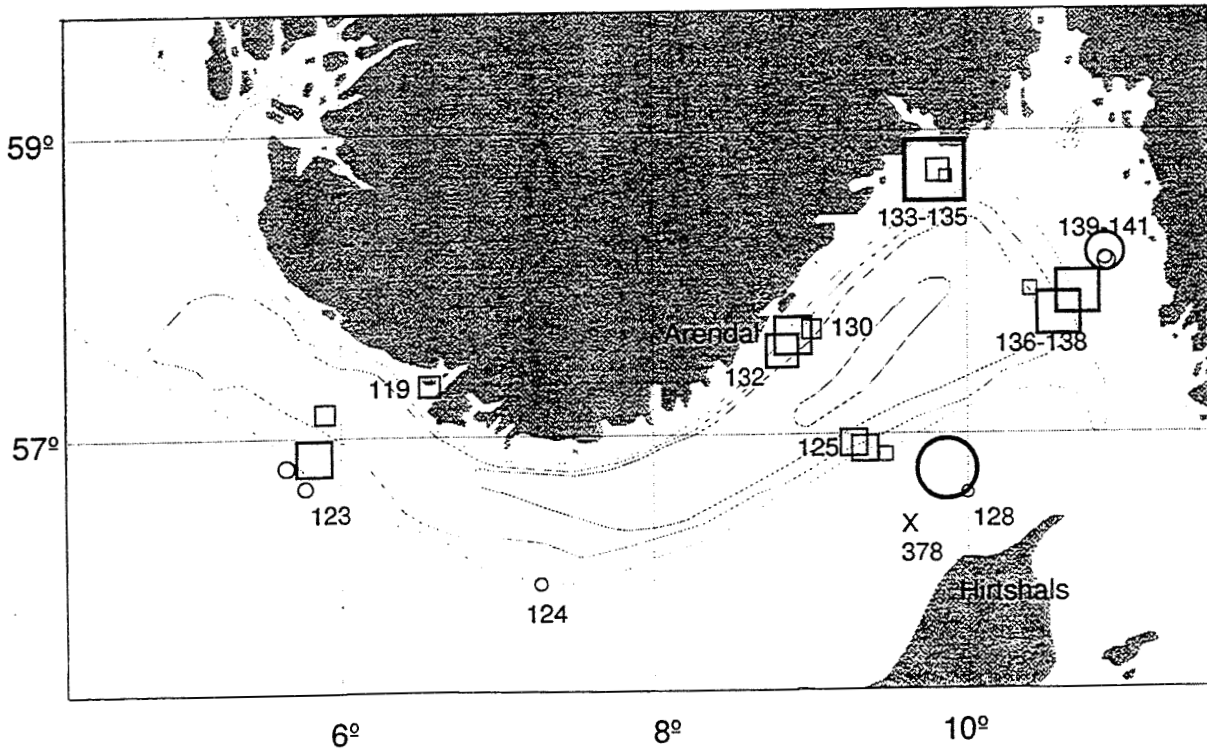
3 - 10 March 1998 TRAWL st.no 7-27
 Cruise no 1998309

“G.M. Dannevig”

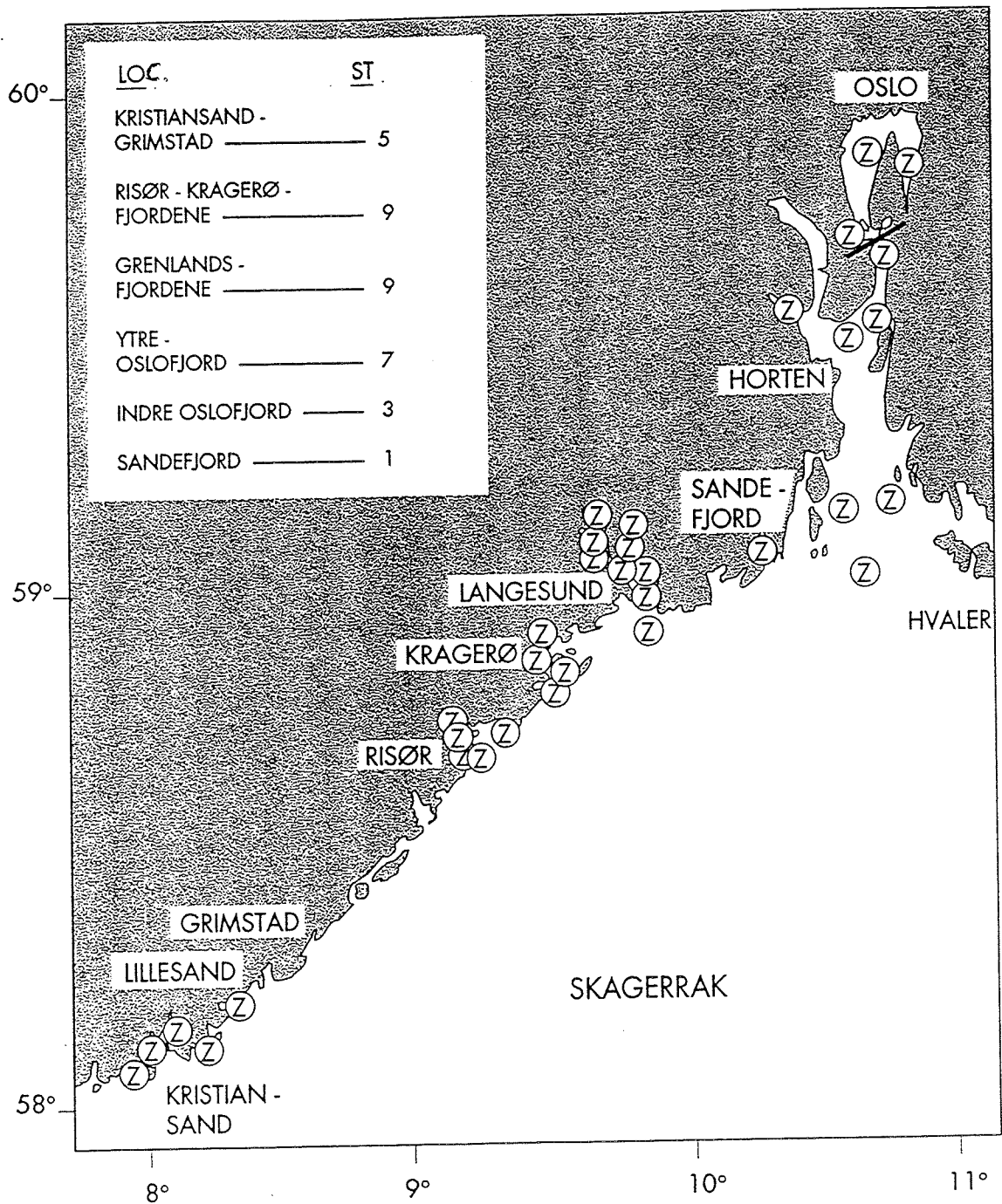


8 - 27 April 1998 z CTD st.no 81-194
 Cruise no 1998317

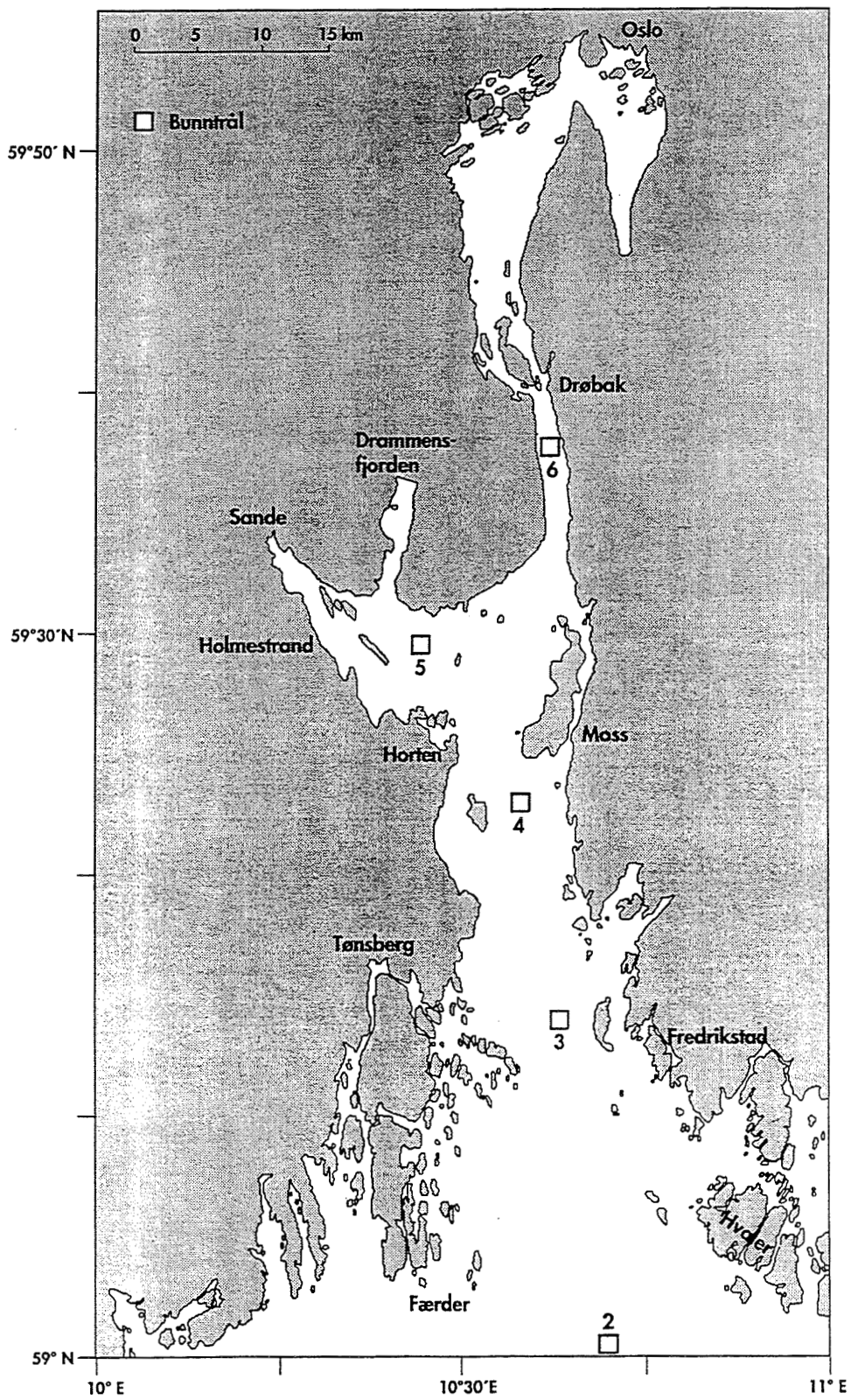
“G.M. Dannevig”



19 - 26 June 1998 TRAWL st.no 119-141 "G.M. Dannevig"
 Cruise no 1998329



15 Sep - 3 Oct 1998 z CTD st.no 440-479 "G.M. Dannevig"
 Cruise no 1998347



4 - 6 Feb 1998 □ TRAWL st. "G.M. Dannevig