

## **SCIENTIFIC COUNCIL MEETING – JUNE 2025**

### **Spanish Research Report for 2024**

by

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Spanish catch and effort information used in this Report is based on the preliminary logbook data contributed by the Spanish Administration. The logbooks information for 2024 was available haul by haul. Total effort of the Spanish fleet in 2024 was 1,356 fishing days. Table 1 presents the preliminary Spanish catches by species and Division in 2024 in NAFO Regulatory Area. These catch figures are preliminary, the final catches to carry out the NAFO assessments will be agreed by the NAFO Joint Commission-Scientific Council Catch Estimation Strategy Advisory Group (CESAG).

In 2024, IEO scientific observers were on board 257 fishing days that it means 19 % of the Spanish total effort. All length, age and biological information presented in this paper is based on sampling carried out by IEO scientific observers. In 2024, 330 samples were taken with 44,844 individuals of different species examined (Table 2).

## **SUBAREA 3**

### **A. Status of the fisheries**

A total of 9 Spanish trawlers operated in Div. 3LMNO NAFO Regulatory Area (NRA) during 2024, amounting to 1,356 days (21,137 hours) of fishing effort. Table 3 presents the Spanish effort (fishing hours) since 2003 in NRA Subarea 3. Total catches (Table 1) for all species combined in Div. 3LMNO were 20,708 tons.

Table 4 shows the effort (hours) by quarter and Division. This year it has not been possible to analyze the distribution by depth strata due to the lack of depth information in many records of the Logbooks. Table 5 presents the effort by Division, quarter and mesh size.

The Spanish fleet usually carries out different targeted fisheries in NRA Subarea 3 characterized by different mesh size, target species, depth and fishing area: 1) In Divisions 3LMNO at more than 600 meters depth with demersal 130 mm mesh size trawl gear with Greenland halibut as target species. 2) A redfish fishery in Divisions 3LMNO, mainly in Div. 3O and 3M with demersal 130 mm mesh size trawl gear in the 200-600 strata. 3) A skate fishery in Divisions 3NO with 280 mm mesh size trawl gear at less than 200 meters depth. 4) Cod fishery in Division 3M at depth between 150-550 meters with 130 mm mesh size trawl gear with sorting grids. In recent years a directed fishery for silver hake has developed mainly in the NRA Division 3O in depths between 100-300 metres with a 130 mm mesh size trawl gear. It should be noted that this species has been the species with the highest catches by the Spanish fleet in 2024 in the NRA. In addition to these main fisheries, and depending on the annual availability of resources, other targeted fisheries are carried out by the Spanish commercial fleet: the shrimp fishery in Division 3M with 40 mm cod-end mesh size trawl gear and a fishery

with a 60 mm mesh size trawl gear targeted squid in Div. 3O, mainly during the third quarter in 400-100 meters depth.

Effort and fisheries by Division. The fishing effort of the Spanish fleet in the NRA has increased slightly (7%) in 2024 compared to the values observed in 2023 (Table 3). Based on the information on the distribution of the effort by depth of previous years and on the information presented in tables 4 and 5 with 2024 data, it was possible to conclude the following: In Div. 3L, most of the effort was performed at more than 600 meters depth using cod-end mesh size of 130 mm, indicating that the fleet targeted Greenland halibut. Regarding Div. 3M, all effort was performed using 130 mm cod-end mesh size, part was carried out at less than 600 m depth targeting redfish and cod, in the fishery targeting cod the gear has sorting grids, and the other part at depths more than 600 m targeting Greenland halibut. In Div. 3N, the effort carried out using 280 mm was the 63% and with 135 mm cod-end mesh size was 37%, which indicates that the fleet targeted mainly skate in depth less than 200 m. with trawl gear with 280 mm, redfish in 200-600 meters depth and Greenland halibut in depth more than 600 m with trawl gear with 130 mm. Fishing effort in Div. 3O was around the 22% of the 3LMNO total effort targeting skates using mainly 280 mm mesh size in depth less than 200 meters and redfish in depth between 200-600 meters using 130 mm mesh size. A directed fishery for silver hake has been in place since 2020 in Div. 3O with a 130 mm mesh size trawl gear in depth between 100-300 meters.

Seven IEO scientific observer was onboard Spanish vessels during 2024, comprising a total of 257 observed fishing days, around 19% coverage of the total Spanish effort. Figure 1 shows the position of the different hauls observed by the IEO Scientific Observers depending on the target species. 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, American plaice and cod this includes recording weight at length, sex-ratio, maturity stages, performing stomach contents analyses and collecting material for reproductive studies. Otoliths of these four species were also taken for age determination. In 2024, 330 length samples were taken, with 44,844 individuals of different species examined to obtain the length distributions (Table 2). Length distributions presented in this paper are based on sampling carried out by these observers. Length-weight relationships parameters used to calculate the Sum of Products (SOP) of the length distribution are shown by species and stocks in Table 6. These relationships were estimated based on the data collected by the IEO scientific observers and the European Union surveys information carried out in the NAFO Regulatory Area (NRA).

The Spanish fishing activity information in the NRA Subarea 3 in 2024, stock by stock, was the following:

### **Cod (*Gadus morhua*)**

**Div. 3L:** In Div. 3L, the few catches of this species (5 tons) were taken mainly as by-catch in the redfish fishery. In 2024, there were no sample length distributions of this stock.

**Div. 3NO:** Catches of this species were taken as by-catch in the skate fishery with 280 mm mesh size (39 tons) and in fisheries with 130 mm mesh size (40 tons). It should be noted that in 2024 there were only available two length samples of the catches with 102 fish measured. These samples could be not representative of the total catch length distributions of this stock (Table 7).

**Div. 3M:** Catches in Div. 3M were 2202 tons and most of them were taken in the direct fishery with a trawl gear with 130 mm mesh size using a sorting grids (1882 tons). The rest of the catches (320 tons) were taken mainly as by catch of the redfish fishery. Cod minimum landing size (MLZ) 41 cm is implemented in this Division. Cod Div. 3M 2024 catches length distributions are presented in Table 8. It should be noted that in 2024 there were only available three length samples of the catches with 298 fish measured. These samples could be not representative of the total catch length distributions of this stock. Taking this into account, most of the catch length distributions are in the 41-53 cm range. The mode in 2024 was 43 cm. These observed size distributions and mode are much smaller than those observed in the previous year.

### **Redfish (*Sebastes mentella* and *Sebastes fasciatus*)**

**3M:** In Div. 3M the redfish catches in 2024 have been 2426 tons and most of them were catch in a direct fishery and a small part of them was taken as by-catch in the cod fishery. Table 9 shows the Spanish catches length distribution for redfish Division 3M and it can be observed that the bulk of the catches are in the 25-35 cm range.

**Div. 3LN:** Spanish catches were 1217 tons. Most of the catches were taken in a direct fishery for this stock. Table 10 shows the Spanish catches length distribution for redfish Division 3LN and it can be observed that the bulk of the catches are in the 22-30 cm range. These sizes are slightly smaller than those observed in previous years.

**Div. 3O:** A directed fishery for this species took place in Div. 3O. Catches have reached 859 tons in this Division in 2024, most of them with 130 mm mesh size. Catches length distribution for Div. 3O are presented in Table 11 and it can be observed that bulk of the catches are in the 19-30 cm range. These catch length distributions normally are smaller than the observed in Divisions 3LN and 3M.

#### **American plaice (*Hippoglossoides platessoides*)**

**Div. 3LNO:** Spanish catches in 2024 in Div. 3LNO were 105 tons. Catches taken with 280 mm mesh size as by-catch of the skate fishery were 67 tons and with 130 mm mesh size were 38 tons. Table 12 presents the total length distribution for Div. 3LNO. The bulk of catches were in the range of 24-50 cm with a mode around 37 cm. It can be observed a clear different length between sexes, females reach larger sizes than males.

**Div. 3M:** Catches in Div. 3M only amounted 28 tons and most of them were taken as by-catch of the cod and redfish fisheries. In 2024, there was no length distribution samples of these catches.

#### **Witch flounder (*Glyptocephalus cynoglossus*)**

**Div. 2J and 3KL:** Spanish catches for this stock in 2024 were 16 tons and were taken in the small part of NAFO Regulatory Area (NRA) of Div. 3L as by catch of the Greenland halibut and redfish fishery. In 2024, there were no available sample length distributions of this species in this Division.

**Div. 3M:** There is not management stock for this species in this Division. Catches this year were 21 tons. This species in this Division was taken as by-catch in the Cod and redfish fishery. In 2024, there were no available sample length distributions of this species in this Division.

**Div. 3NO:** Spanish catches for this stock in 2024 were 26 tons. Almost all of the catches were taken with 130 mm cod end gear as by-catch of the redfish and Greenland halibut fisheries (26 tons) and in less degree in the skate fishery (less than 1 tons) with 280 mm cod end gear. Table 13 shows the total Spanish length distribution for this species. It should be noted that in 2024 there were only available one length samples of the catches with 95 fish measured. These samples could be not representative of the total catch length distributions of this stock. Taking this into account, the bulk of catches were in the range of 27-40 cm with a mode in 31 cm. Females reach larger sizes than males.

#### **Yellowtail flounder (*Limanda ferruginea*)**

**Div. 3LNO:** In 2024 the yellowtail flounder Spanish catches were 70 tons. Almost all of the catches were taken in Div. 3NO as by-catch of the skate fishery (66 tons). Length distributions for yellowtail flounder in Div. 3LNO are presented in Table 14. Most of the catches are in the 32-44 cm length range with a mode of 38 cm. Females reach larger sizes than males.

#### **Greenland halibut (*Reinhardtius hippoglossoides*)**

**Subareas 2 and Div. 3KLMNO:** Greenland halibut continues to be one of the main target species for the Spanish fleet in NAFO area. In 2024 Spanish catches were 4.813 tons; most of them have been taken in the Flemish Pass area (Div. 3LM) at depths more than 700 m. The mesh size used for this fishery was equal or greater than 130 mm. Tables 15 shows the length distributions of Spanish catches in Divisions 3LMNO. Most of the catches were in the 38-57 cm length range and the mode of the length distribution was in 49 cm. Total age composition based in the commercial Spanish Age Length Key (Table 22), mean weight and mean length at age for Div. 3LMNO are presented in Table 16. Most of the Greenland halibut catches corresponds to ages 5 to 8 with a peak at ages 6-7.

Figure 2 presents the Spanish fleet standardised CPUE (Gonzalez-Costas and Gonzalez-Troncoso, 2009) updated with the 2024 data. The 2020 results are quite uncertain due to the low number of observations available due to COVID 19 issues. It can be observed different periods with different CPUE levels: The first period between 1992-2003 with relative CPUE values around 1; a second period (2007-2015) with values in

the region of 2; a third period (2016-2017) with values about 2.5 and the most recent period (2018-2024) with values similar to those observed between 2007-2015.

### **Thorny skate (*Amblyraja radiata*)**

Commercial catches of skates comprise a mix of skate species (*Amblyraja radiata*, *Bathyrāja spinicauda*, *Raja hyperborean*, *Raja senta*, etc). Thus the catch of skate in Table 1 refers to *Raja* spp. However, thorny skate dominates, comprising about 90% of the skate taken in the Spanish catches base on 2014-2016 data from the EU Spanish 3NO Survey.

**Div. 3LNO:** Spanish 3LNO skate catches in 2024 were 1,985 tons. Most of the catches were taken in Div. 3N at depths less than 200 meters (1670 tons), where a fishery directed to thorny skate took place using 280 mm mesh size. Skate catches in Div. 3L (68 tons) were much smaller than those in Div. 3NO and they were by-catch of the Greenland halibut and redfish fisheries (130 mm cod-end). Table 17 shows the total catches length distributions by sex of Div. 3LNO. In 2024, there are only available length distributions samples of the catches made with the 280 mm. mesh size cod-end. Most of the catches were in the 37-80 cm length range. It can be observed a clear different length between sexes, males reach larger sizes than females.

**Div. 3M:** Skate catches in Div. 3M (20 tons) were much smaller than those in Div. 3NO and they were by-catch of the Greenland halibut, redfish and cod fisheries. There is not available catches length distributions for this species in Division 3M.

### **Roughhead grenadier (*Macrourus berglax*)**

**Subarea 2 and 3:** Roughhead grenadier is the main species taken as by-catch in the Greenland halibut fishery. Most of the 2024 catches were taken in Div. 3LMN. Spanish catches in 2024 were 64 tons. Individuals were measured from tip of snout to base of first anal-fin ray (AFL) to the half centimetre below. Table 18 shows the AFL length distributions, grouping in 1 cm intervals, of Spanish catches for Div. 3LMNO. Most of the catches were in the 13-22 AFL length range, with a mode in 18 cm and a clear length difference between sexes, males reach smaller sizes than females.

Age distributions based on the Spanish commercial Age Length Key (Table 23), 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 2024 were based on ages 4 to 11 with one mode in 8-9 years old.

### **White hake (*Urophycis tenuis*)**

**Div. 3NO:** Catches of this species in 2024 in Div 3NO (443 tons) were a by-catch of different fisheries. In Division 3NO a small part of the catches (3 tons) were taken with the 280 mesh size. Catches in Div. 3NO take with 130 mm mesh size (440 tons) are by-catch of the silver hake fishery and redfish fishery. Table 20 shows the total catches length distributions by sex of Div. 3NO. Most of the catches were in the 31-49 cm length range.

### **Capelin (*Mallotus villosus*)**

**Div. 3NO:** Catches of this species are occasional. In 2024 there is no record of capelin catches by the Spanish fleet.

### **Squid (*Illex illecebrosus*)**

**Div. 3NO:** Catches of this species they have been occasional in the past as by-catch of different fisheries, but in the 2018-2020 period there was a directed fishery to this species. In 2024, squid catches by the Spanish fleet were less than one ton.

### **Shrimp (*Pandalus borealis*)**

**Div. 3M:** The shrimp stock fishery in Div. 3M was closed between 2011-2019. In 2020, activity was resumed in this trawl fishery in which a 40 mm mesh is used. In 2023-2024 the shrimp fishery in Div. 3M was closed.

### **Silver hake (*Merluccius bilinearis*)**

**Div. 3NO:** Catches of this species in Div. 3NO were quite sporadic until 2018. Since 2019, the presence of this resource has been confirmed in the NRA Div. 30 and a directed fishery has been carried out with trawl gear

with a 130 mm mesh size. Spanish total catches have been 5967 tons in 2024. Most of which (5048 tons) have been caught in Div. 3O. Table 21 shows the total catches length distributions by sex of Div. 3NO. Most of the catches were in the 26-35 cm length range. It can be observed a clear different length between sexes, females reach larger sizes than males.

## **(B) Research studies**

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 July 4th to August 6th 2024. The area surveyed was Flemish Cap Bank to depths up to 800 fathoms (1460 m) following the same procedure as in previous years. The number of hauls was 186 and five of them were null. 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 a Scientific Council Research document. Flemish Cap survey results for Northern shrimp (*Pandalus borealis*) were presented in SCR 24/059 and SCR 24/060. Samples for histological assessment of sexual maturity of cod, redfish, Greenland halibut and roughhead grenadier were taken. Oceanography studies continued to take place.

The Spanish bottom trawl survey in NAFO Regulatory Area Div. 3NO was conducted from 5th of June to the 4th of July 2024 on board the R/V Vizconde de Eza. The gear was a Campelen otter trawl with 20 mm mesh size in the cod-end. Following the method used last year, a total of 113 valid hauls were taken within a depth range of 45-1460 m according to a stratified random design and 113 hydrographic profiles. Furthermore, a stratified sampling by length class and sex was used to sample otoliths of Atlantic cod, American plaice, Greenland halibut and silver hake for growth studies. Also, gonads of Atlantic cod and silver hake were sampled from histological maturity and fecundity studies. The results of this 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, American plaice, Atlantic cod, yellowtail flounder, redfish, witch flounder, roughhead grenadier, thorny skate and white hake are presented as Scientific Council Research Documents. In addition, age distributions are presented for Greenland halibut and Atlantic cod.

Since 1995, Spain carries out annually a Spring-Summer survey in the NAFO Regulatory Area of Div. 3NO. In 2003 it was decided to extend the Spanish 3NO survey toward Div. 3L (Flemish Pass). In 2024, 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 August 9 to 27. 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 95 and 1 of them was null. 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 24/061. Samples for histological (Greenland halibut, and roughhead grenadier) and aging (Greenland halibut, American plaice, roughhead grenadier and cod) studies were taken. Ninety-seven hydrographic profile samplings were made in a depth range of 117-1482 m.

VME data from the 2024 EU; EU-Spain and Portugal bottom trawl groundfish surveys in NAFO Regulatory Area (Divs. 3LMNO):

During 2024, R/V Vizconde de Eza carried out the three surveys escribed above. In total there were 397 bottom trawl tows, ten of them considered invalid due to technical problems during the fishing operation. 139 hauls out of 387 valid tows have shown zero catches (i.e. no presence) of VME indicator species groups. This represents 35.92% of the total valid hauls.

Sponges were recorded in 142 of the 387 valid tows (36.7% of the valid tows analyzed), with depths ranging between 45 - 1482 m. There were four significant catches of sponges ( $\geq 100$  kg/tow) in these tows, two of them fell within the VME polygons for sponges. Inside VME closures, sponges were recorded in 3 of the 7 valid tows (43%), one of which had a significant catch of sponges.

Large gorgonians were recorded in 9 of the 387 valid tows (2.3% of valid tows analyzed), at mean depths between 228 and 1332 m. There was one significant catch of large gorgonians ( $\geq 0.6$  kg/tow) in these tows, which fell outside the VME polygons for large gorgonians. No large gorgonians were recorded inside VME closures during the EU 2024 surveys.

Small gorgonians were recorded in 67 of the 387 valid tows (17.3% of valid tows analyzed), at mean depths between 65 and 1440 m. There were five significant catches of small gorgonians ( $\geq 0.2$  kg/tow) in these tows, two of them fell within the VME polygons for small gorgonians. Inside VME closures, small gorgonians were recorded in 4 of the 7 valid tows (57%), and there was one significant catch, with specimens identified as *Radicipes* sp. and *Acanella arbuscula*.

Sea pens were recorded in 156 of the 387 valid tows (40.3% of valid tows analyzed), at mean depths between 103 and 1482 m. There was one significant catch of sea pens ( $\geq 1.3$  kg/tow) in these tows, which fell within the VME polygons for sea pens. Inside VME closures, sea pens were recorded in 4 of the 7 valid tows (57%), and there were no significant catches of sea pens in these tows.

Black corals were recorded in 49 of the 387 valid tows (12.7% of valid tows analyzed), at mean depths between 212 and 1460 m. There were no significant catches of black corals ( $\geq 0.4$  kg/tow) in these tows. No black corals were recorded inside VME closures or VME polygons for black corals during the EU 2024 surveys.

Sea squirts were recorded in 9 of the 387 valid tows (2.3% of valid tows analyzed), at mean depths between 50 and 228 m. There were three significant catches of *Boltenia* sp. ( $\geq 0.35$  kg/tow) in these tows, two of them fell within the VME polygons for *Boltenia* sp. No *Boltenia* sp. were recorded inside VME closures during the EU 2024 surveys.

Bryozoans were recorded in 32 of the 387 valid tows (8.3% of valid tows analyzed), at mean depths between 112 and 1227 m. There were no significant catches of bryozoans ( $\geq 0.2$  kg/tow) in these tows. Inside VME closures, bryozoans were recorded in 2 of the 7 valid tows conducted inside VME closures (29%), and there were no significant catches of bryozoans in these tows.

Above information, including distribution maps of VME species groups, is further detailed in SCR Doc. 24/064.

## NEREIDA

An update on seabed macro litter in NAFO Regulatory Area was provided, building on the information presented during the Scientific Council in June 2024. The update included a reviewed protocol for data collection during the EU groundfish surveys, as well as results from the analysis on the sources and drivers of the spatial distribution of seabed macro litter in the NRA.

Reviewed protocol for data collection in the EU groundfish surveys: Given the need for standardized protocols to collect data on seabed macro litter and ensure high-quality information, a revised protocol was proposed based on the revision and improvement of the previous methodology used by the IEO during its groundfish surveys in the NRA. The aim of this revised protocol is to establish common criteria for the surveys across different divisions, promoting a "common practice" and enabling standardized data recording. The review of the available data and information led to the development of a standardized master file, that includes all updated categories and specific codes for records collected by the IEO in the NRA to date. This standardized master file, it has been an essential first step for subsequent data analysis and it is crucial for the correct categorization of sampled items. Additionally, as part of the revised protocol an improved seabed macro litter data collection form was developed and tested during the EU groundfish in 2024. Furthermore, a visual guide for seabed macro litter data collection, designed to assist in categorizing litter items onboard, and a decalogue of good practices for scientific bottom trawl surveys are in preparation.

Update on seabed macro litter. Sources and drivers of distribution.: Data collected from EU groundfish surveys (Divisions 3LMNO: 2018-2023 period) was analyzed. A total of 1936 valid hauls were examined, with 528 macro litter items found in 16.7% of these hauls. Using the source-specific indicator items from the OSPAR Commission (2007), following García-Alegre et al. (2020), the main sources of seabed macro litter were identified. The primary source was fisheries (44.8% of recorded items); followed by non-operational galley waste from shipping, fisheries and offshore activities (3.9% of recorded items); and operational waste from

shipping and offshore activities (3.2 % of recorded items). Significant differences in density of items were found among Divisions for all sources except non-operational waste. To elucidate the drivers of seabed macro litter distribution, the data was analyzed separately for different trawl gear types (Campelen 1800 in Divisions 3LNO; Lofoten in Division 3M). Environmental variables that could influence seabed macro litter distribution were considered. Overall, the GAM models explained only a small portion of the variability, with limited predictive power. The best models for both areas considered only presence data and explained approximately 11% of the variability in standardized item abundance. Important variables influencing the spatial distribution of seabed macro litter included slope, depth, bottom sea current speed, roughness, and sediment texture. Slope was significant in Divisions 3LNO, while bottom trawl fishing effort and sediment texture were significant in Division 3M. Despite the low explanatory power of the models, these results provide preliminary insights into the distribution of seabed macro litter, though accurate modelling remains challenging.

## **SUBAREA 6**

### **A. Status of the fisheries**

During 2024 there was no fishing activity of the Spanish fleet in this Division.

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## **REFERENCES**

González-Costas, F. and D. González-Troncoso. 2009. Spanish 2006-2008 Fisheries Footprint, scientific Observers and surveys coverage and update of the Standardized CPUE Indices for Greenland Halibut. Serial No N5657 NAFO SCR Doc. 09/22.

**Table1.** Spanish Catches (tons) in NAFO Area in 2024 by species and Division, based on the provisional Logbook data.

Code	English_name	Scientific_name	Provisional STATLANT 21A 2024				
			3L	3M	3N	3O	Total
HKS	Silver hake	<i>Merluccius bilinearis</i>	0	0	919	5048	5967
GHL	Greenland halibut	<i>Reinhardtius hippoglossoides</i>	2940	1414	459	1	4813
RED	Atlantic redfishes nei	<i>Sebastes spp</i>	982	2426	234	859	4501
COD	Atlantic cod	<i>Gadus morhua</i>	5	2202	48	31	2286
SKA	Raja rays nei	<i>Raja spp</i>	68	20	1670	248	2006
HKW	White hake	<i>Urophycis tenuis</i>	0	0	24	420	443
HAL	Atlantic halibut	<i>Hippoglossus hippoglossus</i>	16	45	31	106	198
PLA	American plaice	<i>Hippoglossoides platessoides</i>	5	28	73	27	133
YEL	Yellowtail flounder	<i>Limanda ferruginea</i>	0	1	65	5	71
RHG	Roughhead grenadier	<i>Macrourus berglax</i>	31	18	14	0	64
WIT	Witch flounder	<i>Glyptocephalus cynoglossus</i>	16	21	20	7	64
HAD	Haddock	<i>Melanogrammus aeglefinus</i>	0	0	2	56	58
CAS	Spotted wolffish	<i>Anarhichas minor</i>	1	48	1	0	50
ANG	American angler	<i>Lophius americanus</i>	0	0	8	36	44
RNG	Roundnose grenadier	<i>Coryphaenoides rupestris</i>	5	4	0	0	9
CAA	Atlantic wolffish	<i>Anarhichas lupus</i>	0	0	1	0	1
SQI	Northern shortfin squid	<i>Illex illecebrosus</i>	0	0	0	0	0
CAB	Northern wolffish	<i>Anarhichas denticulatus</i>	0	0	0	0	0
		Total tons	4069	6227	3568	6843	20708

**Table 2.** Samples and individuals sampled by the IEO Scientific Observers by species, mesh size and NAFO Division in 2024. In red, samples conducted in the cod Div. 3M directed fishery. In bold, discard sampling conducted.

Code	Species	English_name	Catch/Disc.	Division	Mesh size	Samples	Indiv
COD	<i>Gadus morhua</i>	Atlantic cod	C	3M	130 mm	3	298
<b>COD</b>	<b><i>Gadus morhua</i></b>	<b>Atlantic cod</b>	<b>C</b>	<b>3M</b>	<b>130 mm</b>	<b>2</b>	<b>114</b>
COD	<i>Gadus morhua</i>	Atlantic cod	C	3O	130 mm	2	102
GDE	<i>Gaidropsarus ensis</i>	Threadfin rockling	C	3O	130 mm	1	197
WIT	<i>Glyptocephalus cynoglossus</i>	Witch flounder	C	3N	130 mm	1	95
PLA	<i>Hippoglossoides platessoides</i>	American plaice	C	3N	130 mm	2	215
PLA	<i>Hippoglossoides platessoides</i>	American plaice	C	3N	280 mm	3	265
PLA	<i>Hippoglossoides platessoides</i>	American plaice	C	3O	130 mm	3	319
YEL	<i>Limanda ferruginea</i>	Yellowtail flounder	C	3N	280 mm	5	417
RHG	<i>Macrourus berglax</i>	Roughhead grenadier	C	3L	130 mm	33	3999
RHG	<i>Macrourus berglax</i>	Roughhead grenadier	C	3M	130 mm	10	1252
RHG	<i>Macrourus berglax</i>	Roughhead grenadier	C	3N	130 mm	5	661
HKS	<i>Merluccius bilineares</i>	Silver hake	C	3N	130 mm	4	764
HKS	<i>Merluccius bilineares</i>	Silver hake	C	3O	130 mm	61	9131
RJR	<i>Raja radiata</i>	Starry ray	C	3O	280 mm	5	476
RJR	<i>Raja radiata</i>	Starry ray	C	3N	280 mm	25	2382
GHL	<i>Reinhardtius hippoglossoides</i>	Greenland halibut	C	3L	130 mm	63	9815
GHL	<i>Reinhardtius hippoglossoides</i>	Greenland halibut	C	3M	130 mm	14	2153
GHL	<i>Reinhardtius hippoglossoides</i>	Greenland halibut	C	3N	130 mm	17	2478
RED	<i>Sebastes spp</i>	Redfish	C	3L	130 mm	7	1035
RED	<i>Sebastes spp</i>	Redfish	C	3M	130 mm	8	1380
RED	<i>Sebastes spp</i>	Redfish	C	3M	130 mm	1	111
RED	<i>Sebastes spp</i>	Redfish	C	3N	130 mm	6	847
RED	<i>Sebastes spp</i>	Redfish	C	3O	130 mm	23	3498
HKW	<i>Urophycis tenuis</i>	White hake	C	3N	130 mm	1	111
HKW	<i>Urophycis tenuis</i>	White hake	C	3O	130 mm	5	689
<b>GDE</b>	<b><i>Gaidropsarus ensis</i></b>	<b>Threadfin rockling</b>	<b>D</b>	<b>3L</b>	<b>130 mm</b>	<b>1</b>	<b>61</b>
<b>RJR</b>	<b><i>Raja radiata</i></b>	<b>Starry ray</b>	<b>D</b>	<b>3N</b>	<b>280 mm</b>	<b>9</b>	<b>865</b>
<b>HKW</b>	<b><i>Urophycis tenuis</i></b>	<b>White hake</b>	<b>D</b>	<b>3O</b>	<b>130 mm</b>	<b>10</b>	<b>1114</b>
Total						330	44844

**Table 3.** Fishing effort (hours) of the Spanish fleet in Divisions 3LMNO by year based on the Logbook data.

3LMNO	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Effort (Hours)	106821	76028	60128	44044	25163	21408	21250	22703	25276	25410	18602	18271
3LMNO	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Effort (Hours)	18031	15577	15101	16608	18686	19051	18296	16592	19651	21137		

**Table 4.** Fishing effort (hours) of the Spanish fleet in 2024 by quarter and Division, as well as percentage of effort by Division based on the Logbook data.

Division	1st Q	2nd Q	3rd Q	4th Q	Total	% Div.
3L	1228	1471	1236	2187	6122	29%
3M	759	1731	2406	1607	6503	31%
3N	734	751	1272	1151	3908	18%
3O	1525	1492	896	692	4605	22%
<b>Total Hours</b>	<b>4245</b>	<b>5446</b>	<b>5809</b>	<b>5637</b>	<b>21137</b>	<b>100%</b>
<b>%</b>	<b>20%</b>	<b>26%</b>	<b>27%</b>	<b>27%</b>	<b>100%</b>	

**Table 5.** Spanish 2024 effort (hours) in SA 3 by mesh size, quarter and Division based on the Logbook data.

Div.	Mesh Size	1st Q	2nd Q	3rd Q	4th Q	Total
<b>3L</b>	<b>&lt;90 mm</b>					
	<b>100-200 mm</b>	133	175	152	240	700
	<b>&gt;200 mm</b>	1				1
<b>3M</b>	<b>&lt;90 mm</b>					
	<b>100-200 mm</b>	104	214	336	224	878
	<b>&gt;200 mm</b>					
<b>3N</b>	<b>&lt;90 mm</b>					
	<b>100-200 mm</b>	38	64	140	45	287
	<b>&gt;200 mm</b>	97	76	119	192	484
<b>3O</b>	<b>&lt;90 mm</b>					
	<b>100-200 mm</b>	177	266	155	113	711
	<b>&gt;200 mm</b>	43	12	2	2	59

**Table 6.** Parameters of the length-weight relationship ( $W(g) = a \cdot L(cm)^b$ ) by species (2023).

Species	Source	a	b	Nº indiv
Greenland halibut	3NO Survey	0.0048	3.1207	1517
Redfish 3LN	Commercial	0.0131	3.0025	100
Redfish 3O	Commercial	0.0131	3.0025	100
Redfish 3M	Commercial	0.0102	3.0553	340
Roughhead grenadier	Commercial	0.1029	2.9135	1734
Witch flounder	3NO Survey	0.0010	3.5104	582
American plaice 3LNO	Commercial	0.0038	3.2227	315
Cod 3NO	Commercial	0.0055	3.0936	257
Cod 3M	Commercial	0.0081	3.0026	92
Yellowtail Flounder	3NO Survey	0.0043	3.1761	1488
Skate	3NO Survey	0.0084	3.0404	1683
Silver Hake	Commercial	0.0058	3.0424	3633
White Hake	3NO Survey	0.0026	3.2578	219

**Table 7.** Cod 3NO stock Spanish catches length distribution (2024).

Cod	3NO			
Length (cm)	Males	Females	Ind.	Total
29	0	0	0	0
30	0	0	0	0
31	0	0	0	0
32	0	0	0	0
33	0	0	0	0
34	0	0	0	0
35	0	0	0	0
36	0	0	0	0
37	0	1042	0	1042
38	0	0	0	0
39	1042	0	0	1042
40	3125	1042	0	4167
41	2083	580	0	2664
42	2083	1161	0	3244
43	2783	4286	0	7069
44	4286	1622	0	5908
45	1161	3244	0	4405
46	1042	1042	0	2083
47	4286	2083	0	6369
48	2083	1042	0	3125
49	1042	2664	0	3705
50	2783	2783	0	5566
51	1622	4286	0	5908
52	3363	2664	0	6027
53	1161	2783	0	3944
54	2783	1622	0	4405
55	1622	1741	0	3363
56	580	0	0	580
57	3125	2083	0	5208
58	0	0	0	0
59	580	0	0	580
60	0	0	0	0
61	580	0	0	580
62	0	0	0	0
63	0	0	0	0
64	0	0	0	0
65	0	1042	0	1042
66	580	0	0	580
67	0	0	0	0
68	0	0	0	0
69	0	0	0	0
70	580	0	0	580
71	0	0	0	0
72	0	0	0	0
73	0	0	0	0
74	0	0	0	0
75	0	0	0	0
<b>Total</b>	<b>44376</b>	<b>38810</b>	<b>0</b>	<b>83186</b>
<b>Samples</b>				<b>2</b>
<b>Ind. Sampled</b>				<b>102</b>
<b>Catch (tons)</b>				<b>79</b>
<b>SOP</b>				<b>0.97</b>

**Table 8.** Cod 3M stock Spanish catches length distribution (2024).

<b>Cod Length (cm)</b>	<b>3M</b>			<b>Total</b>
	<b>Males</b>	<b>Females</b>	<b>Ind.</b>	
35	0	0	0	0
36	0	0	0	0
37	778	0	0	778
38	0	778	0	778
39	0	0	0	0
40	307	1446	0	1753
41	77571	130977	0	208548
42	101325	187023	0	288348
43	241906	258245	0	500151
44	110369	238651	0	349020
45	241324	140417	0	381741
46	100656	76991	0	177647
47	28072	52713	0	80785
48	55967	22138	0	78106
49	10688	25864	0	36553
50	8158	39039	0	47196
51	72975	52822	0	125796
52	45804	62342	0	108145
53	9494	16205	0	25698
54	1084	6674	0	7758
55	0	2586	0	2586
56	2893	778	0	3670
57	1031	3813	0	4844
58	1555	2368	0	3924
59	2422	2586	0	5008
60	2784	2730	0	5514
61	2258	2115	0	4373
62	778	0	0	778
63	1282	1917	0	3199
64	1084	1446	0	2531
65	975	2170	0	3146
66	1084	669	0	1753
67	1555	4175	0	5730
68	3364	669	0	4032
69	3888	2224	0	6112
70	0	3308	0	3308
71	1917	1502	0	3419
72	307	0	0	307
73	1502	0	0	1502
74	613	724	0	1337
75	0	307	0	307
76	0	0	0	0
77	0	0	0	0
78	0	1555	0	1555
79	0	0	0	0
80	0	2279	0	2279
81	778	778	0	1555
82	724	307	0	1031

<b>83</b>	0	778	0	778
<b>84</b>	0	362	0	362
<b>85</b>	1555	0	0	1555
<b>86</b>	0	1140	0	1140
<b>87</b>	0	0	0	0
<b>88</b>	0	0	0	0
<b>89</b>	0	0	0	0
<b>90</b>	0	0	0	0
<b>91</b>	0	0	0	0
<b>92</b>	778	778	0	1555
<b>93</b>	0	362	0	362
<b>94</b>	362	1140	0	1502
<b>95</b>	778	778	0	1555
<b>96</b>	0	0	0	0
<b>97</b>	0	362	0	362
<b>98</b>	0	0	0	0
<b>99</b>	0	0	0	0
<b>100</b>	0	0	0	0
<b>Total</b>	1142745	1359029	0	2501773

<b>Samples</b>	5
<b>Ind. Sampled</b>	412
<b>Catch (tons)</b>	2202
<b>SOP</b>	1.04

**Table 9.** Redfish 3M stock Spanish catches length distribution 2024.

<b>Redfish Length (cm)</b>	<b>Division 3M</b>			<b>Total</b>
	<b>Males</b>	<b>Females</b>	<b>Ind.</b>	
15	0	0	0	0
16	6116	0	0	6116
17	0	0	0	0
18	17185	12233	0	29418
19	17185	12233	0	29418
20	6116	11069	0	17185
21	30297	0	0	30297
22	36313	15881	0	52195
23	62759	14729	0	77488
24	52519	64855	0	117374
25	131232	86633	0	217865
26	191018	146483	0	337501
27	293197	276725	0	569922
28	424339	309044	0	733383
29	510595	325878	0	836473
30	227327	245274	0	472600
31	222155	140576	0	362731
32	103558	158345	0	261903
33	112886	109482	0	222368
34	75200	177172	0	252372
35	101418	172963	0	274381
36	54924	158156	0	213080
37	35589	85168	0	120757
38	35540	82729	0	118269
39	17720	55373	0	73092
40	15124	23836	0	38960
41	48413	15124	0	63537
42	28781	28834	0	57615
43	33475	21196	0	54671
44	19400	13747	0	33147
45	15825	0	0	15825
46	0	2499	0	2499
47	0	0	0	0
48	0	12173	0	12173
49	0	23516	0	23516
50	0	5692	0	5692
51	0	0	0	0
52	0	6330	0	6330
53	0	0	0	0
54	0	0	0	0
55	0	0	0	0
<b>Total</b>	2926209	2813945	0	5740154
<b>Samples</b>				9
<b>Ind. Sampled</b>				1491
<b>Catch (tons)</b>				2426
<b>SOP</b>				1.03

**Table 10.** Redfish 3LN stock Spanish catches length distribution 2024.

Redfish Length (cm)	Division 3LN			Total
	Males	Females	Ind.	
15	0	0	0	0
16	0	0	0	0
17	1305	0	0	1305
18	0	0	0	0
19	1305	0	0	1305
20	4407	8369	0	12776
21	42256	19049	0	61305
22	125238	130472	0	255710
23	303195	234515	0	537710
24	548391	462701	0	1011092
25	547934	494938	0	1042871
26	325765	287325	0	613091
27	154293	164685	0	318978
28	73677	123684	0	197361
29	85907	68958	0	154865
30	77234	146986	0	224220
31	36759	34796	0	71554
32	13611	29481	0	43092
33	27816	36599	0	64416
34	12320	20485	0	32805
35	13832	17695	0	31527
36	5637	35803	0	41440
37	2609	21565	0	24174
38	3013	0	0	3013
39	0	6040	0	6040
40	0	12412	0	12412
41	0	5206	0	5206
42	0	4332	0	4332
43	1305	4735	0	6040
44	1305	6026	0	7330
45	0	1723	0	1723
46	0	0	0	0
47	0	5623	0	5623
48	0	1305	0	1305
49	0	0	0	0
50	0	0	0	0
51	0	0	0	0
52	0	0	0	0
53	0	0	0	0
54	0	3901	0	3901
55	0	0	0	0
<b>Total</b>	2409113	2389409	0	4798522
<b>Samples</b>				13
<b>Ind. Sampled</b>				1882
<b>Catch (tons)</b>				1217
<b>SOP</b>				1.00

**Table 11.** Redfish 30 stock Spanish catches length distribution 2024.

<b>Redfish Length (cm)</b>	<b>Males</b>	<b>30 Females</b>	<b>Ind.</b>	<b>Total</b>
10				0
11				0
12				0
13	0	695	0	695
14	1641	3997	0	5637
15	3865	477	0	4342
16	11191	8379	0	19570
17	37205	16636	0	53842
18	26528	7020	0	33548
19	43714	47510	0	91224
20	111425	64216	0	175641
21	197256	68551	0	265807
22	267908	190034	0	457942
23	299284	186078	0	485362
24	331154	208089	0	539243
25	283915	213777	0	497692
26	138046	192471	0	330516
27	66773	236367	0	303141
28	34940	226653	0	261593
29	20397	154405	0	174802
30	2536	129249	0	131785
31	1074	60369	0	61444
32	0	35621	0	35621
33	0	14681	0	14681
34	0	9795	0	9795
35	0	1432	0	1432
36				0
37				0
38				0
39				0
40				0
41				0
42				0
43				0
44				0
45				0
<b>Total</b>	<b>1878852</b>	<b>2076504</b>	<b>0</b>	<b>3955356</b>
<b>Samples</b>				<b>23</b>
<b>Ind. Sampled</b>				<b>3498</b>
<b>Catch (tons)</b>				<b>859</b>
<b>SOP</b>				<b>1.02</b>

**Table 12.** American plaice 3LNO stock Spanish catches length distribution (2024).

American Plaice Length (cm)	Division 3LNO			Total
	Males	Females	Ind.	
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
18	0	0	0	0
19	332	0	0	332
20	0	138	0	138
21	1273	665	0	1938
22	1605	1017	0	2623
23	1329	963	0	2292
24	3065	2165	0	5230
25	1030	1094	0	2124
26	1329	2723	0	4052
27	1068	2388	0	3456
28	4170	1560	0	5730
29	2731	1994	0	4725
30	4334	4257	0	8591
31	3290	1734	0	5025
32	6952	3726	0	10679
33	5787	3850	0	9638
34	5702	8737	0	14439
35	8244	8277	0	16521
36	7253	10982	0	18234
37	9629	9051	0	18680
38	5197	8155	0	13351
39	3488	9453	0	12941
40	1539	5228	0	6768
41	2582	2662	0	5244
42	1213	4706	0	5919
43	491	2699	0	3190
44	0	4409	0	4409
45	138	4505	0	4643
46	0	4729	0	4729
47	0	5595	0	5595
48	0	5578	0	5578
49	138	4856	0	4994
50	0	4492	0	4492
51	0	2323	0	2323
52	0	542	0	542
53	0	505	0	505
54	0	265	0	265
55	0	403	0	403
56	0	2515	0	2515
57	0	403	0	403
58	0	0	0	0
59	0	0	0	0

<b>60</b>	0	138	0	138
<b>61</b>	0	138	0	138
<b>62</b>	0	0	0	0
<b>63</b>	0	999	0	999
<b>64</b>	0	999	0	999
<b>65</b>	0	0	0	0
<b>66</b>	0	0	0	0
<b>67</b>	0	0	0	0
<b>68</b>	0	0	0	0
<b>69</b>	0	0	0	0
<b>70</b>	0	0	0	0
<b>71</b>	0	0	0	0
<b>72</b>	0	0	0	0
<b>73</b>	0	0	0	0
<b>74</b>	0	0	0	0
<b>75</b>	0	0	0	0
<b>Total</b>	83912	141619	0	225531

<b>Samples</b>	8
<b>Ind. Sampled</b>	799
<b>Catch (tons)</b>	105
<b>SOP</b>	0.90

**Table 13.** Witch flounder Spanish catches length distribution for Div. 3NO (2024).

Witch flounder Length (cm)	3NO			Total
	Males	Females	Ind.	
14	881	0	0	881
15	0	881	0	881
16	0	0	0	0
17	0	0	0	0
18	0	0	0	0
19	0	0	881	881
20	0	0	0	0
21	0	881	0	881
22	881	0	0	881
23	881	881	0	1762
24	1762	881	0	2643
25	1762	0	0	1762
26	0	0	0	0
27	4405	1762	0	6168
28	1762	2643	0	4405
29	1762	1762	0	3524
30	6168	2643	0	8811
31	2643	7049	0	9692
32	0	3524	0	3524
33	4405	0	0	4405
34	0	4405	0	4405
35	3524	2643	0	6168
36	3524	1762	0	5286
37	2643	881	0	3524
38	881	2643	0	3524
39	0	0	0	0
40	0	4405	0	4405
41	0	0	0	0
42	881	881	0	1762
43	0	881	0	881
44	0	0	0	0
45	0	1762	0	1762
46	0	0	0	0
47	0	0	0	0
48	0	881	0	881
49	0	0	0	0
50	0	0	0	0
51	0	0	0	0
<b>Total</b>	38768	44054	881	83703
<b>Samples</b>				1
<b>Ind. Sampled</b>				95
<b>Catch (tons)</b>				26
<b>SOP</b>				1.36

**Table 14.** Yellowtail flounder Spanish catches length distribution for Div. 3LNO (2024).

Yellowtail flounder Length (cm)	3LNO			Total
	Males	Females	Ind.	
18	0	0	0	0
19	0	0	0	0
20	0	0	0	0
21	534	634	0	1168
22	1527	2979	0	4506
23	1669	534	0	2203
24	4147	1118	0	5265
25	3847	3029	0	6876
26	676	2520	0	3196
27	334	1669	0	2003
28	902	993	0	1895
29	851	818	0	1669
30	1970	1235	0	3205
31	334	142	0	476
32	6918	1469	0	8387
33	3095	3346	0	6440
34	6615	4581	0	11195
35	11069	6726	0	17795
36	4278	6959	0	11238
37	2787	8109	0	10896
38	6377	15105	0	21482
39	1876	12681	0	14557
40	4200	7486	0	11686
41	4011	11715	0	15726
42	2891	6826	0	9717
43	917	4487	0	5403
44	917	4429	0	5346
45	993	1876	0	2869
46	0	50	0	50
47	0	142	0	142
48	0	0	0	0
49	0	142	0	142
50	0	0	0	0
<b>Total</b>	<b>73732</b>	<b>111798</b>	<b>0</b>	<b>185530</b>
<b>Samples</b>				<b>5</b>
<b>Ind. Sampled</b>				<b>417</b>
<b>Catch (tons)</b>				<b>70</b>
<b>SOP</b>				<b>0.90</b>

**Table 15.** Greenland halibut Spanish catches length distribution for Div. 3L and 3M (2024).

Length (cm)	Division 3L					Division 3M			
	Males	Females	Ind.	Total		Males	Females	Ind.	Total
15	0	0	0	0		0	0	0	0
16	0	0	0	0		0	0	0	0
17	0	0	0	0		0	0	0	0
18	0	0	0	0		0	0	0	0
19	0	0	0	0		0	0	0	0
20	0	0	0	0		0	0	0	0
21	0	0	0	0		0	0	0	0
22	0	0	0	0		0	0	0	0
23	0	0	0	0		0	0	0	0
24	0	0	0	0		0	0	0	0
25	0	0	0	0		0	0	0	0
26	0	390	0	390		0	0	0	0
27	0	288	0	288		0	0	0	0
28	929	0	0	929		0	0	0	0
29	981	0	0	981		0	0	0	0
30	2718	363	0	3081		0	420	0	420
31	2930	1137	0	4067		0	420	0	420
32	4679	3196	0	7874		3015	245	0	3260
33	4672	1978	0	6650		840	3567	0	4408
34	5829	4116	0	9946		2707	3248	0	5955
35	10532	4040	0	14572		6329	3030	0	9358
36	10167	12916	0	23083		12575	4968	0	17543
37	21300	13816	0	35116		12789	9713	0	22502
38	33483	24426	0	57909		16419	16178	0	32597
39	30938	24373	0	55312		14093	11219	0	25312
40	57822	55517	0	113339		15643	17145	0	32789
41	56569	50899	0	107468		25892	19287	0	45180
42	67448	67476	0	134924		23336	40794	0	64131
43	68607	72679	0	141286		33557	32955	0	66513
44	82427	88422	0	170850		27690	32646	0	60336
45	78894	110890	0	189785		28582	44384	0	72967
46	66878	115291	0	182169		37870	46597	0	84467
47	83041	120612	1183	204836		30493	47873	0	78365
48	76601	135961	0	212562		38673	52400	0	91073
49	65958	132872	0	198830		35168	59747	0	94915
50	55385	125492	0	180877		31553	51937	0	83490
51	56240	97671	0	153911		22211	40630	0	62841
52	36218	124565	0	160783		17391	33175	0	50567
53	31553	101514	0	133067		16532	25229	0	41761
54	22125	97372	0	119497		7141	32549	0	39690
55	18286	70278	0	88565		9123	24890	0	34014
56	15679	55723	0	71403		2715	20946	0	23661
57	10521	63686	0	74207		3151	31254	0	34404
58	7283	51918	0	59201		3499	18507	0	22006
59	5168	40137	0	45305		3377	15697	0	19074
60	1788	45154	0	46942		3629	22249	0	25878

61	1325	39951	0	41276		1265	22629	0	23894
62	1082	25667	0	26749		1387	21058	0	22445
63	642	21427	0	22070		0	22366	0	22366
64	305	21745	0	22050		0	18460	0	18460
65	0	22355	0	22355		0	7760	0	7760
66	0	11273	0	11273		0	9879	0	9879
67	230	14422	0	14652		1099	19188	0	20287
68	0	8558	0	8558		0	5532	0	5532
69	0	7742	0	7742		0	3728	0	3728
70	0	6308	0	6308		0	1924	0	1924
71	0	3000	0	3000		0	4531	0	4531
72	0	4249	0	4249		0	3652	0	3652
73	0	2243	0	2243		0	1243	0	1243
74	0	2823	0	2823		0	879	0	879
75	0	1051	0	1051		0	1243	0	1243
76	0	363	0	363		0	1243	0	1243
77	0	552	0	552		0	0	0	0
78	0	930	0	930		0	879	0	879
79	0	515	0	515		0	0	0	0
80	0	0	0	0		0	0	0	0
81	0	538	0	538		0	0	0	0
82	0	832	0	832		0	0	0	0
83	0	0	0	0		0	879	0	879
84	0	224	0	224		0	0	0	0
85	0	270	0	270		0	0	0	0
86	0	363	0	363		0	0	0	0
87	0	0	0	0		0	0	0	0
88	0	270	0	270		0	0	0	0
89	0	0	0	0		0	879	0	879
90	0	0	0	0		0	0	0	0
91	0	0	0	0		0	0	0	0
92	0	0	0	0		0	0	0	0
93	0	0	0	0		0	0	0	0
94	0	297	0	297		0	0	0	0
95	0	0	0	0		0	0	0	0
96	0	416	0	416		0	0	0	0
<b>Total</b>	1097235	2113558	1183	3211975		489745	911851	0	1401596
<b>Samples</b>				63					14
<b>Ind. Sampled</b>				9815					2153
<b>Catch (tons)</b>				2940					1414

**Table 15 (cont.).** Greenland halibut Spanish catches length distribution for Div. 3NO (2024).

Length (cm)	Division 3NO			Total
	Males	Females	Ind.	
15	288	0	0	288
16	0	0	0	0
17	0	0	0	0
18	0	0	0	0
19	0	0	0	0
20	0	0	0	0
21	0	0	0	0
22	288	0	0	288
23	0	0	0	0
24	0	0	0	0
25	0	0	0	0
26	0	0	0	0
27	0	0	0	0
28	336	0	0	336
29	485	170	0	655
30	170	1012	0	1182
31	3225	516	0	3740
32	729	435	0	1164
33	3764	2410	0	6175
34	5693	2365	0	8058
35	3860	4578	0	8438
36	14305	6782	0	21088
37	14489	9015	0	23504
38	19126	12409	0	31535
39	16560	17809	0	34369
40	14224	22630	0	36854
41	22521	25167	0	47688
42	15987	36877	0	52865
43	15454	26453	0	41907
44	11888	24946	0	36835
45	12195	42584	0	54779
46	9390	23116	0	32506
47	7544	28844	0	36388
48	7010	19721	0	26731
49	6977	55051	0	62027
50	8184	25075	0	33259
51	5780	14182	0	19962
52	3331	9655	0	12985
53	4392	12959	0	17351
54	843	7720	0	8564
55	319	9024	0	9343
56	1353	4483	0	5836
57	470	4931	0	5400
58	553	3625	0	4178
59	482	2077	0	2559
60	551	2298	0	2849

61	170	2468	0	2638
62	0	2417	0	2417
63	0	2198	0	2198
64	288	772	0	1060
65	204	1291	0	1495
66	204	0	0	204
67	0	1254	0	1254
68	0	341	0	341
69	0	170	0	170
70	0	204	0	204
71	0	0	0	0
72	0	0	0	0
73	204	149	0	354
74	0	0	0	0
75	0	290	0	290
76	0	0	0	0
77	0	0	0	0
78	0	0	0	0
79	0	0	0	0
80	0	218	0	218
81	0	205	0	205
82	0	0	0	0
83	0	218	0	218
84	0	0	0	0
85	0	0	0	0
86	0	0	0	0
87	0	0	0	0
88	0	0	0	0
89	0	0	0	0
90	0	0	0	0
91	0	0	0	0
92	0	0	0	0
93	0	0	0	0
94	0	0	0	0
95	0	0	0	0
96	0	0	0	0
<b>Total</b>	233840	471113	0	704953
<b>Samples</b>				17
<b>Ind Sampled</b>				2478
<b>Catch (tons)</b>				459

**Table 15 (cont.).** Greenland halibut Spanish catches length distribution for Div. 3LMNO (2024).

Length (cm)	Division 3LMNO			
	Males	Females	Indter.	Total
15	288	0	0	288
16	0	0	0	0
17	0	0	0	0
18	0	0	0	0
19	0	0	0	0
20	0	0	0	0
21	0	0	0	0
22	288	0	0	288
23	0	0	0	0
24	0	0	0	0
25	0	0	0	0
26	0	390	0	390
27	0	288	0	288
28	1265	0	0	1265
29	1465	170	0	1635
30	2888	1795	0	4683
31	6155	2072	0	8227
32	8423	3876	0	12299
33	9277	7956	0	17232
34	14230	9729	0	23959
35	20720	11648	0	32369
36	37047	24666	0	61714
37	48579	32544	0	81123
38	69028	53013	0	122041
39	61592	53401	0	114993
40	87689	95293	0	182982
41	104982	95354	0	200336
42	106772	145148	0	251920
43	117619	132087	0	249706
44	122005	146015	0	268020
45	119672	197859	0	317530
46	114139	185003	0	299142
47	121078	197329	1183	319590
48	122284	208083	0	330366
49	108103	247669	0	355772
50	95122	202504	0	297626
51	84232	152483	0	236715
52	56940	167395	0	224335
53	52477	139702	0	192179
54	30109	137641	0	167750
55	27729	104193	0	131921
56	19747	81152	0	100899
57	14142	99870	0	114012
58	11335	74050	0	85385
59	9027	57911	0	66937
60	5968	69701	0	75669

61	2760	65048	0	67808
62	2469	49142	0	51611
63	642	45991	0	46633
64	593	40977	0	41570
65	204	31406	0	31611
66	204	21152	0	21357
67	1329	34864	0	36194
68	0	14431	0	14431
69	0	11641	0	11641
70	0	8437	0	8437
71	0	7531	0	7531
72	0	7901	0	7901
73	204	3635	0	3839
74	0	3702	0	3702
75	0	2584	0	2584
76	0	1606	0	1606
77	0	552	0	552
78	0	1809	0	1809
79	0	515	0	515
80	0	218	0	218
81	0	743	0	743
82	0	832	0	832
83	0	1097	0	1097
84	0	224	0	224
85	0	270	0	270
86	0	363	0	363
87	0	0	0	0
88	0	270	0	270
89	0	879	0	879
90	0	0	0	0
91	0	0	0	0
92	0	0	0	0
93	0	0	0	0
94	0	297	0	297
95	0	0	0	0
96	0	416	0	416
<b>Total</b>	1820819	3496522	1183	5318524

<b>Samples</b>	94
<b>Ind Sampled</b>	14446
<b>Catch (tons)</b>	4813
<b>SOP</b>	0.94

**Table 16.** Greenland halibut Div. 3LMNO Spanish catches age distribution, mean weight (g) and mean length (AFL cm) at age.

Abundance					Mean Weight (g)				
Age	Males	Females	Ind.	Total	Age	Males	Females	Ind.	Total
1	288	0	0	288	1	25			25
2	240	195	0	435	2	79	132		103
3	781	501	0	1281	3	178	150		167
4	26997	17368	0	44365	4	287	277		283
5	362247	327179	0	689426	5	451	484		467
6	759457	1121098	624	1881179	6	678	717	816	701
7	545618	1059550	559	1605726	7	975	1025	816	1008
8	83011	351299	0	434310	8	1300	1319		1315
9	26371	177298	0	203669	9	1427	1473		1467
10	11825	156852	0	168678	10	1632	1777		1767
11	2392	128772	0	131164	11	2074	2090		2090
12	560	67287	0	67847	12	2352	2185		2186
13	662	48147	0	48809	13	2355	2433		2432
14	135	15555	0	15690	14	3053	2931		2932
15	236	14035	0	14270	15	2626	2905		2900
16	0	6690	0	6690	16		3505		3505
17	0	1861	0	1861	17		4724		4724
18	0	732	0	732	18		4297		4297
19	0	121	0	121	19		5295		5295
20	0	1983	0	1983	20		6315		6315
Mean Length (cm)									
Age	Males	Females	Ind.	Total					
1	15.5			15.5					
2	22.5	26.5		24.3					
3	29.1	27.6		28.5					
4	33.7	33.5		33.6					
5	39.1	40.0		39.5					
6	44.6	45.4	47.5	45.1					
7	50.1	51.0	47.5	50.7					
8	55.1	55.3		55.3					
9	56.7	57.3		57.2					
10	59.2	60.9		60.7					
11	64.0	64.1		64.1					
12	66.6	65.0		65.0					
13	66.7	67.3		67.3					
14	72.4	71.4		71.4					
15	69.0	71.2		71.2					
16		75.5		75.5					
17		83.4		83.4					
18		80.6		80.6					
19		86.5		86.5					
20		91.4		91.4					

**Table 17.** Skates Spanish 2024 catches length distribution by sex for Div. 3LNO.

Skates Length (cm)	3LNO			Total
	Males	Females	Ind.	
13	0	0	0	0
14	0	0	0	0
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
18	0	0	0	0
19	67	0	0	67
20	0	0	0	0
21	0	0	0	0
22	0	0	0	0
23	0	0	0	0
24	584	0	0	584
25	67	89	0	157
26	328	0	0	328
27	266	67	0	333
28	273	324	0	598
29	562	527	0	1090
30	1017	462	0	1480
31	889	719	0	1608
32	2940	901	0	3842
33	2482	784	0	3266
34	1426	5403	0	6829
35	1980	2156	0	4137
36	4202	3893	0	8095
37	4268	9419	0	13687
38	3314	5775	0	9090
39	3173	9198	0	12371
40	7973	7987	0	15960
41	5364	2568	0	7932
42	5424	4964	0	10388
43	9732	8994	0	18726
44	7336	6584	0	13920
45	10646	9961	0	20607
46	12171	11026	0	23196
47	14714	10827	0	25541
48	11182	15615	0	26797
49	8916	9440	0	18356
50	14644	6429	0	21074
51	15131	7494	0	22625
52	9328	10224	0	19551
53	12837	18026	0	30863
54	15282	8158	0	23439
55	17762	12967	0	30729
56	15293	9724	0	25017
57	7322	10714	0	18036
58	9628	12891	0	22520

59	7857	7635	0	15492
60	9713	8069	0	17782
61	16740	8002	0	24742
62	9730	18692	0	28422
63	15837	7483	0	23320
64	10776	6568	0	17344
65	5973	17311	0	23285
66	10587	6050	0	16636
67	5394	16943	0	22337
68	14782	15137	0	29919
69	6184	5630	0	11814
70	4136	10170	0	14307
71	8609	5196	0	13806
72	5013	9002	0	14015
73	6061	10462	0	16522
74	3847	6707	0	10554
75	6863	21224	0	28087
76	4978	3009	0	7988
77	6168	9915	0	16083
78	6615	871	0	7486
79	4661	7365	0	12026
80	9378	815	0	10194
81	1567	6025	0	7591
82	2990	5182	0	8172
83	1497	2315	0	3811
84	2518	0	0	2518
85	763	0	0	763
86	138	2792	0	2931
87	846	2443	0	3288
88	351	0	0	351
89	213	0	0	213
90	213	0	0	213
91	448	0	0	448
92	0	0	0	0
93	0	0	0	0
94	0	0	0	0
95	138	0	0	138
96	0	0	0	0
97	324	0	0	324
98	0	0	0	0
99	0	0	0	0
100	0	0	0	0
<b>Total</b>	<b>430433</b>	<b>445327</b>	<b>0</b>	<b>875760</b>

<b>Samples</b>	<b>30</b>
<b>Ind. Sampled</b>	<b>2858</b>
<b>Catch (ton)</b>	<b>1985</b>
<b>SOP</b>	<b>1,00</b>

**Table 18.** Roughhead grenadier Spanish catches length distribution measured as preanal fin lengths (AFL) for Divisions 3LMNO (2024).

<b>Roughhead G. Length (cm)</b>	<b>3LMNO</b>			<b>Total</b>
	<b>Males</b>	<b>Females</b>	<b>Ind.</b>	
<b>3</b>	0	0	0	0
<b>4</b>	0	0	0	0
<b>5</b>	0	10	0	10
<b>6</b>	103	23	0	126
<b>7</b>	220	35	10	265
<b>8</b>	779	288	10	1076
<b>9</b>	838	191	0	1029
<b>10</b>	881	614	0	1495
<b>11</b>	1534	1060	0	2595
<b>12</b>	2046	814	0	2860
<b>13</b>	3335	1402	0	4737
<b>14</b>	5292	2304	0	7596
<b>15</b>	8299	3248	0	11547
<b>16</b>	8792	3336	0	12127
<b>17</b>	8578	4833	0	13411
<b>18</b>	8230	6388	0	14619
<b>19</b>	4654	7016	0	11670
<b>20</b>	2270	7937	0	10208
<b>21</b>	1124	5780	0	6904
<b>22</b>	398	3151	0	3549
<b>23</b>	163	2403	0	2566
<b>24</b>	78	1897	0	1975
<b>25</b>	8	2209	0	2218
<b>26</b>	32	1265	0	1297
<b>27</b>	8	1194	0	1202
<b>28</b>	4	837	0	841
<b>29</b>	0	708	0	708
<b>30</b>	8	158	0	166
<b>31</b>	0	323	0	323
<b>32</b>	12	100	0	112
<b>33</b>	4	127	0	131
<b>34</b>	8	80	0	88
<b>35</b>	0	40	0	40
<b>36</b>	0	36	0	36
<b>37</b>	0	13	0	13
<b>38</b>	0	37	0	37
<b>39</b>	0	22	0	22
<b>40</b>	0	4	0	4
<b>41</b>	0	0	0	0
<b>42</b>	0	0	0	0
<b>Total</b>	57699	59883	19	117602
<b>Samples</b>				48
<b>Ind. Sampled</b>				5912
<b>Catch (tons)</b>				64
<b>SOP</b>				0.99

**Table 19.** Roughhead grenadier Div. 3LMNO Spanish catches distribution, mean weight (g) and mean length (AFL cm) by age (2024).

Abundance					Mean Weight (g)				
Age	Males	Females	Ind.	Total	Age	Males	Females	Ind.	Total
1	0	0	0	0	1				
2	86	21	0	107	2	24	20		23
3	1615	422	17	2054	3	61	64	43	62
4	3517	2064	2	5584	4	133	128	53	131
5	6569	3591	0	10160	5	215	227		220
6	8187	2075	0	10262	6	280	265		277
7	11030	6118	0	17148	7	352	367		357
8	11970	7589	0	19559	8	440	501		464
9	8105	11175	0	19280	9	521	579		555
10	4448	8842	0	13290	10	627	704		678
11	1318	6514	0	7832	11	724	833		814
12	660	3564	0	4224	12	866	1107		1069
13	114	2890	0	3004	13	1006	1237		1228
14	40	2327	0	2367	14	1335	1468		1465
15	9	1348	0	1357	15	1656	1642		1642
16	2	574	0	576	16	2498	2147		2148
17	9	263	0	272	17	2719	2334		2347
18	15	194	0	209	18	2588	2674		2668
19	6	207	0	213	19	2843	2776		2778
20	0	27	0	27	20		3526		3526
21	0	36	0	36	21		3666		3666
22	0	41	0	41	22		4351		4351
23	0	0	0	0	23				
24	0	0	0	0	24				
Mean Length (cm)									
Age	Males	Females	Ind.	Total					
1									
2	6,5	6,0		6,4					
3	8,9	9,0	7,9	8,9					
4	11,6	11,4	8,5	11,5					
5	13,7	14,0		13,8					
6	15,1	14,8		15,0					
7	16,3	16,5		16,4					
8	17,6	18,4		17,9					
9	18,6	19,3		19,0					
10	19,9	20,7		20,4					
11	20,8	21,9		21,7					
12	22,2	24,1		23,8					
13	23,3	25,0		25,0					
14	25,8	26,6		26,6					
15	27,7	27,6		27,6					
16	31,8	30,3		30,3					
17	32,8	31,1		31,2					
18	32,4	32,7		32,7					
19	33,4	33,0		33,0					
20		36,0		36,0					
21		36,5		36,5					
22		38,7		38,7					
23									
24									

**Table 20.** White hake 2024 Spanish catches length distribution by sex for Div. 3NO.

White hake Length (cm)	Males	3NO Females	Ind.	Total
20	0	0	0	0
21	0	0	0	0
22	0	0	0	0
23	0	0	0	0
24	0	0	0	0
25	0	186	0	186
26	0	0	0	0
27	186	1249	0	1435
28	0	186	0	186
29	186	0	0	186
30	745	13168	0	13913
31	14099	6770	0	20869
32	26204	21988	0	48193
33	13438	7515	0	20953
34	17845	15749	0	33594
35	24769	44699	0	69469
36	12324	45694	0	58018
37	14240	62288	0	76528
38	18060	50072	0	68132
39	10067	47803	0	57870
40	21899	33105	0	55005
41	8526	17800	0	26326
42	18149	20339	0	38488
43	13699	6430	0	20129
44	15804	6536	0	22339
45	11082	8634	0	19716
46	8847	15573	0	24421
47	11390	2370	0	13760
48	14055	4360	0	18414
49	23394	6222	0	29616
50	3739	5456	0	9196
51	4186	1015	0	5201
52	3618	2923	0	6541
53	1969	4609	0	6577
54	5399	720	0	6118
55	3126	2923	0	6048
56	5739	3807	0	9546
57	3703	1461	0	5164
58	2288	3172	0	5459
59	3618	720	0	4338
60	5541	2983	0	8524
61	614	401	0	1015
62	1227	908	0	2135
63	826	802	0	1628
64	425	319	0	744
65	3360	401	0	3761

66	0	908	0	908
67	106	0	0	106
68	507	106	0	614
69	213	106	0	319
70	0	106	0	106
71	0	0	0	0
72	0	0	0	0
73	0	0	0	0
74	0	0	0	0
75	0	213	0	213
76	0	0	0	0
77	0	0	0	0
78	0	0	0	0
79	0	0	0	0
80	0	0	0	0
81	0	0	0	0
82	0	0	0	0
83	0	106	0	106
84	0	0	0	0
85	0	0	0	0
86	0	106	0	106
87	0	0	0	0
88	0	0	0	0
89	0	0	0	0
90	0	0	0	0
<b>Total</b>	349213	473007	0	822220

<b>Samples</b>	6
<b>Ind. Sampled</b>	800
<b>Catch (ton)</b>	443
<b>SOP</b>	1.02

**Table 21.** Silver hake 2024 Spanish catches length distribution by sex for Div. 3NO.

Silver hake Length (cm)	3NO			Total
	Males	Females	Ind.	
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
18	722	0	0	722
19	722	0	0	722
20	0	0	0	0
21	15069	0	0	15069
22	4738	0	0	4738
23	11732	0	0	11732
24	92227	20701	0	112929
25	266558	70270	0	336827
26	878549	209755	0	1088303
27	2020827	553981	0	2574808
28	2957995	992723	0	3950718
29	2790284	1788789	4340	4583413
30	1943070	2620088	8417	4571575
31	1188541	2738845	0	3927386
32	498226	2530016	0	3028242
33	263443	2233472	0	2496915
34	133642	1670273	0	1803915
35	47824	1144829	0	1192654
36	31542	619130	0	650672
37	10108	318462	0	328570
38	10742	175776	0	186518
39	0	105004	0	105004
40	2310	105145	0	107455
41	0	47172	0	47172
42	5243	43381	0	48624
43	0	46359	0	46359
44	5243	15659	0	20902
45	0	12985	0	12985
46	0	40273	0	40273
47	0	21159	0	21159
48	0	30322	0	30322
49	5243	4267	0	9510
50	0	17350	0	17350
51	0	0	0	0
52	0	26449	0	26449
53	0	14796	0	14796
54	0	1468	0	1468
55	0	2526	0	2526
56	0	0	0	0
57	0	0	0	0
58	0	0	0	0
59	0	0	0	0
60	0	0	0	0

<b>61</b>	0	0	0	0
<b>62</b>	0	0	0	0
<b>63</b>	0	5667	0	5667
<b>Total</b>	13184599	18227092	12758	31424448

<b>Samples</b>	65
<b>Ind. Sampled</b>	9895
<b>Catch (ton)</b>	5967
<b>SOP</b>	1.10

**Table 22.** Greenland halibut Spanish 2024 Commercial Males Age Length key (ALK).

CLAVE	Ages																				TOTAL
LENGTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+	TOTAL
15	4																				4
16	1	1																			2
17		1																			1
18		1																			1
19		2																			2
20		1																			1
21		4																			4
22		5	1																		6
23																					0
24																					0
25																					0
26																					0
27																					0
28				1																	1
29			1	1																	2
30				5																	5
31				3																	3
32				1	5																6
33				1	5																6
34				2	5	1															8
35				1	8																9
36				1	10	1															12
37					12																12
38				1	14	2															17
39					9	5															14
40					8	4															12
41					3	11															14
42					5	9															14
43					3	10	1														14
44						12	2														14
45						13	1														14
46						14	1														15
47						6	9														15
48						6	6														12
49						2	9														11
50						1	10														11
51							11	1													12
52							9	2	1												12
53							9	3													12
54							6	5	1												12
55							3	4	2	1											10
56							3	7	1												11
57							2	6	1												9
58							1	2	3	1											7
59							1	4	1	2											8
60							1		3	2											6
61										1											1
62									1		1										2
63										1	1										2
64										1	5	4	3								13
65										2	4	2	2	1							11
66										1	4	2	2								9
67											5	3	5		2						15
68											2	4	2								8
69										1	4	2	2	1							10
70											2	1	1	2	2						8
71											1		1	2	1						5
72													4	4	2	1					11
73												1		4	2						7
TOTAL	5	15	2	17	87	97	85	34	14	13	27	20	22	13	9	3	0	0	0	0	463

**Table 22 (Cont.).** Greenland halibut Spanish 2024 Commercial Females Age Length key (ALK).

CLAVE	Ages																				TOTAL
LENGTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+	TOTAL
26		2	2																		4
27			2	1																	3
28			3																		3
29			2	1																	3
30				1																	1
31				2																	2
32				1	3																4
33				1	4																5
34				1																	1
35				1	10																11
36					12	1															13
37					13	2															15
38					14	2															16
39					9	3															12
40					6	6															12
41					7	8															15
42					3	13															16
43					4	13															17
44					2	12	1														15
45						16	1														17
46						12	3														15
47						13	8														21
48						9	11														20
49						5	15	1													21
50						5	18														23
51						1	17	1	1												20
52							14	4													18
53							8	5	1												14
54							6	6	3												15
55							2	8	3												13
56							5	4	2	3											14
57							4	8	2	1											15
58							1	5	6	1											13
59							1	5	4	4											14
60									3	7	4	1									15
61									2	5	2										9
62									1	4	2	5									12
63										4	9		1								14
64										1	5	4	3								13
65										2	4	2	2	1							11
66										1	4	2	2								9
67											5	3	5		2						15
68											2	4	2								8
69										1	4	2	2	1							10
70											2	1	1	2	2						8
71											1		1	2	1						5
72													4	4	2	1					11
73												1		4	2						7
74													1	1	2	1					5
75													1	1	1						3
76													1	1	1			1			4
77															1						1
78																2					2
79														1							1
80																2					2
81																1					1
82																1	2				3
83																	1				1
84																1	1	1			3
85																	1	1			2
86																		1	1	1	3
87																			1		1
88																				1	1
89																				1	1
90																					0
91																					0
92																					0
93																					0
94																				1	1
95																				1	1
96																				1	1
TOTAL	0	2	9	9	87	121	115	47	28	34	42	26	26	17	14	11	5	4	2	6	605

**Table 22 (Cont.).** Greenland halibut Spanish 2024 Commercial Indeterminate Age Length key (ALK).

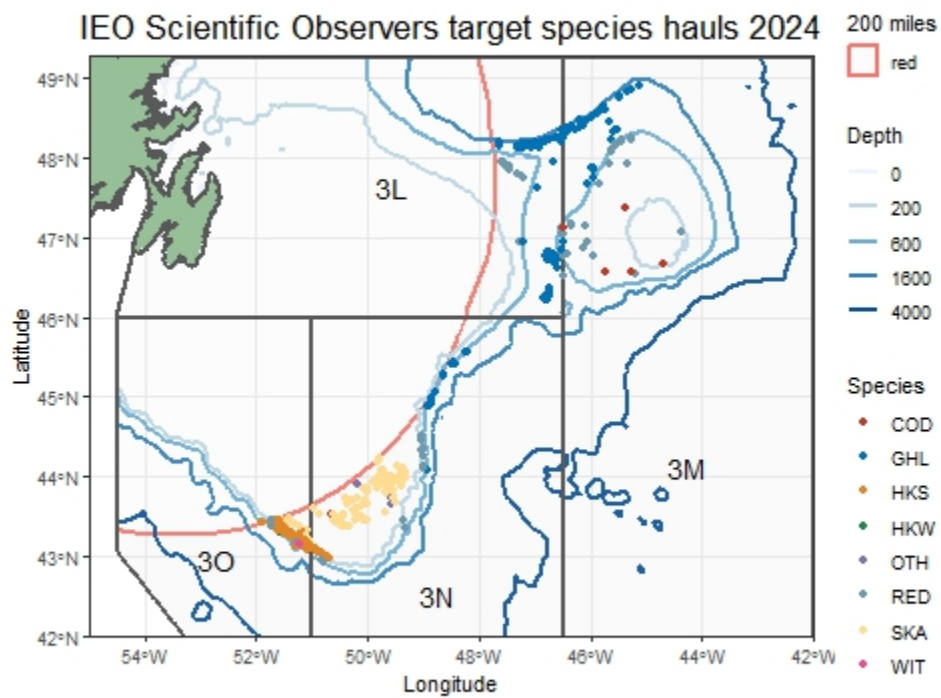
CLAVE LENGTH	Ages																				TOTAL
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+	
26				1																	1
27																					0
28				1																	1
29			1	1																	2
30				6																	6
31				5																	5
32				2	8																10
33				2	9																11
34				3	5	1															9
35				2	18																20
36				1	22	2															25
37					25	2															27
38				1	28	4															33
39					18	8															26
40					14	10															24
41					10	19															29
42					8	22															30
43					7	23	1														31
44					2	24	3														29
45						29	2														31
46						26	4														30
47						19	17														36
48						15	17														32
49						7	24	1													32
50						6	28														34
51						1	28	2	1												32
52							23	6	1												30
53							17	8	1												26
54							12	11	4												27
55							5	12	5	1											23
56							8	11	3	3											25
57							6	14	3	1											24
58							2	7	9	2											20
59							2	9	5	6											22
60							1		6	9	4	1									21
61									2	6	2										10
62									2	4	3	5									14
63										5	10		1								16
64										1	5	4	3								13
65										2	4	2	2	1							11
66										1	4	2	2								9
67											5	3	5		2						15
68											2	4	2								8
69										1	4	2	2	1							10
70											2	1	1	2	2						8
71											1		2	1							5
72													4	4	2	1					11
73												1		4	2						7
74													1	1	2	1					5
75													1	1	1						3
76													1	1	1			1			4
77															1						1
78																2					2
79														1							1
80																2					2
81																1					1
82																1	2				3
83																	1				1
84																					0
85																					0
86																			1		1
87																		1			1
88																					0
89																					0
90																					0
91																					0
92																					0
93																					0
94																					0
95																				1	1
96																					0
TOTAL	0	0	1	25	174	218	200	81	42	42	44	26	26	17	14	10	3	1	1	2	927

**Table 23 .** Roughhead grenadier Spanish 2024 Commercial males Age Length key (ALK).

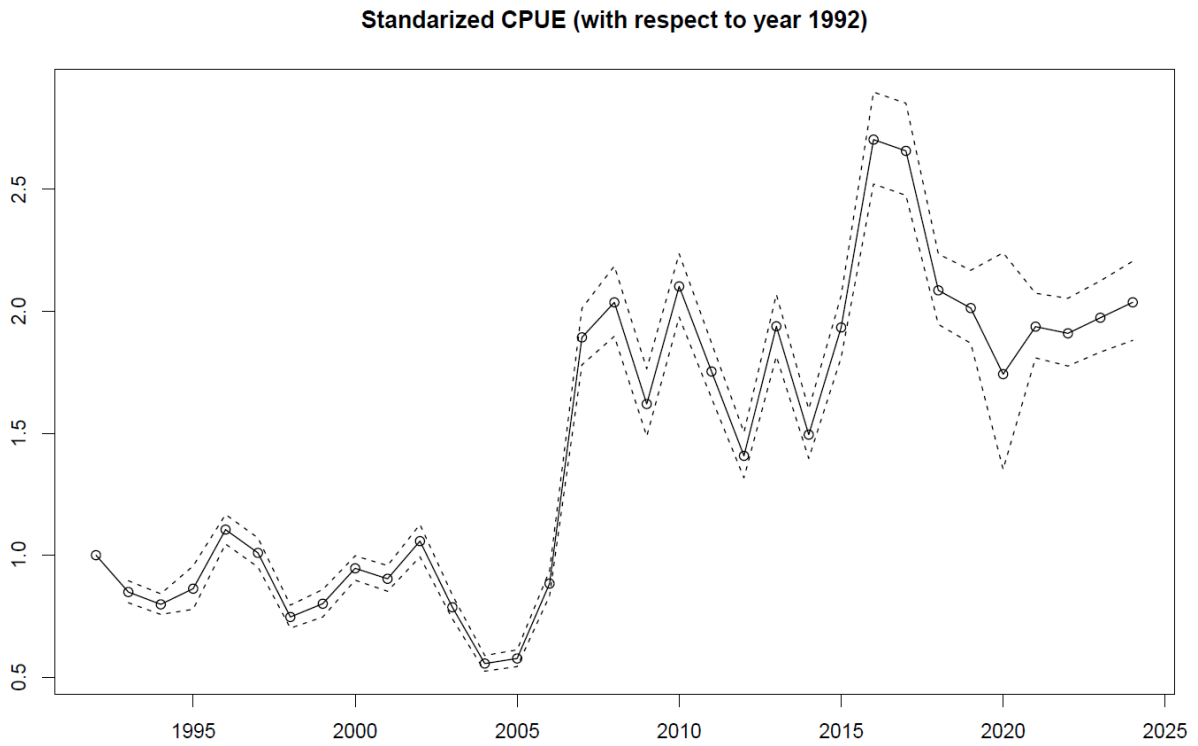
Length cm	Ages																								Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
3																									
4																									
5																									
6		5	1																						6
7			1																						1
8			4	1																					5
9			3	1																					4
10			1	5	1																				7
11				12	4																				16
12				7	8																				15
13				2	8	6																			16
14					10	7	1																		18
15					1	11	11																		23
16						3	16	10																	29
17							7	22	8																37
18							1	12	13	2															28
19								2	12	13	3														30
20									3	8	1														12
21										2	4	3													9
22										1	1	2	1												5
23											1	1													2
24												7	4	3											14
25											1	7	4	3	2										17
26											1	1	3	8	1										14
27													3	4	5										12
28													5	5	5	3									18
29														3	4	3	2								12
30															1		2	1	1						5
31																2			1						3
32																		3							3
33																1	1	1							3
34																	1		1						2
35																									
Total		5	10	28	32	27	36	46	36	26	12	21	20	26	18	9	6	5	3	0	0	0	0	0	366

**Table 23 (Cont.)** Roughhead grenadier Spanish 2024 Commercial females Age Length key (ALK).

Length cm	Ages																								Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
3																									
4																									
5		6																							6
6		3	3																						6
7			1																						1
8			2	1																					3
9			3	3																					6
10			1	6																					7
11				9	3																				12
12				2	3	1																			6
13				2	6	2																			10
14					8	3	1																		12
15					2	4	6																		12
16							10	3																	13
17							4	6	4																14
18							1	7	9	1															18
19								5	8	5	1														19
20								1	8	7	3														19
21									1	11	7														19
22										2	9	4	2												17
23											4	4	3												11
24												7	4	3											14
25											1	7	4	3	2										17
26											1	1	3	8	1										14
27													3	4	5										12
28													5	5	5	3									18
29														3	4	3	2								12
30															1		2	1	1						5
31																2			1						3
32																		3							3
33																1	1	1							3
34																	1		1						2
35																		1		1					2
36																					1				1
37																			1	1					2
38																						1			1
39																			1						1
40																						1	0	0	1
Total		9	10	23	22	10	22	22	30	26	26	23	24	26	18	9	6	6	5	2	1	2	0	0	322



**Figure 1.** IEO Scientific Observers sampled commercial hauls position depending on the target species.



**Figure 2.** Spanish fleet standardized CPUE with model presented by Gonzalez-Costas and Gonzalez-Troncoso (2009) update with the 2024 data.