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Young Northern Shrimp (*Pandalus borealis*) Index for Flemish Cap (Division 3M), 1998-2000

by

Árni Nicolajsen¹ and Stefan Brynjolfsson²

¹Fiskirannsóknarstovan, Nóatún 1, Tórshavn, Faroe Islands

²Hafrannsóknarstofnin, Skúlagata 4, Reykjavík, Ísland

Abstract

Indices for shrimp age 2 caught in larval bag on Flemish Cap in June-July 1998-2000 were estimated to 2 725 mill., 5 680 mill. and 458 mill. for 1998, 1999 and 2000, respectively. Year-classes 1996 and 1997 seem to be at a relatively strong level where as year class 1998 is comparatively weak.

Introduction

This paper present the results of a young northern shrimp survey carried out in the period 1998-2000 in connection with the Faroese shrimp survey on Flemish Cap (Nicolajsen, 2000).

Material and Method

A larval bag was mounted on the codend by the method used in Icelandic shrimp surveys. The shrimps were measured to the nearest 0.5 mm using Vernier callipers. The length distribution from each sample was divided by area swept for each station to get abundance per unit area (density) at length. Mean density at length was calculated for each strata and multiplied by strata area to get stock in numbers by strata before summing all strata by length.

Results

The stock in numbers by length and strata and total for the period 1998-2000 are shown in Tabs. 1-3, stock in numbers are shown in Tab. 1 and length distribution for total young northern shrimp stock for this period is shown in Fig. 1.

Reference

Árni Nicolajsen, 2000, Biomass estimate, growth, length and age distribution of the northern shrimp (*Pandalus borealis*) stock on Flemish Cap (NAFO Div. 3M) in June. NAFO SCR 00/83. 17p.

Table 1. Young shrimp in numbers (mill.) at length by strata and total, Flemish Cap (NAFO Div. 3M) in July 1998.

STRATA OCL, mm	13	14	15	16	17	18	19	20	21	22	23	26	Total
7.0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.5	0	0	0	0	0	0	0	0	0	0	0	0	0
8.0	0	0	0	0	10	2	0	0	0	0	0	0	12
8.5	0	0	0	2	38	5	0	0	0	0	0	0	45
9.0	0	2	0	0	65	75	0	0	0	0	0	0	141
9.5	0	0	0	2	117	204	0	0	0	0	0	0	323
10.0	2	0	0	4	159	264	0	0	0	0	0	0	430
10.5	2	2	0	12	163	208	0	0	0	4	0	0	390
11.0	2	2	0	22	105	106	0	0	0	0	0	0	237
11.5	0	2	0	18	44	55	0	0	0	0	0	0	119
12.0	0	2	0	37	90	32	0	0	0	0	0	0	161
12.5	4	6	0	45	128	82	0	0	0	0	0	0	264
13.0	18	7	2	51	186	115	0	0	0	0	0	0	380
13.5	20	15	2	59	191	184	0	0	0	0	0	0	471
14.0	28	15	19	59	203	121	0	0	0	0	0	0	445
14.5	52	26	13	47	142	103	2	0	0	0	0	0	386
15.0	16	26	17	29	63	64	2	0	0	0	0	0	218
15.5	22	28	27	20	59	34	4	0	0	0	0	0	194
16.0	13	17	17	4	13	14	0	0	0	0	0	0	77
16.5	6	13	15	4	6	5	0	0	0	0	0	0	49
17.0	6	13	19	6	17	11	0	0	0	0	0	0	71
17.5	10	4	4	18	21	18	2	0	0	0	3	0	80
18.0	36	15	2	18	31	21	2	0	0	0	5	0	130
18.5	29	20	4	18	27	25	2	0	6	0	15	0	147
19.0	22	17	8	28	40	23	4	0	0	0	17	0	159
19.5	8	15	2	6	15	9	2	2	0	0	7	3	68
20.0	8	11	0	12	17	12	2	2	3	0	3	3	74
20.5	2	6	4	2	4	5	0	0	0	0	2	6	31
21.0	0	4	0	0	8	0	2	2	0	11	0	8	36
21.5	0	0	0	0	2	5	2	0	0	4	2	6	21
22.0	0	4	0	0	4	0	2	0	0	7	0	0	17
22.5	0	0	0	0	4	0	2	0	0	0	0	0	6
23.0	2	0	0	0	2	2	0	0	0	0	0	0	6
23.5	0	0	0	0	0	0	0	0	0	0	0	0	0
24.0	0	2	0	0	2	0	0	0	0	4	0	0	8
24.5	0	0	0	0	2	0	0	0	0	0	0	0	2
25.0	0	0	0	0	0	0	0	0	0	0	0	0	0
25.5	2	0	0	0	0	0	0	0	0	0	0	0	2
26.0	0	0	0	0	0	0	0	0	0	0	0	0	0
26.5	0	0	0	0	2	2	0	0	0	0	0	3	7
27.0	0	0	0	0	0	0	0	0	0	0	0	0	0
27.5	0	0	0	0	0	0	0	0	0	0	0	0	0
28.0	0	0	0	0	0	0	0	0	0	0	0	0	0
28.5	0	0	0	0	0	0	0	0	0	0	0	0	0
29.0	0	0	0	0	0	0	0	0	0	0	0	0	0
29.5	0	0	0	0	0	0	0	0	0	0	0	0	0
30.0	0	0	0	0	0	0	0	0	0	0	0	0	0
30.5	0	0	0	0	0	0	0	0	0	0	0	0	0
31.0	0	0	0	0	0	0	0	0	0	0	0	0	0
31.5	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	312	272	156	521	1982	1806	33	5	9	29	53	28	5208

Table 2. Young shrimp in numbers (mill.) at length by strata and total, Flemish Cap (NAFO Div. 3M) in July 1999.

STRATA OCL, mm	13	14	15	16	17	18	19	20	21	22	23	Total
7.0	0	0	0	0	2	0	0	0	0	0	0	2
7.5	0	0	0	0	0	0	0	0	0	0	0	0
8.0	2	0	0	10	6	0	0	0	0	0	0	18
8.5	2	0	0	4	11	0	0	0	0	0	0	17
9.0	6	0	0	8	2	8	0	0	0	0	0	24
9.5	10	2	0	8	7	14	0	0	0	0	0	40
10.0	2	4	0	8	42	8	0	0	0	0	0	63
10.5	6	2	0	6	66	16	0	0	0	0	0	96
11.0	2	0	0	0	8	4	0	0	0	0	0	13
11.5	0	2	0	4	4	2	0	0	0	0	0	11
12.0	6	0	0	9	11	7	0	0	0	0	0	33
12.5	4	0	0	30	13	16	0	0	0	0	0	63
13.0	14	2	0	99	72	93	0	0	0	0	0	280
13.5	40	11	2	138	145	150	0	0	0	0	0	487
14.0	72	65	8	249	250	259	0	0	0	7	0	911
14.5	104	80	11	334	246	296	0	0	4	31	0	1106
15.0	134	114	11	339	285	214	0	0	2	37	0	1134
15.5	78	106	15	311	169	147	0	2	0	66	0	894
16.0	54	50	21	328	112	106	2	0	0	59	2	733
16.5	40	34	15	229	72	77	11	5	0	49	0	532
17.0	48	41	17	286	88	85	7	5	2	46	2	626
17.5	22	37	23	339	70	92	13	15	6	77	5	699
18.0	30	35	27	238	65	71	33	24	2	53	2	581
18.5	12	15	13	74	28	51	24	17	15	42	5	296
19.0	12	9	11	30	13	31	4	27	2	22	7	167
19.5	0	0	6	32	4	13	7	12	2	22	3	101
20.0	6	0	4	17	8	7	0	7	0	7	3	60
20.5	0	0	0	23	8	11	0	2	6	7	0	58
21.0	2	7	4	8	8	5	0	2	2	7	3	49
21.5	2	4	0	15	4	7	0	0	6	11	2	50
22.0	2	4	2	2	8	2	0	0	4	2	0	25
22.5	2	7	0	2	2	8	0	0	2	2	0	25
23.0	0	2	0	2	0	0	2	0	0	2	0	8
23.5	0	4	0	2	4	2	2	2	0	2	0	18
24.0	0	2	0	2	2	3	0	5	0	0	2	15
24.5	0	0	0	0	2	0	0	0	0	0	0	2
25.0	0	0	0	0	4	5	0	0	0	2	0	11
25.5	0	0	0	0	2	0	0	0	0	0	0	2
26.0	0	0	0	0	0	0	0	0	0	0	0	0
26.5	0	0	0	0	0	0	0	0	0	0	0	0
27.0	0	0	0	0	0	0	0	0	0	0	0	0
27.5	0	0	0	0	0	0	0	0	0	0	0	0
28.0	0	0	0	0	0	0	0	0	0	0	0	0
28.5	0	0	0	0	0	0	0	0	0	0	0	0
29.0	0	0	0	0	0	0	0	0	0	0	0	0
29.5	0	0	0	0	0	0	0	0	0	0	0	0
30.0	0	0	0	0	0	0	0	0	0	0	0	0
30.5	0	0	0	0	0	0	0	0	0	0	0	0
31.0	0	0	0	0	0	0	0	0	0	0	0	0
31.5	0	0	0	0	0	0	0	0	0	0	0	0
Total	712	639	190	3184	1840	1809	106	127	57	552	35	9252

Table 3. Young shrimp in numbers (mill.) at length by strata and total, Flemish Cap (NAFO Div. 3M) in June 2000.

STRATA OCL, mm	13	14	15	16	17	18	19	20	21	22	23	Total
7.0	10	12	0	0	2	1	0	0	0	0	0	25
7.5	11	12	0	0	2	3	0	0	0	0	0	28
8.0	36	23	0	0	2	4	0	0	0	0	0	65
8.5	33	31	0	0	3	9	0	0	0	0	0	75
9.0	69	32	0	3	6	47	0	0	0	0	0	157
9.5	44	26	0	1	3	74	0	0	0	0	0	149
10.0	41	12	0	3	6	57	1	0	2	0	0	123
10.5	20	15	0	3	2	45	0	0	0	0	0	85
11.0	28	3	0	3	2	23	0	0	0	0	0	59
11.5	2	3	0	4	2	31	0	0	0	0	0	41
12.0	8	2	0	10	0	9	0	0	2	0	0	30
12.5	13	2	0	25	0	13	1	0	0	0	0	54
13.0	5	5	0	40	6	20	0	0	0	0	0	76
13.5	16	11	3	32	3	31	0	0	0	0	0	95
14.0	8	8	3	26	3	12	1	0	3	0	0	64
14.5	7	9	10	26	3	12	0	2	0	0	0	68
15.0	5	5	13	27	8	4	0	2	0	0	0	64
15.5	7	5	18	48	3	12	1	0	0	0	0	94
16.0	5	9	36	44	20	22	0	0	0	0	0	137
16.5	16	12	26	51	44	26	0	0	0	0	0	176
17.0	18	17	29	79	44	48	0	0	2	0	0	237
17.5	20	29	18	67	56	50	3	2	0	0	0	245
18.0	26	21	8	49	61	41	1	3	0	0	0	210
18.5	21	17	5	25	43	26	0	2	0	0	0	139
19.0	26	11	3	27	33	15	3	6	0	0	0	123
19.5	10	9	16	12	32	15	1	2	5	2	0	103
20.0	13	9	5	18	14	16	0	2	3	0	0	80
20.5	11	11	5	7	17	23	4	2	0	0	0	81
21.0	5	3	5	6	28	10	3	3	0	3	0	66
21.5	2	2	3	3	18	9	3	8	0	5	3	53
22.0	3	0	3	0	7	3	0	2	2	2	0	21
22.5	2	3	3	1	3	1	0	0	0	2	0	15
23.0	2	0	3	0	0	0	0	0	2	0	0	6
23.5	0	0	3	1	0	3	0	0	0	0	1	8
24.0	0	2	0	1	1	4	0	3	0	0	3	14
24.5	0	0	0	0	0	0	1	0	0	2	1	4
25.0	0	0	0	0	2	3	1	0	0	0	1	7
25.5	2	0	0	0	0	0	0	0	0	0	0	2
26.0	0	0	0	0	0	1	0	0	0	0	0	1
26.5	0	0	0	0	0	0	0	0	0	0	0	0
27.0	0	0	0	0	0	0	0	0	0	2	0	2
27.5	0	0	0	0	0	0	0	0	0	0	0	0
28.0	0	0	0	0	0	0	0	0	0	0	0	0
28.5	0	0	0	0	0	0	0	0	0	0	0	0
29.0	0	0	0	0	0	0	0	0	0	0	0	0
29.5	0	0	0	0	0	0	0	0	0	0	0	0
30.0	0	0	0	0	0	0	0	0	0	0	0	0
30.5	0	0	0	0	0	0	0	0	0	0	0	0
31.0	0	0	0	0	0	0	0	0	0	0	0	0
31.5	0	0	0	0	0	0	0	0	0	0	0	0
Total	545	369	216	645	478	724	26	35	21	15	10	3083

Table 4. Stock in numbers from juvenile bag for age groups 1-6 for 1998-2000.

Age	1998	1999	2000	Average
1	1614	288	775	892
2	2725	5680	458	2954
3	676	2970	1354	1667
4	149	223	440	271
5	32	91	27	50
6	13		29	14
Total	5208	9252	3083	5848

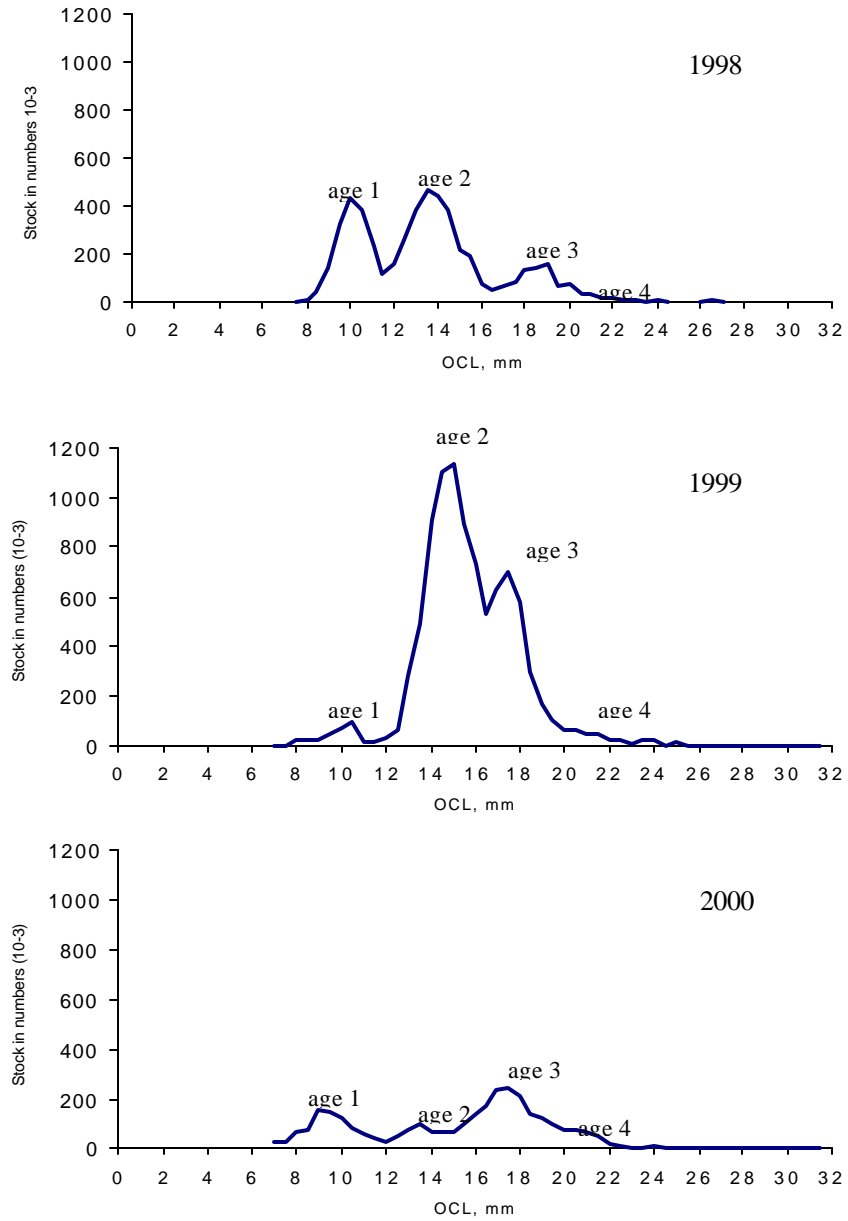


Fig. 1. Length distribution of young shrimp stock component on Flemish Cap (Div. 3M) in 1998-2000.

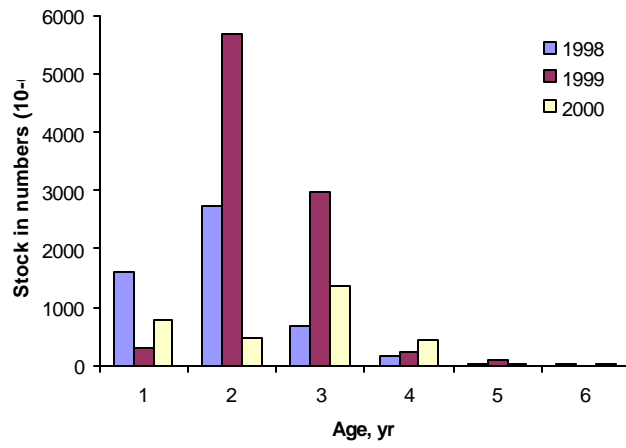


Fig. 2. Age distribution of young shrimp stock component on Flemish Cap (Div. 3M) in 1998-2000.