

INTERN TOKTRAPPOR

Fartøy: F/F "Eldjarn"
Avgang: Hammerfest, 4. september 1987
Ankomst: Kirkenes, 13. oktober 1987
Formål: Kartlegge mengde og utbredelse av bunnfisk og reker i samarbeid med F/F "Michael Sars" i området Svalbard - Bjørnøya. Trålforsøk. Hydrografi - snittene Bjørnøya-vest og Bjørnøya-Fugløya.

Personell: A.Totland, Ø.Torgersen, H.Myran (4/9-13/10).
S.Mehl, I.M.Beck, G.Burgos, V.Anthonypillai (4/9-16/9).

Fartøy: F/F "Michael Sars"
Avgang: Tromsø, 7. september 1987
Ankomst: Tromsø, 12. oktober 1987
Formål: Kartlegge mengde og utbredelse av bunnfisk og reker i samarbeid med F/F "Eldjarn" i området Svalbard - Bjørnøya. Trålforsøk.

Personell: K.Lauvås, M.Møgster, B.Kvinge, J.E.Nygård (7/9-12/10).
P.Dalpadado, E.Sælen, R.Toresen (7/9-25/9).
W.Clausen, Ø.Tangen, J.A.Jacobsen (7/9-12/10).

GJENNOMFØRING

Toktet vart stort sett gjennomført som i tidlegare år med unnatak av at tidlegare tokt har vorte gjennomførte også med innsats av ein trålar. Dette gjorde at innsatsen i 1987 (ant. stasjonar, 133) var den minste i heile tidsserien. På grunn av dårleg vær vart også dekninga redusert og starta 42 vart ikkje dekt i det heile.

Botntrålsurveyet vart gjennomført saman med fleirbestandssurveyet. Trålforsøk vart gjennomførde både under og etter botntrålsurveyet.

RESULTAT

Resultata frå toktet er viste i fylgjande tabeller og fugurar. Hydrografi er presentert i rapporten frå fleirbestandstoktet.

Olav Rune Godø

Harald Senneset

Table 1. Stratified indices on numbers (thousands) for different depths and areas in 1987.

Species	North of 76°N						South of 76°N						Total
	0-100	100-200	200-300	300-400	>400	Total	0-100	100-200	200-300	300-400	>400	Total	
Cod	2310	61300	1730	487	550	66400	41300	57900	37800	7460	4590	149000	215000
Haddock	0	80	0	0	0	80	0	200	55	14	0	269	349
<u>S. Marinus</u>	0	1430	4980	37	2850	9300	59	3400	3660	98	151	7370	16700
<u>S. Mentella</u> *)	200	4360	19400	9440	12730	46070	0	737	10260	28980	122000	161670	208100
Greenland halibut	26	46	1170	1820	2460	5520	0	31	957	3070	8910	13000	18500
Long rough dab	2040	14600	8400	1510	4060	30700	3300	34100	40000	20800	19600	118000	149000
Blue whiting	0	0	0	0	126	126	0	0	344	2920	6020	9280	9410
Jelly cat	0	0	12	11	3	25	0	348	626	35	548	1560	1580
Catfish	223	1550	460	70	128	2430	0	1200	83	0	114	1390	3830
Smaller catfish	28	577	210	101	123	1040	212	1690	440	27	19	2390	3430

Table 2. Stratified indices on weight (thousands kg) for different depths and areas in 1987.

Species	North of 76°N						South of 76°N						Total
	0-100	100-200	200-300	300-400	>400	Total	0-100	100-200	200-300	300-400	>400	Total	
Cod	3080	23300	1930	1090	697	30100	24400	44000	33700	12300	7950	122000	152000
Haddock	0	21	0	0	0	21	0	122	67	0	0	189	211
<u>S. Marinus</u>	0	55	99	13	235	402	0	626	610	41	151	1430	1830
<u>S. Mentella</u> *)	7	58	1509	609	1062	3246	0	14	750	1739	12000	14489	17755
Greenland halibut	5	11	388	860	1150	2420	0	0	483	1540	6300	8320	10700
Long rough dab	118	879	872	198	327	2400	499	4470	4560	2910	3040	15500	17900
Blue whiting	0	0	0	0	37	37	0	0	119	953	1390	2460	2500
Jelly cat	0	0	163	0	0	163	0	1210	1470	0	969	3650	3810
Catfish	104	220	157	45	122	648	0	746	134	0	2020	2900	3550
Smaller catfish	74	1130	146	89	96	1530	508	1530	947	17	126	3130	4660
Shrimps	5	595	281	345	222	1450	0	0	102	4120	6770	11000	12400

*) Include considerable quantities of *Sebastes* species.

Table 5. Stratified trawl indices on numbers (thousands) for different species in 1981 - 1987.

	Year	Number of hauls	Cod	Haddock	<u>S.marinus</u>	*) <u>S.mentella</u>	Greenland halibut	Long rough dab	Blue whiting	Jelly cat	Catfish	Smaller Catfish
North of 76°N	1981	66	1 467	327	3 415	45 680	13 600	48 720	1 821	35	621	1 209
	1982	70	4 140	56	204	59 190	12 940	34 190	537	30	1 527	279
	1983	70	3 251	362	36 330	58 360	14 360	32 560	128	56	690	975
	1984	72	20 700	38 490	373	278 600	12 680	73 410	422	34	2 167	1 518
	1985	77	82 810	30 090	695	198 430	13 970	85 100	322	116	3 376	2 481
	1986	69	83 600	2 370	2 140	57 200	6 970	26 700	86	40	1 970	1 070
	1987	59	66 400	80	9 300	46 070	5 520	30 700	126	25	2 430	1 040
South of 76°N	1981	119	48 310	481	58 250	133 800	6 492	287 500	26 650	1 235	790	1 242
	1982	121	41 460	928	11 790	218 500	13 070	336 100	27 230	1 360	1 082	1 452
	1983	117	42 670	3 358	6 070	248 100	12 330	339 800	30 480	1 456	960	2 155
	1984	122	90 810	30 160	33 100	273 500	23 960	592 400	67 110	2 083	1 358	4 190
	1985	125	197 700	25 760	7 711	338 400	25 520	403 500	25 950	2 323	1 561	6 686
	1986	122	201 000	22 200	7 570	296 000	12 500	152 000	4 910	1 950	2 340	2 640
	1987	74	149 000	269	7 370	161 670	13 000	118 000	9 280	1 560	1 390	2 390
Total	1981	185	49 770	808	61 670	179 500	20 100	336 300	28 470	1 270	1 411	2 450
	1982	192	45 600	984	11 990	277 600	26 000	370 300	27 760	1 391	2 609	1 730
	1983	187	45 920	3 720	42 400	306 500	26 690	372 400	30 610	1 511	1 650	3 130
	1984	194	111 500	68 640	33 470	552 100	36 630	665 800	67 530	2 117	3 525	5 709
	1985	202	280 600	55 850	8 405	536 820	39 450	488 600	26 270	2 439	4 936	9 167
	1986	191	284 600	24 570	9 710	353 000	19 470	178 700	4 996	1 990	4 310	3 710
	1987	133	215 000	349	16 700	208 100	18 500	149 000	9 410	1 580	3 830	3 430

*) Include considerable quantities of *Sebastes* species.

Table 6. Stratified trawl indices on weight (thousands kg) for different species in 1981 - 1987.

Year		Cod	Haddock	<u>S. marinus</u>	<u>S. mentella</u>	Greenland halibut	Long rough dab	Blue whiting	Jelly cat	Catfish	Smaller Catfish	Shrimps
North of 76°N	1981	3 156	942	453	11 030	3 645	4 125	400	30	1 032	343	17 060
	1982	3 348	5	63	9 804	6 550	2 858	158	130	1 359	363	24 810
	1983	3 226	35	3 984	6 869	4 967	2 322	38	217	462	1 104	13 240
	1984	5 704	5 136	127	19 250	6 840	5 132	83	197	1 238	1 376	6 901
	1985	32 980	4 068	295	15 130	7 880	7 082	79	373	1 638	3 055	3 830
	1986	46 700	860	243	6 100	4 510	2 020	28	-	1 110	1 760	661
	1987	30 100	21	402	3 246	2 420	2 400	37	163	648	1 530	1 450
South of 76°N	1981	73 270	988	10 230	31 510	5 794	40 770	4 968	9 427	1 054	3 764	50 650
	1982	61 180	469	4 325	49 830	15 660	45 510	7 741	12 590	1 849	6 425	68 780
	1983	54 350	474	1 252	35 350	18 170	46 610	9 349	14 130	2 335	6 309	60 090
	1984	66 510	3 201	3 262	65 670	24 220	82 160	20 530	19 260	4 538	13 480	31 740
	1985	133 500	7 122	1 346	22 030	19 270	53 010	7 643	20 290	3 323	25 110	12 670
	1986	167 000	10 600	1 640	24 700	11 700	20 100	1 390	-	1 190	7 740	2 550
	1987	122 000	189	1 430	14 489	8 320	15 500	2 460	3 650	2 900	3 130	11 000
Total	1981	76 430	1 930	10 680	42 530	9 439	44 890	5 368	9 457	2 086	4 407	67 710
	1982	64 530	502	4 388	59 640	22 221	48 370	7 899	12 720	3 209	6 788	93 590
	1983	57 580	509	5 236	42 350	23 130	48 930	9 387	14 350	2 797	7 412	74 330
	1984	72 210	8 337	3 389	84 920	31 060	87 290	20 610	19 450	5 776	14 850	38 640
	1985	166 400	11 119	1 641	37 160	27 160	60 090	7 721	20 660	4 961	28 170	16 500
	1986	213 700	11 460	1 883	30 800	16 210	22 120	1 418	-	2 300	9 500	3 210
	1987	152 000	211	1 830	17 755	10 700	17 900	2 500	3 810	3 550	4 660	12 400

Table 9. Length distribution (percent) of *Sebastes marinus*.
 A:0-100m, B:100-200m, C:200-300m, D:300-400m,
 E:Deeper than 400m, F:Northern area, G:Southern
 area, H:Total area.

LENGTH	A	B	C	D	E	F	G	H
5- 9	0	14.1	23.8	0	0	16.8	16.1	16.5
10-14	100.0	25.6	48.1	0	6.0	48.8	14.2	34.0
15-19	0	27.0	7.5	16.0	79.3	29.3	21.9	26.1
20-24	0	10.5	7.9	6.6	4.9	3.0	14.8	8.0
25-29	0	13.0	7.8	40.3	4.0	1.1	18.9	8.7
30-34	0	6.8	2.7	16.6	3.3	0.6	8.5	4.0
35-39	0	3.1	1.6	20.5	1.7	0.4	4.6	2.2
40-44	0	0	0.2	0	0.3	0	0.4	0.2
45-49	0	0	0.2	0	0	0	0.3	0.1
50-54	0	0	0	0	0.6	0	0.3	0.1
55-59	0	0	0	0	0	0	0	0
60-64	0	0	0.1	0	0	0	0.1	0

Table 10. Length distribution (percent) of *Sebastes mentella*. *)
 A:0-100m, B:100-200m, C:200-300m, D:300-400m,
 E:Deeper than 400m, F:Northern area, G:Southern
 area, H:Total area.

LENGTH	A	B	C	D	E	F	G	H
0- 4	0	0	0.1	0	0	0.1	0	0
5- 9	51.2	68.9	20.4	13.8	4.1	19.7	6.8	9.7
10-14	14.9	24.2	24.5	10.2	1.7	20.4	3.2	7.0
15-19	28.0	5.1	44.5	70.8	75.0	51.1	73.2	68.2
20-24	4.8	1.8	6.3	3.2	12.0	4.8	10.7	9.4
25-29	1.2	0	2.5	0.7	4.0	2.3	3.3	3.1
30-34	0	0	1.0	0.5	1.2	0.8	1.1	1.0
35-39	0	0	0.2	0.2	0.4	0.2	0.3	0.3
40-44	0	0	0.3	0.5	1.3	0.5	1.1	1.0
45-49	0	0	0.2	0.2	0.3	0.1	0.3	0.2
50-54	0	0	0	0	0	0	0	0

*) Include considerable quantities of *Sebastes* species.

Table 11. Length distribution (percent) of Blue whiting.
 A:0-100m, B:100-200m, C:200-300m, D:300-400m,
 E:Deeper than 400m, F:Northern area, G:Southern
 area, H:Total area.

LENGTH	A	B	C	D	E	F	G	H
20-24	0	0	0	0	0	0	0	0
25-29	0	0	0	0	12.5	0	0.4	0.4
30-34	0	0	0	47.8	12.5	0	39.4	39.4
35-39	0	0	100.0	52.2	75.0	0	60.2	60.2
40-44	0	0	0	0	0	0	0	0

Table 12. Length distribution (percent) of Smaller catfish.
 A:0-100m, B:100-200m, C:200-300m, D:300-400m,
 E:Deeper than 400m, F:Northern area, G:Southern
 area, H:Total area.

LENGTH	A	B	C	D	E	F	G	H
5- 9	0.5	0	0	0	0	0.2	0	0.1
10-14	1.0	8.9	34.6	0	2.5	6.3	15.5	12.3
15-19	4.0	3.5	3.5	0	0	2.5	3.5	3.1
20-24	8.7	12.0	10.2	5.0	0	7.1	11.5	10.0
25-29	2.0	4.8	5.3	7.5	0	5.1	4.0	4.3
30-34	16.3	7.9	11.9	7.5	9.2	5.8	12.0	9.9
35-39	0	7.9	8.9	27.3	18.7	13.5	6.6	9.0
40-44	16.3	0.7	6.0	15.1	26.7	11.6	3.6	6.4
45-49	16.8	5.0	8.5	23.0	24.5	9.5	9.6	9.6
50-54	3.0	4.0	6.8	5.0	2.5	7.3	2.9	4.4
55-59	3.0	4.3	1.5	6.4	0	1.9	4.2	3.4
60-64	2.1	9.4	0.2	0	0	6.0	5.1	5.4
65-69	3.0	6.2	1.2	0	0	5.9	3.0	4.0
70-74	5.1	9.3	0.3	0	2.5	5.6	6.0	5.9
75-79	0	3.7	0	3.2	0	1.5	2.6	2.2
80-84	0	2.6	0	0	13.5	0	3.7	2.4
85-89	17.3	4.5	0	0	0	5.2	4.3	4.6
90-94	1.0	2.4	1.0	0	0	1.0	2.0	1.6
95-99	0	2.6	0	0	0	4.2	0	1.4

Table 13. Length distribution (percent) of Long rough dab.
 A:0-100m, B:100-200m, C:200-300m, D:300-400m,
 E:Deeper than 400m, F:Northern area, G:Southern
 area, H:Total area.

LENGTH	A	B	C	D	E	F	G	H
0- 4	0.7	0.2	0	0	0	0.1	0.1	0.1
5- 9	10.1	4.4	1.9	0.6	2.5	4.5	2.5	2.9
10-14	25.5	34.8	26.5	6.5	1.2	28.0	20.6	22.1
15-19	20.7	22.7	21.8	12.6	9.4	30.0	15.7	18.7
20-24	21.6	14.3	19.5	30.8	32.9	23.2	21.3	21.7
25-29	10.9	11.0	19.0	30.1	37.5	9.0	23.7	20.7
30-34	5.1	8.4	8.9	13.1	12.7	3.4	11.5	9.8
35-39	4.2	3.2	2.3	4.9	2.7	1.6	3.5	3.1
40-44	1.4	0.9	0.2	1.3	1.1	0.1	1.0	0.8

Table 14. Length distribution (percent) of Greenland halibut.
 A:0-100m, B:100-200m, C:200-300m, D:300-400m,
 E:Deeper than 400m, F:Northern area, G:Southern
 area, H:Total area.

LENGTH	A	B	C	D	E	F	G	H
5- 9	58.9	28.6	5.7	0.3	0.1	1.3	0.8	0.9
10-14	0	0	14.9	3.1	0	2.7	2.5	2.5
15-19	0	14.3	6.8	1.7	0.8	2.8	1.3	1.8
20-24	0	0	2.7	2.6	1.6	1.5	2.1	2.0
25-29	9.1	28.6	10.9	5.1	5.4	8.6	4.9	6.0
30-34	9.1	0	19.3	18.2	14.1	25.7	11.5	15.7
35-39	9.1	28.6	17.6	28.3	22.2	27.9	21.4	23.3
40-44	13.7	0	11.0	23.3	24.3	18.8	24.0	22.5
45-49	0	0	3.6	14.0	17.4	8.3	17.6	14.8
50-54	0	0	4.9	2.5	8.4	1.5	8.5	6.4
55-59	0	0	0.4	0.8	3.9	0.6	3.6	2.7
60-64	0	0	0.9	0	0.5	0	0.6	0.4
65-69	0	0	1.3	0.3	0.6	0.2	0.8	0.6
70-74	0	0	0	0	0.5	0	0.4	0.3
75-79	0	0	0	0	0	0	0	0
80-84	0	0	0	0	0	0	0	0
85-89	0	0	0	0	0.2	0	0.1	0.1

Table 15. Length distribution (percent) of Catfish.
 A:0-100m, B:100-200m, C:200-300m, D:300-400m,
 E:Deeper than 400m, F:Northern area, G:Southern
 area, H:Total area.

LENGTH	A	B	C	D	E	F	G	H
5- 9	0	0	0	0	0	0	0	0
10-14	14.7	21.2	0	0	11.1	14.8	0	13.8
15-19	8.5	22.9	29.0	0	0	22.2	0	20.7
20-24	9.1	6.8	6.2	0	22.2	8.5	0	7.9
25-29	25.0	24.8	6.2	0	33.3	21.8	0	20.4
30-34	21.0	8.4	0	0	11.1	9.2	0	8.6
35-39	3.5	0	0	0	0	0.7	0	0.6
40-44	2.9	4.0	0	0	0	2.7	0	2.5
45-49	1.2	4.2	1.4	0	0	2.9	0	2.7
50-54	4.9	2.1	29.0	0	11.1	11.0	0	10.3
55-59	0.6	2.8	24.9	0	0	1.6	100.0	8.1
60-64	8.1	1.4	1.6	0	0	2.7	0	2.6
65-69	0	0.7	1.6	0	11.1	1.5	0	1.4
70-74	0.6	0.7	0	0	0	0.5	0	0.4

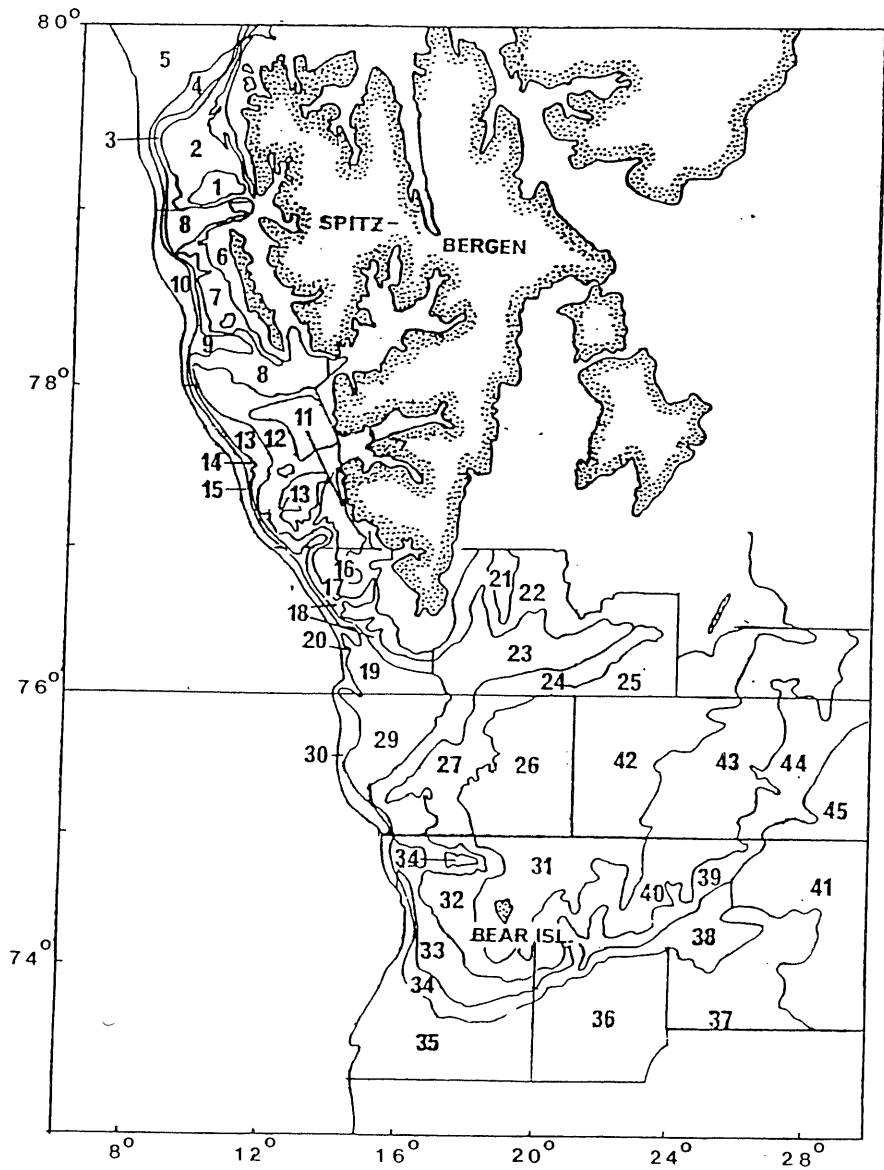


Fig. 1 The area of investigation with the different strata.

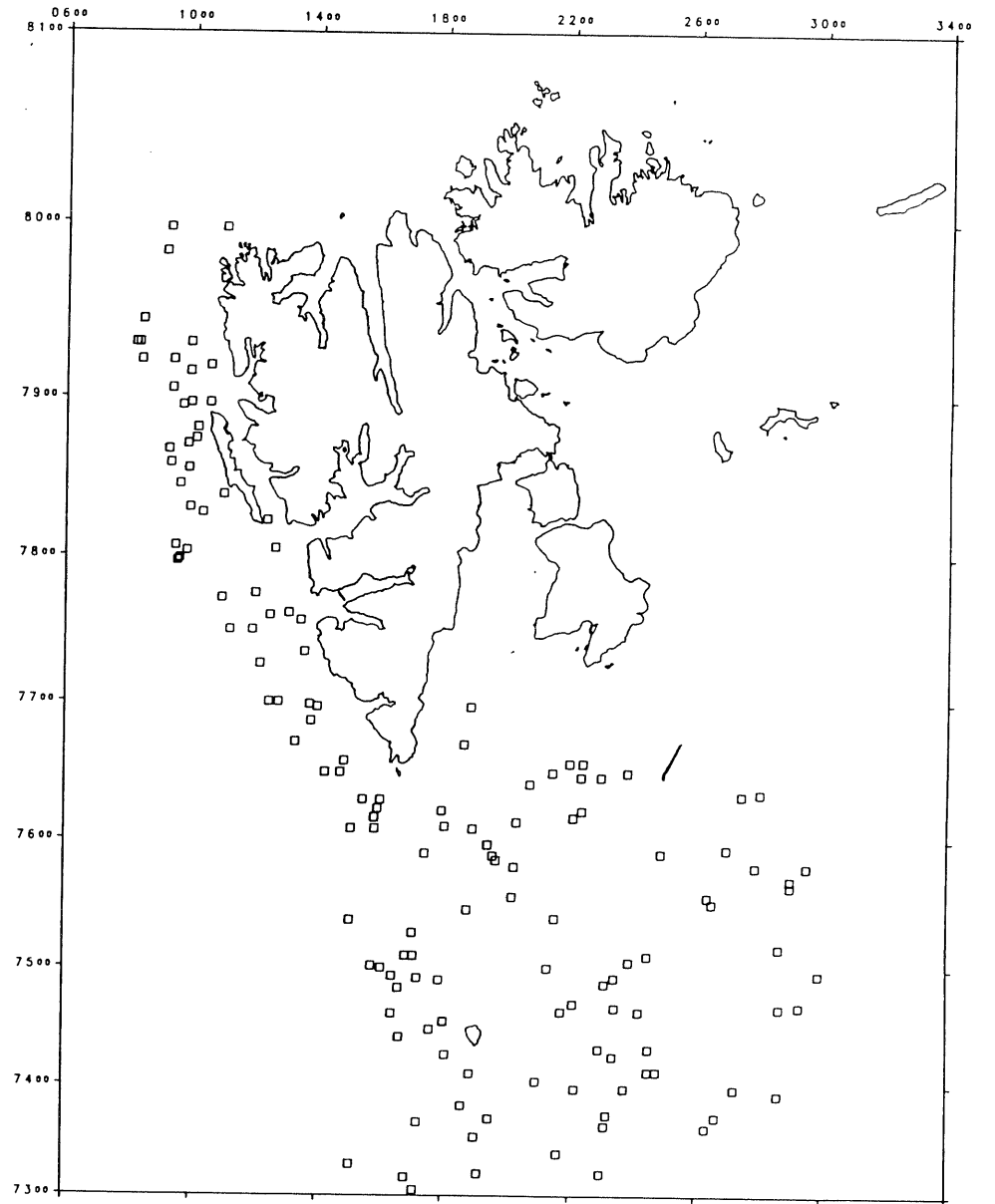


FIG. 2 BOTTOM TRAWL-STATIONS TAKEN BY R/V "ELDJARN" AND R/V "MICHAEL SARS" 06.09. - 08.10. 1967

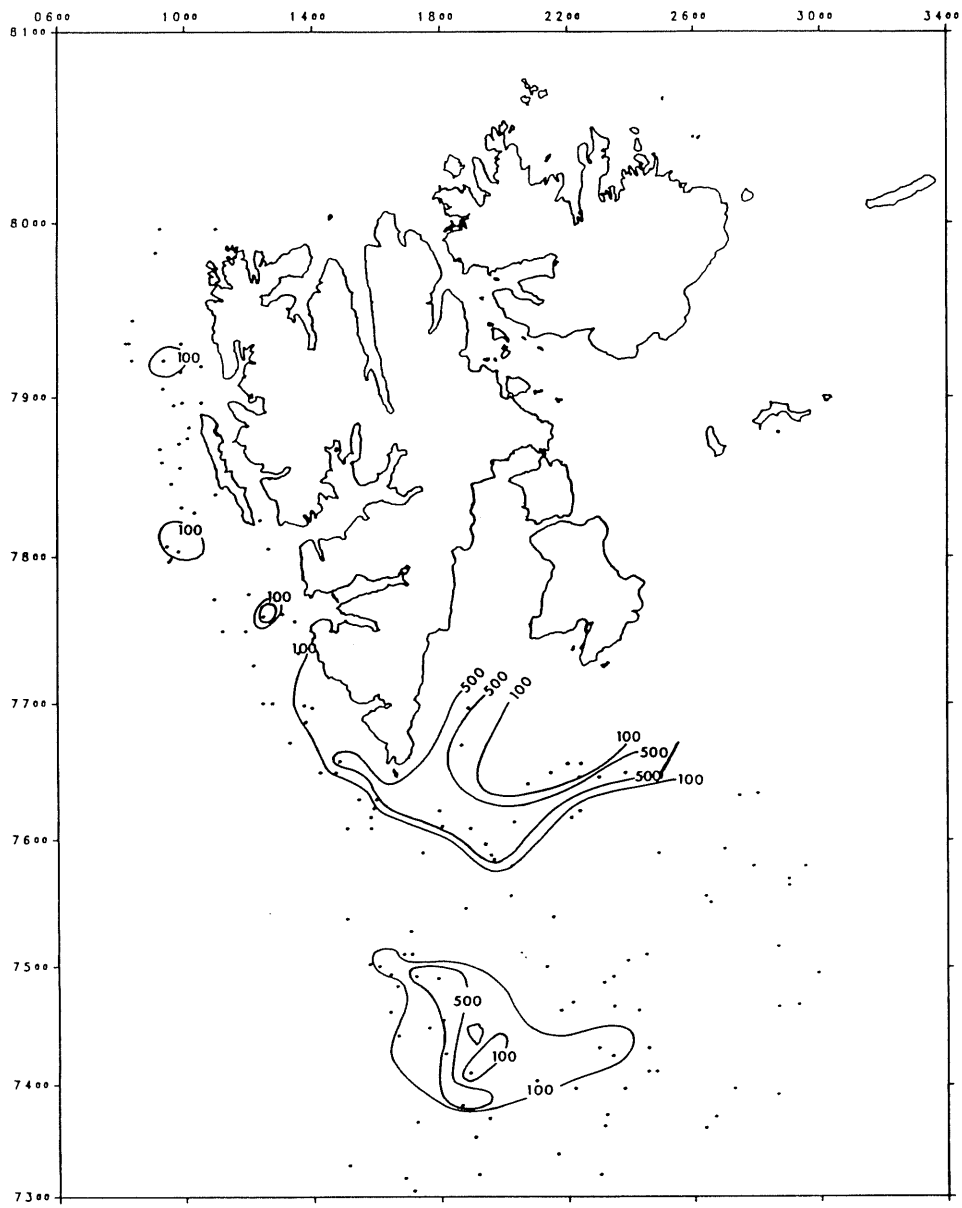


FIG. 3 DISTRIBUTION OF COD IN THE TRAWL CATCHES (NUMBER PER HOUR TRAWLING)

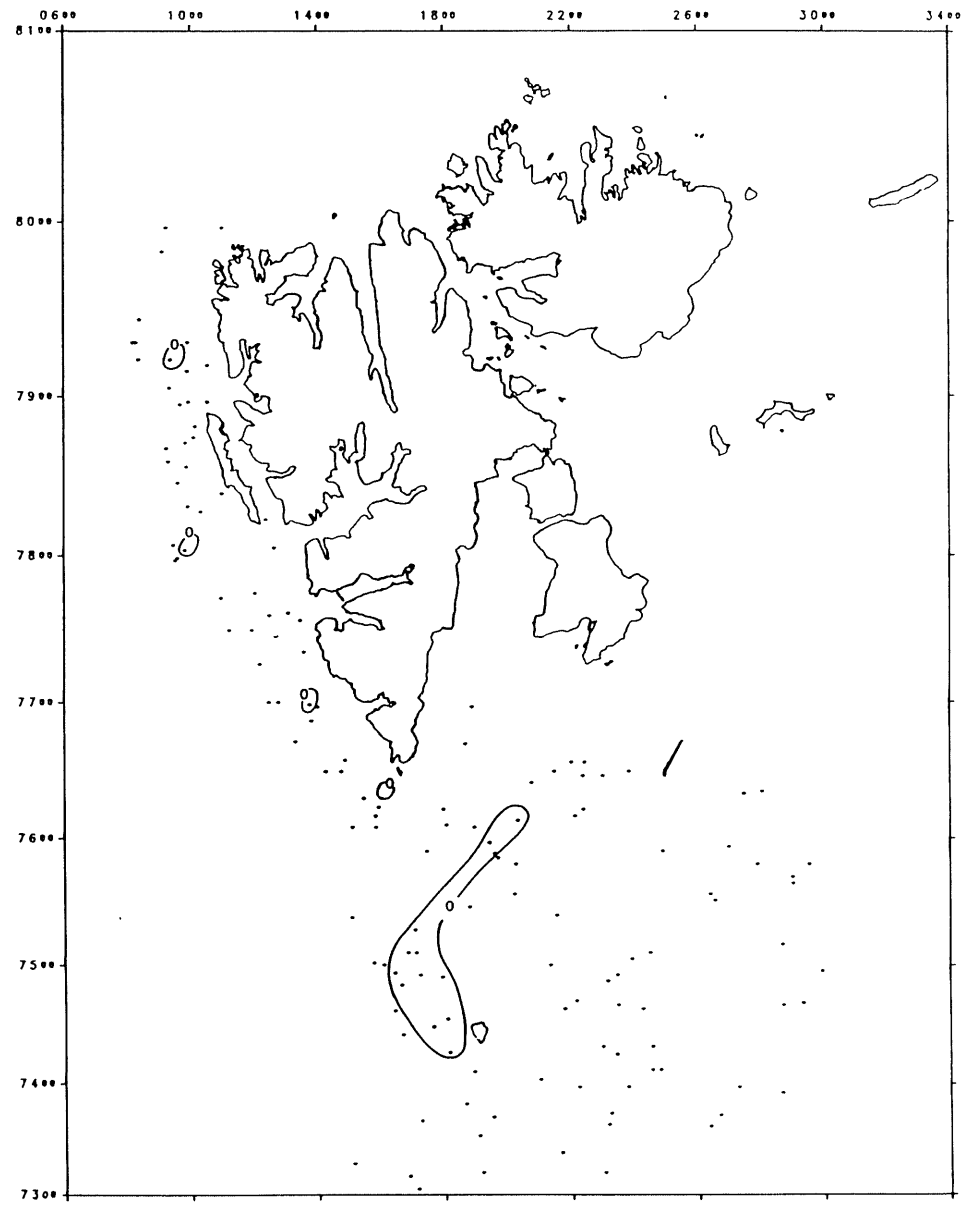


FIG. 4 DISTRIBUTION OF HADDOCK IN THE TRAWL CATCHES (NUMBER PER HOUR TRAWLING)

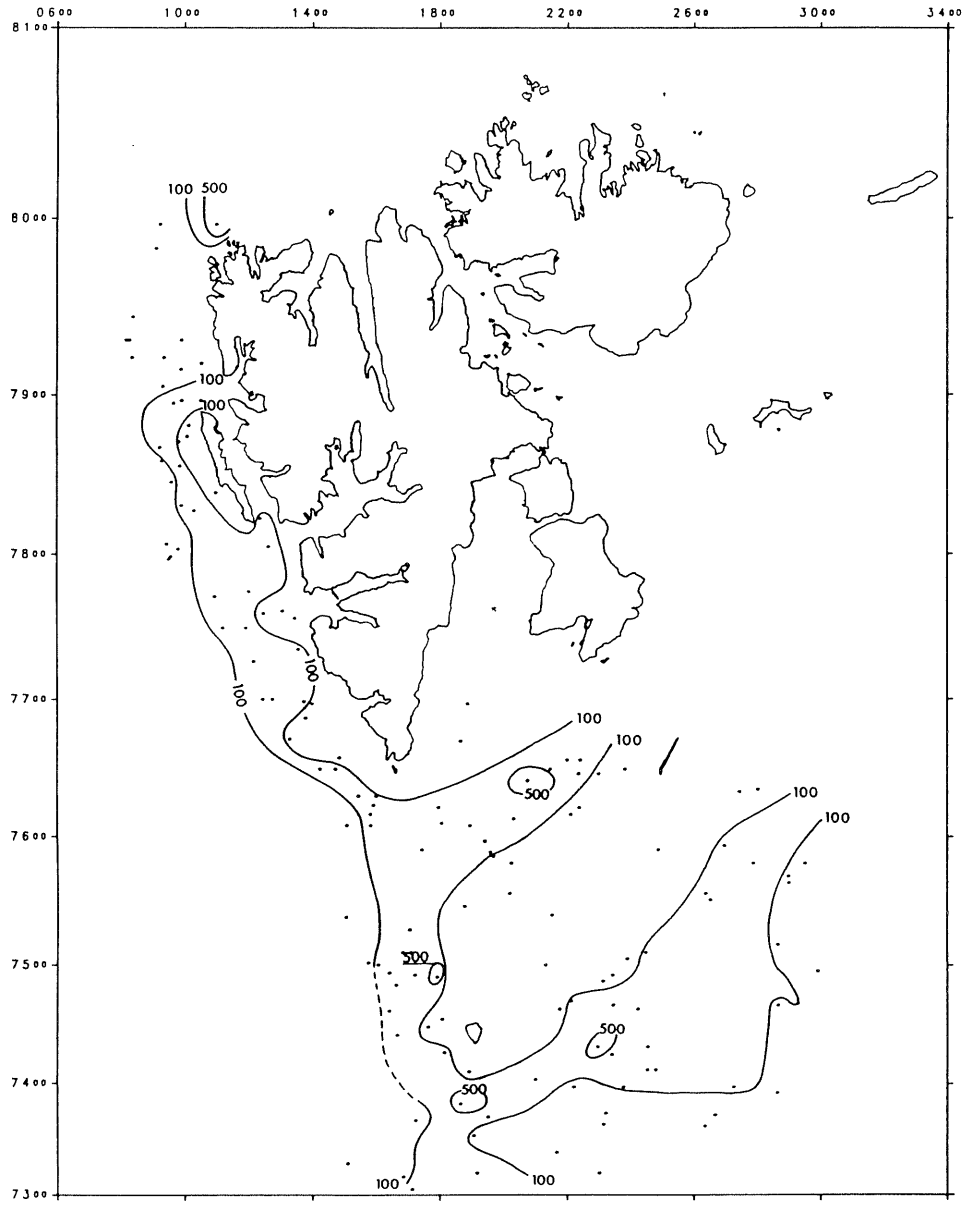


FIG. 5 DISTRIBUTION OF LONG ROUGH DAB IN THE TRAWL CATCHES (NUMBER PER HOUR TRAWLING).

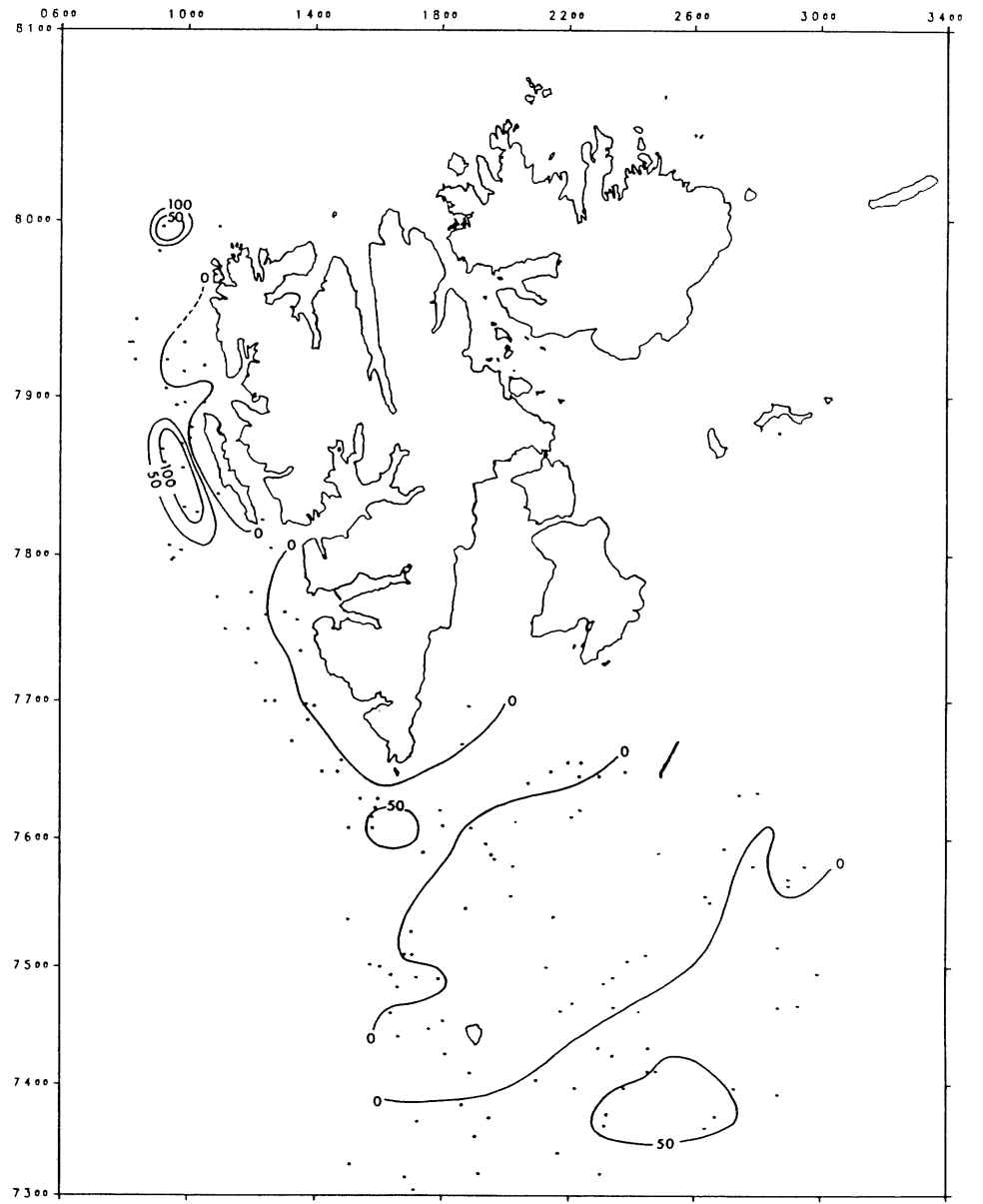


FIG. 6 DISTRIBUTION OF GREENLAND HALIBUT IN THE TRAWL CATCHES (NUMBER PER HOUR TRAWLING)

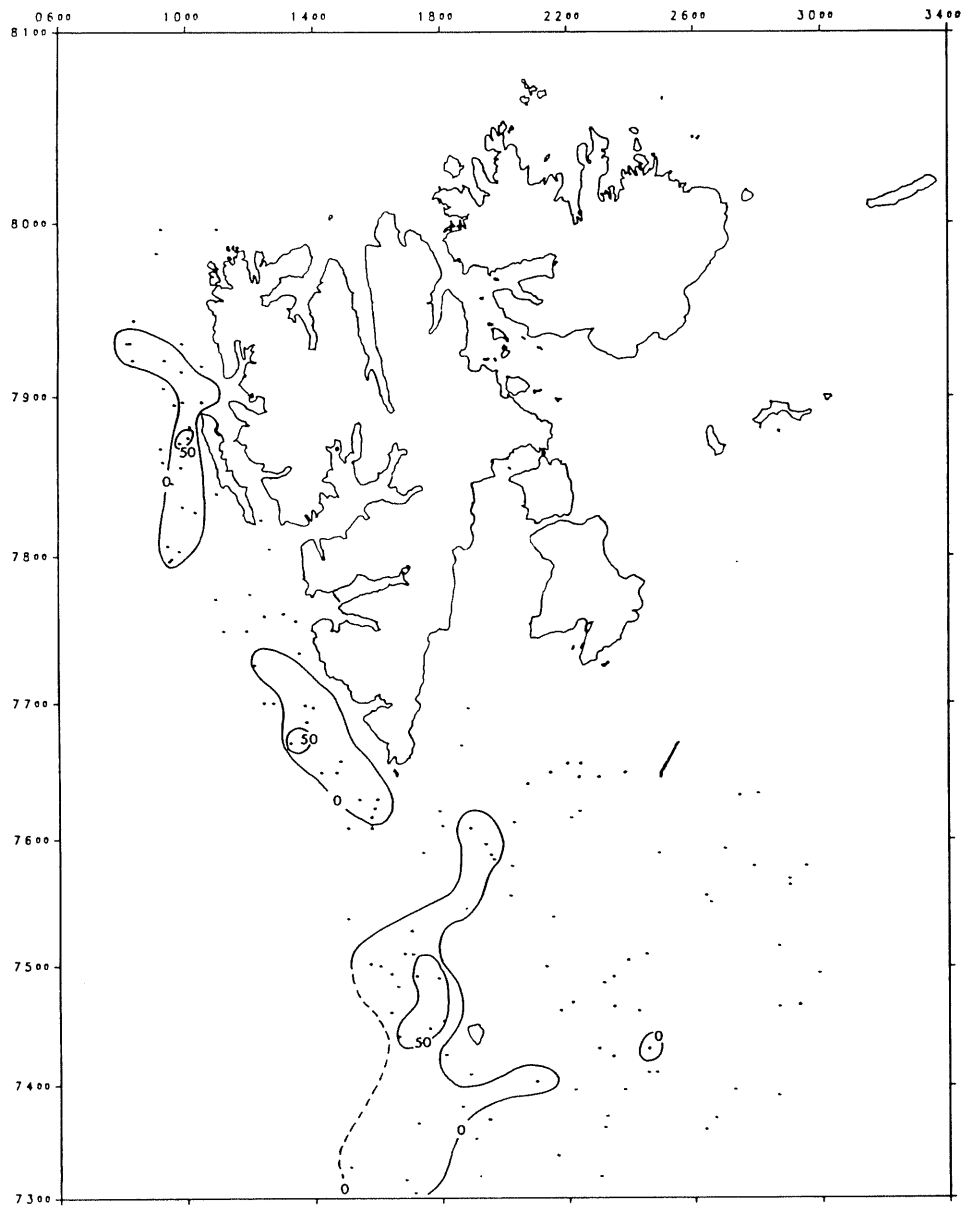


FIG. 7 DISTRIBUTION OF SEBASTES MARINUS IN THE TRAWL CATCHES (NUMBER PER HOUR TRAWLING)

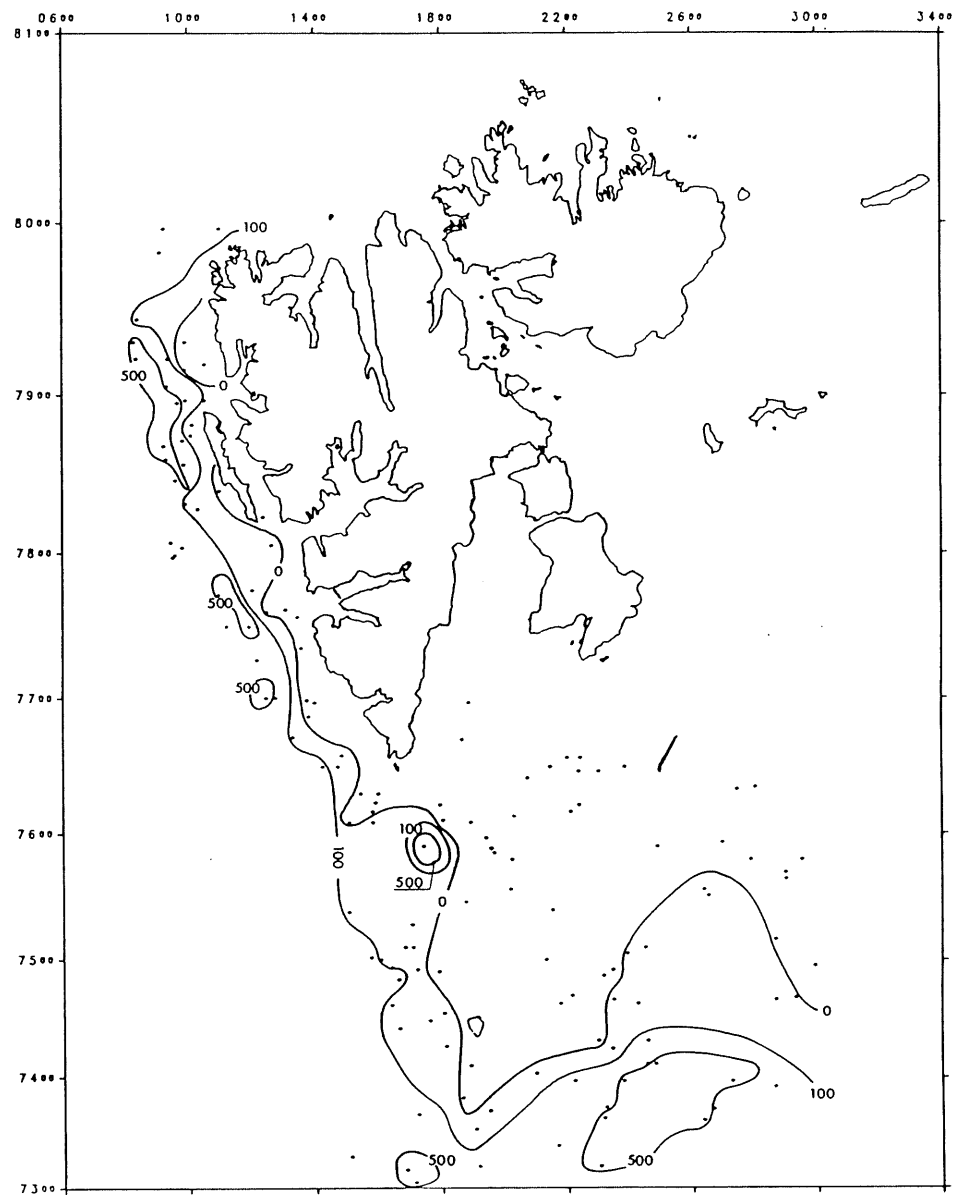


FIG. 8 DISTRIBUTION OF SEBASTES MENTELLA ♣ IN THE TRAWL CATCHES (NUMBER PER HOUR TRAWLING)

♣ Include considerable quantities of *Sebastes* species.

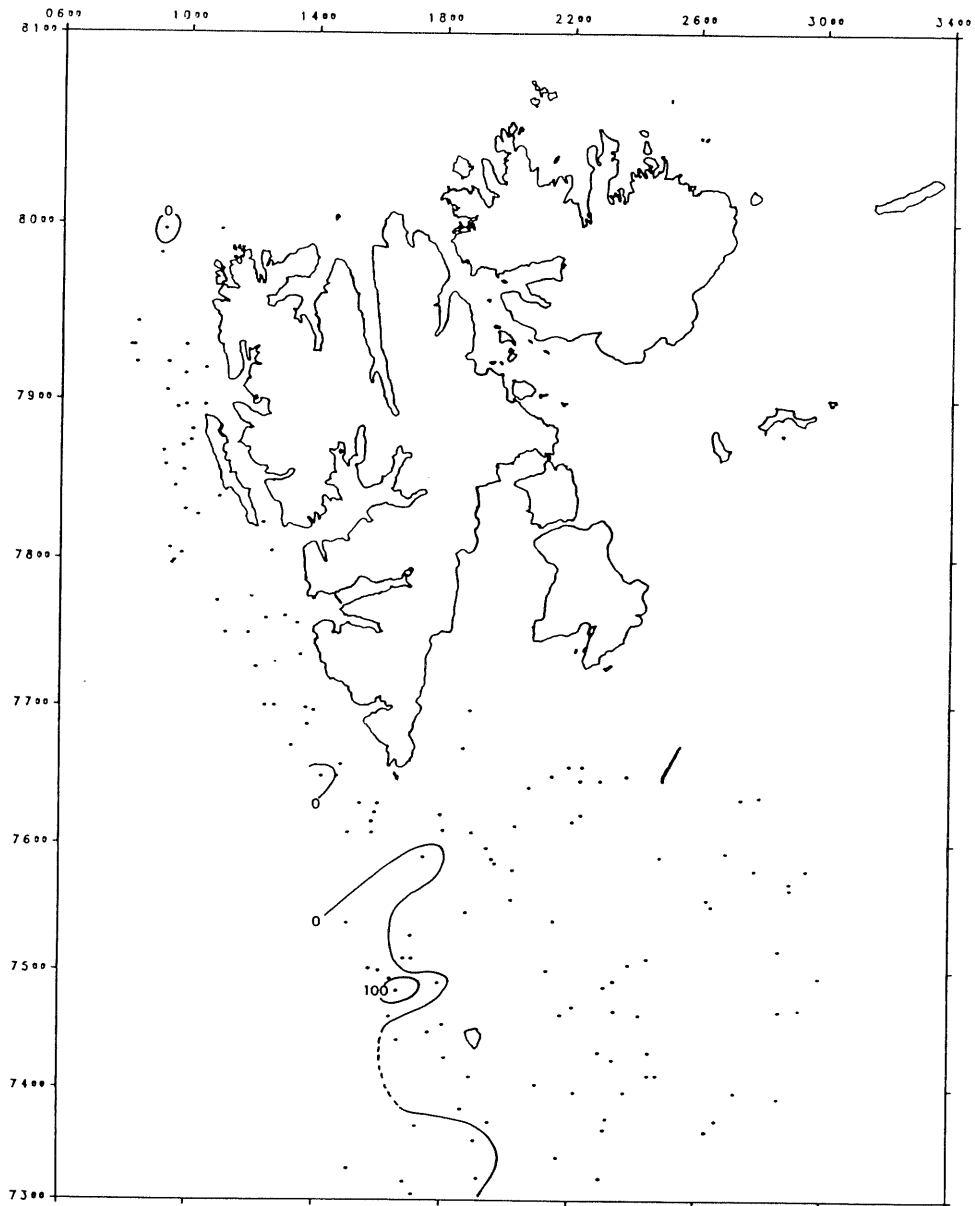


FIG. 9 DISTRIBUTION OF BLUE WHITING IN THE TRAWL CATCHES (NUMBER PER HOUR TRAWLING)

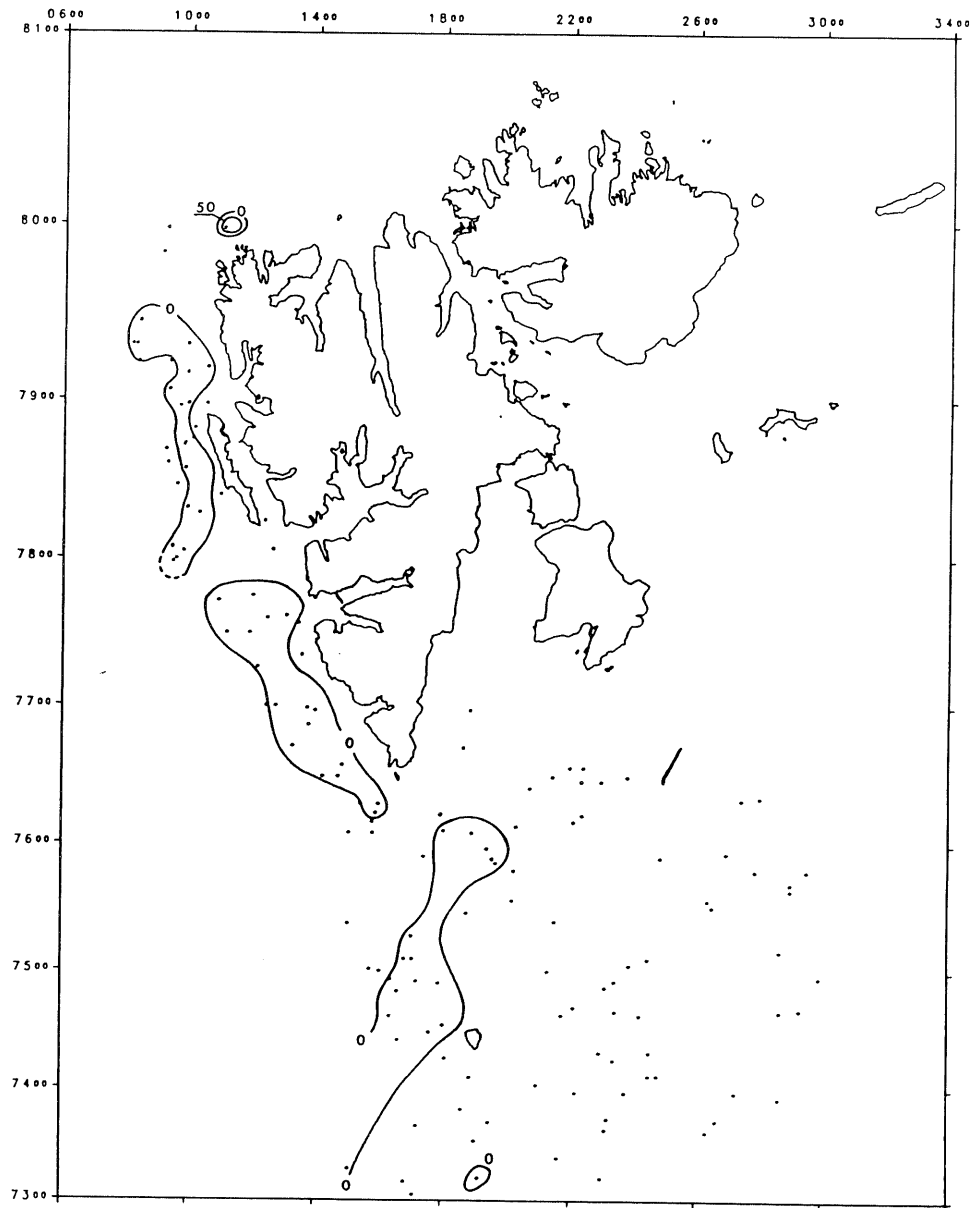


FIG. 10 DISTRIBUTION OF CATFISH IN THE TRAWL CATCHES (NUMBER PER HOUR TRAWLING)

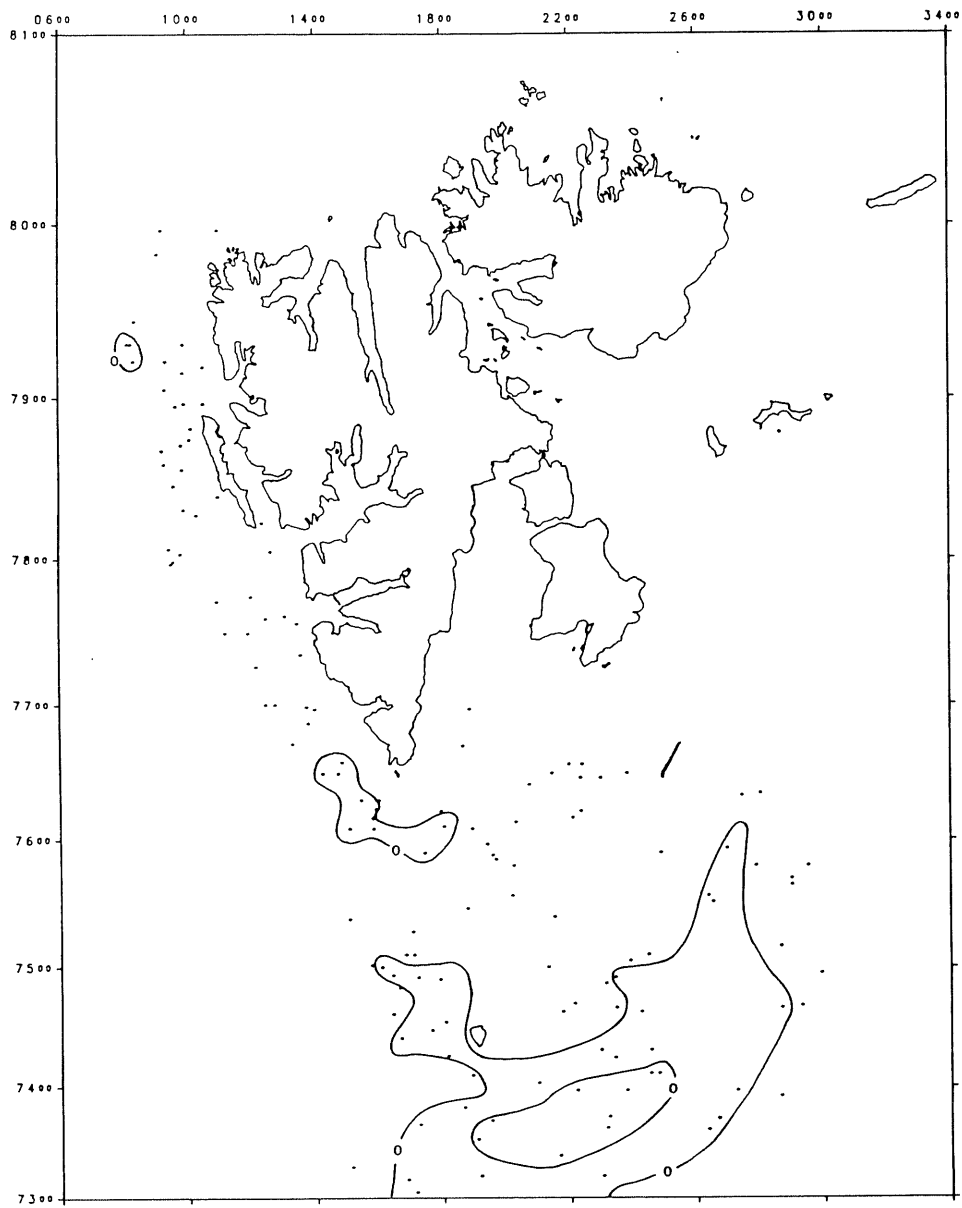


FIG. 11 DISTRIBUTION OF JELLY CAT IN THE TRAWL CATCHES (NUMBER PER HOUR TRAWLING)

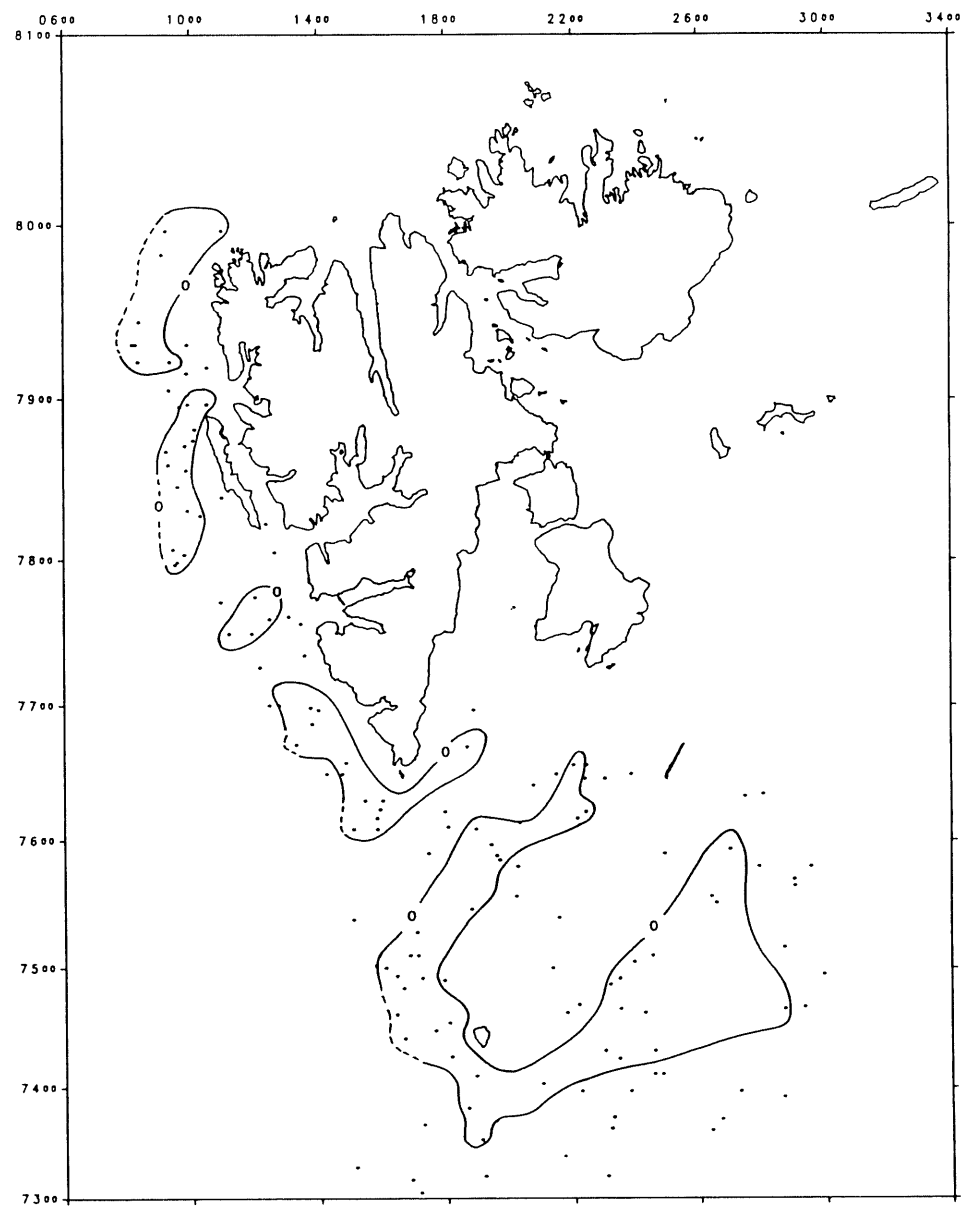


FIG. 12 DISTRIBUTION OF SMALLER CATFISH IN THE TRAWL CATCHES (NUMBER PER HOUR TRAWLING)

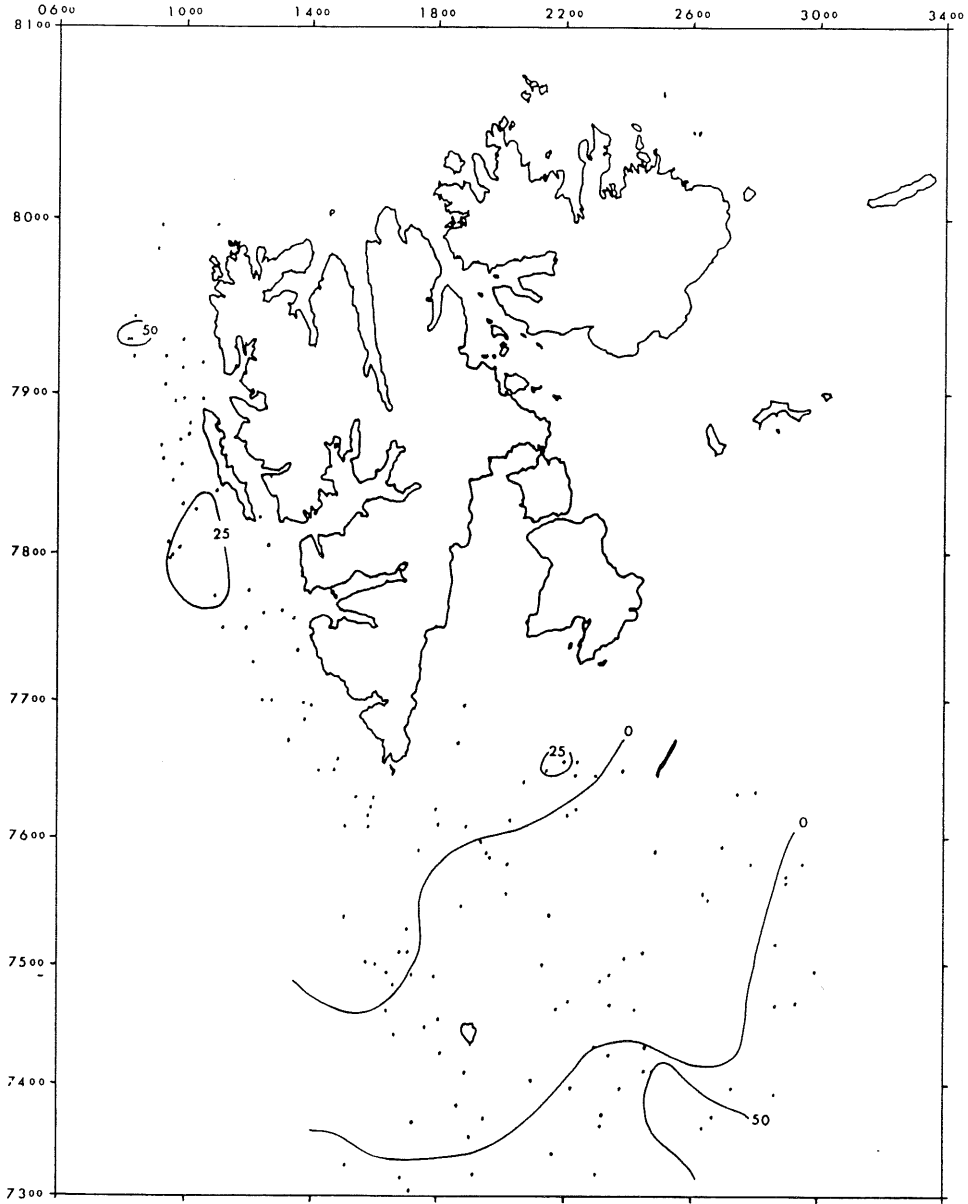


FIG. 1 3 DISTRIBUTION OF SHRIMPS IN THE TRAWL CATCHES (KILOS PER HOUR TRAWLING).