

**SCIENTIFIC COUNCIL MEETING – JUNE 2009****Spanish Research Report for 2008**

by

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All effort and catch information in this Report are based on information from NAFO observers on board. In 2008 information from 1384 days was available while total effort of the Spanish fleet in NAFO Regulatory Area was 1406 days (98% coverage). Estimates from NAFO observers of Spanish catches by species and Division in 2008 are presented in Table 1. The split by species of grenadiers were calculated based upon the percentage observed by the IEO scientific observers.

In addition to NAFO observers, IEO scientific observers were on board. All length, age and biological information presented in this paper are based on sampling carried out by IEO observers: in 2008, 315 samples were taken, with 45 698 individuals of different species examined. These samples were made in 290 working days that it means 20.6 % of the Spanish total effort.

**SUBAREA 1 and 2****A. Status of the fisheries**

There was not Spanish fishing activity in these Subareas during 2008.

**SUBAREA 3****A. Status of the fisheries**

A total of 14 Spanish trawlers operated in NAFO Regulatory Area, Div. 3LMNO, during 2008, amounting to 1 406 days (21 408 hours) of fishing effort. This implies a decrease of 80 % in 2008 effort compared to 2003 effort (Table 2). Total catches (Table 1) for all species combined in Div. 3LMNO were 17 364 tons in 2008, compared to 14 044 tons in 2007.

Table 3 shows the effort (hours) by quarter and Division and their percentage. Table 4 presents the percentage of the effort by Division and mesh size and Figure 1 shows the holes position made with the different mesh sizes.

These tables and figure illustrate that the Spanish fleet has, at least, four different fisheries in NAFO Subarea 3 characterized by different mesh size, target species, depth and fishing area. The Spanish fleet effort in NAFO area is mainly directed to Greenland halibut (mostly in Div. 3LM), alternating with the skate fishery in the second half of

the year (Div. 3NO), shrimp fishery (Div. 3LM), and in less degree redfish (Div. 3O and Div. 3M). In Div. 3L, most of the effort was performed using cod-end mesh size of 135 mm, indicating that the fleet targeted Greenland halibut. In the first half of the year a small part of the effort was directed to the shrimp fishery. Regarding Div. 3M, most of the effort was carried out using 135 mm cod-end mesh size at more than 700 m depth targeting Greenland halibut and in less degree at less than 700 m depth targeting redfish. The 15% of the fishing effort was carried out using 40 mm cod-end mesh size directed to the shrimp fishery. In Div. 3N and during the first quarter of the year, fishing was performed using 135 and 280 mm cod-end mesh size, which indicates that the fleet targeted Greenland halibut in depth more than 700 m. and skate in depth less than 200 m. in similar proportion. However, during the others quarters most part of the effort moved to depths less than 200 m where the skate fishery took place using 280 mm mesh size. Fishing effort in Div. 3O was limited (3%) and targeted redfish, using mainly 135 mm mesh size.

In addition to NAFO observers (NAFO Observers Program), 6 IEO scientific observers were onboard the Spanish vessels, comprising a total of 290 observed fishing days, around 21% coverage of the total Spanish effort. Besides recording catches, discards, and effort, these observers carried out biological sampling of the main species taken in the catch. For Greenland halibut, roughhead grenadier and American plaice this includes recording weight at length, sex-ratio, maturity stages, performing stomach contents analyses, and collecting material for reproductive studies. Otoliths of these three species were also taken for age determination. In 2008, 315 length samples were taken, with 45 024 individuals of different species examined to obtain the length distributions (Table 5). Length and age distributions presented in this paper are based on sampling carried out by these observers. Parameters used for the length-weight relationships are shown by species in Table 6.

The Spanish activity en NAFO Regulatory Area (NRA) Subarea 3 in 2008 stock by stock was the following:

#### **Cod (Div. 3NO; Div. 3M)**

Main part of the catches of this species were taken as by-catch in the skate fishery and Greenland halibut fishery in Div. 3N. Few catches were taken in Div. 3LMO.

Table 7 shows the catch length distribution for Div. 3NO cod. All samples were taken in Division 3N. There is not available length distributions for Division 3M.

#### **Redfish (Div. 3LN; Div. 3M; Div. 3O)**

Most of the catches in Div. 3LN were taken as by-catch in the Greenland halibut fishery. In Div. 3M the redfish catches in 2008 have been 1247 tons. In this Division a small part of the catches were taken as by-catch in the Shrimp fishery. A directed fishery for this species took place in Div. 3O mostly in the second half of this year. Catches have reached 968 ton in this Division.

Table 8 shows the length distribution for Div. 3LN. Catches length distribution for Div. 3M and 3O are presented in Table 9 and Table 10, respectively.

#### **American plaice (Div. 3LNO; Div. 3M)**

Most catches were taken in Div. 3LNO as by-catch of the skate and Greenland halibut fisheries. Catches in Div. 3M only amounted 26 tons and were taken as by-catch of the Greenland halibut fishery.

Length distributions for Div. 3LNO are presented in Table 11, all samples were taken in Division 3N. There is not available length distributions for Division 3M.

#### **Witch flounder (Div. 2J and 3KL; Div. 3NO; Div. 3M)**

This species is taken as by-catch in the Greenland halibut fishery in Divisions 3LMNO. This year, there was only length distribution samples for Witch flounder Division 3NO (Table 12).

### **Yellowtail flounder (Div. 3LNO)**

Most of the catches were taken in Div. 3N as by-catch in the skate fishery. Length distributions for Yellowtail flounder Div. 3LNO are presented in Table 13, all samples were taken in Division 3N.

### **Greenland halibut (Subareas 2 and 3)**

Greenland halibut continues to be the main target species for the Spanish fleet in NAFO area. A great reduction of effort in this fishery has been carried out in the last years to adapt to the NAFO Greenland halibut recovery plan. Most of the catches have been taken in the Flemish Pass area (Div. 3LM) at depths more than 700 meters. The mesh size used for this fishery was equal to or greater than 130 mm. Tables 14, 15 show length distributions of Spanish catches by Division and Table 16 shows the total length distributions of Spanish catches in Divisions 3LMNO. The commercial Spanish Age Length Key (ALK) for 2008 was not available for NAFO Scientific Council June meeting.

### **Thorny skate (Div. 3LNO; Div. 3M)**

Commercial catches of skates comprise a mix of skate species (*Raja radiata*, *Bathyraja spinicauda*, *Raja hyperborean*, *Raja senta*, etc). Thus the catch of skate in Table 1 refers to *Raja* spp. However, thorny skate dominates, comprising about 95% of the skate taken in the Spanish catches. Most of the catches were taken in Div. 3N at depths less than 200 meters, where a fishery directed to thorny skate took place mainly in the second semester of the year, using 280 mm mesh size. Skate catches in Div. 3LM were smaller than those in Div. 3NO and they were by-catch of the Greenland halibut fishery (135 mm cod-end).

Table 17 shows the total catches length distributions of Div. 3LNO, all samples were taken in Division 3NO. There is not available length distributions for Division 3M.

### **Roughhead grenadier (Subarea 2 and 3)**

Roughhead grenadier is the main species taken as by-catch in the Greenland halibut fishery, and most of the 2008 catches were taken in Div. 3LM. Individuals were measured from tip of snout to base of first anal-fin ray (AFL). Tables 18 show the AFL length distributions, in 1 cm intervals, of Spanish catches for Div. 3LMNO. Age distributions based in the Spanish Age Length Key (ALK), mean weight and mean length (AFL) at age of the total catch for Div. 3LMNO are presented in Table 19. Most of the Roughhead grenadier catches in 2008 were based on ages 6 to 9.

### **White hake (Div. 3LMNO)**

Catches in the last years are in the same level as before 2000. Catches of this species in 2008 were a small by-catch of different fisheries. In Div. 3LMN they are by-catch of the Greenland halibut fishery and by-catch of the redfish fishery in Div. 3O. There were not length distribution samplings available in 2008.

## **(B) Research studies**

The Spanish bottom trawl survey in NAFO Regulatory area Div. 3NO was conducted in May and June 2008 on board R/V Vizconde de Eza using Campelen gear with a stratified design. A total of 123 hauls were carried out up to a depth of 1 446 m, one of which was null. The results of the Spanish 3NO bottom trawl survey, including biomass indices with their errors and length distributions, as well as the calculated biomass based on conversion of length frequencies for Greenland halibut and American plaice; Atlantic cod and yellowtail flounder; Thorny skate, white hake and roughhead grenadier are presented as Scientific Council Research documents. As in the years 1995 and 1996 few deeper strata were surveyed, the data obtained in those surveys are not representative for most of the species, so the data is presented since 1997 to 2008 for all the species, except for Yellowtail flounder, whose data are presented for the whole period, and for White hake, presented for the period 2001-2008 because before 2001 there are no data available.

Feeding studies on the main species continued to be conducted. Material for histology and aging (Cod, American plaice and Greenland halibut) studies were taken.

One hundred twenty two hydrographic profile samplings were made in a depth range of 33 - 1420 m.

In 2003 it was decided to extend the Spanish 3NO survey toward Div. 3L (Flemish Pass). In 2008, the bottom trawl survey in Flemish Pass (Div. 3L) was carry out on board R/V Vizconde de Eza using the usual survey gear (Campelen 1800) from July 24th to August 11th. The area surveyed was Flemish Pass to depths up 800 fathoms (1463 m) following the same procedure as in previous years. The number of hauls was 103 and 3 of them were nulls. Survey results including abundance indices and length distributions of the main commercial species are presented as Scientific Council Research documents. Survey results for Div. 3LNO of the northern shrimp (*Pandalus borealis*) were presented in SCR 08/66.

Feeding studies on Greenland halibut and American plaice continued to be performed and samples for histological (Greenland halibut, American plaice) and aging (Greenland halibut, American plaice and cod) studies were taken. One hundred one hydrographic profile samplings were made in a depth range of 95-1411 m.

In 2007 the Spanish administration obtained a license from Canadian Authorities to carry out a research survey inside of the Canadian waters in 3L Division. In 2008 this survey was made by the R/V Vizconde de Eza, covering 14 strata in the north of Div. 3L, using a Campelen survey gear up to 1420 meters depth and following the same procedures as in 3NO survey. Initial plan could not be completed neither, due to the bad meteorological conditions and the travels to pick up and drop off the Canadian participants and 33 valid fishing operations instead of the 44 initially planned were carried out. Total biomass, calculated by swept area method, for the main species is shown in the Table 20. Due to the low number of hauls these results should be considered with caution. Eight hydrographic profile samplings were made in a depth range of 343-1070 m.

The EU bottom trawl survey in Flemish Cap (Div. 3M) was carried out on board R/V Vizconde de Eza using the usual survey gear (Lofoten) from June 18th to July 22th 2008. The area surveyed was Flemish Cap Bank to depths up to 800 fathoms (1 400 m) following the same procedure as in previous years. The number of hauls was 176 and nine of them were nulls. Survey results including abundance indices of the main commercial species and age distributions for cod, redfish, American plaice, roughhead grenadier and Greenland halibut are presented as Scientific Council Research documents. Flemish Cap survey results for northern shrimp (*Pandalus borealis*) were presented in SCR 08/68.

Samples for histological assessment of sexual maturity of cod, redfish, Greenland halibut and Roughhead grenadier were taken.

Oceanography studies continued to take place.

## REFERENCES

Casas, J.M. Northern shrimp (*Pandalus borealis*) on Flemish Cap Survey 2008. NAFO SCR Doc. 08/68

Casas, J.M., E. Román<sup>1</sup> and J. Teruel. Northern shrimp (*Pandalus borealis*, Krøyer) from Spanish bottom trawl survey 2008 in NAFO Divisions 3LNO. NAFO SCR Doc. 08/66

**Table 1.** Spanish Catches (ton) in NAFO Area in 2008 by Division, based on NAFO Observers information.

|      |                          |                              | Division |      |      |      | Total Catch |
|------|--------------------------|------------------------------|----------|------|------|------|-------------|
| Code | English_name             | Scientific_name              | 3L       | 3M   | 3N   | 3O   | (ton)       |
| SKA  | Raja rays nei            | Raja spp                     | 56       | 70   | 5685 | 109  | 5920        |
| GHL  | Greenland halibut        | Reinhardtius hippoglossoides | 3172     | 1273 | 358  | 17   | 4820        |
| RED  | Atlantic redfishes nei   | Sebastes spp                 | 139      | 1247 | 14   | 968  | 2368        |
| PRA  | Northern prawn           | Pandalus borealis            | 277      | 408  |      |      | 685         |
| PLA  | Amer. Plaice             | Hippoglossoides platessoides | 54       | 26   | 478  | 83   | 641         |
| YEL  | Yellowtail flounder      | Limanda ferruginea           | 5        |      | 494  | 99   | 598         |
| RHG  | Roughhead grenadier      | Macrourus berglax            | 341      | 478  | 76   | 3    | 897         |
| RNG  | Roundnose grenadier      | Coryphaenoides rupestris     | 19       | 86   | 12   | 0    | 117         |
| COD  | Atlantic cod             | Gadus morhua                 | 36       | 60   | 310  | 30   | 435         |
| WIT  | Witch flounder           | Glyptocephalus cynoglossus   | 40       | 29   | 70   | 27   | 166         |
| CAT  | Wolffishes               | Anarhichas spp               | 90       | 24   | 31   | 7    | 152         |
| HKR  | Red hake                 | Urophycis chuss              | 66       | 73   | 1    |      | 140         |
| DGX  | Dogfish sharks nei       | Squalidae                    | 101      | 20   | 14   | 1    | 137         |
| HKW  | White hake               | Urophycis tenuis             | 32       | 14   | 27   | 19   | 92          |
| CAS  | Spotted wolffish         | Anarhichas minor             | 0        | 1    | 40   |      | 42          |
| ANT  | Blue antimora            | Antimora rostrata            | 13       | 17   | 1    |      | 30          |
| ANG  | American angler          | Lophius americanus           | 0        |      | 29   | 0    | 30          |
| GDE  | Shore rockling           | Gaidropsarus ensis           | 23       | 1    | 3    | 1    | 27          |
| HAL  | Atlantic halibut         | Hippoglossus hippoglossus    | 13       | 3    | 7    | 2    | 25          |
| CAA  | Atlantic wolffish        | Anarhichas lupus             | 0        | 0    | 18   | 0    | 19          |
| GSK  | Greenland shark          | Somniosus microcephalus      | 3        | 3    | 1    |      | 6           |
| GRV  | Grenadiers nei           | Macrourus spp                | 1        |      | 0    | 0    | 2           |
| ELZ  | Eelpouts                 | Lycodes spp                  | 1        | 0    | 1    |      | 2           |
| GAM  | Mouse catshark           | Galeus murinus               |          | 1    |      |      | 1           |
| NZB  | Marlin-spike grenadier   | Nezumia bairdi               | 1        |      | 0    |      | 1           |
| SHL  | Lanternsharks nei        | Etmopterus spp               | 0        | 1    |      |      | 1           |
| XXX  | Unknow                   | Unknow                       | 0        | 1    |      |      | 1           |
| SKX  | Sharks, rays, skates nei | Elasmobranchii               | 1        |      |      |      | 1           |
| HAD  | Haddock                  | Melanogrammus aeglefinus     |          |      | 1    | 0    | 1           |
| MNZ  | Monkfishes nei           | Lophius spp                  |          |      | 0    | 0    | 1           |
| CFB  | Black dogfish            | Centroscyllium fabricii      | 0        | 0    | 0    |      | 1           |
| COE  | European conger          | Conger conger                | 0        | 0    | 0    |      | 1           |
|      | Others                   | 35 species                   | 1        | 2    | 2    | 0    | 5           |
|      | Total Catches            | (ton)                        | 4486     | 3836 | 7674 | 1367 | 17364       |

**Table 2.** Fishing effort (hours) of the Spanish fleet in 2008 in Divisions 3LMNO by year, as well as percentage of effort reduction compare with 2003.

| <b>3LMNO</b>     | <b>2003</b> | <b>2004</b> | <b>2005</b> | <b>2006</b> | <b>2007</b> | <b>2008</b> |
|------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Effort (Hours)   | 106821      | 76028       | 60128       | 44044       | 25163       | 21408       |
| Effort reduction | 0%          | 29%         | 44%         | 59%         | 76%         | 80%         |

**Table 3.** Fishing effort (hours) of the Spanish fleet in 2008, by quarter and Division, as well as percentage of effort by quarter and Division.

| <b>Division</b> | <b>units</b>       | <b>1st Q</b> | <b>2nd Q</b> | <b>3rd Q</b> | <b>4th Q</b> | <b>Total</b> | <b>%</b> |
|-----------------|--------------------|--------------|--------------|--------------|--------------|--------------|----------|
| <b>3L</b>       | <b>Hours</b>       | 3125         | 1199         | 4431         | 190          | 8946         | 42%      |
| <b>3M</b>       | <b>Hours</b>       | 1907         | 1942         | 1701         | 0            | 5550         | 26%      |
| <b>3N</b>       | <b>Hours</b>       | 662          | 641          | 1722         | 3333         | 6358         | 30%      |
| <b>3O</b>       | <b>Hours</b>       | 31           | 84           | 178          | 261          | 553          | 3%       |
|                 | <b>Total Hours</b> | 5724         | 3867         | 8033         | 3784         | 21408        | 100%     |
|                 | <b>%</b>           | 27%          | 18%          | 38%          | 18%          | 100%         |          |

**Table 4-.** Percentage of the effort in SA 3 by mesh size, quarter and Division.

| <b>Div.</b> | <b>Mesh Size</b>  | <b>1st Q</b> | <b>2nd Q</b> | <b>3rd Q</b> | <b>4th Q</b> | <b>Total</b> |
|-------------|-------------------|--------------|--------------|--------------|--------------|--------------|
| <b>3L</b>   | <b>&lt;90 mm</b>  | 4%           | 0%           | 8%           | 0%           | 6%           |
|             | <b>100-200 mm</b> | 96%          | 100%         | 92%          | 100%         | 94%          |
|             | <b>&gt;200 mm</b> |              |              |              |              |              |
| <b>3M</b>   | <b>&lt;90 mm</b>  | 4%           | 8%           | 35%          |              | 15%          |
|             | <b>100-200 mm</b> | 96%          | 92%          | 65%          |              | 85%          |
|             | <b>&gt;200 mm</b> |              |              |              |              |              |
| <b>3N</b>   | <b>&lt;90 mm</b>  |              |              |              |              |              |
|             | <b>100-200 mm</b> | 56%          | 18%          | 39%          | 0%           | 18%          |
|             | <b>&gt;200 mm</b> | 44%          | 82%          | 61%          | 100%         | 82%          |
| <b>3O</b>   | <b>&lt;90 mm</b>  |              |              |              |              |              |
|             | <b>100-200 mm</b> | 58%          | 94%          | 93%          | 85%          | 87%          |
|             | <b>&gt;200 mm</b> | 42%          | 6%           | 7%           | 15%          | 13%          |

**Table 5.** Length distribution samples and individuals sampled by Division, species and gear (mesh size) in 2008 .

| Species             | Division | Gear   | Samples | Ind. Sampled |
|---------------------|----------|--------|---------|--------------|
| Greenland halibut   | 3L       | 135 mm | 83      | 14553        |
| Greenland halibut   | 3M       | 135 mm | 34      | 5020         |
| Greenland halibut   | 3N       | 135 mm | 12      | 2881         |
| Greenland halibut   | 3O       | 135 mm | 1       | 197          |
| Redfish             | 3L       | 135 mm | 9       | 278          |
| Redfish             | 3M       | 135 mm | 5       | 872          |
| Redfish             | 3N       | 135 mm | 4       | 908          |
| Redfish             | 3O       | 135 mm | 4       | 745          |
| Roughhead grenadier | 3L       | 135 mm | 36      | 4550         |
| Roughhead grenadier | 3M       | 135 mm | 2       | 181          |
| Roughhead grenadier | 3N       | 135 mm | 1       | 163          |
| American plaice     | 3L       | 135 mm | 2       | 473          |
| Which flounder      | 3N       | 135 mm | 3       | 559          |
| Cod                 | 3N       | 135 mm | 2       | 283          |
| Shore rockling      | 3L       | 135 mm | 22      | 1752         |
| Shore rockling      | 3M       | 135 mm | 1       | 60           |
| Blue antimora       | 3L       | 135 mm | 1       | 84           |
| Atlantic wolffish   | 3L       | 135 mm | 1       | 4            |
| Northern wolffish   | 3L       | 135 mm | 3       | 17           |
| Spotted wolffish    | 3L       | 135 mm | 4       | 23           |
| American plaice     | 3N       | 280 mm | 24      | 3078         |
| Cod                 | 3N       | 280 mm | 3       | 125          |
| Yellowtail flounder | 3N       | 280 mm | 7       | 1188         |
| Skates              | 3N       | 280 mm | 48      | 7441         |
| Skates              | 3O       | 280 mm | 1       | 220          |
| American angler     | 3N       | 280 mm | 2       | 43           |
| Total               |          |        | 315     | 45698        |

**Table 6.** Parameters of the length-weight relationship ( $W(g) = a \cdot L(cm)^b$ ) by species.

| Species             | a       | b      |
|---------------------|---------|--------|
| Greenland halibut   | 0.00740 | 3.0310 |
| Redfish             | 0.01900 | 2.9060 |
| Roughhead grenadier | 0.11390 | 2.8921 |
| Witch flounder      | 0.00220 | 3.2995 |
| American plaice     | 0.00600 | 3.1127 |
| Cod                 | 0.00800 | 3.0400 |
| Roundnose grenadier | 0.20400 | 2.9636 |
| Yellowtail Flounder | 0.00710 | 3.0903 |
| Skate               | 0.01115 | 2.9471 |
| <i>S. mentella</i>  | 0.02473 | 2.8376 |
| White Hake          | 0.00540 | 3.0938 |

**Table 7.** Length distribution of 3NO Spanish cod catches.

| <b>Cod<br/>Length (cm)</b> | <b>Division 3NO</b> |                |             | <b>Total</b> |
|----------------------------|---------------------|----------------|-------------|--------------|
|                            | <b>Males</b>        | <b>Females</b> | <b>Ind.</b> |              |
| <b>18</b>                  | 0                   | 0              | 11          | 11           |
| <b>19</b>                  | 0                   | 0              | 0           | 0            |
| <b>20</b>                  | 0                   | 0              | 0           | 0            |
| <b>21</b>                  | 0                   | 0              | 0           | 0            |
| <b>22</b>                  | 0                   | 0              | 22          | 22           |
| <b>23</b>                  | 0                   | 0              | 66          | 66           |
| <b>24</b>                  | 0                   | 0              | 44          | 44           |
| <b>25</b>                  | 0                   | 0              | 131         | 131          |
| <b>26</b>                  | 0                   | 0              | 164         | 164          |
| <b>27</b>                  | 0                   | 0              | 175         | 175          |
| <b>28</b>                  | 0                   | 0              | 121         | 121          |
| <b>29</b>                  | 0                   | 0              | 55          | 55           |
| <b>30</b>                  | 0                   | 0              | 88          | 88           |
| <b>31</b>                  | 0                   | 0              | 0           | 0            |
| <b>32</b>                  | 0                   | 0              | 11          | 11           |
| <b>33</b>                  | 0                   | 1151           | 431         | 1581         |
| <b>34</b>                  | 0                   | 409            | 22          | 431          |
| <b>35</b>                  | 0                   | 0              | 861         | 861          |
| <b>36</b>                  | 0                   | 0              | 22          | 22           |
| <b>37</b>                  | 0                   | 0              | 33          | 33           |
| <b>38</b>                  | 0                   | 0              | 518         | 518          |
| <b>39</b>                  | 0                   | 0              | 66          | 66           |
| <b>40</b>                  | 0                   | 0              | 131         | 131          |
| <b>41</b>                  | 0                   | 0              | 153         | 153          |
| <b>42</b>                  | 409                 | 0              | 142         | 552          |
| <b>43</b>                  | 409                 | 409            | 110         | 928          |
| <b>44</b>                  | 0                   | 0              | 153         | 153          |
| <b>45</b>                  | 0                   | 0              | 66          | 66           |
| <b>46</b>                  | 1151                | 1151           | 99          | 2400         |
| <b>47</b>                  | 2301                | 5421           | 55          | 7776         |
| <b>48</b>                  | 2301                | 1560           | 22          | 3883         |
| <b>49</b>                  | 2301                | 4602           | 33          | 6936         |
| <b>50</b>                  | 1151                | 5011           | 485         | 6647         |
| <b>51</b>                  | 2710                | 2710           | 463         | 5884         |
| <b>52</b>                  | 3861                | 3529           | 33          | 7423         |
| <b>53</b>                  | 3861                | 6162           | 452         | 10475        |
| <b>54</b>                  | 5421                | 5011           | 44          | 10476        |
| <b>55</b>                  | 2301                | 5830           | 77          | 8208         |
| <b>56</b>                  | 2301                | 5753           | 22          | 8076         |
| <b>57</b>                  | 4270                | 2710           | 22          | 7002         |
| <b>58</b>                  | 1560                | 2301           | 0           | 3861         |
| <b>59</b>                  | 0                   | 1151           | 0           | 1151         |
| <b>60</b>                  | 0                   | 3861           | 0           | 3861         |
| <b>61</b>                  | 5011                | 3861           | 0           | 8872         |
| <b>62</b>                  | 1560                | 0              | 0           | 1560         |
| <b>63</b>                  | 0                   | 0              | 11          | 11           |

|     |      |      |     |      |
|-----|------|------|-----|------|
| 64  | 1151 | 409  | 0   | 1560 |
| 65  | 3861 | 0    | 0   | 3861 |
| 66  | 2710 | 409  | 0   | 3120 |
| 67  | 1151 | 409  | 0   | 1560 |
| 68  | 1151 | 409  | 0   | 1560 |
| 69  | 1151 | 409  | 0   | 1560 |
| 70  | 0    | 0    | 0   | 0    |
| 71  | 409  | 0    | 0   | 409  |
| 72  | 0    | 0    | 441 | 441  |
| 73  | 0    | 409  | 0   | 409  |
| 74  | 416  | 0    | 0   | 416  |
| 75  | 409  | 1234 | 0   | 1643 |
| 76  | 0    | 0    | 0   | 0    |
| 77  | 1234 | 0    | 0   | 1234 |
| 78  | 818  | 825  | 0   | 1643 |
| 79  | 0    | 1969 | 0   | 1969 |
| 80  | 825  | 409  | 0   | 1234 |
| 81  | 0    | 409  | 0   | 409  |
| 82  | 409  | 409  | 0   | 818  |
| 83  | 0    | 0    | 0   | 0    |
| 84  | 0    | 409  | 0   | 409  |
| 85  | 0    | 416  | 0   | 416  |
| 86  | 409  | 0    | 0   | 409  |
| 87  | 0    | 0    | 0   | 0    |
| 88  | 416  | 409  | 0   | 825  |
| 89  | 0    | 416  | 0   | 416  |
| 90  | 0    | 0    | 0   | 0    |
| 91  | 0    | 416  | 0   | 416  |
| 92  | 0    | 409  | 0   | 409  |
| 93  | 0    | 0    | 0   | 0    |
| 94  | 825  | 0    | 0   | 825  |
| 95  | 416  | 1241 | 0   | 1656 |
| 96  | 0    | 0    | 0   | 0    |
| 97  | 416  | 0    | 0   | 416  |
| 98  | 0    | 825  | 11  | 836  |
| 99  | 0    | 0    | 0   | 0    |
| 100 | 0    | 0    | 0   | 0    |
| 101 | 0    | 0    | 0   | 0    |
| 102 | 0    | 0    | 0   | 0    |
| 103 | 0    | 0    | 0   | 0    |
| 104 | 416  | 0    | 0   | 416  |
| 105 | 0    | 0    | 0   | 0    |
| 106 | 0    | 0    | 0   | 0    |
| 107 | 416  | 0    | 0   | 416  |
| 108 | 0    | 416  | 0   | 416  |
| 109 | 0    | 0    | 0   | 0    |
| 110 | 0    | 409  | 0   | 409  |
| 111 | 0    | 416  | 0   | 416  |
| 112 | 0    | 416  | 0   | 416  |
| 113 | 416  | 0    | 0   | 416  |

|              |       |       |      |        |
|--------------|-------|-------|------|--------|
| <b>114</b>   | 0     | 0     | 0    | 0      |
| <b>115</b>   | 0     | 0     | 0    | 0      |
| <b>116</b>   | 0     | 0     | 0    | 0      |
| <b>117</b>   | 0     | 0     | 0    | 0      |
| <b>118</b>   | 0     | 0     | 0    | 0      |
| <b>119</b>   | 0     | 0     | 0    | 0      |
| <b>120</b>   | 0     | 0     | 0    | 0      |
| <b>121</b>   | 416   | 0     | 0    | 416    |
| <b>122</b>   | 0     | 0     | 0    | 0      |
| <b>123</b>   | 0     | 416   | 0    | 416    |
| <b>124</b>   | 0     | 0     | 0    | 0      |
| <b>125</b>   | 416   | 0     | 0    | 416    |
| <b>126</b>   | 0     | 0     | 0    | 0      |
| <b>127</b>   | 0     | 0     | 0    | 0      |
| <b>128</b>   | 0     | 416   | 0    | 416    |
| <b>129</b>   | 416   | 0     | 0    | 416    |
| <b>Total</b> | 63549 | 77332 | 5866 | 146747 |

|                     |     |
|---------------------|-----|
| <b>Ind. Sampled</b> | 408 |
| <b>Samples</b>      | 5   |
| <b>Catch (ton)</b>  | 340 |

**Table 8.** Length distribution of 3LN Spanish redfish catches by Division.

| <b>Redfish</b>      | <b>3LN</b>    |                |             |               |
|---------------------|---------------|----------------|-------------|---------------|
| <b>Length (cm)</b>  | <b>Males</b>  | <b>Females</b> | <b>Ind.</b> | <b>Total</b>  |
| 15                  | 915           | 0              | 0           | 915           |
| 16                  | 2959          | 2247           | 0           | 5206          |
| 17                  | 22292         | 8169           | 0           | 30461         |
| 18                  | 24169         | 15436          | 0           | 39605         |
| 19                  | 17405         | 19417          | 0           | 36822         |
| 20                  | 9118          | 7199           | 0           | 16318         |
| 21                  | 34628         | 16450          | 0           | 51078         |
| 22                  | 73239         | 18318          | 0           | 91557         |
| 23                  | 73701         | 42432          | 0           | 116133        |
| 24                  | 68150         | 28946          | 0           | 97096         |
| 25                  | 53375         | 32445          | 0           | 85820         |
| 26                  | 25840         | 27046          | 0           | 52886         |
| 27                  | 16984         | 13743          | 0           | 30727         |
| 28                  | 629           | 10955          | 0           | 11583         |
| 29                  | 1726          | 13264          | 0           | 14990         |
| 30                  | 780           | 14265          | 0           | 15045         |
| 31                  | 1570          | 2084           | 0           | 3654          |
| 32                  | 2500          | 1444           | 0           | 3943          |
| 33                  | 4807          | 1928           | 0           | 6735          |
| 34                  | 2322          | 7991           | 0           | 10314         |
| 35                  | 2501          | 4240           | 0           | 6741          |
| 36                  | 2219          | 1904           | 0           | 4123          |
| 37                  | 1157          | 2239           | 0           | 3397          |
| 38                  | 1023          | 173            | 0           | 1196          |
| 39                  | 426           | 470            | 0           | 895           |
| 40                  | 87            | 0              | 0           | 87            |
| 41                  | 0             | 87             | 0           | 87            |
| 42                  | 0             | 0              | 0           | 0             |
| 43                  | 343           | 0              | 0           | 343           |
| 44                  | 0             | 0              | 0           | 0             |
| 45                  | 117           | 0              | 0           | 117           |
| 46                  | 0             | 0              | 0           | 0             |
| 47                  | 0             | 0              | 0           | 0             |
| 48                  | 0             | 0              | 0           | 0             |
| 49                  | 87            | 0              | 0           | 87            |
| <b>TOTAL</b>        | <b>445068</b> | <b>292893</b>  | <b>0</b>    | <b>737961</b> |
| <b>Ind. Sampled</b> |               |                |             | <b>1186</b>   |
| <b>Samples</b>      |               |                |             | <b>13</b>     |
| <b>Catch (ton)</b>  |               |                |             | <b>153</b>    |

**Table 9.** Redfish 3M stock Spanish catches length distribution.

| <b>Redfish<br/>Length (cm)</b> | <b>Males</b> | <b>3M<br/>Females</b> | <b>Ind.</b> | <b>Total</b> |
|--------------------------------|--------------|-----------------------|-------------|--------------|
| 12                             | 6177         | 0                     | 0           | 6177         |
| 13                             | 0            | 6177                  | 0           | 6177         |
| 14                             | 0            | 0                     | 0           | 0            |
| 15                             | 0            | 10034                 | 0           | 10034        |
| 16                             | 30103        | 10034                 | 0           | 40138        |
| 17                             | 50172        | 24005                 | 0           | 74178        |
| 18                             | 74392        | 24102                 | 0           | 98494        |
| 19                             | 149719       | 140177                | 0           | 289895       |
| 20                             | 386923       | 208572                | 0           | 595495       |
| 21                             | 350558       | 381362                | 0           | 731921       |
| 22                             | 317207       | 326965                | 0           | 644172       |
| 23                             | 146124       | 213296                | 0           | 359421       |
| 24                             | 129642       | 156527                | 0           | 286169       |
| 25                             | 234402       | 113895                | 0           | 348297       |
| 26                             | 148472       | 136560                | 0           | 285032       |
| 27                             | 109543       | 127791                | 0           | 237334       |
| 28                             | 147583       | 164592                | 0           | 312175       |
| 29                             | 163651       | 75639                 | 0           | 239290       |
| 30                             | 174757       | 106801                | 0           | 281558       |
| 31                             | 65343        | 145410                | 0           | 210753       |
| 32                             | 38223        | 128165                | 0           | 166387       |
| 33                             | 9723         | 115075                | 0           | 124797       |
| 34                             | 3664         | 44699                 | 0           | 48363        |
| 35                             | 14186        | 23228                 | 0           | 37414        |
| 36                             | 7890         | 8009                  | 0           | 15899        |
| 37                             | 0            | 19445                 | 0           | 19445        |
| 38                             | 3664         | 6058                  | 0           | 9723         |
| 39                             | 0            | 3664                  | 0           | 3664         |
| 40                             | 1832         | 0                     | 0           | 1832         |
| 41                             | 0            | 0                     | 0           | 0            |
| 42                             | 0            | 0                     | 0           | 0            |
| 43                             | 0            | 0                     | 0           | 0            |
| 44                             | 0            | 1832                  | 0           | 1832         |
| 45                             | 0            | 0                     | 0           | 0            |
| 46                             | 0            | 1832                  | 0           | 1832         |
| 47                             | 0            | 1832                  | 0           | 1832         |
| 48                             | 0            | 1832                  | 0           | 1832         |
| 49                             | 0            | 0                     | 0           | 0            |
| 50                             | 0            | 0                     | 0           | 0            |
| 51                             | 0            | 0                     | 0           | 0            |
| 52                             | 0            | 0                     | 0           | 0            |
| 53                             | 0            | 10034                 | 0           | 10034        |
| <b>TOTAL</b>                   | 2763951      | 2737648               | 0           | 5501599      |
| <b>Ind. Sampled</b>            |              |                       |             | 872          |
| <b>Samples</b>                 |              |                       |             | 5            |
| <b>Catch (ton)</b>             |              |                       |             | 1247         |

**Table 10.** Redfish 3O stock Spanish catches length distribution.

| <b>Redfish</b>      | <b>3O</b>    |                |             |              |
|---------------------|--------------|----------------|-------------|--------------|
| <b>Length (cm)</b>  | <b>Males</b> | <b>Females</b> | <b>Ind.</b> | <b>Total</b> |
| 15                  |              |                |             |              |
| 16                  | 15019        | 45058          | 0           | 60077        |
| 17                  | 122549       | 46149          | 0           | 168698       |
| 18                  | 132420       | 136265         | 0           | 268685       |
| 19                  | 127962       | 137515         | 0           | 265477       |
| 20                  | 57642        | 32221          | 0           | 89863        |
| 21                  | 96822        | 107477         | 0           | 204299       |
| 22                  | 514369       | 93867          | 0           | 608236       |
| 23                  | 333437       | 162379         | 0           | 495816       |
| 24                  | 433936       | 188947         | 0           | 622883       |
| 25                  | 226098       | 164600         | 0           | 390698       |
| 26                  | 212861       | 68870          | 0           | 281731       |
| 27                  | 89515        | 107168         | 0           | 196683       |
| 28                  | 65438        | 156280         | 0           | 221717       |
| 29                  | 40335        | 246691         | 0           | 287026       |
| 30                  | 0            | 189261         | 0           | 189261       |
| 31                  | 0            | 90753          | 0           | 90753        |
| 32                  | 0            | 40335          | 0           | 40335        |
| 33                  | 10084        | 25103          | 0           | 35187        |
| 34                  | 0            | 40335          | 0           | 40335        |
| 35                  | 0            | 0              | 0           | 0            |
| 36                  | 0            | 10084          | 0           | 10084        |
| 37                  |              |                |             |              |
| 38                  |              |                |             |              |
| 39                  |              |                |             |              |
| 40                  |              |                |             |              |
| <b>TOTAL</b>        | 2478487      | 2089355        | 0           | 4567843      |
| <b>Ind. Sampled</b> |              |                |             | 745          |
| <b>Samples</b>      |              |                |             | 4            |
| <b>Catch (ton)</b>  |              |                |             | 968          |

**Table 11.** American plaice 3LNO stock Spanish catches length distribution.

| American Plaice<br>Length (cm) | Division 3LNO |         |      | Total |
|--------------------------------|---------------|---------|------|-------|
|                                | Males         | Females | Ind. |       |
| 10                             |               |         |      |       |
| 11                             | 0             | 0       | 40   | 40    |
| 12                             | 0             | 0       | 0    | 0     |
| 13                             | 0             | 0       | 0    | 0     |
| 14                             | 0             | 0       | 38   | 38    |
| 15                             | 0             | 0       | 38   | 38    |
| 16                             | 0             | 0       | 76   | 76    |
| 17                             | 0             | 0       | 0    | 0     |
| 18                             | 0             | 0       | 1167 | 1167  |
| 19                             | 0             | 0       | 0    | 0     |
| 20                             | 38            | 0       | 0    | 38    |
| 21                             | 0             | 458     | 0    | 458   |
| 22                             | 38            | 73      | 0    | 111   |
| 23                             | 316           | 84      | 0    | 400   |
| 24                             | 465           | 557     | 38   | 1060  |
| 25                             | 596           | 691     | 0    | 1287  |
| 26                             | 2456          | 1367    | 0    | 3824  |
| 27                             | 1078          | 1538    | 0    | 2616  |
| 28                             | 1279          | 2946    | 0    | 4225  |
| 29                             | 1069          | 2268    | 0    | 3337  |
| 30                             | 4709          | 11905   | 0    | 16614 |
| 31                             | 2953          | 11236   | 0    | 14189 |
| 32                             | 4189          | 8508    | 0    | 12697 |
| 33                             | 4183          | 8185    | 0    | 12368 |
| 34                             | 3780          | 11701   | 0    | 15481 |
| 35                             | 3946          | 11570   | 0    | 15516 |
| 36                             | 5919          | 9201    | 0    | 15120 |
| 37                             | 3749          | 11470   | 0    | 15219 |
| 38                             | 3569          | 10454   | 0    | 14023 |
| 39                             | 1013          | 15531   | 0    | 16544 |
| 40                             | 2785          | 17731   | 0    | 20516 |
| 41                             | 761           | 27487   | 0    | 28248 |
| 42                             | 3121          | 20838   | 0    | 23959 |
| 43                             | 1280          | 25777   | 0    | 27057 |
| 44                             | 1202          | 33808   | 0    | 35009 |
| 45                             | 921           | 28038   | 0    | 28958 |
| 46                             | 447           | 26113   | 0    | 26561 |
| 47                             | 362           | 17620   | 0    | 17982 |
| 48                             | 0             | 13006   | 0    | 13006 |
| 49                             | 362           | 11546   | 0    | 11908 |
| 50                             | 0             | 15194   | 0    | 15194 |
| 51                             | 0             | 17897   | 0    | 17897 |
| 52                             | 0             | 21110   | 0    | 21110 |
| 53                             | 0             | 21771   | 0    | 21771 |
| 54                             | 0             | 12875   | 0    | 12875 |
| 55                             | 0             | 19293   | 0    | 19293 |

|                     |       |        |      |        |
|---------------------|-------|--------|------|--------|
| 56                  | 0     | 19331  | 0    | 19331  |
| 57                  | 0     | 18788  | 0    | 18788  |
| 58                  | 0     | 22957  | 0    | 22957  |
| 59                  | 0     | 11216  | 0    | 11216  |
| 60                  | 0     | 8501   | 0    | 8501   |
| 61                  | 0     | 5741   | 0    | 5741   |
| 62                  | 0     | 4746   | 0    | 4746   |
| 63                  | 0     | 1088   | 0    | 1088   |
| 64                  | 0     | 2598   | 0    | 2598   |
| 65                  | 0     | 618    | 0    | 618    |
| 66                  | 0     | 1404   | 0    | 1404   |
| 67                  | 0     | 2      | 0    | 2      |
| 68                  | 0     | 1023   | 0    | 1023   |
| 69                  | 0     | 364    | 0    | 364    |
| 70                  | 0     | 38     | 0    | 38     |
| 71                  | 0     | 244    | 0    | 244    |
| 72                  | 0     | 3      | 0    | 3      |
| 73                  | 0     | 0      | 0    | 0      |
| 74                  | 0     | 0      | 0    | 0      |
| 75                  | 0     | 0      | 0    | 0      |
| 76                  | 0     | 674    | 0    | 674    |
| <b>Total</b>        | 56586 | 549181 | 1398 | 607165 |
| <b>Ind. Sampled</b> |       |        |      | 3551   |
| <b>Samples</b>      |       |        |      | 26     |
| <b>Catch (ton)</b>  |       |        |      | 615    |

**Table 12.** Witch flounder Spanish catches length distribution for Div. 3NO.

| <b>Witch flounder</b> |              | <b>3NO</b>     |               |               |
|-----------------------|--------------|----------------|---------------|---------------|
| <b>Length (cm)</b>    | <b>Males</b> | <b>Females</b> | <b>Ind.</b>   | <b>Total</b>  |
| 24                    | 0            | 0              | 626           | 626           |
| 25                    | 0            | 0              | 0             | 0             |
| 26                    | 0            | 0              | 0             | 0             |
| 27                    | 0            | 0              | 626           | 626           |
| 28                    | 277          | 63             | 0             | 340           |
| 29                    | 0            | 277            | 0             | 277           |
| 30                    | 0            | 0              | 626           | 626           |
| 31                    | 277          | 63             | 0             | 340           |
| 32                    | 277          | 0              | 0             | 277           |
| 33                    | 0            | 63             | 0             | 63            |
| 34                    | 126          | 340            | 4384          | 4850          |
| 35                    | 0            | 679            | 7516          | 8195          |
| 36                    | 893          | 528            | 16285         | 17706         |
| 37                    | 893          | 1761           | 15033         | 17686         |
| 38                    | 1848         | 3458           | 19417         | 24724         |
| 39                    | 528          | 4753           | 16912         | 22193         |
| 40                    | 1082         | 4778           | 11901         | 17760         |
| 41                    | 553          | 2012           | 10648         | 13214         |
| 42                    | 0            | 4753           | 11901         | 16654         |
| 43                    | 0            | 5821           | 1879          | 7700          |
| 44                    | 277          | 4564           | 4384          | 9226          |
| 45                    | 0            | 4162           | 2505          | 6667          |
| 46                    | 0            | 3483           | 1879          | 5362          |
| 47                    | 0            | 2716           | 1879          | 4595          |
| 48                    | 0            | 3973           | 1253          | 5226          |
| 49                    | 0            | 3508           | 0             | 3508          |
| 50                    | 0            | 1295           | 0             | 1295          |
| 51                    | 0            | 1446           | 626           | 2072          |
| 52                    | 0            | 616            | 0             | 616           |
| 53                    | 0            | 679            | 0             | 679           |
| 54                    | 0            | 340            | 0             | 340           |
| 55                    | 0            | 830            | 0             | 830           |
| 56                    | 0            | 0              | 0             | 0             |
| 57                    | 0            | 0              | 0             | 0             |
| 58                    | 0            | 277            | 0             | 277           |
| 59                    | 0            | 277            | 0             | 277           |
| 60                    | 0            | 277            | 0             | 277           |
| <b>TOTAL</b>          | <b>7029</b>  | <b>57791</b>   | <b>130282</b> | <b>195102</b> |
| <b>Ind. Sampled</b>   |              |                |               | <b>559</b>    |
| <b>Samples</b>        |              |                |               | <b>3</b>      |
| <b>Catch (ton)</b>    |              |                |               | <b>98</b>     |

**Table 13.** Yellowtail flounder Spanish catches length distribution for Div. 3LNO.

| Yellowtail flounder<br>Length (cm) | 3LNO  |         |      | Total  |
|------------------------------------|-------|---------|------|--------|
|                                    | Males | Females | Ind. |        |
| 15                                 | 8408  | 0       | 0    | 8408   |
| 16                                 | 8408  | 0       | 0    | 8408   |
| 17                                 | 0     | 0       | 0    | 0      |
| 18                                 | 8408  | 16816   | 0    | 25223  |
| 19                                 | 16816 | 25223   | 0    | 42039  |
| 20                                 | 8408  | 8408    | 0    | 16816  |
| 21                                 | 4216  | 16940   | 0    | 21156  |
| 22                                 | 1405  | 8538    | 0    | 9943   |
| 23                                 | 19626 | 32887   | 0    | 52514  |
| 24                                 | 2609  | 11732   | 22   | 14363  |
| 25                                 | 9899  | 38416   | 22   | 48337  |
| 26                                 | 5395  | 16401   | 22   | 21819  |
| 27                                 | 13653 | 16454   | 22   | 30129  |
| 28                                 | 8135  | 25791   | 0    | 33926  |
| 29                                 | 34777 | 35917   | 0    | 70693  |
| 30                                 | 49016 | 73745   | 0    | 122761 |
| 31                                 | 19810 | 32585   | 0    | 52395  |
| 32                                 | 68965 | 50256   | 0    | 119222 |
| 33                                 | 41286 | 30282   | 0    | 71569  |
| 34                                 | 69294 | 51991   | 0    | 121285 |
| 35                                 | 40893 | 73028   | 0    | 113921 |
| 36                                 | 22270 | 38917   | 0    | 61187  |
| 37                                 | 18833 | 21287   | 0    | 40121  |
| 38                                 | 2509  | 26238   | 0    | 28747  |
| 39                                 | 990   | 16498   | 0    | 17488  |
| 40                                 | 9909  | 44287   | 0    | 54196  |
| 41                                 | 807   | 22355   | 0    | 23162  |
| 42                                 | 20664 | 7109    | 0    | 27773  |
| 43                                 | 5253  | 20607   | 0    | 25860  |
| 44                                 | 13293 | 27048   | 0    | 40341  |
| 45                                 | 8064  | 14672   | 0    | 22736  |
| 46                                 | 23106 | 17144   | 0    | 40250  |
| 47                                 | 9813  | 9469    | 0    | 19282  |
| 48                                 | 15066 | 9541    | 0    | 24607  |
| 49                                 | 2443  | 4143    | 0    | 6586   |
| 50                                 | 19584 | 20622   | 0    | 40206  |
| 51                                 | 15066 | 6291    | 0    | 21357  |
| 52                                 | 1405  | 19258   | 0    | 20664  |
| 53                                 | 3848  | 13661   | 0    | 17509  |
| 54                                 | 11218 | 6291    | 0    | 17509  |
| 55                                 | 1405  | 12256   | 0    | 13661  |
| 56                                 | 2811  | 15066   | 0    | 17877  |
| 57                                 | 1405  | 0       | 0    | 1405   |
| 58                                 | 1405  | 8408    | 0    | 9813   |

|                     |        |        |    |         |
|---------------------|--------|--------|----|---------|
| <b>59</b>           | 0      | 2811   | 0  | 2811    |
| <b>60</b>           | 0      | 1405   | 0  | 1405    |
| <b>61</b>           | 0      | 0      | 0  | 0       |
| <b>62</b>           | 0      | 2443   | 0  | 2443    |
| <b>63</b>           | 0      | 1405   | 0  | 1405    |
| <b>Total</b>        | 612032 | 865347 | 89 | 1477468 |
| <b>Ind. Sampled</b> |        |        |    | 1188    |
| <b>Samples</b>      |        |        |    | 7       |
| <b>Catch (ton)</b>  |        |        |    | 598     |

**Table 14.** Greenland halibut Spanish catches length distribution for Div. 3L and 3M.

| Greenland halibut<br>Length (cm) | 3L     |         |      |        | 3M    |         |      |        |
|----------------------------------|--------|---------|------|--------|-------|---------|------|--------|
|                                  | Males  | Females | Ind. | Total  | Males | Females | Ind. | Total  |
| 25                               | 0      | 1346    | 0    | 1346   | 0     | 0       | 0    |        |
| 26                               | 0      | 0       | 240  | 240    | 0     | 0       | 0    |        |
| 27                               | 0      | 1158    | 0    | 1158   | 0     | 0       | 0    |        |
| 28                               | 0      | 0       | 0    | 0      | 0     | 0       | 0    |        |
| 29                               | 851    | 0       | 0    | 851    | 0     | 0       | 0    | 0      |
| 30                               | 780    | 836     | 0    | 1616   | 0     | 0       | 0    | 0      |
| 31                               | 1532   | 3292    | 0    | 4824   | 0     | 0       | 0    | 0      |
| 32                               | 3920   | 3548    | 0    | 7467   | 0     | 0       | 0    | 0      |
| 33                               | 8820   | 8781    | 0    | 17602  | 0     | 0       | 0    | 0      |
| 34                               | 10134  | 8929    | 0    | 19063  | 0     | 161     | 0    | 161    |
| 35                               | 16139  | 14575   | 0    | 30713  | 201   | 0       | 0    | 201    |
| 36                               | 20355  | 17707   | 0    | 38062  | 0     | 634     | 0    | 634    |
| 37                               | 28813  | 22590   | 0    | 51402  | 944   | 924     | 0    | 1868   |
| 38                               | 30395  | 31664   | 0    | 62059  | 1031  | 2026    | 0    | 3057   |
| 39                               | 45195  | 49473   | 0    | 94668  | 3763  | 3822    | 0    | 7585   |
| 40                               | 63351  | 63513   | 0    | 126864 | 4818  | 10212   | 0    | 15029  |
| 41                               | 84443  | 87807   | 0    | 172250 | 9075  | 11294   | 0    | 20369  |
| 42                               | 97015  | 121502  | 0    | 218517 | 20640 | 23616   | 0    | 44256  |
| 43                               | 127736 | 142888  | 0    | 270623 | 16606 | 25554   | 0    | 42160  |
| 44                               | 136701 | 165588  | 0    | 302289 | 27388 | 35444   | 0    | 62831  |
| 45                               | 146424 | 209025  | 0    | 355449 | 33141 | 39237   | 0    | 72378  |
| 46                               | 138913 | 216946  | 0    | 355859 | 37918 | 41528   | 0    | 79446  |
| 47                               | 108345 | 200704  | 0    | 309049 | 43333 | 50672   | 0    | 94005  |
| 48                               | 114798 | 204787  | 0    | 319585 | 40350 | 59895   | 0    | 100246 |
| 49                               | 87038  | 198245  | 0    | 285283 | 37992 | 56570   | 0    | 94562  |
| 50                               | 74385  | 173095  | 0    | 247480 | 27062 | 47722   | 0    | 74785  |
| 51                               | 54116  | 145787  | 0    | 199903 | 26249 | 50972   | 0    | 77221  |
| 52                               | 34427  | 140176  | 0    | 174603 | 19856 | 56246   | 0    | 76102  |
| 53                               | 25590  | 107931  | 0    | 133521 | 13278 | 46221   | 0    | 59500  |
| 54                               | 17301  | 79189   | 0    | 96490  | 15666 | 47729   | 0    | 63396  |
| 55                               | 12456  | 58996   | 0    | 71453  | 11902 | 34861   | 0    | 46763  |
| 56                               | 7054   | 48378   | 0    | 55432  | 8102  | 28647   | 0    | 36749  |
| 57                               | 4395   | 35839   | 0    | 40234  | 5652  | 25582   | 0    | 31234  |
| 58                               | 2522   | 29178   | 0    | 31700  | 2917  | 21972   | 0    | 24889  |
| 59                               | 850    | 17186   | 0    | 18036  | 1459  | 17319   | 0    | 18778  |
| 60                               | 1483   | 12123   | 0    | 13606  | 1604  | 11150   | 0    | 12754  |
| 61                               | 420    | 11516   | 0    | 11936  | 496   | 12873   | 0    | 13369  |
| 62                               | 131    | 7235    | 0    | 7366   | 295   | 6559    | 0    | 6855   |
| 63                               | 0      | 4871    | 0    | 4871   | 667   | 6939    | 0    | 7606   |
| 64                               | 0      | 4091    | 0    | 4091   | 0     | 3260    | 0    | 3260   |
| 65                               | 0      | 3977    | 0    | 3977   | 298   | 3179    | 0    | 3477   |
| 66                               | 222    | 2090    | 0    | 2312   | 376   | 1415    | 0    | 1792   |
| 67                               | 229    | 1546    | 0    | 1775   | 0     | 1313    | 0    | 1313   |
| 68                               | 0      | 1980    | 0    | 1980   | 0     | 4038    | 0    | 4038   |
| 69                               | 0      | 1278    | 0    | 1278   | 0     | 1208    | 0    | 1208   |

|                     |         |         |   |         |        |        |   |         |
|---------------------|---------|---------|---|---------|--------|--------|---|---------|
| 70                  | 352     | 879     | 0 | 1231    | 0      | 1518   | 0 | 1518    |
| 71                  | 0       | 897     | 0 | 897     | 0      | 571    | 0 | 571     |
| 72                  | 0       | 1634    | 0 | 1634    | 0      | 1303   | 0 | 1303    |
| 73                  | 0       | 840     | 0 | 840     | 0      | 1945   | 0 | 1945    |
| 74                  | 0       | 489     | 0 | 489     | 0      | 406    | 0 | 406     |
| 75                  | 0       | 430     | 0 | 430     | 0      | 0      | 0 | 0       |
| 76                  | 0       | 314     | 0 | 314     | 0      | 316    | 0 | 316     |
| 77                  | 0       | 523     | 0 | 523     | 0      | 250    | 0 | 250     |
| 78                  | 0       | 181     | 0 | 181     | 0      | 188    | 0 | 188     |
| 79                  | 0       | 590     | 0 | 590     | 0      | 423    | 0 | 423     |
| 80                  | 0       | 596     | 0 | 596     | 0      | 0      | 0 | 0       |
| 81                  | 0       | 131     | 0 | 131     | 0      | 0      | 0 | 0       |
| 82                  | 0       | 0       | 0 | 0       | 0      | 749    | 0 | 749     |
| 83                  | 0       | 314     | 0 | 314     | 0      | 363    | 0 | 363     |
| 84                  | 0       | 0       | 0 | 0       | 0      | 209    | 0 | 209     |
| 85                  | 0       | 0       | 0 | 0       | 0      | 847    | 0 | 847     |
| 86                  | 0       | 0       | 0 | 0       | 0      | 179    | 0 | 179     |
| 87                  | 0       | 0       | 0 | 0       | 0      | 0      | 0 | 0       |
| 88                  | 0       | 0       | 0 | 0       | 0      | 0      | 0 | 0       |
| 89                  | 0       | 107     | 0 | 107     | 0      | 0      | 0 | 0       |
| 90                  | 0       | 0       | 0 | 0       | 0      | 0      | 0 | 0       |
| 91                  | 0       | 125     | 0 | 125     | 0      | 0      | 0 | 0       |
| 92                  | 0       | 0       | 0 | 0       | 0      | 0      | 0 | 0       |
| 93                  | 0       | 0       | 0 | 0       | 0      | 0      | 0 | 0       |
| 94                  | 0       | 0       | 0 | 0       | 0      | 0      | 0 | 0       |
| 95                  | 0       | 0       | 0 | 0       | 0      | 0      | 0 | 0       |
| <b>Total</b>        | 1507631 | 2666909 | 0 | 4174540 | 413077 | 800062 | 0 | 1213139 |
| <b>Ind. Sampled</b> |         |         |   | 14553   |        |        |   | 5020    |
| <b>Samples</b>      |         |         |   | 83      |        |        |   | 34      |
| <b>Catch (ton)</b>  |         |         |   | 3172    |        |        |   | 1273    |

**Table 15.** Greenland halibut Spanish catches length distribution for Div. NO

| Greenland halibut<br>Length (cm) | 3N    |         |      |       | 3O    |         |      |       |
|----------------------------------|-------|---------|------|-------|-------|---------|------|-------|
|                                  | Males | Females | Ind. | Total | Males | Females | Ind. | Total |
| 25                               | 0     | 0       | 0    | 0     | 0     | 0       | 0    | 0     |
| 26                               | 0     | 0       | 0    | 0     | 0     | 0       | 0    | 0     |
| 27                               | 0     | 0       | 0    | 0     | 0     | 0       | 0    | 0     |
| 28                               | 0     | 0       | 0    | 0     | 0     | 0       | 0    | 0     |
| 29                               | 153   | 127     | 0    | 280   | 0     | 0       | 0    | 0     |
| 30                               | 138   | 0       | 0    | 138   | 0     | 0       | 0    | 0     |
| 31                               | 138   | 293     | 0    | 430   | 0     | 0       | 0    | 0     |
| 32                               | 144   | 166     | 0    | 310   | 0     | 0       | 0    | 0     |
| 33                               | 98    | 0       | 0    | 98    | 0     | 0       | 0    | 0     |
| 34                               | 465   | 632     | 0    | 1097  | 0     | 0       | 0    | 0     |
| 35                               | 775   | 1300    | 0    | 2075  | 0     | 0       | 0    | 0     |
| 36                               | 2692  | 2066    | 0    | 4758  | 0     | 0       | 0    | 0     |
| 37                               | 3232  | 3105    | 0    | 6337  | 0     | 0       | 0    | 0     |
| 38                               | 3374  | 5091    | 0    | 8465  | 161   | 80      | 0    | 241   |
| 39                               | 4233  | 5327    | 0    | 9560  | 80    | 80      | 0    | 161   |
| 40                               | 4762  | 10336   | 0    | 15098 | 0     | 321     | 0    | 321   |
| 41                               | 7304  | 13021   | 0    | 20325 | 161   | 402     | 0    | 562   |
| 42                               | 7068  | 16221   | 0    | 23289 | 161   | 321     | 0    | 482   |
| 43                               | 9818  | 14270   | 0    | 24087 | 80    | 482     | 0    | 562   |
| 44                               | 8376  | 20952   | 0    | 29328 | 482   | 803     | 0    | 1285  |
| 45                               | 11004 | 21181   | 0    | 32185 | 321   | 964     | 0    | 1285  |
| 46                               | 8617  | 18807   | 0    | 27423 | 482   | 402     | 0    | 884   |
| 47                               | 5326  | 18809   | 0    | 24135 | 241   | 964     | 0    | 1205  |
| 48                               | 6276  | 20541   | 0    | 26816 | 402   | 1044    | 0    | 1446  |
| 49                               | 5272  | 22060   | 0    | 27332 | 482   | 1366    | 0    | 1847  |
| 50                               | 3403  | 13859   | 0    | 17262 | 0     | 562     | 0    | 562   |
| 51                               | 3534  | 12860   | 0    | 16393 | 161   | 723     | 0    | 884   |
| 52                               | 2331  | 11700   | 0    | 14031 | 241   | 562     | 0    | 803   |
| 53                               | 1569  | 7814    | 0    | 9382  | 80    | 643     | 0    | 723   |
| 54                               | 1430  | 8997    | 0    | 10427 | 80    | 161     | 0    | 241   |
| 55                               | 1510  | 6617    | 0    | 8127  | 0     | 241     | 0    | 241   |
| 56                               | 98    | 4377    | 0    | 4474  | 0     | 321     | 0    | 321   |
| 57                               | 507   | 3649    | 0    | 4156  | 0     | 0       | 0    | 0     |
| 58                               | 509   | 4005    | 0    | 4515  | 0     | 0       | 0    | 0     |
| 59                               | 0     | 2550    | 0    | 2550  | 80    | 321     | 0    | 402   |
| 60                               | 212   | 1300    | 0    | 1511  | 0     | 80      | 0    | 80    |
| 61                               | 183   | 2314    | 0    | 2497  | 0     | 0       | 0    | 0     |
| 62                               | 230   | 1301    | 0    | 1531  | 80    | 0       | 0    | 80    |
| 63                               | 230   | 669     | 0    | 898   | 80    | 241     | 0    | 321   |
| 64                               | 207   | 496     | 0    | 703   | 0     | 161     | 0    | 161   |
| 65                               | 127   | 1110    | 0    | 1236  | 0     | 80      | 0    | 80    |
| 66                               | 0     | 1110    | 0    | 1110  | 0     | 161     | 0    | 161   |
| 67                               | 0     | 413     | 0    | 413   | 0     | 0       | 0    | 0     |
| 68                               | 0     | 500     | 0    | 500   | 0     | 0       | 0    | 0     |
| 69                               | 0     | 560     | 0    | 560   | 0     | 0       | 0    | 0     |
| 70                               | 0     | 773     | 0    | 773   | 0     | 0       | 0    | 0     |

|                     |        |        |   |        |  |      |       |   |       |
|---------------------|--------|--------|---|--------|--|------|-------|---|-------|
| 71                  | 0      | 395    | 0 | 395    |  | 0    | 80    | 0 | 80    |
| 72                  | 0      | 538    | 0 | 538    |  | 0    | 0     | 0 | 0     |
| 73                  | 0      | 127    | 0 | 127    |  | 0    | 0     | 0 | 0     |
| 74                  | 0      | 527    | 0 | 527    |  | 0    | 0     | 0 | 0     |
| 75                  | 0      | 127    | 0 | 127    |  | 0    | 0     | 0 | 0     |
| 76                  | 0      | 363    | 0 | 363    |  | 0    | 161   | 0 | 161   |
| 77                  | 0      | 0      | 0 | 0      |  | 0    | 0     | 0 | 0     |
| 78                  | 0      | 0      | 0 | 0      |  | 0    | 161   | 0 | 161   |
| 79                  | 0      | 0      | 0 | 0      |  | 0    | 0     | 0 | 0     |
| 80                  | 0      | 0      | 0 | 0      |  | 0    | 0     | 0 | 0     |
| 81                  | 0      | 133    | 0 | 133    |  | 0    | 0     | 0 | 0     |
| 82                  | 0      | 0      | 0 | 0      |  | 0    | 0     | 0 | 0     |
| 83                  | 0      | 0      | 0 | 0      |  | 0    | 80    | 0 | 80    |
| 84                  | 0      | 327    | 0 | 327    |  | 0    | 0     | 0 | 0     |
| 85                  | 0      | 0      | 0 | 0      |  | 0    | 0     | 0 | 0     |
| 86                  | 0      | 138    | 0 | 138    |  | 0    | 0     | 0 | 0     |
| 87                  | 0      | 0      | 0 | 0      |  | 0    | 0     | 0 | 0     |
| 88                  | 0      | 0      | 0 | 0      |  | 0    | 0     | 0 | 0     |
| 89                  | 0      | 0      | 0 | 0      |  | 0    | 0     | 0 | 0     |
| 90                  | 0      | 0      | 0 | 0      |  | 0    | 0     | 0 | 0     |
| 91                  | 0      | 133    | 0 | 133    |  | 0    | 0     | 0 | 0     |
| 92                  | 0      | 0      | 0 | 0      |  | 0    | 0     | 0 | 0     |
| 93                  | 0      | 0      | 0 | 0      |  | 0    | 0     | 0 | 0     |
| 94                  | 0      | 171    | 0 | 171    |  | 0    | 0     | 0 | 0     |
| 95                  | 0      | 0      | 0 | 0      |  | 0    | 0     | 0 | 0     |
| <b>Total</b>        | 105344 | 284252 | 0 | 389597 |  | 3856 | 11968 | 0 | 15824 |
| <b>Ind. Sampled</b> |        |        |   | 2881   |  |      |       |   | 197   |
| <b>Samples</b>      |        |        |   | 12     |  |      |       |   | 1     |
| <b>Catch (ton)</b>  |        |        |   | 358    |  |      |       |   | 17    |

**Table 16.** Greenland halibut Subarea 2 Div. 3LMNO stock Spanish catches length distribution.

| <b>Greenland halibut</b> | <b>3LMNO</b> |                |             |              |
|--------------------------|--------------|----------------|-------------|--------------|
| <b>Length (cm)</b>       | <b>Males</b> | <b>Females</b> | <b>Ind.</b> | <b>Total</b> |
| 25                       | 0            | 1346           | 0           | 1346         |
| 26                       | 0            | 0              | 240         | 240          |
| 27                       | 0            | 1158           | 0           | 1158         |
| 28                       | 0            | 0              | 0           | 0            |
| 29                       | 1004         | 127            | 0           | 1131         |
| 30                       | 918          | 836            | 0           | 1754         |
| 31                       | 1670         | 3585           | 0           | 5254         |
| 32                       | 4064         | 3714           | 0           | 7777         |
| 33                       | 8918         | 8781           | 0           | 17700        |
| 34                       | 10599        | 9723           | 0           | 20322        |
| 35                       | 17115        | 15874          | 0           | 32989        |
| 36                       | 23048        | 20406          | 0           | 43454        |
| 37                       | 32988        | 26619          | 0           | 59608        |
| 38                       | 34961        | 38861          | 0           | 73822        |
| 39                       | 53271        | 58702          | 0           | 111974       |
| 40                       | 72930        | 84382          | 0           | 157312       |
| 41                       | 100983       | 112523         | 0           | 213507       |
| 42                       | 124883       | 161660         | 0           | 286544       |
| 43                       | 154240       | 183193         | 0           | 337433       |
| 44                       | 172947       | 222786         | 0           | 395733       |
| 45                       | 190890       | 270407         | 0           | 461296       |
| 46                       | 185929       | 277683         | 0           | 463612       |
| 47                       | 157245       | 271149         | 0           | 428394       |
| 48                       | 161826       | 286267         | 0           | 448093       |
| 49                       | 130784       | 278241         | 0           | 409025       |
| 50                       | 104850       | 235239         | 0           | 340089       |
| 51                       | 84059        | 210341         | 0           | 294401       |
| 52                       | 56855        | 208685         | 0           | 265539       |
| 53                       | 40517        | 162608         | 0           | 203126       |
| 54                       | 34478        | 136075         | 0           | 170553       |
| 55                       | 25869        | 100715         | 0           | 126583       |
| 56                       | 15254        | 81723          | 0           | 96976        |
| 57                       | 10554        | 65070          | 0           | 75624        |
| 58                       | 5948         | 55155          | 0           | 61104        |
| 59                       | 2389         | 37376          | 0           | 39765        |
| 60                       | 3299         | 24653          | 0           | 27952        |
| 61                       | 1100         | 26702          | 0           | 27802        |
| 62                       | 736          | 15096          | 0           | 15832        |
| 63                       | 977          | 12720          | 0           | 13696        |
| 64                       | 207          | 8007           | 0           | 8214         |
| 65                       | 424          | 8346           | 0           | 8771         |
| 66                       | 598          | 4777           | 0           | 5375         |
| 67                       | 229          | 3272           | 0           | 3501         |
| 68                       | 0            | 6517           | 0           | 6517         |
| 69                       | 0            | 3046           | 0           | 3046         |
| 70                       | 352          | 3170           | 0           | 3522         |

|                     |         |         |   |         |
|---------------------|---------|---------|---|---------|
| 71                  | 0       | 1944    | 0 | 1944    |
| 72                  | 0       | 3475    | 0 | 3475    |
| 73                  | 0       | 2912    | 0 | 2912    |
| 74                  | 0       | 1421    | 0 | 1421    |
| 75                  | 0       | 556     | 0 | 556     |
| 76                  | 0       | 1153    | 0 | 1153    |
| 77                  | 0       | 773     | 0 | 773     |
| 78                  | 0       | 530     | 0 | 530     |
| 79                  | 0       | 1014    | 0 | 1014    |
| 80                  | 0       | 596     | 0 | 596     |
| 81                  | 0       | 264     | 0 | 264     |
| 82                  | 0       | 749     | 0 | 749     |
| 83                  | 0       | 758     | 0 | 758     |
| 84                  | 0       | 536     | 0 | 536     |
| 85                  | 0       | 847     | 0 | 847     |
| 86                  | 0       | 317     | 0 | 317     |
| 87                  | 0       | 0       | 0 | 0       |
| 88                  | 0       | 0       | 0 | 0       |
| 89                  | 0       | 107     | 0 | 107     |
| 90                  | 0       | 0       | 0 | 0       |
| 91                  | 0       | 258     | 0 | 258     |
| 92                  | 0       | 0       | 0 | 0       |
| 93                  | 0       | 0       | 0 | 0       |
| 94                  | 0       | 171     | 0 | 171     |
| 95                  | 0       | 0       | 0 | 0       |
| <b>Total</b>        | 2029908 | 3763192 | 0 | 5793100 |
| <b>Ind. Sampled</b> |         |         |   | 22651   |
| <b>Samples</b>      |         |         |   | 130     |
| <b>Catch (ton)</b>  |         |         |   | 4820    |

**Table 17.** Skates Spanish catches length distribution for Div. 3LNO.

| <b>Skates<br/>Length (cm)</b> | <b>3LNO</b>  |                |             | <b>Total</b> |
|-------------------------------|--------------|----------------|-------------|--------------|
|                               | <b>Males</b> | <b>Females</b> | <b>Ind.</b> |              |
| 21                            | 0            | 388            | 0           | 388          |
| 22                            | 0            | 0              | 0           | 0            |
| 23                            | 0            | 0              | 0           | 0            |
| 24                            | 0            | 0              | 0           | 0            |
| 25                            | 0            | 248            | 0           | 248          |
| 26                            | 0            | 121            | 0           | 121          |
| 27                            | 388          | 355            | 0           | 743          |
| 28                            | 931          | 0              | 0           | 931          |
| 29                            | 898          | 175            | 0           | 1072         |
| 30                            | 1480         | 631            | 0           | 2111         |
| 31                            | 2322         | 4535           | 0           | 6857         |
| 32                            | 4798         | 3242           | 0           | 8040         |
| 33                            | 6397         | 3234           | 0           | 9630         |
| 34                            | 6384         | 3802           | 0           | 10186        |
| 35                            | 6067         | 2800           | 0           | 8868         |
| 36                            | 4437         | 12339          | 0           | 16777        |
| 37                            | 14068        | 12425          | 0           | 26493        |
| 38                            | 12128        | 13298          | 0           | 25426        |
| 39                            | 9023         | 7030           | 0           | 16053        |
| 40                            | 60346        | 36040          | 0           | 96385        |
| 41                            | 36739        | 61253          | 0           | 97992        |
| 42                            | 45071        | 77929          | 0           | 123000       |
| 43                            | 54931        | 36713          | 0           | 91644        |
| 44                            | 81193        | 49822          | 0           | 131015       |
| 45                            | 90933        | 28064          | 0           | 118997       |
| 46                            | 110092       | 162020         | 0           | 272112       |
| 47                            | 136643       | 107535         | 0           | 244178       |
| 48                            | 197622       | 131559         | 0           | 329182       |
| 49                            | 111495       | 111295         | 0           | 222790       |
| 50                            | 23922        | 86589          | 0           | 110511       |
| 51                            | 38507        | 46623          | 0           | 85130        |
| 52                            | 31784        | 84271          | 0           | 116055       |
| 53                            | 61693        | 108448         | 0           | 170142       |
| 54                            | 41782        | 42165          | 0           | 83947        |
| 55                            | 63083        | 35204          | 0           | 98287        |
| 56                            | 58243        | 17124          | 0           | 75367        |
| 57                            | 44682        | 29154          | 0           | 73837        |
| 58                            | 24377        | 47987          | 0           | 72364        |
| 59                            | 21308        | 55484          | 0           | 76792        |
| 60                            | 14798        | 42496          | 0           | 57294        |
| 61                            | 22270        | 29085          | 0           | 51355        |
| 62                            | 30036        | 33992          | 0           | 64027        |
| 63                            | 24736        | 25380          | 0           | 50116        |
| 64                            | 14401        | 33094          | 0           | 47494        |
| 65                            | 24990        | 33591          | 0           | 58580        |
| 66                            | 25324        | 13752          | 0           | 39075        |
| 67                            | 16040        | 26379          | 0           | 42419        |

|              |         |         |   |         |
|--------------|---------|---------|---|---------|
| 68           | 18162   | 18297   | 0 | 36459   |
| 69           | 38605   | 12814   | 0 | 51419   |
| 70           | 13497   | 25828   | 0 | 39325   |
| 71           | 13362   | 12605   | 0 | 25967   |
| 72           | 14459   | 27507   | 0 | 41966   |
| 73           | 29623   | 15030   | 0 | 44653   |
| 74           | 12075   | 6475    | 0 | 18550   |
| 75           | 14119   | 21802   | 0 | 35921   |
| 76           | 19537   | 4927    | 0 | 24464   |
| 77           | 29162   | 8705    | 0 | 37867   |
| 78           | 27740   | 1920    | 0 | 29660   |
| 79           | 17175   | 1994    | 0 | 19169   |
| 80           | 10768   | 1188    | 0 | 11955   |
| 81           | 14321   | 1373    | 0 | 15694   |
| 82           | 8408    | 488     | 0 | 8896    |
| 83           | 12153   | 536     | 0 | 12690   |
| 84           | 4930    | 141     | 0 | 5072    |
| 85           | 3542    | 163     | 0 | 3705    |
| 86           | 3586    | 40      | 0 | 3626    |
| 87           | 2224    | 0       | 0 | 2224    |
| 88           | 2174    | 0       | 0 | 2174    |
| 89           | 476     | 0       | 0 | 476     |
| 90           | 747     | 689     | 0 | 1436    |
| 91           | 231     | 0       | 0 | 231     |
| 92           | 1078    | 0       | 0 | 0       |
| 93           | 0       | 0       | 0 | 0       |
| 94           | 0       | 0       | 0 | 0       |
| 95           | 143     | 0       | 0 | 0       |
| <b>Total</b> | 1888660 | 1820189 | 0 | 3707628 |

|                     |      |
|---------------------|------|
| <b>Ind. Sampled</b> | 7661 |
| <b>Samples</b>      | 49   |
| <b>Catch (ton)</b>  | 5850 |

**Table 18.** Roughhead grenadier Spanish catches length distribution measured as preanal fin lengths (AFL) for Divisions 3LMNO.

| <b>Roughhead G.</b> |              | <b>3LMNO</b>   |             |              |
|---------------------|--------------|----------------|-------------|--------------|
| <b>Length (cm)</b>  | <b>Males</b> | <b>Females</b> | <b>Ind.</b> | <b>Total</b> |
| 7                   | 1184         | 437            | 0           | 1621         |
| 8                   | 3384         | 925            | 0           | 4309         |
| 9                   | 10336        | 3457           | 0           | 13793        |
| 10                  | 20989        | 7883           | 0           | 28871        |
| 11                  | 51283        | 19774          | 0           | 71056        |
| 12                  | 110915       | 47389          | 0           | 158304       |
| 13                  | 93643        | 63644          | 0           | 157286       |
| 14                  | 113085       | 79302          | 0           | 192387       |
| 15                  | 141443       | 80388          | 0           | 221831       |
| 16                  | 155206       | 86349          | 0           | 241555       |
| 17                  | 137548       | 96646          | 0           | 234195       |
| 18                  | 84267        | 58623          | 0           | 142891       |
| 19                  | 36860        | 63944          | 0           | 100804       |
| 20                  | 37685        | 42431          | 0           | 80116        |
| 21                  | 3511         | 21008          | 0           | 24519        |
| 22                  | 9153         | 12660          | 0           | 21813        |
| 23                  | 843          | 9746           | 0           | 10589        |
| 24                  | 700          | 14034          | 0           | 14735        |
| 25                  | 0            | 2840           | 0           | 2840         |
| 26                  | 700          | 6366           | 0           | 7066         |
| 27                  | 700          | 15305          | 0           | 16005        |
| 28                  | 700          | 5428           | 0           | 6128         |
| 29                  | 0            | 1413           | 0           | 1413         |
| 30                  | 0            | 817            | 0           | 817          |
| 31                  | 0            | 737            | 0           | 737          |
| 32                  | 0            | 4959           | 0           | 4959         |
| 33                  | 0            | 529            | 0           | 529          |
| 34                  | 0            | 71             | 0           | 71           |
| 35                  | 0            | 345            | 0           | 345          |
| 36                  | 0            | 985            | 0           | 985          |
| 37                  | 0            | 0              | 0           | 0            |
| 38                  | 0            | 0              | 0           | 0            |
| 39                  | 0            | 700            | 0           | 700          |
| 40                  |              |                |             |              |
| <b>Total</b>        | 1014137      | 749136         | 0           | 1763272      |
| <b>Ind. Sampled</b> |              |                |             | 4894         |
| <b>Samples</b>      |              |                |             | 39           |
| <b>Catch (ton)</b>  |              |                |             | 898          |

**Table 19.** Roughhead grenadier Div. 3LMNO Spanish catches ages distribution, mean weight (g) and mean length (AFL cm) by age.

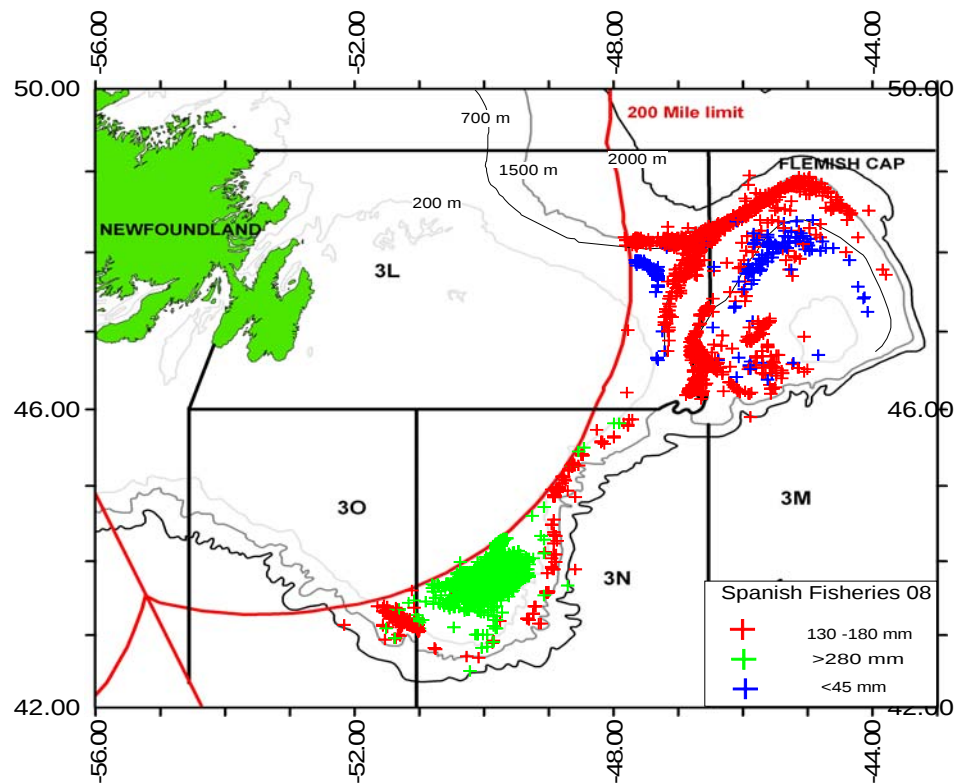
| Abundance |        |         |      |        | Mean Weight (gr) |       |         |      |       |
|-----------|--------|---------|------|--------|------------------|-------|---------|------|-------|
| Age       | Males  | Females | Ind. | Total  | Age              | Males | Females | Ind. | Total |
| 3         | 896    | 787     |      | 1682   | 3                | 45    | 59      |      | 52    |
| 4         | 6717   | 8285    |      | 15002  | 4                | 71    | 103     |      | 88    |
| 5         | 45141  | 5876    |      | 51017  | 5                | 149   | 131     |      | 147   |
| 6         | 99472  | 88157   |      | 187629 | 6                | 188   | 238     |      | 212   |
| 7         | 161638 | 105208  |      | 266846 | 7                | 298   | 316     |      | 305   |
| 8         | 95032  | 50651   |      | 145684 | 8                | 399   | 465     |      | 422   |
| 9         | 74343  | 48619   |      | 122962 | 9                | 457   | 542     |      | 491   |
| 10        | 48898  | 50363   |      | 99261  | 10               | 462   | 558     |      | 510   |
| 11        | 23473  | 22338   |      | 45811  | 11               | 665   | 633     |      | 649   |
| 12        | 13926  | 14600   |      | 28527  | 12               | 656   | 910     |      | 786   |
| 13        | 2745   | 12049   |      | 14794  | 13               | 1083  | 1361    |      | 1310  |
| 14        | 2828   | 9028    |      | 11856  | 14               | 736   | 1272    |      | 1144  |
| 15        | 10401  | 3277    |      | 13678  | 15               | 503   | 1480    |      | 737   |
| 16        | 67     | 4798    |      | 4865   | 16               | 1837  | 1793    |      | 1794  |
| 17        | 67     | 3905    |      | 3972   | 17               | 1837  | 1900    |      | 1899  |
| 18        | 0      | 2537    |      | 2537   | 18               |       | 1727    |      | 1727  |
| 19        | 0      | 187     |      | 187    | 19               |       | 3009    |      | 3009  |
| 20        | 0      | 1488    |      | 1488   | 20               |       | 2225    |      | 2225  |
| 21        | 0      | 66      |      | 66     | 21               |       | 3467    |      | 3467  |
| 22        | 0      | 392     |      | 392    | 22               |       | 4255    |      | 4255  |

| Mean Length (cm) |       |         |      |       |
|------------------|-------|---------|------|-------|
| Age              | Males | Females | Ind. | Total |
| 3                | 7.9   | 8.6     |      | 8.2   |
| 4                | 9.2   | 10.5    |      | 9.9   |
| 5                | 11.9  | 11.4    |      | 11.8  |
| 6                | 12.9  | 13.9    |      | 13.4  |
| 7                | 15.1  | 15.4    |      | 15.2  |
| 8                | 16.8  | 17.6    |      | 17.1  |
| 9                | 17.5  | 18.6    |      | 17.9  |
| 10               | 17.4  | 18.7    |      | 18.1  |
| 11               | 20.0  | 19.6    |      | 19.8  |
| 12               | 19.9  | 22.2    |      | 21.1  |
| 13               | 23.6  | 25.6    |      | 25.2  |
| 14               | 20.7  | 24.6    |      | 23.7  |
| 15               | 18.0  | 26.1    |      | 19.9  |
| 16               | 28.5  | 27.8    |      | 27.8  |
| 17               | 28.5  | 28.7    |      | 28.6  |
| 18               |       | 26.6    |      | 26.6  |
| 19               |       | 33.7    |      | 33.7  |
| 20               |       | 29.8    |      | 29.8  |
| 21               |       | 35.5    |      | 35.5  |
| 22               |       | 38.0    |      | 38.0  |

**Table 20.** Total biomass (t.) of the Spanish 3L Survey (inside Canadian Waters) in 2008, calculated by the swept area method, by species and stratum. (R/V “*Vizconde de Eza*”).

| Stratum | Area<br>(sq. Miles) | Area<br>inside EEZ | Greenland<br>Halibut | Redfish | Roughhead<br>Grenadier | Witch<br>Flounder | American<br>Plaice | Cod | Thorny<br>Skate | Northern<br>Shrimp |
|---------|---------------------|--------------------|----------------------|---------|------------------------|-------------------|--------------------|-----|-----------------|--------------------|
| 368     | 334                 | 334                | 1405                 | 22696   | 1620                   | 19                | 22                 | 305 | 1091            | 4448               |
| 387     | 718                 | 462                | 2888                 | 21578   | 1187                   | 101               | 128                | 577 | 915             | 22543              |
| 733     | 468                 | 234                | 1266                 | 43978   | 900                    | 130               | 0                  | 8   | 513             | 6296               |
| 734     | 228                 | 75                 | 620                  | 269     | 296                    | 5                 | 0                  | 0   | 0               | 6                  |
| 735     | 272                 | 272                | 1860                 | 5102    | 343                    | 198               | 0                  | 0   | 786             | 338                |
| 736     | 175                 | 175                | 2403                 | 88      | 819                    | 471               | 0                  | 0   | 0               | 11                 |
| 737     | 227                 | 227                | 1223                 | 0       | 378                    | 0                 | 0                  | 0   | 28              | 0                  |
| 738     | 221                 | 221                | 343                  | 0       | 401                    | 0                 | 0                  | 0   | 0               | 0                  |
| 739     | 254                 | 254                | 416                  | 0       | 1168                   | 0                 | 0                  | 0   | 0               | 0                  |
| 740     | 264                 | 264                | 445                  | 0       | 381                    | 0                 | 0                  | 0   | 0               | 0                  |
| 741     | 223                 | 123                | 550                  | 5       | 1258                   | 0                 | 0                  | 0   | 0               | 3                  |
| 742     | 206                 | 142                | 528                  | 0       | 708                    | 0                 | 0                  | 0   | 0               | 0                  |
| 743     | 211                 | 160                | 632                  | 0       | 609                    | 0                 | 0                  | 0   | 0               | 0                  |
| 744     | 280                 | 214                | 550                  | 0       | 1212                   | 0                 | 0                  | 0   | 0               | 0                  |
| Total   | 4081                | 3157               | 15130                | 93716   | 11280                  | 924               | 150                | 890 | 3332            | 33647              |



**Figure 1.** Spanish Fishery 2008 footprint by mesh size based in NAFO Observers data.