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The Spanish Shrimp Fishery on Flemish Cap (NAFO Division 3M) in 2002

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 catches on Flemish Cap (NAFO Division 3M) in 2002.

Material and Methods

The information concerning to the Spanish shrimp fishery was taken from data collected by UE observers on boarding in the Spanish vessels. However this year was not possible to obtain the whole information about the real effort and catches in NAFO area. Because of this, it was necessary to estimate the effort and catches by division and quarter from data of the Spanish Fisheries Administration and adjusted according to the data gathered by UE observers.

Two Spanish scientific observers remained in June and July on board during the fishing period directed to shrimp, providing information about fishing activity and carrying out biological sampling (length distributions).

Results

In all vessels the gear used was a simple trawl with bar spacing sorting grates. The hauls were mainly carried out in depths between 250 and 500 meters. The 85% of the effort (fishing hours) was carried out between 300 and 450 meters (Fig. 1).

The annual catch according to UE observers was 497 tons in NAFO Div. 3M. The Table 1 shows the catches and yields of shrimp and discards of the main caught species by quarter, together with the distribution of effort (number of days and hours of activity estimated).

The annual CPUE was around 225 kg/h. Only the 3rd quarter presented yields next to 300 kg/h.

The Table 2 and Fig. 2 show the length distribution by sexes of shrimp as percentage in the catches carried out in June and July during the 2002. The length distributions in both sexes were unimodal with peaks at 19 and 24.5 mm, respectively. According to the results presented last year (del Río *et al.*, 2002), these modal lengths correspond roughly with the ages 3 for males and 5 for females.

References

DEL RÍO, J. L., J. M. CASAS and T. PATROCINIO. 2002. Northern Shrimp (*Pandalus borealis*) on Flemish Cap in July 2002. *NAFO SCR Doc.*, No. 150, 21 p.

Table 1.- Estimated catches (kg), effort and CPUE (kg/h) from UE observers by quarter of the Spanish trawl fleet directed to shrimp fishery on Flemish Cap (NAFO Div. 3M) in 2002.

| SPECIES | 1st | 2nd | 3rd | 4th | Total |
|---------------------|-----------------------|-----------------------|-----------------------|-----------------------|--------------|
| SHRIMP | | 157096 | 138596 | 200838 | 496530 |
| REDFISH | | 15750 | 88 | 34976 | 50814 |
| WHITE HAKE | | 28 | 0 | 62 | 89 |
| SKATES | | 31 | 0 | 68 | 98 |
| ROUGHHEAD GRENADIER | | 2 | 14 | 0 | 17 |
| ROUGHNOSE GRENADIER | | 25 | 157 | 0 | 182 |
| Fishing days | | 55 | 29 | 58 | 142 |
| Fishing hours | | 870 | 476 | 865 | 1891 |
| CPUE Shrimp (kg/h) | | 181 | 291 | 232 | 225 |

Table 2: Length distribution of Shrimp as percentage from sampled Spanish catches in June and July on Flemish Cap (NAFO Div. 3M).

| Length (mm) | 2 nd | | 3 rd | | All Year | | total |
|---------------------------|-----------------|--------------|-----------------|--------------|--------------|--------------|---------------|
| | males | females | males | females | males | females | |
| 9 | | | 0.03 | | 0.02 | | 0.02 |
| 9.5 | | | 0.03 | | 0.02 | | 0.02 |
| 10 | | | 0.01 | | 0.01 | | 0.01 |
| 11 | | | 0.03 | | 0.02 | | 0.02 |
| 14 | | | 0.01 | | 0.01 | | 0.01 |
| 14.5 | | | 0.02 | | 0.01 | | 0.01 |
| 15 | 0.06 | | 0.20 | | 0.14 | | 0.14 |
| 15.5 | 0.06 | | 0.60 | | 0.39 | | 0.39 |
| 16 | 0.24 | | 1.64 | | 1.10 | | 1.10 |
| 16.5 | 0.61 | | 1.27 | | 1.02 | | 1.02 |
| 17 | 0.84 | | 2.45 | | 1.83 | | 1.83 |
| 17.5 | 1.80 | | 3.80 | | 3.03 | | 3.03 |
| 18 | 2.92 | | 8.32 | | 6.24 | | 6.24 |
| 18.5 | 4.29 | | 12.00 | 0.02 | 9.03 | 0.01 | 9.04 |
| 19 | 4.53 | 0.05 | 13.97 | 0.12 | 10.32 | 0.09 | 10.41 |
| 19.5 | 4.77 | | 10.26 | 0.06 | 8.14 | 0.04 | 8.18 |
| 20 | 5.15 | 0.24 | 8.50 | 0.20 | 7.21 | 0.22 | 7.43 |
| 20.5 | 5.40 | 0.45 | 3.95 | 0.35 | 4.51 | 0.38 | 4.89 |
| 21 | 4.78 | 0.74 | 1.82 | 0.84 | 2.96 | 0.80 | 3.76 |
| 21.5 | 3.62 | 1.17 | 0.83 | 0.93 | 1.90 | 1.02 | 2.92 |
| 22 | 2.88 | 1.89 | 0.23 | 2.02 | 1.25 | 1.97 | 3.22 |
| 22.5 | 2.44 | 2.88 | 0.28 | 2.10 | 1.11 | 2.40 | 3.51 |
| 23 | 1.50 | 4.21 | 0.08 | 3.42 | 0.63 | 3.72 | 4.35 |
| 23.5 | 1.01 | 5.18 | 0.05 | 3.21 | 0.42 | 3.97 | 4.39 |
| 24 | 0.77 | 5.62 | 0.08 | 3.82 | 0.35 | 4.51 | 4.86 |
| 24.5 | 0.38 | 6.17 | | 3.97 | 0.15 | 4.82 | 4.96 |
| 25 | 0.15 | 6.20 | | 3.41 | 0.06 | 4.48 | 4.54 |
| 25.5 | 0.06 | 5.28 | | 1.99 | 0.02 | 3.26 | 3.28 |
| 26 | 0.05 | 4.64 | | 1.50 | 0.02 | 2.71 | 2.73 |
| 26.5 | | 3.09 | | 0.87 | | 1.73 | 1.73 |
| 27 | | 1.86 | | 0.34 | | 0.93 | 0.93 |
| 27.5 | | 0.95 | | 0.17 | | 0.47 | 0.47 |
| 28 | | 0.52 | | 0.10 | | 0.26 | 0.26 |
| 28.5 | | 0.27 | | 0.11 | | 0.17 | 0.17 |
| 29 | | 0.11 | | 0.02 | | 0.05 | 0.05 |
| 29.5 | | 0.11 | | 0.01 | | 0.05 | 0.05 |
| 30.5 | | | | 0.01 | | 0.01 | 0.01 |
| 31.5 | | 0.06 | | | | 0.02 | 0.02 |
| TOTAL (%) | 48.32 | 51.68 | 70.43 | 29.57 | 61.90 | 38.10 | 100.00 |
| Sampled catch (kg) | 26662 | | 33115 | | 59777 | | |
| No. Sampled | 938 | | 2060 | | 2998 | | |
| No. Samples | 7 | | 10 | | 17 | | |

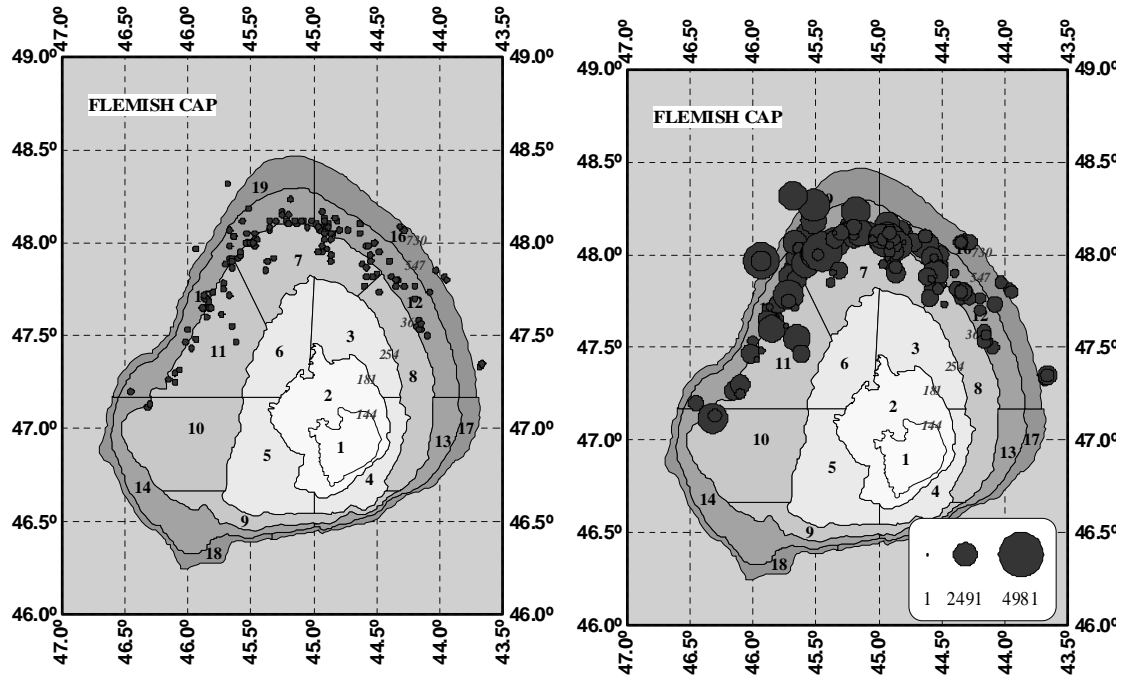


Fig. 1. Geographical location and distribution of Spanish catches (kg) on Flemish Cap (NAFO Div. 3M) in 2002. Only the available hauls and catches from UE observers area were printed.

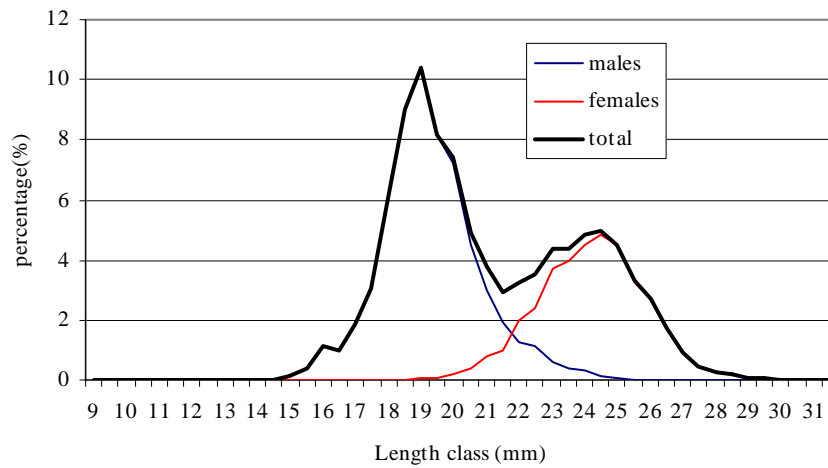


Fig. 2. Length distribution by sexes of shrimp as percentage from catches sampled in June and July of 2002.