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The Ukrainian Shrimp Fishery on Flemish Cap (Division 3M) and Division 3L in 2006

by

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**Abstract**

This paper present data on catch, effort, catch per unit effort (CPUE), and size distributions of shrimp (*Pandalus borealis*) with the Ukrainian commercial fishery in NAFO Divisions 3M and 3L during 2006.

**Material and Methods**

The national scientific observer fishing activity and biological information collected as described Kulka (1998). The vessel used a single shrimp trawl model 3210/40 made in Canada with a 22mm sorting grate and split codends. The hauls were mainly carried out in depths between 290 and 400 meters. Approximately 95% of the effort (fishing hours) was carried out between 295 and 325 meters.

**Results**

The vessel caught 119 tons and 280 tons in Div. 3L and 3M, respectively. Table 1 shows the catches and yields of shrimp and discards of the main caught species by quarter, together with the distribution of effort.

Although the shrimp catch was smaller in Div. 3L, the catch rates were much greater than Div. 3M (1 280 kg/h, 722 kg/h, respectively). In Div. 3M the biggest yield occurred in the third quarter with yields of 806 kg/h.

The Table 2 shows the length distribution of shrimp by sex, Division and quarters as percentage in the catch sampled during 2006.

The length distributions in Div. 3M showed a bigger percentage of males (71%) with one clear peak on classes 17.5, 18.0 mm (Fig. 1). These lengths of males would correspond with the age 3 (Casas *et al.*, 2005). The length classes are stronger 19.0, 19.5 and 20.0 mm among females with the age 4.

In Div. 3L showed a smaller percentage of males (59%) with classes of carapace length 19-22.5 mm dominated by the age 4 (Casas and Teruel, 2005). Animals among females dominated shrimps with carapace length 22.5-25 mm, these lengths would correspond with the age 5 years

**References**

Casas, J. M., J. L Del Río, J. Teruel, and A. Alonso. 2005. Northern Shrimp (*Pandalus borealis*) on Flemish Cap Surveys 2005. *NAFO SCR Doc.*, No. 78, 28 p.

Casas, J. M., and J. Teruel. 2005. Northern Shrimp (*Pandalus borealis*, Krøyer) in Spanish Bottom Trawl Survey 2004 and 2005 in NAFO Divisions 3LNO. *NAFO SCR Doc.*, No. 77, 10 p.

Kulka, D. W. 1998. Observer Program Training Manual - Newfoundland Region. Fishery and Oceans, Canada, 1-205.

Table 1. Estimated catches (kg), effort and CPUE (kg/h) from Ukrainian scientific observer by quarter year period of the Ukrainian trawl vessel directed to shrimp fishery in NAFO Div. 3M and 3L in 2006.

SPECIES	DIVISION 3L	DIVISION 3M		Total
	3 <sup>rd</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	
Northern shrimp	119455	34867	244682	279549
Redfish	564	321	1652	1973
Greenland halibut	5	30	31	61
White hake	4	31	145	176
Capelin	8	1		1
Yellowtail flounder	2			
American plaice	7			
Short-finned squid	4	17	16	33
Other fishes	329	300	525	825
Fishing days	14	8	23	31
Fishing hours	93.3	83.9	303.5	387.4
CPUE Shrimp (kg/h)	1280	416	806	722

Table 2. Length distribution of Shrimp as percentage from sampled Ukrainian catches by quarters in NAFO Div. 3L and 3M.

Divisions Quarters	3L. 3 <sup>rd</sup>		3M					
	3 <sup>rd</sup>		2 <sup>nd</sup>		3 <sup>rd</sup>		Total	
Length (mm)	Males	Females	Males	Females	Males	Females	Males	Females
10								
10.5					0.15		0.09	
11					0.15		0.09	
11.5			0.3		0.55		0.46	
12			0.12		0.47		0.34	
12.5			0.12		0.84		0.57	
13			0.24		0.77		0.57	
13.5			0.12		0.73		0.5	
14			0.43		0.99		0.78	
14.5			0.79		0.95		0.89	
15			0.97		1.06		1.03	
15.5			3.4		1.79		2.4	
16			4.98		2.45		3.4	
16.5	0.07		9.9		6.03		7.48	
17	0.45		13.43	0.55	7.74	0.22	9.88	0.34
17.5	0.52	0.15	13.97	1.46	11.73	0.4	12.58	0.8
18	0.75		12.03	1.58	11.59	1.17	11.77	1.32
18.5	2.76		7.72	2.98	10.3	3.07	9.33	3.03
19	4.41	0.15	3.76	3.71	5.95	3.91	5.13	3.83
19.5	5.53	0.07	1.52	2.61	3.18	5.15	2.55	4.2
20	7.17		0.36	2.86	1.1	4.46	0.82	3.85
20.5	7.02	0.15	0.18	1.58	0.33	3.58	0.27	2.83
21	7.32	0.3	0.06	1.82	0.04	2.52	0.05	2.26
21.5	7.77	1.27	0.06	1.4		1.72	0.02	1.6
22	6.57	1.87		1.34		1.1		1.19
22.5	4.41	4.48		0.61		0.99		0.84
23	2.69	4.85		0.55		1.06		0.87
23.5	1.27	7.4		0.91		0.37		0.57
24	0.22	6.72		0.67		0.4		0.5
24.5	0.07	5.08		0.43		0.22		0.3
25		3.21		0.24		0.33		0.3
25.5		2.69		0.12		0.26		0.21
26		1.19		0.12		0.11		0.11
26.5		0.75				0.07		0.05
27		0.3						
27.5		0.22						
28		0.15						
TOTAL	59.00	41.00	74.46	25.54	68.89	31.11	71	29
Sampled catch (kg)	11262		9312		21375		30687	
No. Samples	4		5		8		13	
No. Sampled	1340		1646		2738		4384	

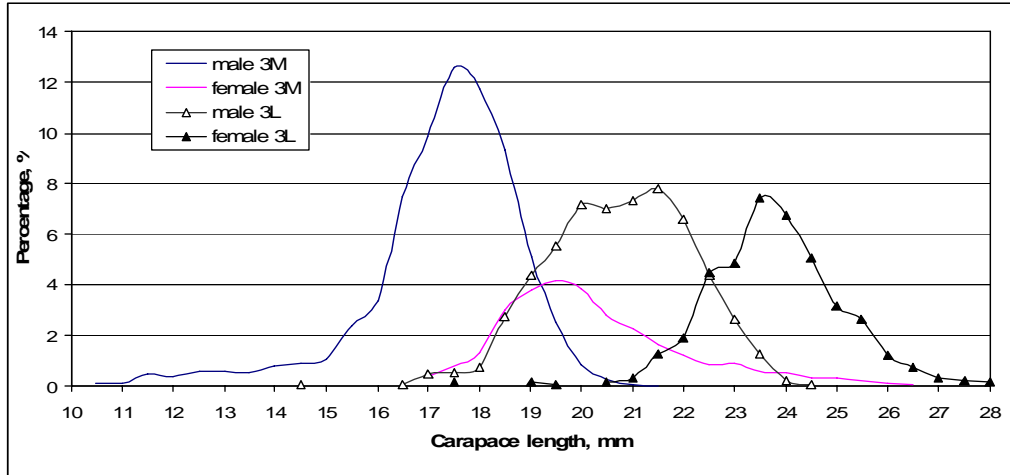


Fig. 1. Size distribution (carapace lengths) by sexes of shrimp as percentage from catches sampled in NAFO Div. 3L and 3M in 2006.