



NAFO/ICES *PANDALUS* ASSESSMENT GROUP—OCTOBER 2011

The Spanish Shrimp Fishery on Flemish Cap (Division 3M) and Division 3L in 2010

by

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Abstract

This paper shows data about catch, effort, catch per unit effort (CPUE) and size distributions of shrimp (*Pandalus borealis*) for Spanish commercial fishery in NAFO Divisions 3M and 3L in 2010.

Material and Methods

The information concerning to the Spanish shrimp fishery was taken from data collected from the STATLANT (landings) and the UE observers on board in the Spanish vessels from January to May (monthly landings, effort, bycatch and discards). Also, two Spanish scientific observers for the Spanish Scientific Program (IEO) were on board during the fishing period directed to shrimp in two vessels, providing information about fishing activity and carrying out biological sampling (length distributions).

Results

In all vessels visited by EU observers the gear used was a simple trawl with bar spacing sorting grates. The hauls were carried out in depths between 150 and 700 m. (82-380 fth.) In 3L Division the total effort (fishing hours) was carried out in depths lower than 400 m. (219 fth.) while in Division 3M the depth range was wider, 25% at depths lower than 400m. and 75 % between 400 and 700m. (Fig. 1)

The annual catches according to Statlant 21A were 347 t and 507 t in NAFO Div. 3L and 3M respectively. In Div 3L the catches were carried out in the beginning of the year (January and February). In Div 3M the catches were taken along the year.

The Table 1 shows the catches and yields of shrimp from the UE observers when the information was available (January-May), together with the distribution of effort (number of days and hours of activity estimated). Also the bycatch and discards of the main caught species by month are shown. From the information recorded by EU observers the shrimp catches in Division 3L was smaller than 3M and the yields (kg/h) obtained were 1134 kg/h for 3L and 507 kg/h for 3M.

The Table 2 shows the shrimp length distribution by sexes, Divisions and months when the catches were sampled during 2010. The length distributions from Division 3L and 3M carried out from February showed a sex-ratio for males around to 30%. The sex ratio estimated in October on 3M showed the preponderance of the males (59%).

Relatively few length frequencies were collected by Spanish scientific observers and therefore it is not certain whether the length frequencies are representative of Spanish fleet activities (Fig. 2). Lengths from samples taken by

observers consisted of a broad size range of males and females. In Division 3L the modes from males were near 18.5 and 20 mm, these animals were probably 3 - 4 years of age. The female length frequency distributions were also broad and showed several modes mainly at 21.5 mm, 24 mm, and 25.5 mm. These animals were probably 4, 5 and 6 years old.

In Division 3M the length distributions from February showed a broad mode at 17-18.5 mm. for males probably corresponding to individuals 3 years old. This length range was also present in the female length distribution showing two sub-peaks at 17.5 and 18.5 mm. The larger bulk of females between 20 and 26.5 mm. showed several modes at 21.5, 24 and 25.5 mm. These modal lengths would correspond roughly with the ages 4, 5 and 6.

Table 1.- Estimated catches (kg), effort and CPUE (kg/h) from UE observers of the Spanish trawl fleet directed to shrimp fishery in NAFO Div. 3L and 3M from January to May in 2010.

DIVISION 3L						
SPECIES	Jan	Feb	Mar	Apr	May	Jan-May
Northern shrimp		217412				217412
Redfish		855				855
American plaice ¹		110				110
Skates ¹		35				35
Witch flounder ¹		65				65
Vessel numbers		3				3
Fishing hours		192				192
CPUE Shrimp (kg/h)		1134				1134
DIVISION 3M						
SPECIES	Jan	Feb	Mar	Apr	May	Jan- May
Northern shrimp		149051	19118	6050	131742	305961
Redfish ²		5186	110			5296
American plaice ¹		230	30			260
Skates ¹		215	20			235
Witch flounder ¹		141	25			166
Capelin ¹		30				30
Vessel numbers		4	2	2	1	5
Fishing hours		289	154	8	153	604
CPUE Shrimp (kg/h)		516	124	748	862	507

¹ discards

² around 70% discards

Table 2: Shrimp length distributions by month and sex from Spanish catches in NAFO Divisions 3L and 3M.

Divisions	3L		3M					
Months	February		February		October		All year	
Length (mm)	males	females	males	females	males	females	males	females
12.5			77				77	
13			139				139	
13.5			139				139	
14			2584				2584	
14.5	3741		3056		324		3380	
15	4988		4010		324		4334	
15.5	8114		4123				4123	
16	3947		7359		324		7683	
16.5	3947		14094	346	540		14634	346
17	4167		29543	3782	540		30083	3782
17.5	7895		26858	10249	1836		28694	10249
18	20395		22869	9922	2431	486	25300	10408
18.5	52632		21107	16397	5077		26184	16397
19	48246		6449	14419	3437	1964	9886	16383
19.5	52851		4501	29740	2836	945	7337	30685
20	85307	8333	2204	27027	4705	588	6909	27615
20.5	40351	32675	1729	24222	5833	972	7562	25194
21	28289	97588	1369	35710	2639	3518	4008	39228
21.5	12281	126316	131	39757	523	1745	654	41502
22	7895	80044		25938	286	4143	286	30081
22.5		92544		33469		2593		36062
23		73684		19539		1728		21267
23.5		59868		18935		972		19907
24		93202		17385		972		18357
24.5		36623		10110		864		10974
25		45175		9118		108		9226
25.5		56798		12122				12122
26		44298		9313		324		9637
26.5		8114		2738		108		2846
27		16228		198				198
27.5		7895						
28								
28.5				198				198
TOTAL	385046	879385	152341	370634	31655	22030	183996	392664
Sex ratio	30%	70%	29%	71%	59%	41%	32%	68%
Sampled catch	8250		2684		200		2884	
No. Hauls	2		9		1		10	

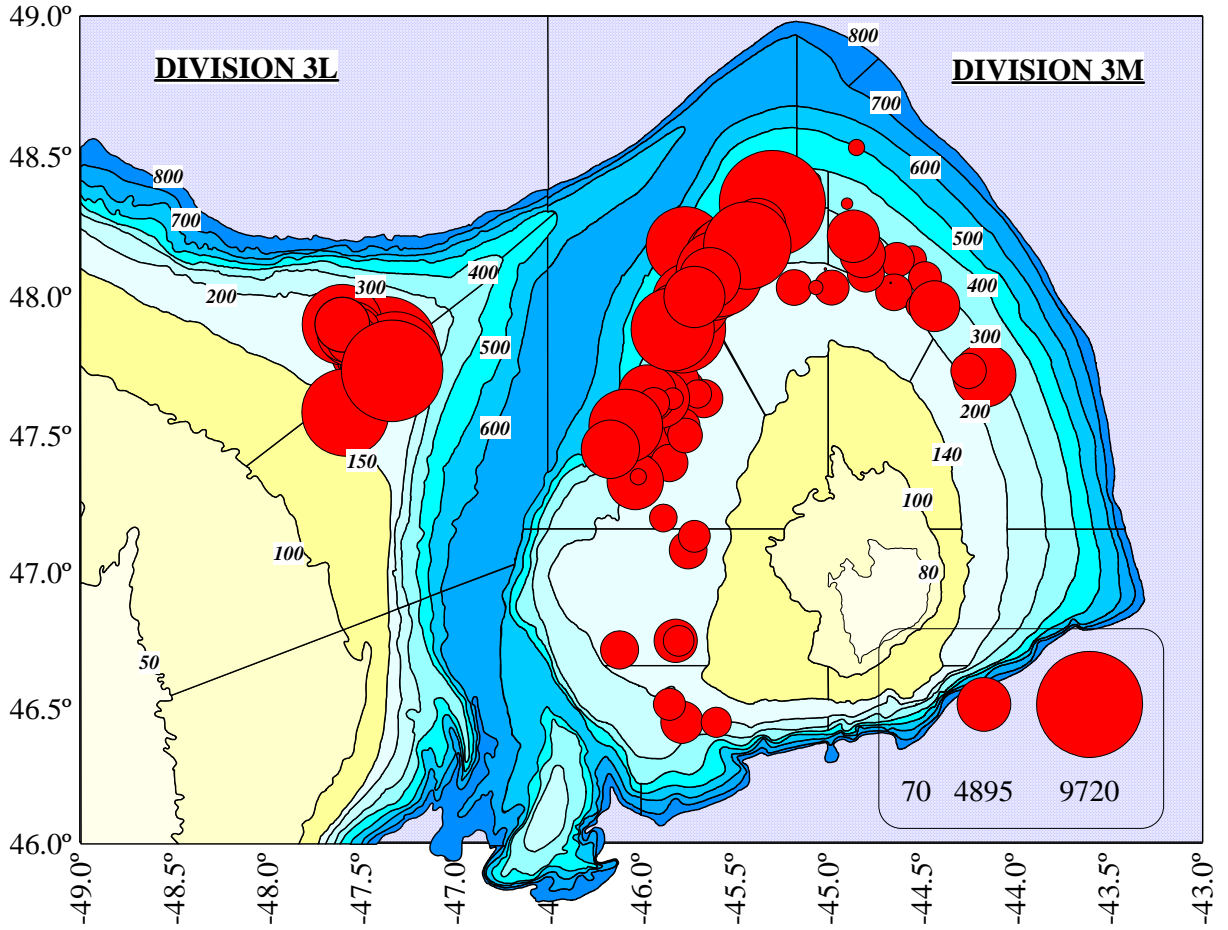


Fig. 1.- Geographical location and distribution of Spanish catches (kg) in NAFO Div. 3M and 3L in 2010 from UE observers. Depth labels in fathoms.

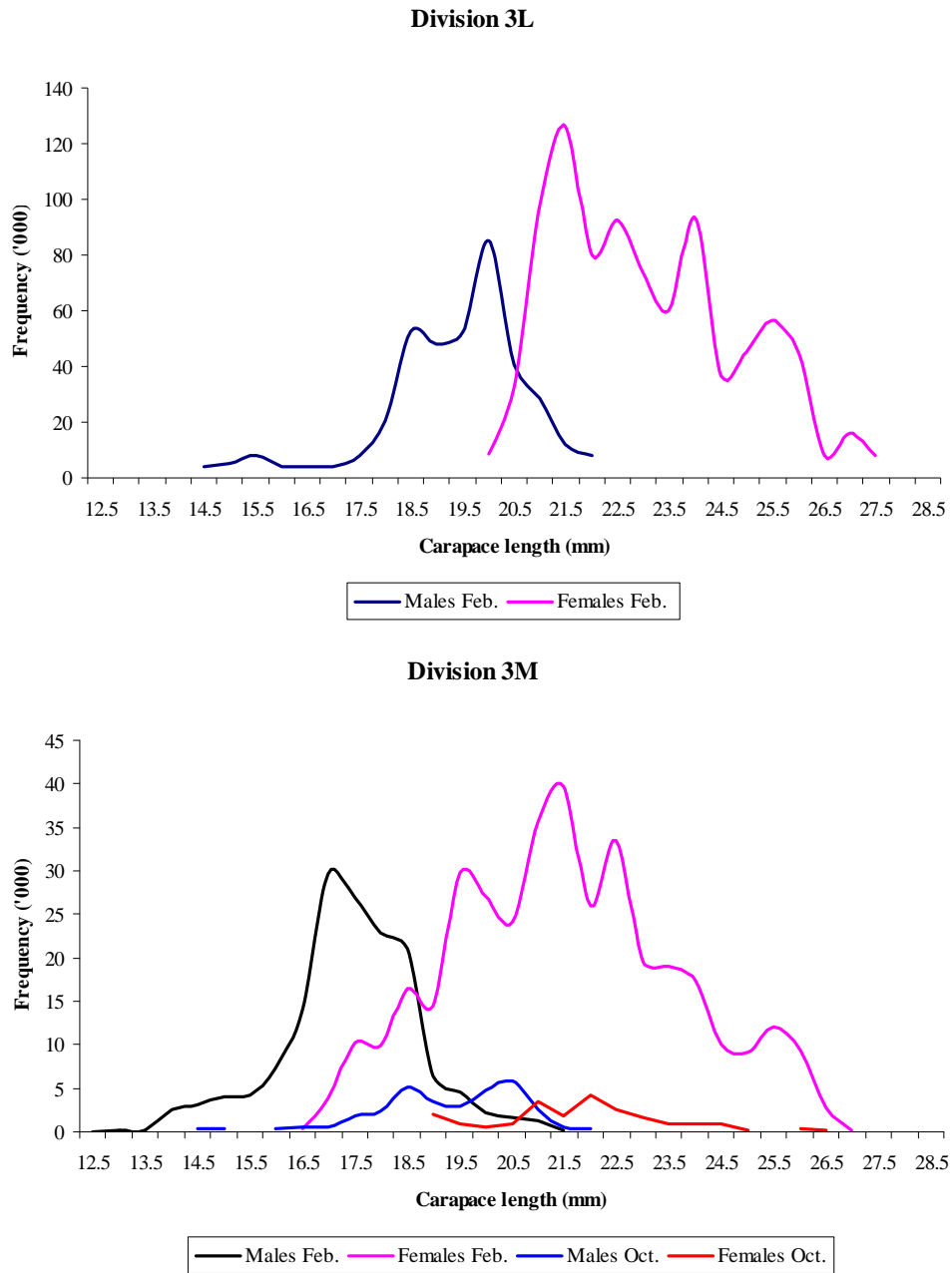


Fig. 2. Size distribution (carapace lengths) of shrimp by sex from Spanish commercial catches sampled in NAFO Division 3L and 3M in 2010