

SCIENTIFIC COUNCIL MEETING –JUNE 2026

Results for the Spanish Survey in the NAFO Regulatory Area of Division 3L for the period 2003-2025

by

E. Román-Marcote¹ and I. Garrido¹

¹Instituto Español de Oceanografía (IEO, CSIC)
P.O. Box 1552. Vigo, Spain
e-mail: esther.roman@ieo.csic.es

ROMÁN-MARCOTE, E. AND I. GARRIDO. 2026. Results for the Spanish Survey in the NAFO Regulatory Area of Division 3L for the period 2003-2025. *NAFO Scientific Council Research Document*, SCR Doc. 26/005: 1-62.

Abstract

Since 2003, a stratified random summer bottom trawl survey was conducted by Spain in the NAFO Regulatory Area of Division 3L (Flemish Pass). The surveys were carried out by the R/V “*Vizconde de Eza*” using bottom trawl net type Campelen 1800. Entire series of mean catches, biomass and length distribution for Greenland halibut, American plaice, witch flounder, Atlantic cod, redfish, roughhead grenadier, thorny skate and black dogfish are presented for the period 2003-2025. In 2025, the biomass shows an increase for all these species except for the Greenland halibut.

KEYWORDS: Survey, Flemish Pass, Greenland halibut, American plaice, witch flounder, Atlantic cod, redfish, roughhead grenadier, thorny skate, black dogfish.

Material and Methods

The Spanish surveys in Div. 3L of NAFO Regulatory Area (Flemish Pass) were initiated in 2003. The Research vessel “*Vizconde de Eza*” has carried out these surveys following the same procedures and using the same bottom trawl gear *Campelen 1800*. In 2003, the survey was carried out in spring (June) and it did not cover all strata adequately (17 of the 24 strata). In 2004, the survey was carried out 50 valid hauls in August, for a period of nine days, and not adequately covered all strata. In 2005, it was not possible to perform the survey due to problems with the winch of the ship; and in 2006, for the first time, an adequate prospecting survey was conducted in Division 3L with over 100 valid hauls. Survey were not carried out in 2022 due technical problems and 2020/2021 due to the exceptional pandemic situation caused by COVID 19. Table 1 presents the number of valid tows, the depth strata covered and the dates of the survey series. Figure 1 shows haul positions of Spanish surveys in NAFO Div. 3L in the period 2003-2025.

The survey area was stratified following the standard stratification schemes (Bishop, 1994). All surveys had a stratified random design following NAFO specifications (Doubleday, 1981). Hauls were allocated to strata proportionally to stratum size, with a minimum of two planned hauls per stratum and the trawl positions were chosen at random. A synoptic sheet of the survey with the vessel and gear characteristics is shown in Table 2. Biomass and abundance indices were calculated by the swept area method (Cochran, 1997), assuming catchability factor of 1.

The catch from each haul was sorted out and weighted by species and a randomly selected sample of each species was taken in order to measure it and to obtain the length distribution. For Greenland halibut, American plaice, witch flounder, Atlantic cod, redfish, thorny skate and black dogfish each individual of the sample was measured to the total length to the nearest lower cm and data are given in 2 cm intervals. However, roughhead grenadier individuals were measured from tip of snout to base of first anal-fin ray to the lower ½ cm., in 0.5 cm intervals, as adopted by NAFO in June 1980 (Atkinson, 1991) as a standard measurement for roundnose and roughhead grenadiers; length is presented as pre-anal-fin length (AFL) and data are given in 1 cm intervals.

We present on a yearly basis: the mean catch per haul, the stratified mean catch per haul, the biomass with its variance per year and the length distribution in number per haul stratified mean catches by length, sex and year for each species in the period 2003-2025.

Biological studies (age, growth, feeding,...), oceanographic data and special studies (occurrence of marine mammals and sea birds) were collected from NAFO Regulatory area Div. 3L during the survey aboard *Vizconde de Eza*. The following formula was used to obtain the biomass from length distribution: $Weight = a (Length + 0.5)^b / Weight = a (Length + 0.25)^b$. To calculate the parameters for the indeterminate individuals, we used the total data (males+females+indeterminate individuals).

Stratified mean catches and SD

The mean catch ($\bar{y}_i$) and the variance (Var_i) are calculated by stratum by the following formulas:

$$\bar{y}_i = \sum_{j=1}^{T_i} \frac{y_j}{T_i}, \quad i = 1, \dots, h$$

$$Var_i = \sum_{j=1}^{T_i} \frac{(y_j - \bar{y}_i)^2}{T_i - 1}, \quad i = 1, \dots, h$$

where: y_j is the catch in haul j

T_i is the number of hauls in the stratum i

h is the total number of strata

and the stratified mean catch ($\bar{y}_i^{str}$) and the stratified variance (Var_i^{str}) by stratum are obtained as follow:

$$\bar{y}_i^{str} = \bar{y}_i n_i, \quad i = 1, \dots, h$$

$$Var_i^{str} = Var_i \frac{n_i^2}{T_i}, \quad i = 1, \dots, h \quad \text{where: } n_i \text{ is the area of the stratum } i, i = 1, \dots, h$$

Then the total stratified mean catch ($\bar{Y}$) and the variance (Var) by year are calculated according to the formulas:

$$\bar{Y} = \sum_{i=1}^h \frac{\bar{y}_i^{str}}{N}$$

$$Var = \sum_{i=1}^h \frac{Var_i^{str}}{N^2}$$

where: $N = \sum_{i=1}^h n_i$ is the total area by year

The stratified standard deviation (SD) by year is calculated as the square root of the stratified variance by year.

Results

In 2025, the bottom trawl survey in Div. 3L (Flemish pass) of NAFO Regulatory Area was carried out on board R/V *Vizconde de Eza* using the usual survey gear (*Campelen 1800*) from August 11st to 29th and following the same procedure as in previous years. A total of 90 hauls (8 of them nulls) were performed in a depth range of 125-1467 m. (Table 1).

Biological studies

Biological data - length, sex, sexual maturity, weight and stomach repletion degree on 9 target species and other 81 species were collected from Div. 3L in 2025 (16304 individuals sampled).

Maturity and fecundity - 183 samples for histological maturity and fecundity of American plaice and roughhead grenadier were taken.

Age and Growth - otoliths (1322 samples) of Greenland halibut, American plaice, roughhead grenadier and cod were collected for growth studies.

Feeding studies - Feeding studies are biennial, in even years.

Northern shrimp - Detailed results for the northern shrimp, the most abundant crustacean in the catches of all studies, are presented in Casas *et al.* (2026).

Hydrographic Studies

Temperature and salinity were measured in each haul by means of CTD (SBE25 SEALOGGER CTD). Hydrographic profile samplings were performed at 82 (80 valid) fishing stations in a depth range of 120-1429 m. The minimum and maximum observed temperatures were -0.78 and 4.10°C respectively and the observed salinity range was 32.98 - 34.90 PSU. Results are presented in MEDS (Marine Environmental Data Service of Canada) every year.

Other Studies

Marine litter - Each valid haul was inspected to find and collect seabed litter items. Seabed litter items were categorised to the most detailed level in the 82 valid hauls of the survey.

Benthic invertebrate - The study of benthic invertebrates was performed as a routine work during the survey (catch in weight and number, photographs and collection for study in the laboratory). This study will help us to have more knowledge about these species and their relation to the marine environment in the surveyed area.

Marine mammals and sea birds - Observations and incidental catches of marine mammals occasionally occurred were recorded during fishing time in the surveyed area of Flemish Pass. Occurrence, date, position, number, T^a, fishing time and other data were collected related to marine mammals throughout the survey. In 8 hauls observations of marine mammals species were recorded. *Physeter macrocephalus*, *Hyperoodon Ampullatus* and *Globicephala melas* were the most common marine mammals. (Román *et al.*, 2015; Roman-Marcote *et al.* 2020c).

Regarding seabirds, information about species, and incidental catches was also collected in the surveyed area. This will help us get a better understanding of these species, their relation to the marine environment and the interaction of seabirds with fishing. *Fulmarus glacialis*, *Puffinus gravis*, *Puffinus griseus*, *Morus bassanus* and *Catharacta skua* were the most common seabird species.

Results for Greenland halibut, American plaice, witch flounder Atlantic cod, redfish, roughhead grenadier, thorny skate and black dogfish are presented in this report. Most of the tables present the last years of survey (2018-2025), while most of the figures include the whole series of data. Information from the previous years is available in Roman-Marcote *et al.* (2020a, 2020b).

Greenland halibut (*Reinhardtius hippoglossoides* Walbaum, 1792)

The Greenland halibut stock in Subarea 2 and Div. 3KLMNO is considered to be part of a biological stock complex, which includes Subareas 0 and 1. Fishery status (Div. 3L): TAC for 2025 is 14791t. (NAFO, 2025).

Mean catches and biomass

Table 3 shows the swept area, the tow number, the mean catches and their variance per haul and year (2018-2025) for Greenland halibut. Table 11 and Figure 2 present the stratified mean catches per stratum with the total variance per year. Table 19 and Figure 2 present the abundance, the biomass per swept area per stratum and their total variance per year. Table 27 presents the length-weight relationships (2015-2025).

The biomass of the Greenland halibut has had an increase in the surveyed area along the whole period, reaching the maximum values in the series in 2017 and 2019 (second highest value). The biomass index for the survey increased from 2006 to 2008. After declining to lower levels in 2011 and 2012 it increased to a time series high in 2017 before declining substantially in 2018. In 2023, a decrease is observed both in biomass and abundance with respect to the 2019 values. In 2025, there was a slight decrease in the biomass index compared to 2024 (2025: 12743t.).

The biomass presents the same trend as mean catches since the year 2004. In 2003, the mean catch does not follow the same pattern; this was probably due to the less area covered in 2003 survey (Figure 2).

The abundance index shows the same trend as biomass since 2003 (Figure 2), in 2018 this index does not follow the same pattern due to the presence of smaller individuals (<15 cm). Figure 5 shows a map with the distribution of Greenland halibut catches per haul in 2025 Spanish 3L survey.

Length distribution

Table 30 presents the stratified mean catches per haul length distribution for the Greenland halibut, by sex and year (2019-2025), with the number of samples in which there were length measures, the total number of individuals measured in these samples, the sampled catch and the range of lengths met, as well as the total catch of this species and the total valid hauls made in the survey. In the period 2017-2019 there is a quite good presence of small individuals (<30cm). In 2018 and 2019 we have the best presence of small individuals (11-15cm.).

In the 2025 the mode was 15, 22 and 42 cm and the length range 10-93 cm. Females attain larger lengths than males in all years. In Figures 6 and 14 the evolution along the years can be followed.

American plaice (*Hippoglossoides platesoides* Fabricius, 1780)

American plaice are distributed within Divisions 3LMNO and managed as two separate stocks: 3LNO and 3M. As bycatch, it is primarily caught in the cod and redfish fisheries. Fishery status (Div. 3L): There was no fishing targeting American plaice in 1994 and it has been under moratorium (no directed fishery) since 1995 (NAFO, 2025).

Mean catches and biomass

American plaice haul mean catches by stratum are presented in Table 4, including swept area, number of hauls and SD. Stratified mean catches per tow by stratum and year and their variance are presented in Table 12.

The time series (2018-2025) of biomass and their SD estimates of American plaice are shown in Table 20. Length-weight relationships are presented in Table 27 (2015-2025).

The American plaice indices showed a general increasing trend in the prospected area since 2004 (Figure 2). But in 2010 this increasing trend was broken and the value was below the 2006 value, following by an increase in 2011-2015. The American plaice indices showed a decreasing since 2015 but in 2023 it increased (10439 t.). In 2025, there was a slight increase in the biomass index compared to 2024 (2025: 11459t.). The highest values in the estimated biomass have been observed in the shallowest strata, in a range of depth from 93 to 274 meters.

The abundance index shows the same trend as biomass (Figure 2), in 2023 this index does not follow the same pattern due to the presence of larger individuals.

Figure 5 shows a map with the distribution of American plaice catches per haul in 2025 Spanish 3L survey.

Length distribution

Table 31 presents the stratified mean catches per haul length distribution by sex and year (2019-2025). They present also the number of samples in which length measurements were performed, the total number of individuals measured in these samples, the sampled catch and the range of lengths found. The total catch of this species and the total valid hauls made in the survey are shown too. In Figures 7 and 14 the evolution along the years can be followed. From 2014-2017, it can be seen a great increase of small individuals (individuals <20 cm); in 2025, the mode was 24 and 36 cm for females and 23 cm for males, the length range 5-63 cm. There is higher proportion of females (68%) than males (23.9%).

Witch flounder (*Glyptocephalus cynoglossus* Linnaeus, 1758)

Witch flounder are distributed within and managed as two separate stocks in Divisions 3NO and 2J3KL Fishery status (Div. 3L): A moratorium (no directed fishery) has remained in place since it was declared in 2004 and no directed fishing for 2018 to 2019 to allow for stock rebuilding.

Mean catches and biomass

Table 5 shows the swept area, the tow number, the mean catches and their variance per haul and year (2019-2025) for witch flounder. Table 13 and Figure 2 present the stratified mean catches per stratum with the total variance per year. Table 21 and Figure 2 present the abundance and biomass per swept area per stratum and their total variance per year. Parameters *a* and *b* estimated values of length-weight distribution are presented in Table 27 (2015-2025). Figure 5 shows a map with the distribution of the witch flounder catches per haul in 2025 Spanish 3L survey.

Witch flounder indices show no clear trend throughout the period 2003-2025, the index peaked in 2010 and 2015. Estimated biomass ranged from 691 t in 2010 to 262 in 2019; although most estimate results come from few strata. The witch flounder indices show a decreasing since 2015 although in 2023 and 2024 biomass is at an intermediate-high level. In 2025 the biomass reaches the highest value in the time series (2025: 9860t.). The abundance index shows the same trend as biomass (Figure 2), in 2019 this index does not follow the same pattern due to the presence of smaller individuals.

Length distribution

Table 32 presents the stratified mean catches per haul length distribution for this species, by sex and year (2019-2025), with the number of samples in which there were length measures, the total number of individuals measured in these samples, the sampled catch and the range of lengths met, as well as the total catch of this species and the total valid hauls made in the survey. In Figures 8 and 14 we can follow the evolution along the years.

In the 2025 the mode was 35 cm and the length range 7-62 cm. The highest recruitment was in 2003, but since then the number of younger individuals has declined.

In the length distribution, the highest recruitment was in 2003, but since then the number of younger individuals has declined.

Atlantic Cod (*Gadus morhua* Linnaeus, 1758)

Atlantic cod are distributed within Divisions 3LMNO and managed as three separate stocks: Div. 3L, 3M (Flemish Cap) and 3NO (southern Grand Bank). Fishery status (Div. 3L): A moratorium (no directed fishery) has remained in place since it was declared in 1994.

Mean catches and biomass

Table 6 shows the swept area, the tow number, the mean catches and their variance per haul by stratum for Atlantic cod. Table 14 and Figure 3 present the stratified mean catches by stratum and year with their total variance. The time series (2018-2025) of biomass and their total variance for Atlantic cod are presented in Table 22 and Figure 3. Estimated parameters values of length-weight relationship are presented in Table 28 (2015-2025).

Figure 5 shows a map with the distribution of Atlantic cod catches per haul in 2025 Spanish 3L survey. Atlantic cod indices show a great variation, due to a few hauls in which the presence of cod was very high, however there is no clear trend along the whole period (2003-2025). Stratified mean catch and biomass decreased from 2003 to 2004; then, the values of these indices increased in 2006 and declined briefly again in 2007. A great increase is shown in 2008 but this was due to a single haul in which the presence of cod was very high (1298.5 kg). The great value of the variance in some years is produced by the tows with a large catch. In 2009 declined again and since then an increasing trend in the biomass can be seen. In 2011 the biomass reaches the highest value in the time series and it decreases at the same level than in 2008 in 2012. In 2013, the index increased briefly but then continually decreased to a very low level. In 2025, the indices again show a slight increase (from 5189 to 8622 t.).

The highest values in the estimated biomass have been observed in the shallow strata, in a range of depth from 93 to 274 meters

Length distribution

Table 33 presents the length distribution of stratified mean catches per haul for this species, by sex and year (2019-2025), with the number of samples in which there were length measurements, the sampled catch, the total number of individuals measured in each sample and the range of lengths achieved, as well as the total catch of this species and the total hauls made in the survey. In Figures 9 and 15 the evolution throughout the period can be followed.

In this period, individuals between 12 and 25 cm can be seen although in 2004 there was no presence of individuals below 24 cm. In general, all lengths presence is very low, even it is very difficult to follow the modal values. In 2008 we have a good presence of individuals between 26 and 33 cm, probably due to the haul with great catch of that year, 29 cm is the mode in the length distribution. In 2010 the mode was 44 cm with the dominant length between 40 and 47 cm. In 2013 we have the best presence of individuals between 12 - 25 cm. and there were two modes, one in 28 cm and another in 47cm with the dominant length between 23-31 and 41-58 cm. In 2024, the dominant lengths were between 20 and 30 cm and the mode 30 cm. No large recruitments have been observed since 2008. The length range 12-67 cm.

Roughhead grenadier (*Macrourus berglax* Lacepède, 1801)

NAFO considers the population of Subareas 2 and 3 as a single stock for assessment purposes; however, Roughhead grenadier is taken mainly in Div. 3LMN of NAFO Regulatory Area. Fishery status (Div. 3L): is not a regulated species.

Mean catches and biomass

Roughhead grenadier haul mean catches by stratum are presented in Table 7; swept area, number of hauls and SD are also shown in this table. Stratified mean catches per tow by stratum and year and their variance are presented in Table 15. The time series (2018-2025) of biomass and their SD estimates of this species are shown in Table 23 and length-weight relationships are shown in Table 28 (2015-2025).

The Roughhead grenadier biomass index from 2006 to 2008 was stable and since then presents a clear decreasing trend, reaching the time series minimum in 2012. In the period 2012-2015 the index has increased to levels similar to its maximum (2008). In 2015 the biomass increased, reaching the second highest value of the series and the values of these indices declined again in 2016-2019 and increase in 2023-2025 (Figure 3). Figure 5 shows a map with the distribution of roughhead grenadier catches per haul in 2025 Spanish 3L survey.

Length distribution

Table 34 shows the stratified mean catches per haul length distribution, for roughhead grenadier, by sex and year (2019-2025), with the number of samples in which there was length measurements, the sampled catch, the total number of individuals measured in these samples and the range of lengths found. The total catch of this species and the total hauls made in the survey are shown too. In Figures 10 and 15 the evolution along the years can be followed. A slight recruitment can be seen in all period but it was quite good in 2013-2015-2016 (mode =16, 18 and 6.5 respectively). In 2025, the mode observed was 18.5 and the dominant lengths were between 155 and 18.5 cm.

Females attain larger lengths than males in all years.

Redfish (*Sebastes* spp. Cuvier, 1829)

There are two species of redfish that have been commercially fished in Div. 3LN, *Sebastes fasciatus* (Acadian redfish) and *Sebastes mentella* (deepwater redfish). The external characteristics are very similar, making them difficult to distinguish, and as a consequence they are reported collectively as "redfish" in the commercial fishery. Both species, occurring in Division 3LN, are managed as a single stock and are thought to belong to a large Northwest Atlantic complex ranging from the Gulf of Maine to south of Baffin Island. Fishery status (Div. 3L): The moratorium (no directed fishery) was lifted in 2010 and TAC has gradually increased to 18 100 tonnes in 2022 (NAFO, 2025).

Mean catches and biomass

Table 8 shows the swept area, the tow number, the mean catches per haul and year (2018-2025) and their variance for redfish. Table 16 and Figure 3 present the stratified mean catches per stratum with the total variance per year. Figure 5 shows a map with the distribution of redfish catches per haul in 2025 Spanish 3L survey.

Table 24 and Figure 3 show the biomass estimate per swept area per stratum and their total variance by year and also the estimated abundance. Redfish shows a great annual variability probably due to its pelagic habitat. Redfish biomass indices decreased in 2004, 2007 and 2011 with a great decrease in 2013. In 2014 the biomass remains at the same value as the last year but then continually decreased to a very low level. In 2012, the redfish indices show the greater increasing reaching the highest value of the series (this was due to some hauls in which the presence of redfish was very high). Since 2023, the redfish indices increase slightly.

The length-weight relationships are presented in Table 28 (2015-2025).

Length distribution

Table 35 presents the length distribution of the stratified mean catches per haul for redfish, by sex and year (2019-2025), with the number of samples in which there was length measurements, the sampled catch, the total number of individuals measured in these samples and the range of lengths found. The total catch of this species and the total hauls made in the survey are also shown. In Figures 11 and 15 the evolution along the years can be followed. The highest proportions of small individuals in the catches (smaller than 20 cm) were found in the period 2018-2019 (51.06%, highest value of the series). In 2025, the mode observed was 26 cm and the dominant lengths were between 22-30 cm. The length range 5-63 cm

Thorny skate (*Amblyraja radiata* Donovan, 1808)

Thorny skate in Subdivision 3Ps and Divisions 3LNO have a continuous distribution and are considered a single stock unit. A portion of the stock is managed by Canada and France (3Ps) and a portion is managed by NAFO (3LNO). Commercial catches of skates comprise a mix of skate species. However, thorny skate dominates, comprising about 95% of the skate species taken in the Canadian and EU-Spain catches. Thus, the

skate fishery on the Grand Banks can be considered a fishery for thorny skate. Fishery status (Div. 3LNO): The TAC is set at 7 000 tonnes for 2022 (NAFO, 2025).

Mean catches and biomass

Table 9 shows the swept area, the tow number, the mean catches per haul and year (2018-2025) and their variance for thorny skate. Table 29 presents the length-weight relationships (2015-2025). Table 17 and Figure 4 present the stratified mean catches per stratum with the total variance per year. Table 25 and Figure 4 present the biomass per swept area by stratum and year, their total variance per year and the abundance index. Since 2017, the biomass index has been at very low levels. The indices of the thorny skate decreased from 2003 to 2004, increased in 2006-2007 and decreased again in the period 2008-2011. In 2012 the indices of the thorny skate increased and they slight decreased again in the 2013. The thorny skate indices increased slightly in the period 2014-2015 and decreased again since 2016. In 2025 the biomass and abundance increase sharply again, reaching the highest value of the series (32563 t. of biomass and 13483 of abundance).

Figure 5 shows a map with the distribution of thorny skate catches per haul in 2025 Spanish 3L survey.

Length distribution

Table 36 presents the stratified mean catches per haul length distribution for this species, by sex and year (2019-2025), with the number of samples in which there was length measurements, the sampled catch, the total number of individuals measured in these samples and the range of lengths achieved, as well as the total catch of this species and the total hauls made in the survey. In Figures 12 and 16, the evolution along the years can be followed. The highest proportion of small (smaller than 30 cm) thorny skate in the catches was in 2007 and 2015. In this survey recorded 12-90 cm thorny skates (mode: 71 cm.)

Black dogfish (*Centroscyllium fabricii* Reinhardt, 1825)

Black dogfish is present in all Divisions, but is more abundant in Div. 3NO and in depths greater than 900 m. Black dogfish is not a regulated species and commercial catches of this species are mainly a by-catch of the Greenland halibut fishery in Div. 3LMNO (González-Costas *et al.*, 2006).

Mean catches and biomass

Black dogfish haul mean catches by stratum are presented in Table 10, including swept area, number of hauls and SD. Stratified mean catches per tow by stratum and year and their variance are presented in Table 18. The time series (2018-2025) of biomass and their SD estimates of black dogfish are shown in Table 26. Length-weight relationships are presented in Table 29 (2015-2025).

The abundance and biomass present the same trend as mean catches. Biomass estimated from the 3L survey displays an increasing trend since 2004 until 2007 and decreased in 2008, 2009 and 2012. In 2003, the catches occurred only in two strata (747 and 749), in which the catches were much different, what explain why the variance in that year is so large. In 2015 the biomass increased, reaching the highest value of the series. From 2016 to 2019 the indices decreased and they have been relatively stable at very low levels (Figure 4). Since 2023, the black dogfish indices increase. In 2025 the biomass and abundance increase sharply again, reaching the second highest value of the series (6011 t. of biomass and 4817 of abundance).

Figure 5 shows a map with the distribution of black dogfish catches per haul in 2025 Spanish 3L survey.

Length distribution

Table 37 presents the length distribution of the stratified mean catches per haul for black dogfish, by sex and year (2019-2025), with the number of samples in which there was length measurements, the sampled catch, the total number of individuals measured in these samples and the range of lengths met. The total catch of this species and the total hauls made in the survey are shown too. In Figures 13 and 16 the evolution throughout the years can be followed.

In the 2025, the length range caught in the survey was 42-83 cm black dogfish (mode: 64 cm.). There is no presence of small individual (smaller 37 cm) in time series.

Acknowledge

The data used in this paper have been funded by the EU through the European Maritime, Fisheries and Aquaculture Fund (EMFAF) within the National Program of collection, management and use of data in the fisheries sector and support for scientific advice regarding the Common Fisheries Policy.

References

- ATKINSON, D. B. 1991. Relationships Between Pre-anal Fin Length and Total Length of Roughhead Grenadier (*Macrourus berglax* Lacépède) in the Northwest Atlantic. J. Northw. Atlan. Fish. Sci., **11**: 7-9.
- BISHOP, C.A. 1994. Revision and additions to stratification schemes used during research vessel surveys in NAFO Subareas 2 and 3. *NAFO SCR Doc.*, No 43, Serial No N2413, 23 p.
- CASAS, J. M., E. ROMÁN-MARCOTE, J. L. del RIO and V. M. PAJÓN. 2026. Northern Shrimp (*Pandalus borealis*, Krøyer) from Spanish Bottom Trawl Survey 2025 in NAFO Div. 3LNO. SCIENTIFIC COUNCIL MEETING – MAY 2026. NAFO SCR Doc. 26/XX, Serial No. NXXXX. NAFO, 15 p.
- COCHRAN, W. G. 1997. Sampling techniques. J. Wiley and Sons, N. Y., 23 p.
- DOUBLEDAY, W.G. 1981. Manual on groundfish surveys in the Northwest Atlantic. *NAFO Sci.Coun.Studies*, **2**, 55.
- GONZÁLEZ-COSTAS, F., D. GONZÁLEZ-TRONCOSO, M. CASAS, and G. RAMILO. 2006. Spiny Dogfish (*Squalus acanthias*) and Black Dogfish (*Centroscyllium fabricii*) Spanish Data (Surveys and Fishery) in NAFO Divisions 3LMNO. *NAFO SCR Doc.*, No. 30, Serial No. N5250, 10 p.
- ROMAN, E., B. Santos and P. Quelle. 2015. Variación interanual en la presencia de cetáceos en la division 3L del area de regulación de la Northwest Atlantic Fisheries Organization (NAFO, Flemish Pass). Viii Congreso de la Sociedad Española de Cetáceos (2-4 octubre de 2015).
- ROMAN-MARCOTE (a), E., C. González-Iglesias and D. González-Troncoso. 2020. Results for the Spanish Survey in the NAFO Regulatory Area of Division 3L for the period 2003-2019. SCIENTIFIC COUNCIL MEETING – JUNE 2020. NAFO SCR Doc. 20/013, Serial No. N7057.
- ROMAN-MARCOTE (b), E., D. González-Troncoso and M. Álvarez. 2020. Results for the Atlantic cod, roughhead grenadier, redfish, thorny skate and black dogfish of the Spanish Survey in the NAFO Div. 3L for the period 2003-2019. SCIENTIFIC COUNCIL MEETING – JUNE 2020. NAFO SCR Doc. 20/014, Serial No. N7059.
- ROMAN-MARCOTE (c), E., P. Durán Muñoz and M. Sacau. 2020. Preliminary information from EU-Spain surveys in Div 3L regarding Commission request #18: "Provide information to the Commission at its next annual meeting on sea turtles, seabirds, and marine mammals that are present in NAFO Regulatory Area based on available data". 2020. SCIENTIFIC COUNCIL MEETING – JUNE 2020. NAFO SCR Doc. 20/023REV, Serial No. N7069.
- NAFO. 2025. Report of the Scientific Council Meeting, 29 May-12 June 2025 (Halifax - Nova Scotia - Canada). NAFO SCS Doc. 25/13, Serial No. N7664.

Table 1. Spanish bottom trawl surveys in NAFO Division 3L for the period 2003-2025.

Year	Vessel	Valid tows	Depth strata covered (m)	Surveyed strata (no.)	Dates
2003	R/V <i>"Vizconde de Eza"</i>	39	118-1100	17	June 2 - June 6, June 29
2004	R/V <i>"Vizconde de Eza"</i>	50	141-1452	23	August 7 - August 15
2005	No survey - Technical problems with the research vessel.				
2006	R/V <i>"Vizconde de Eza"</i>	100	116-1449	24	July 31 - August 18
2007	R/V <i>"Vizconde de Eza"</i>	94	119-1449	24	July 23 - August 11
2008	R/V <i>"Vizconde de Eza"</i>	100	105-1455	24	July 24 - August 11
2009	R/V <i>"Vizconde de Eza"</i>	98	111-1458	24	July 25 - August 12
2010	R/V <i>"Vizconde de Eza"</i>	97	119-1462	24	July 25 - August 14
2011	R/V <i>"Vizconde de Eza"</i>	89	115-1419	24	August 10 - August 24
2012	R/V <i>"Vizconde de Eza"</i>	98	112-1478	24	July 30 - August 18
2013	R/V <i>"Vizconde de Eza"</i>	100	117-1420	24	July 30 - August 19
2014	R/V <i>"Vizconde de Eza"</i>	102	104-1411	24	July 30 - August 19
2015	R/V <i>"Vizconde de Eza"</i>	97	112-1458	24	July 28 - August 17
2016	R/V <i>"Vizconde de Eza"</i>	98	126-1447	24	July 28 - August 17
2017	R/V <i>"Vizconde de Eza"</i>	99	106-1433	24	July 21 - August 8
2018	R/V <i>"Vizconde de Eza"</i>	100	116-1442	24	July 31 - August 19
2019	R/V <i>"Vizconde de Eza"</i>	96	120-1359	24	August 3 - August 23
2020	No survey - Exceptional pandemic situation caused by COVID 19				
2021	No survey - Exceptional pandemic situation caused by COVID 19				
2022	No survey - Technical problems with the research vessel.				
2023	R/V <i>"Vizconde de Eza"</i>	95	129-1481	24	August 9 - August 27
2024	R/V <i>"Vizconde de Eza"</i>	94	117-1482	24	August 8 - August 27
2025	R/V <i>Vizconde de Eza</i>	82	125-1467	24	August 11 - August 29

Table 2. Technical data of the Spanish survey in NAFO Division 3L for the period 2003-2025.

Procedure	Specification
Vessel	R/V “Vizconde de Eza”
GT	1400 t.
Power	1800 HP
Surveyed area	Div. 3L (depth < 1500 m, outside ZEE Canada)
Mean trawl speed	3 knots
Trawling time	30 minutes effective time
Fishing gear type	<i>Campelen 1800</i>
Headline	29.5 m
Groundrope	19.5 m
Type of groundrope	34 rockhopper
Floats	(2 x 39) + 10
Bridle	40 m (20 mm)
Vertical opening	4-5
Horizontal opening	26
Trawl doors	Polyvalent, 1400 Kg
Warp	20 mm
Warp to depth ratio	$18.426 * \text{Depth (m)}^{0.7008}$
Mesh size in the cod-end	44 mm
Type of survey:	Stratified random bottom trawl survey
Criterion to change position of a selected tow	Unsuitable bottom for trawling according to commercial fish information or ecosounder register. Information on gear damage from previous surveys.
Criterion to reject data from tow	- Severe tears in the gear - tears in cod-end - Less of 20 minutes tow - Bad behaviour of the gear
Daily period for fishing	6.00 to 22.00 hours
Target species	Greenland halibut, American plaice, Atlantic cod, roughhead grenadier, witch flounder, thorny skate, redfish, black dogfish, northern shrimp.

Table 3. Swept area, number of hauls and **Greenland halibut** mean catch (Kg) and SD (**) by stratum. Spanish Survey on NAFO Div. 3L in the period 2018-2025, on board R/V "Vizconde de Eza".

Stratum	2018				2019				2023				2024				2025			
	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD
385	0.0221	2	11.600	4.596	0.0225	2	15.445	3.331	0.0233	2	16.160	12.070	0.0229	2	9	12.700	0.0229	2	3	2.135
387	0.0465	4	17.894	14.002	0.0450	4	18.363	5.800	0.0450	4	5.145	0.668	0.0446	4	4.032	2.704	0.0450	4	6.507	3.292
388	0.0566	5	16.672	7.357	0.0559	5	29.247	33.782	0.0570	5	3.138	1.372	0.0570	5	14.408	21.070	0.0454	4	8.171	4.321
389	0.0803	7	22.186	5.226	0.0784	7	13.952	7.032	0.0795	7	11.606	4.153	0.0799	7	27.527	14.154	0.0589	5	24.725	17.215
390	0.1358	12	5.758	7.635	0.1125	10	7.417	7.085	0.0926	8	4.564	2.079	0.1238	11	5.098	7.027	0.1125	10	2.269	3.093
391	0.0458	4	29.575	8.078	0.0450	4	25.552	16.731	0.0465	4	19.653	10.905	0.0450	4	30.223	11.077	0.0458	4	21.504	3.090
392	0.0229	2	14.000	5.445	0.0229	2	62.140	40.885	0.0229	2	15.777	8.014	0.0225	2	25.100	6.223	0.0225	2	24.335	19.127
729	0.0341	3	19.350	5.921	0.0338	3	10.667	5.948	0.0345	3	15.938	11.418	0.0338	3	9.647	8.103	0.0338	3	6.065	4.957
730	0.0330	3	33.700	12.988	0.0338	3	58.533	13.455	0.0225	2	52.725	27.655	0.0225	2	35.959	15.177	0.0229	2	39.363	2.493
731	0.0353	3	27.428	9.712	0.0341	3	23.926	15.876	0.0345	3	25.874	17.939	0.0341	3	12.452	2.922	0.0341	3	13.745	13.807
732	0.0461	4	27.092	11.860	0.0454	4	52.478	19.796	0.0458	4	47.255	6.885	0.0450	4	61.864	26.389	0.0461	4	35.638	8.420
733	0.0454	4	30.242	20.540	0.0450	4	22.738	5.931	0.0458	4	7.828	3.049	0.0443	4	9.973	8.915	0.0454	4	8.617	4.502
734	0.0225	2	27.940	4.327	0.0229	2	26.450	1.131	0.0236	2	28.862	5.541	0.0225	2	49.180	34.337	0.0233	2	14.273	8.382
741	0.0229	2	33.410	1.895	0.0225	2	44.485	33.255	0.0233	2	55.135	3.627	0.0221	2	39.257	29.844	0.0229	2	41.210	21.227
742	0.0221	2	36.369	20.491	0.0221	2	39.693	40.528	0.0233	2	37.650	8.881	0.0221	2	23.710	2.984	0.0229	2	16.050	7.269
743	0.0225	2	23.365	2.440	0.0225	2	59.725	20.966	0.0236	2	72.835	13.485	0.0225	2	36.040	4.327	0.0233	2	39.285	18.661
744	0.0229	2	26.188	24.193	0.0225	2	42.385	39.407	0.0233	2	55.987	36.963	0.0229	2	89.830	2.517	0.0225	2	76.768	67.617
745	0.0596	5	21.985	11.365	0.0578	5	45.894	20.251	0.0574	5	34.240	15.783	0.0559	5	28.434	5.166	0.0454	4	34.739	10.611
746	0.0698	6	32.570	13.006	0.0679	6	32.247	22.674	0.0686	6	43.549	22.571	0.0664	6	26.008	20.114	0.0450	4	17.141	8.354
747	0.1140	10	12.780	4.729	0.1125	10	24.155	19.948	0.1133	10	15.362	11.283	0.1005	9	17.872	20.804	0.0908	8	22.087	18.985
748	0.0225	2	20.712	13.277	0.0225	2	76.625	72.231	0.0229	2	102.295	77.280	0.0225	2	54.153	7.110	0.0225	2	70.098	76.682
749	0.0225	2	8.035	5.112	0.0221	2	19.175	1.591	0.0229	2	22.320	10.663	0.0221	2	25.920	19.148	0.0233	2	14.330	7.227
750	0.0904	8	23.887	6.916	0.0788	7	43.061	15.592	0.0904	8	26.341	24.677	0.0671	6	35.258	26.451	0.0341	3	34.824	49.469
751	0.0454	4	61.608	93.564	0.0338	3	44.700	23.718	0.0454	4	38.103	26.082	0.0338	3	42.207	8.117	0.0236	2	62.585	13.287

$$(**) SD = \frac{\sum (x_i - \bar{x})}{n-1}$$

Table 4. Swept area, number of hauls and **American plaice** mean catch (Kg) and SD (**) by stratum. Spanish Survey on NAFO Div. 3L in the period 2018-2025, on board R/V "Vizconde de Eza".

Stratum	2018				2019				2023				2024				2025			
	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD
385	0.0221	2	156.66	70.70	0.0225	2	102.25	17.90	0.0233	2	234.02	167.51	0.0229	2	159.09	124.75	0.0229	2	126.36	1816.84
387	0.0465	4	7.81	5.71	0.0450	4	6.67	7.46	0.0450	4	6.50	5.90	0.0446	4	1.00	0.56	0.0450	4	3.47	34.30
388	0.0566	5	11.49	5.20	0.0559	5	18.57	13.27	0.0570	5	2.53	2.58	0.0570	5	4.55	4.55	0.0454	4	3.75	15.00
389	0.0803	7	37.84	31.74	0.0784	7	39.46	50.85	0.0795	7	21.47	7.12	0.0799	7	33.39	41.93	0.0589	5	41.94	6134.53
390	0.1358	12	46.73	32.37	0.1125	10	35.96	26.61	0.0926	8	92.96	75.80	0.1238	11	49.85	44.55	0.1125	10	105.93	8842.37
391	0.0458	4	140.96	130.82	0.0450	4	65.38	56.40	0.0465	4	12.44	12.40	0.0450	4	75.94	83.19	0.0458	4	18.91	514.83
392	0.0229	2	0.44	0.62	0.0229	2	15.97	22.18	0.0229	2	0.00	0.00	0.0225	2	0.01	0.01	0.0225	2	0.00	0.00
729	0.0341	3	0.00	0.00	0.0338	3	0.00	0.00	0.0345	3	0.00	0.00	0.0338	3	1.71	2.97	0.0338	3	0.00	0.00
730	0.0330	3	0.00	0.00	0.0338	3	0.00	0.00	0.0225	2	0.00	0.00	0.0225	2	0.00	0.00	0.0229	2	0.00	0.00
731	0.0353	3	0.25	0.26	0.0341	3	1.68	1.89	0.0345	3	0.00	0.00	0.0341	3	0.00	0.00	0.0341	3	0.24	0.17
732	0.0461	4	0.00	0.00	0.0454	4	0.00	0.00	0.0458	4	0.00	0.00	0.0450	4	0.00	0.00	0.0461	4	0.00	0.00
733	0.0454	4	0.00	0.00	0.0450	4	1.02	1.21	0.0458	4	1.41	2.28	0.0443	4	0.50	0.79	0.0454	4	0.00	0.00
734	0.0225	2	0.00	0.00	0.0229	2	0.00	0.00	0.0236	2	0.00	0.00	0.0225	2	0.00	0.00	0.0233	2	0.00	0.00
741	0.0229	2	0.00	0.00	0.0225	2	0.00	0.00	0.0233	2	0.00	0.00	0.0221	2	0.00	0.00	0.0229	2	0.00	0.00
742	0.0221	2	0.00	0.00	0.0221	2	0.00	0.00	0.0233	2	0.00	0.00	0.0221	2	0.00	0.00	0.0229	2	0.00	0.00
743	0.0225	2	0.00	0.00	0.0225	2	0.00	0.00	0.0236	2	0.00	0.00	0.0225	2	0.00	0.00	0.0233	2	0.00	0.00
744	0.0229	2	0.00	0.00	0.0225	2	0.00	0.00	0.0233	2	0.00	0.00	0.0229	2	0.00	0.00	0.0225	2	0.00	0.00
745	0.0596	5	0.00	0.00	0.0578	5	0.00	0.00	0.0574	5	0.00	0.00	0.0559	5	0.00	0.00	0.0454	4	0.00	0.00
746	0.0698	6	0.00	0.00	0.0679	6	0.00	0.00	0.0686	6	0.00	0.00	0.0664	6	0.00	0.00	0.0450	4	0.00	0.00
747	0.1140	10	0.00	0.00	0.1125	10	0.00	0.00	0.1133	10	0.00	0.00	0.1005	9	0.00	0.00	0.0908	8	0.00	0.00
748	0.0225	2	0.00	0.00	0.0225	2	0.00	0.00	0.0229	2	0.00	0.00	0.0225	2	0.00	0.00	0.0225	2	0.00	0.00
749	0.0225	2	0.00	0.00	0.0221	2	0.00	0.00	0.0229	2	0.00	0.00	0.0221	2	0.00	0.00	0.0233	2	0.00	0.00
750	0.0904	8	0.00	0.00	0.0788	7	0.00	0.00	0.0904	8	0.00	0.00	0.0671	6	0.00	0.00	0.0341	3	0.00	0.00
751	0.0454	4	0.00	0.00	0.0338	3	0.00	0.00	0.0454	4	0.00	0.00	0.0338	3	0.00	0.00	0.0236	2	0.00	0.00

$$(**) SD = \frac{\sum (x_i - \bar{x})}{n-1}$$

Table 5. Swept area, number of hauls and **Witch flounder** mean catch (Kg) and SD (**) by stratum. Spanish Survey on NAFO Div. 3L in the period 2018-2025, on board R/V "Vizconde de Eza".

Stratum	2018				2019				2023				2024				2025			
	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD
385	0.0221	2	0.48	0.68	0.0225	2	0.00	0.00	0.0233	2	0.56	0.79	0.0229	2	2.36	3.33	0.0229	2	0.57	0.81
387	0.0465	4	3.18	1.67	0.0450	4	1.97	1.90	0.0450	4	2.70	1.13	0.0446	4	2.29	1.23	0.0450	4	7.71	4.42
388	0.0566	5	0.53	0.38	0.0559	5	1.04	0.45	0.0570	5	2.23	1.20	0.0570	5	2.06	1.39	0.0454	4	5.98	4.02
389	0.0803	7	0.16	0.20	0.0784	7	0.60	0.48	0.0795	7	0.44	0.57	0.0799	7	0.57	0.94	0.0589	5	1.65	1.56
390	0.1358	12	0.18	0.63	0.1125	10	0.00	0.00	0.0926	8	0.00	0.00	0.1238	11	0.00	0.00	0.1125	10	0.40	0.86
391	0.0458	4	0.77	0.96	0.0450	4	0.00	0.00	0.0465	4	0.00	0.00	0.0450	4	0.00	0.00	0.0458	4	0.62	0.78
392	0.0229	2	1.93	2.72	0.0229	2	1.04	0.27	0.0229	2	1.65	0.70	0.0225	2	0.26	0.37	0.0225	2	4.12	2.41
729	0.0341	3	5.11	3.12	0.0338	3	2.31	1.43	0.0345	3	1.91	1.00	0.0338	3	2.04	1.86	0.0338	3	4.76	3.78
730	0.0330	3	1.40	1.68	0.0338	3	0.69	1.20	0.0225	2	2.36	3.33	0.0225	2	8.91	11.87	0.0229	2	1.38	1.51
731	0.0353	3	2.36	2.24	0.0341	3	2.96	2.34	0.0345	3	2.58	2.35	0.0341	3	0.71	0.59	0.0341	3	2.43	0.76
732	0.0461	4	1.21	1.35	0.0454	4	0.59	0.69	0.0458	4	6.65	2.44	0.0450	4	3.84	2.19	0.0461	4	4.76	2.33
733	0.0454	4	1.95	2.03	0.0450	4	0.85	0.63	0.0458	4	3.91	4.11	0.0443	4	1.69	2.18	0.0454	4	4.23	0.90
734	0.0225	2	0.27	0.37	0.0229	2	0.08	0.11	0.0236	2	0.00	0.00	0.0225	2	0.00	0.00	0.0233	2	0.00	0.00
741	0.0229	2	0.00	0.00	0.0225	2	0.00	0.00	0.0233	2	0.24	0.33	0.0221	2	0.00	0.00	0.0229	2	0.00	0.00
742	0.0221	2	0.00	0.00	0.0221	2	0.00	0.00	0.0233	2	0.00	0.00	0.0221	2	0.00	0.00	0.0229	2	0.00	0.00
743	0.0225	2	0.00	0.00	0.0225	2	0.00	0.00	0.0236	2	0.00	0.00	0.0225	2	0.00	0.00	0.0233	2	0.00	0.00
744	0.0229	2	0.00	0.00	0.0225	2	0.00	0.00	0.0233	2	0.00	0.00	0.0229	2	0.00	0.00	0.0225	2	0.00	0.00
745	0.0596	5	0.02	0.04	0.0578	5	0.04	0.08	0.0574	5	0.01	0.03	0.0559	5	0.00	0.00	0.0454	4	0.01	0.03
746	0.0698	6	0.00	0.00	0.0679	6	0.00	0.00	0.0686	6	0.01	0.02	0.0664	6	0.00	0.00	0.0450	4	0.01	0.01
747	0.1140	10	0.00	0.00	0.1125	10	0.00	0.00	0.1133	10	0.00	0.00	0.1005	9	0.00	0.00	0.0908	8	0.00	0.00
748	0.0225	2	0.00	0.00	0.0225	2	0.49	0.69	0.0229	2	0.00	0.00	0.0225	2	1.84	2.61	0.0225	2	0.01	0.01
749	0.0225	2	0.00	0.00	0.0221	2	0.00	0.00	0.0229	2	0.00	0.00	0.0221	2	0.00	0.00	0.0233	2	0.00	0.00
750	0.0904	8	0.00	0.00	0.0788	7	0.00	0.00	0.0904	8	0.08	0.24	0.0671	6	0.00	0.00	0.0341	3	0.00	0.00
751	0.0454	4	0.00	0.00	0.0338	3	0.00	0.00	0.0454	4	0.00	0.00	0.0338	3	0.00	0.00	0.0236	2	0.00	0.00

$$(**) SD = \frac{\sum (x_i - \bar{x})}{n-1}$$

Table 6. Swept area, number of hauls and **Atlantic cod** mean catch (Kg) and SD (**) by stratum. Spanish Survey on NAFO Div. 3L in the period 2018-2025, on board R/V "Vizconde de Eza".

Stratum	2018				2019				2023				2024				2025			
	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD
385	0.0221	2	1.065	1.506	0.0225	2	1.385	0.219	0.0233	2	5.937	2.788	0.0229	2	0.385	0.544	0.0229	2	5.125	0.664
387	0.0465	4	5.029	4.248	0.0450	4	10.398	14.693	0.0450	4	19.117	28.477	0.0446	4	41.380	31.473	0.0450	4	16.331	19.720
388	0.0566	5	7.337	4.492	0.0559	5	19.525	11.007	0.0570	5	14.932	8.632	0.0570	5	31.060	23.590	0.0454	4	67.047	73.321
389	0.0803	7	16.829	18.110	0.0784	7	22.887	14.423	0.0795	7	38.565	25.121	0.0799	7	34.297	35.001	0.0589	5	81.311	78.309
390	0.1358	12	2.723	2.074	0.1125	10	2.965	6.617	0.0926	8	6.453	5.704	0.1238	11	11.518	20.463	0.1125	10	14.172	32.390
391	0.0458	4	15.435	13.636	0.0450	4	21.082	15.790	0.0465	4	30.151	15.208	0.0450	4	31.755	7.865	0.0458	4	59.188	20.919
392	0.0229	2	0.605	0.856	0.0229	2	6.690	9.461	0.0229	2	0.999	0.409	0.0225	2	7.564	0.811	0.0225	2	1.338	1.564
729	0.0341	3	0.000	0.000	0.0338	3	0.000	0.000	0.0345	3	0.000	0.000	0.0338	3	0.000	0.000	0.0338	3	0.000	0.000
730	0.0330	3	0.000	0.000	0.0338	3	0.000	0.000	0.0225	2	0.000	0.000	0.0225	2	0.000	0.000	0.0229	2	0.000	0.000
731	0.0353	3	0.508	0.598	0.0341	3	1.812	1.649	0.0345	3	0.000	0.000	0.0341	3	0.073	0.127	0.0341	3	0.990	1.714
732	0.0461	4	0.000	0.000	0.0454	4	0.000	0.000	0.0458	4	0.000	0.000	0.0450	4	0.008	0.017	0.0461	4	0.000	0.000
733	0.0454	4	0.000	0.000	0.0450	4	0.040	0.080	0.0458	4	0.000	0.000	0.0443	4	0.030	0.060	0.0454	4	2.455	2.631
734	0.0225	2	0.000	0.000	0.0229	2	0.000	0.000	0.0236	2	0.000	0.000	0.0225	2	0.225	0.318	0.0233	2	0.000	0.000
741	0.0229	2	0.000	0.000	0.0225	2	0.000	0.000	0.0233	2	0.000	0.000	0.0221	2	0.000	0.000	0.0229	2	0.000	0.000
742	0.0221	2	0.000	0.000	0.0221	2	0.000	0.000	0.0233	2	0.000	0.000	0.0221	2	0.000	0.000	0.0229	2	0.000	0.000
743	0.0225	2	0.000	0.000	0.0225	2	0.000	0.000	0.0236	2	0.000	0.000	0.0225	2	0.000	0.000	0.0233	2	0.000	0.000
744	0.0229	2	0.000	0.000	0.0225	2	0.000	0.000	0.0233	2	0.000	0.000	0.0229	2	0.000	0.000	0.0225	2	0.000	0.000
745	0.0596	5	0.000	0.000	0.0578	5	0.000	0.000	0.0574	5	0.000	0.000	0.0559	5	0.000	0.000	0.0454	4	0.000	0.000
746	0.0698	6	0.000	0.000	0.0679	6	0.000	0.000	0.0686	6	0.000	0.000	0.0664	6	0.000	0.000	0.0450	4	0.000	0.000
747	0.1140	10	0.000	0.000	0.1125	10	0.000	0.000	0.1133	10	0.000	0.000	0.1005	9	0.000	0.000	0.0908	8	0.000	0.000
748	0.0225	2	0.000	0.000	0.0225	2	0.000	0.000	0.0229	2	0.000	0.000	0.0225	2	0.000	0.000	0.0225	2	0.000	0.000
749	0.0225	2	0.000	0.000	0.0221	2	0.000	0.000	0.0229	2	0.000	0.000	0.0221	2	0.000	0.000	0.0233	2	0.000	0.000
750	0.0904	8	0.000	0.000	0.0788	7	0.000	0.000	0.0904	8	0.000	0.000	0.0671	6	0.000	0.000	0.0341	3	0.000	0.000
751	0.0454	4	0.000	0.000	0.0338	3	0.000	0.000	0.0454	4	0.000	0.000	0.0338	3	0.000	0.000	0.0236	2	0.000	0.000

$$(**) SD = \frac{\sum (x_i - \bar{x})}{n-1}$$

Table 7. Swept area, number of hauls and **rougehead grenadier** mean catch (Kg) and SD (**) by stratum. Spanish Survey on NAFO Div. 3L in the period 2018-2025, on board R/V "Vizconde de Eza".

Stratum	2018				2019				2023				2024				2025			
	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD
385	0.0221	2	0.000	0.000	0.0225	2	0.000	0.000	0.0233	2	0.000	0.000	0.0225	2	0.000	0.000	0.0229	2	0.000	0.000
387	0.0465	4	19.704	8.192	0.0450	4	24.088	12.740	0.0450	4	66.918	31.948	0.0446	4	53.387	40.728	0.0450	4	64.904	34.833
388	0.0566	5	21.716	20.521	0.0559	5	15.736	5.413	0.0570	5	31.090	36.791	0.0566	5	26.894	27.237	0.0454	4	68.235	16.832
389	0.0803	7	4.866	5.069	0.0784	7	6.217	5.173	0.0795	7	4.985	8.201	0.0799	7	1.402	1.889	0.0589	5	30.468	32.275
390	0.1358	12	0.000	0.000	0.1125	10	0.359	1.135	0.0926	8	4.691	11.541	0.1369	12	0.033	0.113	0.1125	10	1.589	2.966
391	0.0458	4	26.172	18.273	0.0450	4	23.775	31.414	0.0465	4	14.142	16.371	0.0458	4	18.830	35.182	0.0458	4	127.367	64.957
392	0.0229	2	16.375	3.076	0.0229	2	28.400	24.890	0.0229	2	69.295	11.066	0.0229	2	69.358	21.698	0.0225	2	37.375	22.282
729	0.0341	3	15.778	6.335	0.0338	3	10.511	3.245	0.0345	3	11.902	9.202	0.0345	3	29.106	16.933	0.0338	3	21.502	2.256
730	0.0330	3	66.719	70.948	0.0338	3	12.202	4.251	0.0225	2	18.500	4.653	0.0341	3	39.938	14.378	0.0229	2	62.755	66.475
731	0.0353	3	17.212	4.727	0.0341	3	11.883	5.643	0.0345	3	14.975	3.033	0.0338	3	13.683	8.312	0.0341	3	15.614	3.261
732	0.0461	4	7.020	2.783	0.0454	4	12.042	9.860	0.0458	4	24.900	11.201	0.0446	4	10.040	6.175	0.0461	4	28.386	23.566
733	0.0454	4	12.040	6.061	0.0450	4	11.486	7.625	0.0458	4	21.218	14.111	0.0450	4	26.280	19.843	0.0454	4	20.409	13.340
734	0.0225	2	6.545	0.537	0.0229	2	15.461	12.188	0.0236	2	70.028	25.065	0.0225	2	19.190	1.994	0.0233	2	76.844	31.755
741	0.0229	2	4.940	2.319	0.0225	2	1.464	0.600	0.0233	2	19.812	7.536	0.0225	2	20.238	14.867	0.0229	2	24.421	0.822
742	0.0221	2	9.074	3.173	0.0221	2	6.604	0.492	0.0233	2	11.082	3.607	0.0225	2	15.564	5.793	0.0229	2	13.137	5.044
743	0.0225	2	5.864	4.167	0.0225	2	11.168	5.312	0.0236	2	23.810	23.095	0.0229	2	24.673	3.386	0.0233	2	32.899	25.843
744	0.0229	2	4.529	6.299	0.0225	2	3.008	3.949	0.0233	2	34.262	15.554	0.0221	2	6.461	1.278	0.0225	2	15.533	4.937
745	0.0596	5	9.617	7.015	0.0578	5	9.537	6.107	0.0574	5	23.987	11.633	0.0559	5	14.752	13.785	0.0454	4	24.798	13.650
746	0.0698	6	13.844	10.458	0.0679	6	16.959	7.407	0.0686	6	28.393	16.524	0.0683	6	13.424	9.070	0.0450	4	24.792	20.739
747	0.1140	10	15.856	8.129	0.1125	10	18.263	8.231	0.1133	10	18.536	8.036	0.1125	10	23.644	16.516	0.0908	8	31.491	9.592
748	0.0225	2	80.502	7.851	0.0225	2	13.960	12.714	0.0229	2	44.945	44.102	0.0225	2	82.186	100.955	0.0225	2	23.833	11.558
749	0.0225	2	24.125	9.228	0.0221	2	24.231	10.580	0.0229	2	42.160	7.353	0.0229	2	19.075	6.824	0.0233	2	38.152	10.247
750	0.0904	8	11.148	5.852	0.0788	7	11.982	7.043	0.0904	8	10.675	4.221	0.0934	8	17.880	19.526	0.0341	3	35.822	16.870
751	0.0454	4	18.893	6.623	0.0338	3	13.150	7.002	0.0454	4	20.008	8.859	0.0349	3	5.000	4.070	0.0236	2	13.893	11.599

$$(**) SD = \frac{\sum (x_i - \bar{x})}{n-1}$$

Table 8. Swept area, number of hauls and **redfish** mean catch (Kg) and SD (**) by stratum. Spanish Survey on NAFO Div. 3L in the period 2018-2025, on board R/V "Vizconde de Eza".

Stratum	2018				2019				2023				2024				2025			
	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD
385	0.0221	2	0.152	0.215	0.0225	2	0.015	0.018	0.0233	2	0.119	0.168	0.0229	2	0.000	0.000	0.0229	2	0.028	0.018
387	0.0465	4	239.235	229.266	0.0450	4	266.004	127.589	0.0450	4	1102.138	378.687	0.0446	4	1473.990	1358.917	0.0450	4	2518.148	1495.318
388	0.0566	5	235.345	232.170	0.0559	5	424.870	459.902	0.0570	5	1030.016	744.108	0.0570	5	1164.258	1097.334	0.0454	4	2162.368	1536.207
389	0.0803	7	128.879	199.320	0.0784	7	250.967	495.273	0.0795	7	69.859	107.498	0.0799	7	162.084	231.363	0.0589	5	195.410	158.980
390	0.1358	12	0.080	0.274	0.1125	10	0.039	0.120	0.0926	8	0.738	1.035	0.1238	11	1.621	2.917	0.1125	10	2.940	7.853
391	0.0458	4	294.143	557.156	0.0450	4	10.360	10.352	0.0465	4	151.935	105.724	0.0450	4	106.141	178.250	0.0458	4	221.078	196.806
392	0.0229	2	352.825	327.284	0.0229	2	218.475	26.269	0.0229	2	1667.520	431.802	0.0225	2	687.777	520.822	0.0225	2	363.358	56.254
729	0.0341	3	38.827	34.558	0.0338	3	662.483	554.297	0.0345	3	190.843	160.145	0.0338	3	424.373	301.350	0.0338	3	360.087	306.853
730	0.0330	3	69.500	62.933	0.0338	3	25.067	13.268	0.0225	2	20.697	3.686	0.0225	2	11.270	13.817	0.0229	2	6.332	0.575
731	0.0353	3	259.133	396.687	0.0341	3	147.212	207.645	0.0345	3	24.843	25.125	0.0341	3	436.893	338.956	0.0341	3	256.849	366.121
732	0.0461	4	2.715	2.851	0.0454	4	4.034	4.020	0.0458	4	1.361	1.450	0.0450	4	1.967	1.498	0.0461	4	2.411	2.011
733	0.0454	4	172.787	292.419	0.0450	4	268.638	319.639	0.0458	4	238.300	175.057	0.0443	4	2479.145	4797.854	0.0454	4	2378.187	3808.154
734	0.0225	2	6.260	8.853	0.0229	2	10.608	6.353	0.0236	2	4.635	2.171	0.0225	2	4.480	4.554	0.0233	2	30.996	40.169
741	0.0229	2	0.000	0.000	0.0225	2	0.000	0.000	0.0233	2	0.000	0.000	0.0221	2	0.000	0.000	0.0229	2	0.000	0.000
742	0.0221	2	1.770	2.503	0.0221	2	0.000	0.000	0.0233	2	0.710	1.004	0.0221	2	0.000	0.000	0.0229	2	0.000	0.000
743	0.0225	2	0.000	0.000	0.0225	2	0.000	0.000	0.0236	2	0.575	0.813	0.0225	2	0.000	0.000	0.0233	2	0.000	0.000
744	0.0229	2	0.000	0.000	0.0225	2	0.000	0.000	0.0233	2	0.000	0.000	0.0229	2	0.000	0.000	0.0225	2	0.000	0.000
745	0.0596	5	0.126	0.281	0.0578	5	0.400	0.894	0.0574	5	0.000	0.000	0.0559	5	0.070	0.156	0.0454	4	0.346	0.693
746	0.0698	6	0.076	0.186	0.0679	6	0.000	0.000	0.0686	6	0.341	0.531	0.0664	6	0.000	0.000	0.0450	4	0.000	0.000
747	0.1140	10	0.000	0.000	0.1125	10	0.000	0.000	0.1133	10	0.159	0.504	0.1005	9	0.383	0.767	0.0908	8	0.000	0.000
748	0.0225	2	0.545	0.770	0.0225	2	0.000	0.000	0.0229	2	1.195	1.690	0.0225	2	1.077	1.523	0.0225	2	0.615	0.870
749	0.0225	2	0.000	0.000	0.0221	2	0.000	0.000	0.0229	2	1.915	2.708	0.0221	2	0.680	0.962	0.0233	2	0.000	0.000
750	0.0904	8	0.151	0.232	0.0788	7	0.000	0.000	0.0904	8	0.000	0.000	0.0671	6	0.000	0.000	0.0341	3	0.000	0.000
751	0.0454	4	0.000	0.000	0.0338	3	0.000	0.000	0.0454	4	0.000	0.000	0.0338	3	0.003	0.005	0.0236	2	0.000	0.000

$$(**) SD = \frac{\sum (x_i - \bar{x})}{n-1}$$

Table 9. Swept area, number of hauls and **thorny skate** mean catch (Kg) and SD (**) by stratum. Spanish Survey on NAFO Div. 3L in the period 2018-2025, on board R/V "*Vizconde de Eza*".

Stratum	2018				2019				2023				2024				2025			
	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD
385	0.0221	2	4.484	3.438	0.0225	2	22.762	3.473	0.0233	2	30.113	7.025	0.0229	2	77.638	8.460	0.0229	2	79.560	13.435
387	0.0465	4	11.960	7.847	0.0450	4	15.865	8.511	0.0450	4	18.495	18.344	0.0446	4	9.020	7.944	0.0450	4	16.662	15.975
388	0.0566	5	20.228	9.523	0.0559	5	18.151	11.620	0.0570	5	18.217	12.290	0.0570	5	10.989	12.416	0.0454	4	50.610	56.377
389	0.0803	7	10.026	5.995	0.0784	7	19.418	17.571	0.0795	7	30.226	11.145	0.0799	7	92.105	69.483	0.0589	5	101.021	49.398
390	0.1358	12	9.216	7.914	0.1125	10	11.779	11.699	0.0926	8	28.401	12.443	0.1238	11	65.850	96.655	0.1125	10	58.428	30.876
391	0.0458	4	28.346	20.875	0.0450	4	25.120	16.236	0.0465	4	56.239	35.029	0.0450	4	117.069	16.747	0.0458	4	186.669	34.796
392	0.0229	2	90.390	89.859	0.0229	2	59.534	57.695	0.0229	2	354.700	434.192	0.0225	2	260.054	318.009	0.0225	2	1209.745	1127.842
729	0.0341	3	16.297	15.712	0.0338	3	10.230	11.457	0.0345	3	2.387	2.067	0.0338	3	17.811	10.788	0.0338	3	10.930	5.923
730	0.0330	3	1.408	2.439	0.0338	3	0.000	0.000	0.0225	2	1.600	2.263	0.0225	2	2.450	3.465	0.0229	2	1.845	2.609
731	0.0353	3	0.000	0.000	0.0341	3	0.000	0.000	0.0345	3	0.005	0.009	0.0341	3	0.000	0.000	0.0341	3	26.837	43.707
732	0.0461	4	0.000	0.000	0.0454	4	0.000	0.000	0.0458	4	0.270	0.540	0.0450	4	0.855	1.710	0.0461	4	0.000	0.000
733	0.0454	4	2.063	4.125	0.0450	4	1.785	2.499	0.0458	4	4.465	5.457	0.0443	4	4.773	6.793	0.0454	4	12.498	5.066
734	0.0225	2	0.000	0.000	0.0229	2	0.000	0.000	0.0236	2	1.298	1.835	0.0225	2	0.000	0.000	0.0233	2	0.000	0.000
741	0.0229	2	0.000	0.000	0.0225	2	0.000	0.000	0.0233	2	0.000	0.000	0.0221	2	0.000	0.000	0.0229	2	0.000	0.000
742	0.0221	2	0.000	0.000	0.0221	2	0.000	0.000	0.0233	2	0.000	0.000	0.0221	2	0.000	0.000	0.0229	2	0.000	0.000
743	0.0225	2	0.000	0.000	0.0225	2	0.000	0.000	0.0236	2	0.000	0.000	0.0225	2	0.000	0.000	0.0233	2	0.000	0.000
744	0.0229	2	0.000	0.000	0.0225	2	0.000	0.000	0.0233	2	0.000	0.000	0.0229	2	0.000	0.000	0.0225	2	0.000	0.000
745	0.0596	5	0.680	1.521	0.0578	5	0.000	0.000	0.0574	5	0.000	0.000	0.0559	5	0.774	1.731	0.0454	4	0.000	0.000
746	0.0698	6	0.000	0.000	0.0679	6	0.000	0.000	0.0686	6	0.000	0.000	0.0664	6	0.000	0.000	0.0450	4	0.000	0.000
747	0.1140	10	0.000	0.000	0.1125	10	0.000	0.000	0.1133	10	0.350	1.107	0.1005	9	0.000	0.000	0.0908	8	0.000	0.000
748	0.0225	2	0.000	0.000	0.0225	2	0.000	0.000	0.0229	2	0.000	0.000	0.0225	2	2.150	3.041	0.0225	2	0.000	0.000
749	0.0225	2	0.000	0.000	0.0221	2	0.000	0.000	0.0229	2	0.000	0.000	0.0221	2	0.000	0.000	0.0233	2	0.000	0.000
750	0.0904	8	0.000	0.000	0.0788	7	0.000	0.000	0.0904	8	0.000	0.000	0.0671	6	0.000	0.000	0.0341	3	0.000	0.000
751	0.0454	4	0.000	0.000	0.0338	3	0.000	0.000	0.0454	4	0.000	0.000	0.0338	3	0.000	0.000	0.0236	2	0.000	0.000

$$(**) SD = \frac{\sum (x_i - \bar{x})}{n-1}$$

Table 10. Swept area, number of hauls and **black dogfish** mean catch (Kg) and SD (**) by stratum. Spanish Survey on NAFO Div. 3L in the period 2018-2025, on board R/V "Vizconde de Eza".

Stratum	2018				2019				2023				2024				2025			
	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD	Swept area	Tow No.	Mean catch	SD
385	0.0221	2	0.000	0.000	0.0225	2	0.000	0.000	0.0233	2	0.000	0.000	0.0229	2	0.000	0.000	0.0229	2	0.000	0.000
387	0.0465	4	0.000	0.000	0.0450	4	0.000	0.000	0.0450	4	0.000	0.000	0.0446	4	0.000	0.000	0.0450	4	0.000	0.000
388	0.0566	5	0.000	0.000	0.0559	5	0.000	0.000	0.0570	5	0.000	0.000	0.0570	5	0.000	0.000	0.0454	4	0.000	0.000
389	0.0803	7	0.000	0.000	0.0784	7	0.000	0.000	0.0795	7	0.000	0.000	0.0799	7	0.000	0.000	0.0589	5	0.000	0.000
390	0.1358	12	0.000	0.000	0.1125	10	0.000	0.000	0.0926	8	0.000	0.000	0.1238	11	0.000	0.000	0.1125	10	0.000	0.000
391	0.0458	4	0.000	0.000	0.0450	4	0.000	0.000	0.0465	4	0.000	0.000	0.0450	4	0.000	0.000	0.0458	4	0.000	0.000
392	0.0229	2	0.000	0.000	0.0229	2	0.000	0.000	0.0229	2	0.000	0.000	0.0225	2	0.000	0.000	0.0225	2	0.000	0.000
729	0.0341	3	0.000	0.000	0.0338	3	0.000	0.000	0.0345	3	0.438	0.758	0.0338	3	0.000	0.000	0.0338	3	0.000	0.000
730	0.0330	3	5.321	9.216	0.0338	3	0.470	0.814	0.0225	2	1.915	2.708	0.0225	2	0.000	0.000	0.0229	2	63.626	89.981
731	0.0353	3	0.000	0.000	0.0341	3	0.000	0.000	0.0345	3	1.380	2.390	0.0341	3	0.000	0.000	0.0341	3	0.000	0.000
732	0.0461	4	0.000	0.000	0.0454	4	0.000	0.000	0.0458	4	0.317	0.634	0.0450	4	0.000	0.000	0.0461	4	0.000	0.000
733	0.0454	4	0.000	0.000	0.0450	4	0.000	0.000	0.0458	4	0.000	0.000	0.0443	4	0.000	0.000	0.0454	4	0.000	0.000
734	0.0225	2	0.000	0.000	0.0229	2	0.000	0.000	0.0236	2	0.000	0.000	0.0225	2	0.000	0.000	0.0233	2	0.000	0.000
741	0.0229	2	0.000	0.000	0.0225	2	0.000	0.000	0.0233	2	0.000	0.000	0.0221	2	0.000	0.000	0.0229	2	0.000	0.000
742	0.0221	2	0.000	0.000	0.0221	2	0.000	0.000	0.0233	2	0.000	0.000	0.0221	2	0.000	0.000	0.0229	2	0.000	0.000
743	0.0225	2	0.000	0.000	0.0225	2	0.535	0.757	0.0236	2	0.000	0.000	0.0225	2	0.000	0.000	0.0233	2	4.018	4.048
744	0.0229	2	1.331	1.882	0.0225	2	1.145	1.619	0.0233	2	1.650	2.333	0.0229	2	0.000	0.000	0.0225	2	0.000	0.000
745	0.0596	5	4.255	8.265	0.0578	5	7.160	7.778	0.0574	5	21.556	22.586	0.0559	5	39.322	68.327	0.0454	4	19.065	38.130
746	0.0698	6	4.951	6.960	0.0679	6	10.740	8.044	0.0686	6	24.103	30.073	0.0664	6	17.975	16.669	0.0450	4	22.903	16.697
747	0.1140	10	4.684	5.538	0.1125	10	1.257	1.608	0.1133	10	7.899	6.043	0.1005	9	8.129	4.596	0.0908	8	10.124	5.009
748	0.0225	2	45.050	10.607	0.0225	2	10.790	15.259	0.0229	2	32.725	46.280	0.0225	2	0.660	0.933	0.0225	2	28.195	39.874
749	0.0225	2	91.051	21.907	0.0221	2	68.570	4.214	0.0229	2	73.075	52.672	0.0221	2	91.984	18.192	0.0233	2	146.160	129.731
750	0.0904	8	14.194	32.910	0.0788	7	9.729	15.906	0.0904	8	4.998	5.662	0.0671	6	6.037	6.953	0.0341	3	19.327	11.652
751	0.0454	4	3.087	1.120	0.0338	3	1.937	0.910	0.0454	4	1.223	1.212	0.0338	3	7.730	6.044	0.0236	2	4.717	3.088

$$(**) SD = \frac{\sum (x_i - \bar{x})}{n-1}$$

Table 11. Stratified mean catches (Kg) and SD of **Greenland halibut** by stratum and year (2018-2025). Research Vessel *Vizconde de Eza*.

Stratum	Survey				
	2018	2019	2023	2024	2025
385	1368.80	1822.45	1906.88	1059.64	320.96
387	4580.80	4700.80	1317.12	1032.06	1665.66
388	5951.83	10441.25	1120.19	5143.80	2916.87
389	11292.67	7101.79	5907.53	14011.39	12584.92
390	4692.70	6044.94	3719.76	4154.80	1849.56
391	8340.15	7205.66	5542.01	8522.96	6064.06
392	2030.00	9010.30	2287.67	3639.50	3528.58
729	3599.10	1984.00	2964.53	1794.28	1128.09
730	5729.00	9950.67	8963.25	6112.95	6691.63
731	5924.38	5168.02	5588.78	2689.63	2968.99
732	6258.14	12122.36	10915.91	14290.64	8232.26
733	7076.63	5320.58	1831.64	2333.74	2016.32
734	4274.82	4046.85	4415.89	7524.54	2183.77
741	3341.00	4448.50	5513.50	3925.70	4121.00
742	2327.62	2540.32	2409.60	1517.44	1027.20
743	1191.62	3045.98	3714.59	1838.04	2003.54
744	1728.41	2797.41	3695.14	5928.78	5066.66
745	7650.78	15971.11	11915.59	9895.10	12089.26
746	12767.44	12640.69	17071.34	10195.27	6719.17
747	9252.86	17488.22	11122.23	12939.65	15990.90
748	3293.21	12183.38	16264.91	8610.25	11145.50
749	1012.41	2416.05	2812.32	3265.92	1805.58
750	13281.10	23941.76	14645.74	19603.26	19362.33
751	14108.12	10236.30	8725.47	9665.33	14331.97
TOTAL	141073.58	192629.37	154371.56	159694.66	145814.76
($\bar{y}$)	21.75	29.69	23.80	24.62	22.48
SD	1.90	2.25	1.96	1.80	3.08

Table 12. Stratified mean catches (Kg) and SD of **American plaice** by stratum and year (2018-2025). Research Vessel *Vizconde de Eza*.

Stratum	Survey				
	2018	2019	2023	2024	2025
385	18485.29	12065.80	27614.36	18772.56	14910.48
387	1998.34	1706.88	1663.68	255.17	888.90
388	4101.07	6628.49	902.57	1625.14	1339.02
389	19259.03	20085.43	10927.94	16993.04	21348.27
390	38088.35	29310.17	75762.40	40628.12	86333.85
391	39751.43	18437.87	3508.50	21415.79	5333.82
392	64.02	2315.22	0.00	1.02	0.00
729	0.00	0.00	0.00	318.56	0.00
730	0.00	0.00	0.00	0.00	0.00
731	53.28	363.46	0.00	0.00	50.76
732	0.00	0.00	0.00	0.00	0.00
733	0.00	238.39	329.94	115.95	0.00
734	0.00	0.00	0.00	0.00	0.00
741	0.00	0.00	0.00	0.00	0.00
742	0.00	0.00	0.00	0.00	0.00
743	0.00	0.00	0.00	0.00	0.00
744	0.00	0.00	0.00	0.00	0.00
745	0.00	0.00	0.00	0.00	0.00
746	0.00	0.00	0.00	0.00	0.00
747	0.00	0.00	0.00	0.00	0.00
748	0.00	0.00	0.00	0.00	0.00
749	0.00	0.00	0.00	0.00	0.00
750	0.00	0.00	0.00	0.00	0.00
751	0.00	0.00	0.00	0.00	0.00
TOTAL	121800.80	91151.69	120709.39	100125.33	130205.09
($\bar{y}$)	18.78	14.05	18.61	15.43	20.07
SD	3.35	2.28	4.01	3.20	4.7

Table13. Stratified mean catches (Kg) and SD of **witch flounder** by stratum and year (2018-2025). Research Vessel *Vizconde de Eza*.

Stratum	Survey				
	2018	2019	2023	2024	2025
385	56.64	0.00	65.61	277.89	67.32
387	813.44	504.51	691.52	587.01	1974.66
388	188.00	369.50	794.90	734.13	2134.77
389	82.39	306.64	224.18	288.31	840.05
390	148.13	0.00	0.00	0.00	329.34
391	216.22	0.00	0.00	0.00	174.84
392	279.13	150.51	239.47	37.77	597.18
729	950.40	429.97	355.07	379.50	885.48
730	237.43	117.87	400.52	1514.28	233.92
731	509.11	639.86	556.56	152.35	524.59
732	279.91	136.35	1535.05	886.75	1100.31
733	455.66	199.31	915.82	395.34	989.24
734	40.55	12.24	0.00	0.00	0.00
741	0.00	0.00	23.50	0.00	0.00
742	0.00	0.00	0.00	0.00	0.00
743	0.00	0.00	0.00	0.00	0.00
744	0.00	0.00	0.00	0.00	0.00
745	6.68	12.81	4.45	0.00	4.61
746	0.00	0.00	2.74	0.00	2.16
747	0.00	0.00	0.00	0.00	0.00
748	0.00	77.12	0.00	293.12	1.03
749	0.00	0.00	0.00	0.00	0.00
750	0.00	0.00	46.22	0.00	0.00
751	0.00	0.00	0.00	0.00	0.00
TOTAL	4263.68	2956.67	5855.61	5546.46	9859.51
($\bar{y}$)	0.66	0.46	0.90	0.86	1.52
SD	0.11	0.07	0.12	0.24	0.18

Tabe 14. Stratified mean catches (Kg) and SD of **Atlantic cod** by stratum and year (2018-2025). Research Vessel *Vizconde de Eza*.

Stratum	Survey				
	2018	2019	2023	2024	2025
385	125.67	163.43	700.51	45.37	604.69
387	1287.49	2661.82	4893.89	10593.28	4180.67
388	2619.38	6970.50	5330.87	11088.28	23935.78
389	8566.18	11649.41	19629.59	17457.32	41387.50
390	2218.91	2416.23	5259.09	9387.39	11550.51
391	4352.53	5945.05	8502.51	8954.98	16690.88
392	87.73	970.05	144.78	1096.71	194.01
729	0.00	0.00	0.00	0.00	0.00
730	0.00	0.00	0.00	0.00	0.00
731	109.73	391.39	0.00	15.84	213.77
732	0.00	0.00	0.00	1.91	0.00
733	0.00	9.36	0.00	7.02	574.41
734	0.00	0.00	0.00	34.43	0.00
741	0.00	0.00	0.00	0.00	0.00
742	0.00	0.00	0.00	0.00	0.00
743	0.00	0.00	0.00	0.00	0.00
744	0.00	0.00	0.00	0.00	0.00
745	0.00	0.00	0.00	0.00	0.00
746	0.00	0.00	0.00	0.00	0.00
747	0.00	0.00	0.00	0.00	0.00
748	0.00	0.00	0.00	0.00	0.00
749	0.00	0.00	0.00	0.00	0.00
750	0.00	0.00	0.00	0.00	0.00
751	0.00	0.00	0.00	0.00	0.00
TOTAL	19367.60	31177.25	44461.23	58682.52	99332
($\bar{y}$)	2.99	4.81	6.85	9.05	15.31
SD	0.63	0.74	1.04	1.56	3.69

Table 15. Stratified mean catches (Kg) and SD of **roughhead grenadier** by stratum and year (2018-2025). Research Vessel *Vizconde de Eza*.

Stratum	Survey				
	2018	2019	2023	2024	2025
385	0.00	0.00	0.00	0.00	0.00
387	5044.29	6166.53	17130.88	14607.30	16615.49
388	7752.54	5617.75	11099.13	29832.71	24359.98
389	2476.87	3164.53	2537.58	12250.25	15508.01
390	0.00	292.59	3823.37	2310.67	1295.28
391	7380.50	6704.55	3987.97	6737.61	35917.49
392	2374.38	4118.00	10047.78	14818.78	5419.38
729	2934.71	1954.98	2213.83	2925.16	3999.31
730	11342.23	2074.28	3145.00	3171.10	10668.35
731	3717.72	2566.66	3234.53	2236.46	3372.55
732	1621.62	2781.70	5751.90	7765.47	6557.22
733	2817.24	2687.67	4964.90	12123.54	4775.76
734	1001.39	2365.46	10714.21	17432.82	11757.13
741	493.95	146.40	1981.15	2665.00	2442.05
742	580.70	422.66	709.22	1399.68	840.77
743	299.04	569.54	1214.28	1646.03	1677.85
744	298.91	198.50	2261.29	1580.47	1025.18
745	3346.58	3318.81	8347.41	9905.54	8629.79
746	5426.85	6647.73	11129.93	8055.67	9718.46
747	11479.38	13222.48	13419.77	20078.85	22799.12
748	12799.74	2219.64	7146.26	3083.01	3789.45
749	3039.75	3053.11	5312.10	2294.46	4807.09
750	6198.50	6661.83	5935.51	6321.63	19917.03
751	4326.38	3011.35	4581.89	4211.84	3181.38
TOTAL	96753.26	79966.73	140689.87	187454.04	219074.13
($\bar{y}$)	14.91	12.33	21.69	28.90	33.77
SD	1.38	1.06	1.73	2.69	2.72

Table 16. Stratified mean catches (Kg) and SD of **redfish** by stratum and year (2018-2025). Research Vessel *Vizconde de Eza*.

Stratum	Survey				
	2018	2019	2023	2024	2025
385	17.94	1.77	14.04	0.00	3.30
387	61244.16	68096.96	282147.20	377341.44	644645.76
388	84018.09	151678.59	367715.71	415640.11	771965.20
389	65599.19	127742.42	35558.01	82500.61	99463.89
390	65.34	31.38	601.67	1321.49	2395.86
391	82948.19	2921.52	42845.74	29931.76	62343.86
392	51159.63	31678.88	241790.40	99727.59	52686.84
729	7221.88	123221.90	35496.86	78933.44	66976.12
730	11815.00	4261.33	3518.41	1915.90	1076.36
731	55972.80	31797.72	5366.16	94368.96	55479.46
732	627.22	931.91	314.45	454.32	557.00
733	40432.04	62861.18	55762.20	580119.99	556495.70
734	957.78	1622.95	709.16	685.44	4742.39
741	0.00	0.00	0.00	0.00	0.00
742	113.28	0.00	45.44	0.00	0.00
743	0.00	0.00	29.33	0.00	0.00
744	0.00	0.00	0.00	0.00	0.00
745	43.71	139.20	0.00	24.29	120.50
746	29.73	0.00	133.74	0.00	0.00
747	0.00	0.00	115.33	277.29	0.00
748	86.58	0.00	190.01	171.24	97.79
749	0.00	0.00	241.29	85.68	0.00
750	83.96	0.00	0.00	0.00	0.00
751	0.00	0.00	0.00	0.69	0.00
TOTAL	462436.50	606987.70	1072595.14	1763500.24	2319050.00
($\bar{y}$)	98.61	71.29	93.57	165.35	357.49
SD	17.28	18.67	22.00	21.69	86.61

Table 17. Stratified mean catches (Kg) and SD of **thorny skate** by stratum and year (2018-2025): Research Vessel *Vizconde de Eza*.
Table 18. Stratified mean catches (Kg) and SD of **black dogfish** by stratum and year (2018-2025): Research Vessel *Vizconde de Eza*.

Stratum	2018	2019	2023	2024	2025
385	529.11	2685.92	3553.28	9161.28	9388.08
386	0.00	0.00	0.00	0.00	0.00
387	3061.76	4061.31	4734.59	2309.12	4265.54
388	0.00	0.00	0.00	0.00	0.00
389	7221.40	6479.91	6503.47	3923.14	18067.77
390	5103.16	9883.98	15384.89	46881.30	51419.59
391	7511.11	9599.64	23146.82	53667.38	47618.66
392	7993.50	7083.70	15859.40	33013.32	52640.66
393	13106.55	8632.36	51431.50	37707.83	175413.03
729	3031.18	1902.78	443.92	3312.78	2033.04
730	239.42	0.00	81.41	416.50	313.65
731	904.51	79.90	325.55	0.00	10816.42
732	0.00	0.00	1.15	0.00	5796.72
733	0.00	0.00	298.08	0.00	0.00
734	0.00	0.00	62.37	197.51	0.00
741	482.63	417.63	73.17	0.00	0.00
742	0.00	0.00	1044.81	1116.82	2924.42
743	0.00	0.00	198.52	0.00	0.00
744	0.00	0.00	0.00	0.00	0.00
745	0.00	0.00	0.00	0.00	0.00
746	0.00	0.00	0.00	0.00	0.00
747	0.00	0.00	0.00	0.00	0.00
748	0.00	0.00	0.00	0.00	0.00
749	0.00	0.00	0.00	0.00	0.00
750	0.00	0.00	0.00	0.00	0.00
751	0.00	0.00	0.00	0.00	0.00
TOTAL	48516.45	50747.22	122890.11	192318.19	369881.14
($\bar{y}$)	35039.56	24002.81	41025.43	43437.29	68688.57
SD	1.58	1.26	6.95	6.58	57.02
SD	1.12	0.65	1.45	1.74	2.85

Table 20. Survey estimates (by the swept area method) of **American plaice** biomass (t.) and SD by stratum and year (2018-2025)**Table 19.** Survey estimates (by the swept area method) of **Greenland halibut** biomass (t.) and SD by stratum and year (2018-2025) NAFO Div. 3L (R/V Vizconde de Eza).

	Survey				
Stratum	2018	2019	2023	2024	2025
Stratum	2018	2019	2023	2024	2025
387385	17124	152	148	923	2879
388387	36294	5438	797	9343	148118
389388	16826	1794	962	451489	2571813
390389	33685	2694	5204	12811	1063674
391390	34765	1639	302	36904	164466
392391	6729	2041	477	758	5300
729392	0177	0788	200	328	3140
730729	0316	0176	258	159	1000
731730	5521	3885	797	543	5854
732731	0504	0454	486	236	2610
733732	0543	21069	254	1270	7140
734733	0624	0473	160	201	1780
741734	0380	0354	374	669	1880
742741	0292	0395	474	355	3600
743742	0210	0230	207	137	900
744743	0106	0271	314	163	1720
745744	0151	0249	318	518	4500
746745	0642	01383	1038	885	1066
747746	01098	01117	1493	922	5970
748747	0812	01555	982	1159	1410
749748	0293	01083	1422	765	9910
750749	090	0218	246	295	1550
751750	01176	02128	1296	1752	1702
751	1244	910	769	859	1213
TOTAL	10738	8111	10439	8850	11459
SD TOTAL	1892351	137063	22087	14204	127249
SD	1122	1297	1106	1033	1775

Table 21. Survey estimates (by the swept area method) of **witch flounder** biomass (t.) and SD by stratum and year (2018-2025) on NAFO Div. 3L (R/V *Vizconde de Eza*).
Table 22. Survey estimates (by the swept area method) of **Atlantic cod** biomass (t.) and SD by stratum and year (2018-2025) on NAFO Div. 3L (R/V *Vizconde de Eza*).

Stratum	2018	2019	2023	2024	2025
Stratum	2018	2019	2023	2024	2025
385	70	45	61	53	176
387	11	15	60	4	53
388	17	32	70	64	188
389	111	237	435	950	372
388	231	27	20	25	71
390	13	624	468	973	2110
391	747	0	1728	0	29
391	196	0	454	0	15
392	341	13	21	3	53
392	381	528	731	796	1459
392	84	385	31	34	79
730	22	10	36	135	20
731	43	56	48	13	46
732	24	134	134	79	95
732	40	18	80	36	87
733	4	1	0	0	0
734	0	0	0	1	51
741	0	0	2	0	0
742	0	0	0	3	0
743	0	0	0	0	0
744	0	0	0	0	0
745	0	0	0	0	0
746	1	10	0	0	0
747	0	0	0	0	0
748	0	0	0	0	0
749	0	0	0	0	0
750	0	0	0	0	0
751	0	0	4	0	0
751	0	0	0	0	0
TOTAL	0	0	0	0	0
TOTAL	372	262	513	492	867
SD	604	407	723	1405	1028
SD	353	427	600	882	2132

Table 24. Survey estimates (by the swept area method) of redfish biomass (t.) and SD by stratum and year (2018-2025) on NAFO Div. 3L (R/V Vizconde de Eza).

Table 23. Survey estimates (by the swept area method) of roughhead grenadier biomass (t.) and SD by stratum and year (2018-2025) on NAFO Div. 3L (R/V Vizconde de Eza).

Stratum	Survey 2018	2019	2023	2024	2025
385385	0 2	0 0	0 1	0 0	0 0
387387	434 5268	548 6053	1523 25080	33823 36460	5730277 10277
388388	685 7419	503 13573	974 32256	848 36460	6805247 2547
389389	216 5722	283 11409	223 3131	630 7230	8447317 4717
390390	0 6	26 3	330 52	117 2	213115 115
391391	645 7252	596 260	345 3686	2484 2484	5451140 5140
392392	208 4473	360 2770	878 87840	8855 8855	46882 882
729729	258 635	174 953	1987 1987	7476 7476	59355 355
730730	103 174	187 9	288 288	1597 1597	94933 933
731731	316 764	226 95	287 287	8288 8288	48296 296
732732	145 4	243 2	503 503	4008 4008	48569 569
733733	248 564	235 88	4345 4345	53470 53470	49057 421
734734	89 85	207 2	907 907	6261 6261	4081011 1011
741741	43 0	13 0	170 170	0180 0180	0 214
742742	52 10	38 0	61 61	089 089	0 74
743743	27 0	51 0	103 103	0110 0110	0 144
744744	26 0	18 0	195 195	039 039	0 91
745745	28 1	28 2	727 727	2459 2459	11 761
746746	46 3	58 8	923 923	0463 0463	0 864
747747	100 7	11 75	1185 1185	2522 2522	0 2010
748748	113 8	19 7	625 625	15162 15162	9 337
749749	27 0	27 0	464 464	8210 8210	0 414
750750	54 9	59 2	525 525	0852 0852	0 1751
751751	38 1	26 8	404 404	098 098	0 269
TOTAL	8512 40350	7093 54019	12302 94240	11010 157230	19192 204606
SD	787 10496	607 12677	983 12472	1411 55302	1588 49917

Table 25. Survey estimates (by the swept area method) of thorny skate biomass (t) and SD by stratum and year (2018-2025) on NAFO Div. 3L (R/V Vizconde de Eza) (2018-2025) on NAFO Div.3L (R/V Vizconde de Eza).

Stratum	Stratum	Survey 2018	Survey 2018	2019	2023	2024	2024	2025	2025
385	385	48	0	2390	306	0	801	0	821
387	387	263	0	3610	421	0	207	0	379
388	388	638	0	5800	570	0	344	0	1593
389	389	445	0	8830	1355	0	4109	0	4367
390	390	664	0	8530	1999	0	4770	0	4233
391	391	699	0	6300	1364	0	2935	0	4602
392	392	1146	0	7550	1497	0	3352	0	15592
729	729	266	0	1690	39	0	294	0	181
730	730	22	82	0	24	0	37	0	27
731	731	0	0	0	0	0	0	0	510
732	732	0	0	0	5	0	18	0	0
733	733	43	0	37	91	0	101	0	258
734	734	0	0	0	17	0	0	0	0
741	741	0	0	0	0	0	0	0	0
742	742	0	0	0	0	0	0	0	0
743	743	0	0	0	0	0	0	0	0
744	744	0	8	0	0	0	0	0	0
745	745	20	124	0	0	0	24	0	0
746	746	0	167	0	0	1225	0	1225	0
747	747	0	297	0	0	637	0	637	0
748	748	0	637	0	0	527	0	527	0
749	749	0	1020	0	0	9	30	9	0
750	750	0	699	0	0	1048	0	1048	0
751	751	0	62	0	0	300	0	300	0
				39	25	157		157	
TOTAL	TOTAL	4253		4506	10711		17022		32563
SD	SD	877	3096	714	3593	3903	3783	3903	10396
			661	369	800	1000		1000	

Table 27. Length-weight relationships in the calculation of biomass, for Division 3L (out ZEE Canada), 2015-2025 for **Greenland halibut**, **American plaice** and **witch flounder**.

Greenland halibut,					American plaice				Witch flounder			
Year	Sex	L-W Equations	N	r ²	Sex	L-W Equations	N	r ²	Sex	L-W Equations	N	r ²
2015	All	$W = 0.0041 L^{3.1770}$	1670	0.9945	All	$W = 0.0038 L^{3.2259}$	1218	0.9952	All	$W = 0.0020 L^{3.3390}$	330	0.9930
	Males	$W = 0.0043 L^{3.1618}$	668	0.9927	Males	$W = 0.0035 L^{3.2562}$	431	0.9908	Males	$W = 0.0022 L^{3.3309}$	110	0.9849
	Females	$W = 0.0042 L^{3.1756}$	998	0.9953	Females	$W = 0.0039 L^{3.2169}$	777	0.9958	Females	$W = 0.0020 L^{3.3459}$	201	0.9900
2016	All	$W = 0.00336 L^{3.2284}$	1623	0.9949	All	$W = 0.0041 L^{3.1971}$	1095	0.9921	All	$W = 0.0021 L^{3.3301}$	277	0.9896
	Males	$W = 0.0034 L^{3.2181}$	657	0.9937	Males	$W = 0.0050 L^{3.1256}$	377	0.9791	Males	$W = 0.0018 L^{3.3695}$	74	0.9884
	Females	$W = 0.0035 L^{3.2218}$	961	0.9952	Females	$W = 0.0038 L^{3.2195}$	709	0.9945	Females	$W = 0.0014 L^{3.4330}$	189	0.9894
2017	All	$W = 0.0032 L^{3.2341}$	2068	0.9962	All	$W = 0.0034 L^{3.2548}$	1205	0.9942	All	$W = 0.0019 L^{3.3572}$	204	0.9946
	Males	$W = 0.0034 L^{3.2136}$	872	0.9954	Males	$W = 0.0032 L^{3.2655}$	400	0.9866	Males	$W = 0.0017 L^{3.3935}$	52	0.9960
	Females	$W = 0.0032 L^{3.2360}$	1180	0.9966	Females	$W = 0.0032 L^{3.2704}$	778	0.9950	Females	$W = 0.0020 L^{3.3437}$	148	0.9941
2018	All	$W = 0.0033 L^{3.2316}$	1777	0.9959	All	$W = 0.0034 L^{3.2547}$	806	0.9899	All	$W = 0.0021 L^{3.3470}$	152	0.9738
	Males	$W = 0.0032 L^{3.2436}$	724	0.9950	Males	$W = 0.0037 L^{3.2216}$	284	0.9839	Males	$W = 0.0019 L^{3.3575}$	41	0.9738
	Females	$W = 0.0035 L^{3.2205}$	1052	0.9961	Females	$W = 0.0033 L^{3.2615}$	520	0.9902	Females	$W = 0.0024 L^{3.3108}$	110	0.9898
2019	All	$W = 0.0034 L^{3.2235}$	1714	0.9932	All	$W = 0.0034 L^{3.2627}$	739	0.9895	All	$W = 0.0014 L^{3.4472}$	191	0.9917
	Males	$W = 0.0032 L^{3.2370}$	707	0.9905	Males	$W = 0.0046 L^{3.1537}$	221	0.9770	Males	$W = 0.0018 L^{3.3733}$	57	0.9653
	Females	$W = 0.0037 L^{3.2033}$	1004	0.9944	Females	$W = 0.0031 L^{3.2875}$	517	0.9900	Females	$W = 0.0017 L^{3.4024}$	105	0.9927
2023	All	$W = 0.0041 L^{3.1650}$	1821	0.9898	All	$W = 0.0047 L^{3.1557}$	1081	0.9898	All	$W = 0.0019 L^{3.3605}$	226	0.9899
	Males	$W = 0.0045 L^{3.1302}$	762	0.9903	Males	$W = 0.0053 L^{3.1221}$	301	0.9900	Males	$W = 0.0028 L^{3.3466}$	53	0.9900
	Females	$W = 0.0043 L^{3.1588}$	1034	0.9944	Females	$W = 0.0045 L^{3.1717}$	753	0.9897	Females	$W = 0.0018 L^{3.3700}$	172	0.9899
2024	All	$W = 0.0041 L^{3.1736}$	1548	0.9899	All	$W = 0.0037 L^{3.2468}$	591	0.9898	All	$W = 0.0020 L^{3.3428}$	170	0.9900
	Males	$W = 0.0036 L^{3.2045}$	618	0.9902	Males	$W = 0.0036 L^{3.2470}$	172	0.9900	Males	$W = 0.0016 L^{3.4041}$	31	0.9899
	Females	$W = 0.0045 L^{3.1514}$	920	0.9898	Females	$W = 0.0039 L^{3.2351}$	408	0.9898	Females	$W = 0.0020 L^{3.3450}$	134	0.9900
2025	All	$W = 0.0037 L^{3.2018}$	1601	0.9899	All	$W = 0.0037 L^{3.2465}$	740	0.9898	All	$W = 0.0030 L^{3.2441}$	274	0.9899
	Males	$W = 0.0041 L^{3.1685}$	650	0.9902	Males	$W = 0.0031 L^{3.2934}$	222	0.9900	Males	$W = 0.0063 L^{3.0409}$	58	0.9898
	Females	$W = 0.0038 L^{3.2009}$	907	0.9898	Females	$W = 0.0037 L^{3.2474}$	488	0.9898	Females	$W = 0.0017 L^{3.3966}$	209	0.9900

Table 28. Length-weight relationships in the calculation of biomass, for Division 3L (out ZEE Canada), 2015-2025 for **Atlantic cod, roughhead grenadier and redfish.**

Atlantic cod					Roughhead grenadier				Redfish			
Year	Sex	L-W Equations	N	r ²	Sex	L-W Equations	N	r ²	Sex	L-W Equations	N	r ²
2015	All	W = 0.0079 L ^{3.0271}	867	0.989	All	W = 0.1107 L ^{2.9089}	1832	0.993	All	W = 0.0088 L ^{3.1436}	1088	0.9909
	Males	W = 0.0080 L ^{3.0280}	393	0.989	Males	W = 0.1127 L ^{2.9084}	662	0.987	Males	W = 0.0148 L ^{2.9886}	500	0.9893
	Females	W = 0.0080 L ^{3.0264}	473	0.989	Females	W = 0.1197 L ^{2.8800}	1097	0.992	Females	W = 0.0104 L ^{3.0946}	554	0.9898
2016	All	W = 0.0078 L ^{3.0345}	590	0.986	All	W = 0.0972 L ^{2.9511}	1525	0.989	All	W = 0.0088 L ^{3.1297}	908	0.9925
	Males	W = 0.0074 L ^{3.0493}	289	0.984	Males	W = 0.0926 L ^{2.9755}	603	0.985	Males	W = 0.0179 L ^{2.9154}	377	0.9771
	Females	W = 0.0081 L ^{3.0222}	301	0.988	Females	W = 0.1024 L ^{2.9304}	885	0.989	Females	W = 0.0136 L ^{3.0075}	409	0.9808
2017	All	W = 0.0066 L ^{3.0630}	834	0.985	All	W = 0.0898 L ^{2.9684}	1733	0.992	All	W = 0.0084 L ^{3.1317}	1021	0.992
	Males	W = 0.0070 L ^{3.0478}	397	0.988	Males	W = 0.0856 L ^{2.9910}	669	0.990	Males	W = 0.0109 L ^{3.0552}	441	0.986
	Females	W = 0.0063 L ^{3.0787}	437	0.983	Females	W = 0.0990 L ^{2.9328}	996	0.993	Females	W = 0.0094 L ^{3.0946}	380	0.986
2018	All	W = 0.0066 L ^{3.0798}	323	0.990	All	W = 0.0864 L ^{2.9869}	1458	0.990	All	W = 0.0094 L ^{3.1089}	836	0.991
	Males	W = 0.0065 L ^{3.0865}	177	0.989	Males	W = 0.0778 L ^{3.0328}	570	0.985	Males	W = 0.0127 L ^{3.0136}	369	0.989
	Females	W = 0.0068 L ^{3.0716}	146	0.990	Females	W = 0.0879 L ^{2.9776}	874	0.990	Females	W = 0.0122 L ^{3.0349}	388	0.990
2019	All	W = 0.0063 L ^{3.1064}	794	0.983	All	W = 0.0834 L ^{3.0104}	1315	0.987	All	W = 0.0097 L ^{3.1463}	800	0.992
	Males	W = 0.0056 L ^{3.1366}	380	0.978	Males	W = 0.0872 L ^{2.9918}	532	0.980	Males	W = 0.0112 L ^{3.0574}	326	0.985
	Females	W = 0.0068 L ^{3.0812}	414	0.987	Females	W = 0.0868 L ^{2.9978}	757	0.997	Females	W = 0.0106 L ^{3.0851}	354	0.985
2023	All	W = 0.0069 L ^{3.0691}	1019	0.9900	All	W = 0.0079 L ^{2.9920}	1808	0.9899	All	W = 0.0105 L ^{3.0633}	1177	0.9898
	Males	W = 0.0064 L ^{3.0907}	466	0.9900	Males	W = 0.0757 L ^{3.0102}	717	0.9000	Males	W = 0.0126 L ^{3.0049}	498	0.9901
	Females	W = 0.0073 L ^{3.0540}	553	0.9865	Females	W = 0.0844 L ^{2.9689}	1004	0.9900	Females	W = 0.0106 L ^{3.0663}	479	0.9896
2024	All	W = 0.0059 L ^{3.1162}	587	0.9901	All	W = 0.0079 L ^{2.9920}	1808	0.9899	All	W = 0.0084 L ^{3.1357}	639	0.9896
	Males	W = 0.0064 L ^{3.0900}	252	0.9900	Males	W = 0.0757 L ^{3.0102}	717	0.9000	Males	W = 0.0076 L ^{3.1639}	256	0.9896
	Females	W = 0.0068 L ^{3.0737}	334	0.9902	Females	W = 0.0844 L ^{2.9689}	1004	0.9900	Females	W = 0.0070 L ^{3.1886}	294	0.9896
2025	All	W = 0.0050 L ^{3.1596}	609	0.9901	All	W = 0.0977 L ^{2.9362}	1572	0.9900	All	W = 0.0087 L ^{3.1292}	596	0.9897
	Males	W = 0.0052 L ^{3.1523}	587	0.9900	Males	W = 0.0931 L ^{2.9593}	616	0.9898	Males	W = 0.0082 L ^{3.1427}	240	0.9898
	Females	W = 0.0049 L ^{3.1678}	336	0.9901	Females	W = 0.0976 L ^{2.9339}	884	0.9901	Females	W = 0.0077 L ^{3.1677}	283	0.9897

Table 29. Length-weight relationships in the calculation of biomass, for Division 3L (out ZEE Canada), 2015-2025 for **thorny skate and black dogfish.**

Thorny skate					Black dogfish							
Year	Sex	L-W Equations	N	r ²	Sex	L-W Equations	N	r ²	Sex	L-W Equations	N	r ²
2015	All	$W = 0.0064 L^{3.1098}$	532	0.9944	All	$W = 0.0013 L^{3.3416}$	578	0.9544				
	Males	$W = 0.0075 L^{3.0685}$	337	0.9945	Males	$W = 0.0056 L^{2.9683}$	178	0.959				
	Females	$W = 0.0050 L^{3.1760}$	195	0.9941	Females	$W = 0.0011 L^{3.4038}$	400	0.9604				
2016	All	$W = 0.0077 L^{3.0629}$	496	0.9916	All	$W = 0.0015 L^{3.3055}$	350	0.9465				
	Males	$W = 0.0074 L^{3.0722}$	289	0.9919	Males	$W = 0.0085 L^{2.8629}$	135	0.9452				
	Females	$W = 0.0077 L^{3.0656}$	207	0.9904	Females	$W = 0.0010 L^{3.4002}$	215	0.9557				
2017	All	$W = 0.0064 L^{3.1134}$	429	0.9912	All	$W = 0.0009 L^{3.4335}$	390	0.9554				
	Males	$W = 0.0075 L^{3.0698}$	260	0.9906	Males	$W = 0.0048 L^{2.9976}$	108	0.9616				
	Females	$W = 0.0047 L^{3.2013}$	168	0.9925	Females	$W = 0.0006 L^{3.5289}$	282	0.9609				
2018	All	$W = 0.0076 L^{3.0706}$	260	0.9899	All	$W = 0.0011 L^{3.3773}$	319	0.9636				
	Males	$W = 0.0083 L^{3.0450}$	176	0.9902	Males	$W = 0.0046 L^{3.0130}$	84	0.973				
	Females	$W = 0.0053 L^{3.1666}$	84	0.9903	Females	$W = 0.0009 L^{3.4233}$	235	0.9649				
2019	All	$W = 0.0057 L^{3.1376}$	253	0.9933	All	$W = 0.0009 L^{3.4338}$	240	0.9446				
	Males	$W = 0.0060 L^{3.1239}$	162	0.9922	Males	$W = 0.0055 L^{2.9712}$	111	0.99196				
	Females	$W = 0.0050 L^{3.1794}$	91	0.9949	Females	$W = 0.0006 L^{3.5310}$	129	0.9678				
2023	All	$W = 0.0079 L^{3.0560}$	483	0.9900	All	$W = 0.0010 L^{3.3830}$	445	0.9899				
	Males	$W = 0.0088 L^{3.0256}$	291	0.9902	Males	$W = 0.0094 L^{2.8318}$	205	0.9907				
	Females	$W = 0.0067 L^{3.1036}$	192	0.9897	Females	$W = 0.0006 L^{3.5237}$	240	0.9892				
2024	All	$W = 0.0058 L^{3.0583}$	498	0.9902	All	$W = 0.0009 L^{3.4294}$	275	0.9866				
	Males	$W = 0.0058 L^{3.1370}$	263	0.9904	Males	$W = 0.0063 L^{2.9324}$	88	0.9907				
	Females	$W = 0.0059 L^{3.1422}$	235	0.9898	Females	$W = 0.0007 L^{3.4837}$	187	0.9896				
2025	All	$W = 0.0050 L^{3.1722}$	554	0.9902	All	$W = 0.0011 L^{3.3845}$	436	0.9899				
	Males	$W = 0.0051 L^{3.1625}$	320	0.9903	Males	$W = 0.0065 L^{2.9291}$	209	0.9905				
	Females	$W = 0.0047 L^{3.1937}$	234	0.9898	Females	$W = 0.0008 L^{3.4784}$	227	0.9894				

Table 30. Greenland halibut length distribution per haul mean catches by sex and year. Number per stratified mean catches. Spanish Summer Survey on NAFO 3L 2019-2025 (R/V *Vizconde de Eza*). Indet. means indeterminate.

Length (cm.)	2019				2023				2024				2025			
	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00
8	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00
10	1.43	1.02	0.03	2.48	0.02	0.04	0.02	0.08	0.07	0.08	0.05	0.20	0.00	0.00	0.09	0.09
12	6.01	5.49	0.07	11.57	0.64	0.51	0.19	1.34	0.40	0.64	0.08	1.13	0.20	0.44	0.27	0.91
14	1.72	1.82	0.00	3.54	0.97	1.00	0.35	2.32	0.50	0.83	0.03	1.36	1.46	1.68	0.97	4.10
16	0.12	0.08	0.00	0.21	0.15	0.10	0.00	0.25	0.10	0.21	0.00	0.31	0.93	1.05	0.11	2.10
18	0.62	0.36	0.00	0.98	0.08	0.06	0.00	0.14	0.03	0.03	0.00	0.06	0.13	0.23	0.02	0.38
20	1.75	1.75	0.00	3.50	0.25	0.28	0.00	0.53	0.15	0.14	0.00	0.29	0.18	0.15	0.00	0.33
22	3.73	2.42	0.00	6.16	0.84	0.39	0.00	1.24	0.29	0.22	0.00	0.52	0.44	0.50	0.00	0.94
24	4.24	2.51	0.00	6.76	1.03	0.93	0.00	1.96	0.39	0.41	0.00	0.79	0.76	0.64	0.00	1.40
26	3.12	2.12	0.00	5.24	1.20	0.89	0.00	2.09	0.16	0.27	0.00	0.43	0.79	0.81	0.00	1.60
28	2.93	2.24	0.00	5.17	1.13	0.70	0.00	1.83	0.24	0.21	0.00	0.45	0.34	0.30	0.00	0.64
30	2.27	2.18	0.00	4.45	1.60	0.77	0.00	2.37	0.49	0.22	0.00	0.70	0.20	0.26	0.00	0.46
32	2.11	1.93	0.00	4.04	1.62	0.93	0.00	2.55	0.95	0.73	0.00	1.68	0.47	0.41	0.00	0.88
34	1.85	1.32	0.00	3.17	1.54	1.31	0.00	2.85	1.49	1.21	0.00	2.70	0.82	0.77	0.00	1.58
36	2.07	1.76	0.00	3.83	1.69	1.44	0.00	3.13	1.63	1.50	0.00	3.13	0.91	1.01	0.00	1.92
38	2.03	1.85	0.00	3.88	1.70	1.73	0.00	3.42	1.85	1.48	0.00	3.33	1.17	0.86	0.00	2.03
40	1.85	2.25	0.00	4.10	1.73	1.77	0.00	3.49	1.66	1.66	0.00	3.32	1.39	1.42	0.00	2.81
42	1.33	1.97	0.00	3.30	1.36	1.86	0.00	3.21	1.64	1.64	0.00	3.28	1.47	1.66	0.01	3.14
44	0.89	1.61	0.00	2.50	1.06	1.46	0.00	2.52	1.43	1.58	0.00	3.01	1.11	1.44	0.00	2.55
46	0.55	1.13	0.00	1.68	0.93	1.19	0.00	2.12	1.02	1.66	0.00	2.68	1.07	1.17	0.00	2.24
48	0.35	1.05	0.00	1.40	0.48	1.08	0.00	1.56	0.56	1.21	0.00	1.76	0.70	1.12	0.00	1.82
50	0.22	0.97	0.00	1.19	0.37	0.89	0.00	1.25	0.47	1.10	0.00	1.57	0.61	1.06	0.00	1.67
52	0.24	0.77	0.00	1.01	0.19	0.87	0.00	1.05	0.21	0.81	0.00	1.01	0.15	0.71	0.00	0.85
54	0.09	0.67	0.00	0.76	0.13	0.48	0.00	0.62	0.23	0.79	0.00	1.01	0.26	0.60	0.00	0.86
56	0.06	0.77	0.00	0.83	0.07	0.53	0.00	0.60	0.06	0.49	0.00	0.56	0.06	0.47	0.00	0.53
58	0.02	0.60	0.00	0.62	0.02	0.31	0.00	0.33	0.03	0.38	0.00	0.41	0.02	0.38	0.00	0.40
60	0.04	0.50	0.00	0.54	0.03	0.28	0.00	0.31	0.02	0.28	0.00	0.30	0.05	0.35	0.00	0.40
62	0.01	0.44	0.00	0.46	0.00	0.24	0.00	0.24	0.01	0.35	0.00	0.36	0.04	0.36	0.00	0.40
64	0.00	0.30	0.00	0.30	0.00	0.27	0.00	0.27	0.00	0.12	0.00	0.12	0.01	0.13	0.00	0.14
66	0.01	0.27	0.00	0.27	0.01	0.18	0.00	0.19	0.01	0.26	0.00	0.27	0.00	0.16	0.00	0.16
68	0.00	0.13	0.00	0.13	0.01	0.19	0.00	0.20	0.00	0.19	0.00	0.19	0.00	0.20	0.00	0.20
70	0.00	0.12	0.00	0.12	0.00	0.12	0.00	0.12	0.00	0.09	0.00	0.09	0.00	0.08	0.00	0.08
72	0.00	0.03	0.00	0.03	0.00	0.05	0.00	0.05	0.00	0.06	0.00	0.06	0.00	0.04	0.00	0.04
74	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.08	0.00	0.08	0.00	0.08	0.00	0.03	0.00	0.03
76	0.00	0.03	0.00	0.03	0.00	0.04	0.00	0.04	0.00	0.01	0.00	0.01	0.00	0.07	0.00	0.07
78	0.00	0.04	0.00	0.04	0.00	0.05	0.00	0.05	0.00	0.04	0.00	0.04	0.00	0.04	0.00	0.04
80	0.00	0.01	0.00	0.01	0.00	0.02	0.00	0.02	0.00	0.03	0.00	0.03	0.00	0.01	0.00	0.01
82	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.06	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01
84	0.00	0.01	0.00	0.01	0.00	0.03	0.00	0.03	0.00	0.02	0.00	0.02	0.00	0.04	0.00	0.04
86	0.00	0.01	0.00	0.01	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.03
88	0.00	0.02	0.00	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00
92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.02
94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00
104	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	41.7	42.6	0.1	84.4	20.8	23.2	0.6	44.5	16.1	21.1	0.2	37.3	15.7	20.7	1.5	37.9
Nº samples:				96				95				92				821
Nº Ind.:	3378	3607	12	6997	1884	2153	41	4078	1505	1943	15	3463	1236	1613	129	2978
Sampled catch:				2946				2447				2385				1818
Range:				7-104				10-90				6-99				10-93
Total catch:				2946				2447				2385				1818
Total valid hauls				96				95				94				82

Table 31. American plaice length distribution per haul mean catches by sex and year. Number per stratified mean catches. Spanish Summer Survey on NAFO 3L: 2019-2025 (R/V *Vizconde de Eza*). Indet. means indeterminate.

Length (cm.)	2019				2023				2024				2025			
	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02
6	0.00	0.00	0.03	0.03	0.00	0.00	0.25	0.25	0.00	0.00	0.31	0.31	0.00	0.02	0.62	0.64
8	0.03	0.00	0.00	0.03	0.01	0.00	0.33	0.35	0.06	0.05	0.21	0.31	0.03	0.03	0.94	1.00
10	0.28	0.05	0.00	0.33	0.73	1.96	0.06	2.75	0.64	0.64	0.00	1.29	0.22	0.36	3.12	3.69
12	0.89	0.64	0.00	1.53	2.18	5.12	0.01	7.32	2.38	2.05	0.03	4.46	0.87	0.91	1.80	3.57
14	1.59	2.45	0.00	4.04	1.68	2.31	0.05	4.03	1.01	2.07	0.00	3.07	1.39	1.66	0.23	3.28
16	2.80	4.37	0.00	7.18	1.65	2.01	0.00	3.66	3.90	5.67	0.00	9.57	1.90	2.60	0.00	4.50
18	2.76	6.70	0.00	9.46	0.97	2.30	0.00	3.27	4.50	5.44	0.02	9.96	1.95	3.08	0.00	5.02
20	4.03	12.97	0.00	17.00	0.86	2.33	0.00	3.19	2.22	3.32	0.00	5.55	2.51	4.79	0.00	7.30
22	3.85	14.08	0.00	17.93	1.37	2.19	0.00	3.56	1.60	3.17	0.00	4.77	3.20	5.57	0.00	8.78
24	2.75	11.98	0.00	14.73	1.50	2.44	0.00	3.93	1.24	2.65	0.00	3.88	2.29	5.69	0.00	7.98
26	1.06	7.99	0.00	9.04	1.35	2.98	0.00	4.33	1.17	2.32	0.00	3.49	1.64	3.94	0.00	5.58
28	0.81	7.32	0.00	8.13	1.12	4.00	0.00	5.11	0.82	2.16	0.00	2.98	1.36	2.51	0.00	3.86
30	0.23	4.01	0.00	4.25	0.65	4.03	0.00	4.68	0.50	2.37	0.00	2.87	0.97	2.55	0.00	3.52
32	0.11	2.28	0.00	2.39	0.42	5.32	0.00	5.74	0.42	3.35	0.00	3.77	0.79	2.10	0.00	2.89
34	0.06	1.33	0.00	1.38	0.20	5.90	0.00	6.10	0.32	3.33	0.00	3.65	0.37	3.04	0.00	3.41
36	0.09	1.42	0.00	1.52	0.16	5.26	0.00	5.42	0.32	3.36	0.00	3.68	0.18	4.23	0.00	4.40
38	0.00	0.93	0.00	0.93	0.06	4.03	0.00	4.09	0.11	2.88	0.00	2.99	0.11	4.05	0.00	4.16
40	0.03	0.79	0.00	0.82	0.03	2.63	0.00	2.67	0.13	2.30	0.00	2.43	0.01	3.06	0.00	3.07
42	0.00	0.52	0.00	0.52	0.05	1.65	0.00	1.70	0.00	1.32	0.00	1.32	0.00	2.68	0.00	2.68
44	0.00	0.26	0.00	0.26	0.00	1.00	0.00	1.00	0.03	0.91	0.00	0.94	0.00	1.15	0.00	1.15
46	0.00	0.41	0.00	0.41	0.06	0.81	0.00	0.87	0.00	0.43	0.00	0.43	0.00	0.63	0.00	0.63
48	0.00	0.14	0.00	0.14	0.00	0.54	0.00	0.54	0.00	0.24	0.00	0.24	0.00	0.41	0.00	0.41
50	0.00	0.14	0.00	0.14	0.00	0.32	0.00	0.32	0.00	0.15	0.00	0.15	0.00	0.28	0.00	0.28
52	0.00	0.07	0.00	0.07	0.00	0.15	0.00	0.15	0.00	0.15	0.00	0.15	0.00	0.13	0.00	0.13
54	0.00	0.04	0.00	0.04	0.00	0.16	0.00	0.16	0.00	0.19	0.00	0.19	0.00	0.10	0.00	0.10
56	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.13	0.00	0.05	0.00	0.05	0.00	0.24	0.00	0.24
58	0.00	0.04	0.00	0.04	0.00	0.06	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.21
60	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.05	0.00	0.08	0.00	0.08	0.00	0.17	0.00	0.17
62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.05	0.00	0.06	0.00	0.06
64	0.00	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00
Total	21.37	80.99	0.03	102.40	15.04	59.67	0.70	75.42	21.35	50.69	0.59	72.63	19.78	56.25	6.73	82.76
Nº samples:				37				31				37				29
Nº Ind.:	952	3773	1	4726	672	2386	32	3090	821	2202	22	3045	815	2313	319	3447
Sampled catch:				1262				1456				1438				1627
Range:				7-64				6-60				6-64				5-63
Total catch:				1262				1456				1438				1627
Total valid hauls:				96				95				94				82

Table 32. Witch flounder length distribution per haul mean catches by sex and year. Number per stratified mean catches. Spanish Summer Survey on NAFO 3L: 2019-2025 (R/V Vizconde de Eza). Indet. means indeterminate.

Length (cm.)	2019				2023				2024				2025			
	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.03	0.03
8	0.00	0.00	0.33	0.33	0.00	0.00	0.01	0.01	0.00	0.00	0.03	0.03	0.00	0.00	0.05	0.05
10	0.00	0.00	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.02	0.00	0.02
12	0.00	0.00	0.06	0.06	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.01	0.01	0.02	0.04	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.00	0.02	0.01	0.03
16	0.03	0.13	0.01	0.18	0.02	0.04	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.08	0.01	0.09
18	0.02	0.00	0.00	0.02	0.00	0.05	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01
20	0.02	0.04	0.00	0.06	0.01	0.04	0.00	0.05	0.00	0.02	0.00	0.02	0.01	0.01	0.00	0.03
22	0.09	0.06	0.00	0.15	0.00	0.08	0.00	0.08	0.01	0.06	0.00	0.07	0.00	0.01	0.00	0.01
24	0.08	0.14	0.00	0.21	0.03	0.07	0.00	0.10	0.02	0.03	0.00	0.05	0.02	0.01	0.00	0.03
26	0.09	0.04	0.00	0.13	0.05	0.17	0.00	0.23	0.01	0.08	0.00	0.09	0.05	0.04	0.00	0.09
28	0.07	0.17	0.00	0.23	0.08	0.13	0.00	0.21	0.02	0.08	0.00	0.11	0.04	0.08	0.00	0.12
30	0.12	0.07	0.00	0.19	0.12	0.13	0.00	0.26	0.02	0.14	0.00	0.16	0.06	0.18	0.00	0.24
32	0.06	0.03	0.00	0.09	0.03	0.07	0.00	0.11	0.09	0.12	0.00	0.21	0.11	0.13	0.00	0.23
34	0.02	0.08	0.00	0.10	0.05	0.08	0.00	0.13	0.07	0.05	0.00	0.12	0.20	0.18	0.00	0.38
36	0.02	0.07	0.00	0.09	0.04	0.10	0.00	0.14	0.04	0.15	0.00	0.19	0.05	0.29	0.00	0.34
38	0.01	0.02	0.00	0.03	0.06	0.11	0.00	0.17	0.00	0.08	0.00	0.08	0.06	0.13	0.00	0.19
40	0.02	0.06	0.00	0.08	0.01	0.14	0.00	0.15	0.01	0.09	0.00	0.10	0.06	0.17	0.00	0.22
42	0.00	0.08	0.00	0.08	0.02	0.12	0.00	0.13	0.01	0.11	0.00	0.12	0.01	0.14	0.00	0.15
44	0.00	0.02	0.00	0.02	0.01	0.09	0.00	0.10	0.03	0.03	0.00	0.06	0.00	0.18	0.00	0.18
46	0.00	0.04	0.00	0.04	0.00	0.10	0.00	0.10	0.00	0.16	0.00	0.16	0.00	0.14	0.00	0.14
48	0.00	0.06	0.00	0.06	0.00	0.10	0.00	0.10	0.00	0.04	0.00	0.04	0.00	0.19	0.00	0.19
50	0.00	0.03	0.00	0.03	0.00	0.07	0.00	0.07	0.00	0.06	0.00	0.06	0.00	0.14	0.00	0.14
52	0.00	0.01	0.00	0.01	0.00	0.11	0.00	0.11	0.00	0.09	0.00	0.09	0.00	0.06	0.00	0.06
54	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.06	0.00	0.06	0.00	0.06	0.00	0.06
56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.03	0.00	0.04	0.00	0.04
58	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01
Total	0.66	1.16	0.51	2.33	0.56	1.83	0.01	2.40	0.34	1.51	0.05	1.90	0.65	2.33	0.10	3.07
Nº samples:				31				33				29				38
Nº Ind.:	61	111	46	218	54	171	1	226	31	135	5	171	62	211	7	280
Sampled catch:				44				91				81				139
Range:				7-53				9-58				7-56				7-62
Total catch:				44				91				81				139
Total valid hauls:				96				95				94				82

Table 33. Atlantic cod length distribution per haul mean catches by sex and year. Number per stratified mean catches. Spanish Summer Survey on NAFO 3L: 2019-2025 (R/V *Vizconde de Eza*). Indet. means indeterminate.

Length (cm.)	2019				2023				2024				2025			
	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total
<12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.00	0.00	0.02
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.06	0.05	0.17
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.10	0.09	0.34
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02	0.56	0.40	0.25	1.21
18	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.04	0.02	0.00	0.06	0.74	0.66	0.11	1.51
20	0.02	0.01	0.00	0.04	0.00	0.00	0.00	0.00	0.04	0.01	0.00	0.05	1.07	0.72	0.02	1.81
22	0.04	0.04	0.00	0.09	0.05	0.03	0.00	0.07	0.02	0.06	0.00	0.09	1.71	1.37	0.00	3.08
24	0.05	0.01	0.00	0.06	0.05	0.08	0.00	0.13	0.13	0.08	0.00	0.21	2.37	2.02	0.00	4.39
26	0.35	0.21	0.00	0.56	0.15	0.18	0.00	0.33	0.15	0.11	0.00	0.26	2.12	2.19	0.00	4.31
28	0.51	0.56	0.00	1.07	0.44	0.52	0.00	0.96	0.23	0.29	0.00	0.52	1.42	1.37	0.00	2.79
30	0.76	0.88	0.00	1.64	1.05	0.78	0.00	1.83	0.54	0.37	0.00	0.91	0.95	0.77	0.00	1.72
32	0.87	0.92	0.00	1.78	0.77	0.67	0.00	1.44	0.59	0.57	0.00	1.17	0.54	0.40	0.00	0.94
34	0.71	0.86	0.00	1.56	0.50	0.48	0.00	0.98	0.47	0.66	0.00	1.12	0.44	0.57	0.00	1.01
36	0.53	0.55	0.00	1.08	0.55	0.48	0.00	1.03	0.54	0.61	0.00	1.15	0.57	0.59	0.00	1.16
38	0.34	0.37	0.00	0.71	0.60	0.52	0.00	1.12	0.42	0.60	0.00	1.02	0.72	0.40	0.00	1.12
40	0.30	0.38	0.00	0.68	0.56	0.54	0.00	1.09	0.38	0.38	0.00	0.75	0.44	0.63	0.00	1.07
42	0.31	0.33	0.00	0.65	0.48	0.59	0.00	1.07	0.33	0.53	0.00	0.86	0.46	0.62	0.00	1.08
44	0.32	0.30	0.00	0.61	0.50	0.47	0.00	0.97	0.44	0.33	0.00	0.77	0.45	0.46	0.00	0.91
46	0.15	0.31	0.00	0.46	0.41	0.54	0.00	0.96	0.44	0.37	0.00	0.80	0.47	0.58	0.00	1.05
48	0.18	0.22	0.00	0.40	0.43	0.55	0.00	0.98	0.38	0.53	0.00	0.91	0.40	0.49	0.00	0.89
50	0.18	0.11	0.00	0.29	0.27	0.28	0.00	0.56	0.41	0.38	0.00	0.79	0.28	0.50	0.00	0.78
52	0.07	0.12	0.00	0.19	0.20	0.33	0.00	0.53	0.26	0.33	0.00	0.60	0.19	0.46	0.00	0.66
54	0.05	0.15	0.00	0.21	0.16	0.26	0.00	0.42	0.26	0.44	0.00	0.70	0.12	0.48	0.00	0.59
56	0.07	0.14	0.00	0.21	0.07	0.13	0.00	0.20	0.11	0.30	0.00	0.41	0.10	0.39	0.00	0.49
58	0.05	0.09	0.00	0.14	0.08	0.12	0.00	0.20	0.18	0.26	0.00	0.43	0.09	0.19	0.00	0.28
60	0.05	0.06	0.00	0.12	0.05	0.15	0.00	0.20	0.10	0.29	0.00	0.39	0.05	0.16	0.00	0.21
62	0.03	0.05	0.00	0.09	0.00	0.05	0.00	0.05	0.05	0.14	0.00	0.19	0.03	0.17	0.00	0.20
64	0.02	0.02	0.00	0.04	0.01	0.02	0.00	0.03	0.08	0.13	0.00	0.22	0.02	0.06	0.00	0.08
66	0.00	0.05	0.00	0.05	0.03	0.02	0.00	0.06	0.06	0.04	0.00	0.10	0.04	0.01	0.00	0.06
68	0.00	0.00	0.00	0.00	0.01	0.03	0.00	0.04	0.07	0.03	0.00	0.09	0.01	0.05	0.00	0.06
70	0.00	0.01	0.00	0.01	0.01	0.04	0.00	0.05	0.02	0.07	0.00	0.09	0.00	0.02	0.00	0.02
72	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.02	0.06	0.00	0.08	0.00	0.06	0.00	0.06
74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01
76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00
78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.00
80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.00
82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00
84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01
88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01
92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	5.99	6.78	0.00	12.77	7.43	7.90	0.00	15.33	6.79	8.04	0.01	14.84	16.60	16.97	0.52	34.09
Nº samples:				32				32				36				35
Nº Ind.:	548	622	0	1170	679	727	0	1406	608	719	1	1328	1078	1151	34	2263
Sampled catch:				435				607				831				1144
Range:				13-80				12-67				5-81				10-90
Total catch:				435				607				831				1144
Total valid hauls:				96				95				94				82

Table 34. Roughhead grenadier length distribution per haul mean catches by sex and year. Number per stratified mean catches. Spanish Summer Survey on NAFO 3L: 2019-2025 (R/V *Vizconde de Eza*). Indet. means indeterminate.

Length (cm.)	2019				2023				2024				2025			
	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total
1.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.05
2.5	0.01	0.00	0.09	0.10	0.00	0.00	1.01	1.01	0.01	0.00	0.58	0.59	0.00	0.01	0.59	0.61
3.5	0.15	0.03	0.36	0.55	0.17	0.06	3.39	3.62	0.06	0.01	2.42	2.49	0.04	0.03	3.46	3.53
4.5	0.02	0.02	0.01	0.05	0.12	0.09	0.19	0.41	0.08	0.04	0.18	0.31	0.16	0.03	0.63	0.83
5.5	0.36	0.30	0.00	0.66	0.84	1.33	0.05	2.21	0.52	0.46	0.15	1.12	0.37	0.30	0.27	0.93
6.5	0.62	0.77	0.01	1.40	2.25	2.30	0.00	4.55	0.72	0.46	0.01	1.20	1.21	0.78	0.03	2.02
7.5	0.47	0.27	0.00	0.75	0.93	0.95	0.00	1.88	0.70	0.77	0.00	1.47	0.63	0.56	0.00	1.19
8.5	1.15	0.93	0.00	2.08	0.80	1.25	0.00	2.05	1.51	1.41	0.00	2.92	0.71	0.93	0.00	1.64
9.5	0.88	0.95	0.00	1.83	0.96	1.06	0.00	2.02	0.70	1.05	0.00	1.75	1.11	0.87	0.00	1.98
10.5	0.84	0.89	0.00	1.72	1.08	1.40	0.00	2.47	0.89	1.07	0.00	1.96	1.73	1.46	0.00	3.19
11.5	1.04	1.14	0.00	2.18	1.13	1.35	0.00	2.48	1.13	1.53	0.00	2.66	1.50	1.45	0.00	2.95
12.5	1.12	1.22	0.00	2.34	0.97	1.07	0.00	2.04	1.48	1.70	0.00	3.18	1.50	1.65	0.00	3.15
13.5	1.13	1.19	0.00	2.32	1.21	1.40	0.00	2.61	1.35	1.81	0.00	3.16	2.32	1.65	0.00	3.97
14.5	1.64	1.29	0.00	2.93	1.81	1.61	0.00	3.42	1.85	2.10	0.00	3.95	2.78	2.42	0.00	5.20
15.5	1.56	1.31	0.00	2.86	2.65	2.08	0.00	4.73	2.59	2.75	0.00	5.34	3.83	2.37	0.00	6.20
16.5	1.36	1.14	0.00	2.49	2.82	2.21	0.00	5.03	2.85	3.02	0.00	5.87	4.03	3.62	0.00	7.65
17.5	1.13	0.90	0.00	2.02	3.17	2.37	0.00	5.53	2.87	3.16	0.00	6.04	3.96	3.20	0.00	7.16
18.5	0.85	0.79	0.00	1.63	2.07	2.19	0.00	4.26	2.49	3.58	0.00	6.07	3.33	3.29	0.00	6.62
19.5	0.58	0.69	0.00	1.27	1.31	1.99	0.00	3.30	1.29	3.08	0.01	4.38	2.01	3.19	0.00	5.20
20.5	0.19	0.53	0.00	0.72	0.50	1.47	0.00	1.96	0.70	2.20	0.00	2.90	1.16	2.70	0.00	3.86
21.5	0.03	0.61	0.00	0.64	0.25	1.22	0.00	1.47	0.26	1.60	0.00	1.86	0.29	2.17	0.00	2.46
22.5	0.01	0.51	0.00	0.52	0.08	1.00	0.00	1.08	0.07	1.32	0.00	1.38	0.06	1.72	0.00	1.79
23.5	0.02	0.32	0.00	0.33	0.03	0.84	0.00	0.87	0.08	1.26	0.00	1.33	0.04	1.48	0.00	1.52
24.5	0.00	0.25	0.00	0.25	0.00	0.59	0.00	0.59	0.01	0.79	0.00	0.80	0.02	0.94	0.00	0.97
25.5	0.01	0.25	0.00	0.26	0.00	0.49	0.00	0.49	0.01	0.69	0.00	0.71	0.00	0.72	0.00	0.72
26.5	0.00	0.18	0.00	0.18	0.02	0.29	0.00	0.31	0.01	0.46	0.00	0.47	0.00	0.72	0.00	0.72
27.5	0.00	0.16	0.00	0.16	0.00	0.20	0.00	0.20	0.01	0.31	0.00	0.32	0.00	0.34	0.00	0.34
28.5	0.00	0.09	0.00	0.09	0.03	0.21	0.00	0.23	0.02	0.23	0.00	0.25	0.00	0.20	0.00	0.20
29.5	0.00	0.08	0.00	0.08	0.01	0.15	0.00	0.16	0.00	0.14	0.00	0.14	0.00	0.28	0.00	0.28
30.5	0.00	0.09	0.00	0.09	0.00	0.10	0.00	0.10	0.00	0.07	0.00	0.07	0.00	0.07	0.00	0.07
31.5	0.00	0.03	0.00	0.03	0.00	0.06	0.00	0.06	0.00	0.06	0.00	0.06	0.00	0.06	0.00	0.06
32.5	0.00	0.06	0.00	0.06	0.00	0.09	0.00	0.09	0.00	0.04	0.00	0.04	0.00	0.08	0.00	0.08
33.5	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.03	0.00	0.03	0.00	0.02	0.00	0.02
34.5	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00
35.5	0.00	0.05	0.00	0.05	0.00	0.02	0.00	0.02	0.00	0.07	0.00	0.07	0.00	0.00	0.00	0.00
36.5	0.00	0.03	0.00	0.03	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.04
37.5	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.02
38.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
39.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
41.5	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
42.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	15.16	17.06	0.48	32.70	25.20	31.52	4.64	61.35	24.28	37.25	3.36	64.88	32.83	39.36	5.02	77.21
Nº samples:				82				84				78				73
Nº Ind.:	1398	1582	50	3030	2307	2720	429	5456	2315	3211	340	5866	2326	2828	383	5537
Sampled catch:				1179				2126				2754				2752
Range:				2.5-37.5				2.5-41.5				2.5-36				1.5-38
Total catch:				1179				2126				2754				2752
Total valid hauls:				96				95				94				82

Table 35. Redfish length distribution per haul mean catches by sex and year. Number per stratified mean catches. Spanish Summer Survey on NAFO 3L: 2019-2025 (R/V *Vizconde de Eza*). Indet. means indeterminate.

Length (cm.)	2019				2023				2024				2025			
	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total
4	0.00	0.00	0.13	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.00	0.00	0.06	0.06
6	0.00	0.00	1.63	1.63	0.00	0.00	2.29	2.29	0.21	0.00	16.05	16.26	0.00	0.00	5.51	5.51
8	0.00	0.02	12.23	12.25	0.38	0.38	5.74	6.51	0.21	0.00	20.43	20.65	0.00	0.00	21.68	21.68
10	0.00	0.00	20.75	20.75	5.96	4.03	19.10	29.09	0.00	0.00	32.49	32.49	0.00	0.00	19.36	19.36
12	0.37	0.29	20.07	20.73	34.18	19.38	31.33	84.89	0.00	0.00	26.14	26.14	0.47	0.77	26.27	27.51
14	7.41	4.23	7.07	18.71	25.00	16.55	21.84	63.39	3.65	0.42	43.01	47.08	2.40	1.30	19.99	23.69
16	52.15	28.66	0.00	80.81	29.83	19.10	1.24	50.17	30.63	20.14	0.00	50.77	12.62	8.64	0.45	21.70
18	50.50	28.00	0.00	78.51	110.04	69.20	0.00	179.24	18.03	15.44	0.00	33.47	22.36	15.88	0.00	38.24
20	11.05	12.76	0.00	23.81	391.59	302.38	0.00	693.97	62.80	60.39	0.00	123.19	43.34	39.79	0.00	83.13
22	11.72	7.49	0.00	19.21	103.31	79.03	0.00	182.34	243.76	238.59	0.06	482.40	92.25	93.08	0.00	185.33
24	15.87	10.59	0.00	26.45	8.92	4.57	0.00	13.49	292.14	272.32	0.00	564.45	273.93	239.04	0.00	512.97
26	32.59	6.46	0.00	39.06	9.77	6.33	0.00	16.10	47.98	42.90	0.00	90.89	292.18	290.40	0.00	582.58
28	24.83	14.71	0.00	39.54	9.30	4.46	0.00	13.76	9.90	7.60	0.00	17.50	36.63	40.55	0.00	77.17
30	10.15	18.00	0.00	28.15	6.09	4.07	0.00	10.17	12.54	5.19	0.00	17.73	12.02	9.19	0.00	21.22
32	2.98	15.43	0.00	18.41	1.52	2.30	0.00	3.82	2.67	5.65	0.00	8.32	3.01	4.99	0.00	8.00
34	2.19	10.03	0.00	12.22	1.66	4.09	0.00	5.74	0.81	6.49	0.00	7.31	0.99	6.09	0.00	7.07
36	2.30	6.29	0.00	8.58	1.30	3.62	0.00	4.92	0.77	4.55	0.00	5.32	1.03	6.50	0.00	7.53
38	1.62	3.51	0.00	5.13	0.51	3.04	0.00	3.55	0.61	6.94	0.00	7.55	1.07	3.95	0.00	5.02
40	0.16	0.73	0.00	0.89	0.27	1.31	0.00	1.58	0.70	1.71	0.00	2.40	0.28	1.45	0.00	1.73
42	0.30	0.02	0.00	0.33	0.08	0.73	0.00	0.81	0.02	0.31	0.00	0.33	0.03	0.70	0.00	0.73
44	0.00	0.49	0.00	0.49	0.06	0.16	0.00	0.22	0.17	0.24	0.00	0.41	0.26	0.25	0.00	0.50
46	0.06	0.73	0.00	0.79	0.00	0.02	0.00	0.02	0.14	0.14	0.00	0.29	0.00	0.38	0.00	0.38
48	0.00	0.24	0.00	0.24	0.03	0.09	0.00	0.12	0.40	0.00	0.00	0.40	0.00	0.10	0.00	0.10
50	0.00	0.49	0.00	0.49	0.00	0.00	0.00	0.00	0.00	0.35	0.00	0.35	0.00	0.00	0.00	0.00
52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.10
54	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.14	0.00	0.14	0.00	0.00	0.00	0.00
56	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.14	0.00	0.14	0.00	0.00	0.00	0.00
58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.14	0.00	0.00	0.00	0.00
60	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.27	0.00	0.27	0.00	0.00	0.00	0.00
62	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01
64	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.06	0.00	0.06	0.00	0.00	0.00	0.00
66	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
68	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.03	0.00	0.03	0.00	0.00	0.00	0.00
70	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	226.27	169.18	61.87	457.31	739.82	544.93	81.54	1366.29	728.13	690.15	138.22	1556.50	794.86	763.14	93.33	1651.33
Nº samples:				46				52				51				46
Nº Ind.:	2294	2013	1092	5399	3397	2471	1540	7408	2267	2044	1486	5797	3109	2742	1283	7134
Sampled catch:				9042				15665				27217				32782
Range:				5-62				6-70				5-69				5-63
Total catch:				9042				15665				27217				32790
Total valid hauls:				96				95				94				82

Table 36. Thorny skate length distribution per haul mean catches by sex and year. Number per stratified mean catches. Spanish Summer Survey on NAFO 3L: 2019-2025 (R/V *Vizconde de Eza*). Indet. means indeterminate.

Length (cm.)	2019				2023				2024				2025			
	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total
10	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.01	0.03	0.00	0.04	0.03	0.02	0.00	0.05	0.11	0.09	0.00	0.20
14	0.01	0.00	0.00	0.01	0.04	0.03	0.00	0.07	0.10	0.07	0.00	0.17	0.52	0.47	0.00	0.99
16	0.01	0.03	0.00	0.05	0.08	0.03	0.00	0.11	0.08	0.05	0.00	0.13	0.53	0.35	0.00	0.87
18	0.02	0.03	0.00	0.05	0.00	0.07	0.00	0.07	0.06	0.02	0.00	0.08	0.30	0.16	0.00	0.46
20	0.04	0.01	0.00	0.05	0.02	0.02	0.00	0.03	0.03	0.02	0.00	0.06	0.17	0.09	0.00	0.26
22	0.00	0.01	0.00	0.01	0.03	0.05	0.00	0.08	0.02	0.01	0.00	0.03	0.05	0.11	0.00	0.16
24	0.02	0.04	0.00	0.07	0.01	0.03	0.00	0.04	0.01	0.01	0.00	0.02	0.03	0.04	0.00	0.06
26	0.02	0.05	0.00	0.07	0.01	0.03	0.00	0.04	0.02	0.00	0.00	0.02	0.02	0.08	0.00	0.10
28	0.02	0.05	0.00	0.07	0.02	0.03	0.00	0.05	0.02	0.02	0.00	0.04	0.05	0.01	0.00	0.06
30	0.03	0.00	0.00	0.03	0.04	0.06	0.00	0.10	0.03	0.02	0.00	0.06	0.07	0.05	0.00	0.12
32	0.05	0.06	0.00	0.11	0.03	0.02	0.00	0.05	0.03	0.03	0.00	0.07	0.13	0.13	0.00	0.26
34	0.08	0.02	0.00	0.10	0.03	0.01	0.00	0.04	0.09	0.07	0.00	0.16	0.27	0.08	0.00	0.35
36	0.04	0.05	0.00	0.10	0.00	0.03	0.00	0.03	0.14	0.08	0.00	0.22	0.13	0.18	0.00	0.31
38	0.07	0.03	0.00	0.11	0.05	0.05	0.00	0.10	0.13	0.06	0.00	0.18	0.30	0.22	0.00	0.52
40	0.05	0.07	0.00	0.13	0.03	0.03	0.00	0.06	0.10	0.13	0.00	0.23	0.16	0.12	0.00	0.28
42	0.03	0.05	0.00	0.09	0.04	0.04	0.00	0.08	0.15	0.16	0.00	0.30	0.16	0.28	0.00	0.43
44	0.06	0.02	0.00	0.08	0.06	0.08	0.00	0.14	0.10	0.14	0.00	0.24	0.27	0.20	0.00	0.46
46	0.02	0.04	0.00	0.06	0.08	0.02	0.00	0.09	0.12	0.23	0.00	0.35	0.19	0.20	0.00	0.39
48	0.01	0.02	0.00	0.03	0.07	0.07	0.00	0.14	0.14	0.11	0.00	0.25	0.18	0.19	0.00	0.38
50	0.03	0.02	0.00	0.05	0.06	0.09	0.00	0.15	0.17	0.15	0.00	0.31	0.23	0.14	0.00	0.37
52	0.04	0.01	0.00	0.05	0.19	0.05	0.00	0.25	0.31	0.23	0.00	0.54	0.36	0.38	0.00	0.74
54	0.00	0.01	0.00	0.01	0.08	0.14	0.00	0.22	0.26	0.22	0.00	0.48	0.32	0.29	0.00	0.60
56	0.04	0.05	0.00	0.09	0.11	0.06	0.00	0.18	0.24	0.22	0.00	0.46	0.31	0.26	0.00	0.57
58	0.08	0.04	0.00	0.12	0.15	0.08	0.00	0.23	0.21	0.23	0.00	0.45	0.45	0.36	0.00	0.81
60	0.04	0.04	0.00	0.09	0.18	0.07	0.00	0.25	0.19	0.19	0.00	0.39	0.39	0.28	0.00	0.68
62	0.05	0.08	0.00	0.13	0.06	0.11	0.00	0.17	0.31	0.15	0.00	0.46	0.48	0.40	0.00	0.88
64	0.08	0.08	0.00	0.16	0.17	0.11	0.00	0.28	0.29	0.35	0.00	0.64	0.59	0.55	0.00	1.14
66	0.18	0.14	0.00	0.32	0.22	0.31	0.00	0.53	0.37	0.42	0.00	0.80	0.73	0.38	0.00	1.11
68	0.11	0.02	0.00	0.14	0.20	0.25	0.00	0.44	0.35	0.38	0.00	0.72	0.83	0.55	0.00	1.38
70	0.21	0.05	0.00	0.26	0.37	0.23	0.00	0.60	0.36	0.33	0.01	0.70	1.02	0.45	0.00	1.47
72	0.15	0.04	0.00	0.19	0.34	0.14	0.00	0.47	0.38	0.39	0.00	0.77	1.03	0.28	0.00	1.31
74	0.15	0.04	0.00	0.18	0.45	0.12	0.00	0.58	0.38	0.22	0.00	0.60	1.08	0.27	0.00	1.35
76	0.12	0.01	0.00	0.13	0.23	0.03	0.00	0.26	0.39	0.12	0.00	0.51	0.88	0.15	0.00	1.03
78	0.08	0.01	0.00	0.09	0.26	0.01	0.00	0.27	0.35	0.03	0.00	0.38	1.06	0.12	0.00	1.18
80	0.07	0.00	0.00	0.07	0.26	0.00	0.00	0.26	0.18	0.01	0.00	0.19	0.46	0.01	0.00	0.47
82	0.03	0.00	0.00	0.03	0.11	0.00	0.00	0.11	0.11	0.01	0.00	0.12	0.26	0.00	0.00	0.26
84	0.01	0.00	0.00	0.01	0.04	0.00	0.00	0.04	0.01	0.00	0.00	0.01	0.23	0.00	0.00	0.23
86	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.03	0.03	0.00	0.00	0.03	0.06	0.00	0.00	0.06
88	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.02	0.00	0.00	0.02	0.04	0.00	0.00	0.04
90	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	2.08	1.25	0.00	3.34	4.19	2.54	0.00	6.73	6.30	4.94	0.01	11.25	14.47	7.90	0.00	22.36
Nº samples:				38				42				43				41
Nº Ind.:	193	115	0	308	350	206	0	556	568	448	1	1017	1071	615	0	1686
Sampled catch:				711				1634				2693				4851
Range:				14-84				11-90				13-89				12-90
Total catch:				711				1634				2693				4851
Total valid hauls:				96				95				94				82

Table 37. Black dogfish length distribution per haul mean catches by sex and year. Number per stratified mean catches. Spanish Summer Survey on NAFO 3L: 2019-2025 (R/V *Vizconde de Eza*). Indet. means indeterminate.

Length (cm.)	2019				2023				2024				2025			
	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
42	0.00	0.03	0.00	0.03	0.00	0.01	0.00	0.01	0.01	0.05	0.00	0.06	0.01	0.07	0.00	0.09
44	0.06	0.05	0.00	0.11	0.02	0.05	0.00	0.07	0.01	0.02	0.00	0.04	0.02	0.08	0.00	0.10
46	0.02	0.10	0.00	0.13	0.06	0.09	0.00	0.16	0.08	0.10	0.00	0.18	0.08	0.11	0.00	0.20
48	0.01	0.04	0.00	0.05	0.05	0.05	0.00	0.10	0.03	0.08	0.00	0.11	0.09	0.20	0.00	0.29
50	0.07	0.06	0.00	0.14	0.11	0.12	0.00	0.23	0.08	0.10	0.00	0.18	0.22	0.29	0.00	0.50
52	0.03	0.01	0.00	0.04	0.13	0.12	0.00	0.25	0.14	0.07	0.00	0.21	0.40	0.31	0.00	0.71
54	0.10	0.01	0.00	0.11	0.13	0.20	0.00	0.33	0.08	0.11	0.00	0.19	0.37	0.25	0.00	0.62
56	0.07	0.09	0.00	0.16	0.16	0.14	0.00	0.30	0.14	0.08	0.00	0.22	0.38	0.27	0.00	0.65
58	0.15	0.05	0.00	0.20	0.23	0.14	0.00	0.37	0.20	0.18	0.00	0.38	0.41	0.19	0.00	0.60
60	0.14	0.08	0.00	0.22	0.37	0.17	0.00	0.54	0.29	0.09	0.00	0.38	0.50	0.16	0.00	0.66
62	0.32	0.09	0.00	0.42	0.31	0.20	0.00	0.51	0.38	0.26	0.00	0.64	0.64	0.19	0.00	0.83
64	0.17	0.12	0.00	0.29	0.34	0.24	0.00	0.57	0.37	0.28	0.00	0.64	0.70	0.33	0.00	1.02
66	0.17	0.11	0.00	0.27	0.30	0.24	0.00	0.54	0.20	0.33	0.00	0.53	0.28	0.23	0.00	0.50
68	0.06	0.16	0.00	0.22	0.10	0.24	0.00	0.33	0.09	0.31	0.00	0.40	0.10	0.31	0.00	0.41
70	0.01	0.15	0.00	0.16	0.06	0.19	0.00	0.25	0.03	0.24	0.00	0.27	0.08	0.38	0.00	0.47
72	0.00	0.15	0.00	0.15	0.00	0.12	0.00	0.12	0.00	0.21	0.00	0.21	0.01	0.23	0.00	0.24
74	0.00	0.06	0.00	0.06	0.01	0.15	0.00	0.17	0.00	0.15	0.00	0.15	0.01	0.33	0.00	0.35
76	0.00	0.05	0.00	0.05	0.00	0.06	0.00	0.06	0.00	0.14	0.00	0.14	0.00	0.15	0.00	0.15
78	0.00	0.01	0.00	0.01	0.00	0.04	0.00	0.04	0.00	0.02	0.00	0.02	0.00	0.04	0.00	0.04
80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
82	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.02
84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.38	1.43	0.00	2.80	2.39	2.58	0.00	4.97	2.14	2.83	0.00	4.97	4.31	4.14	0.00	8.45
Nº samples:				27				36				31				24
Nº Ind.:	131	135	0	266	207	238	0	445	210	259	0	469	372	279	0	651
Sampled catch:				350				602				622				800
Range:				43-78				43-82				42-79				42-83
Total catch:				350				602				622				800
Total valid hauls:				96				95				94				82

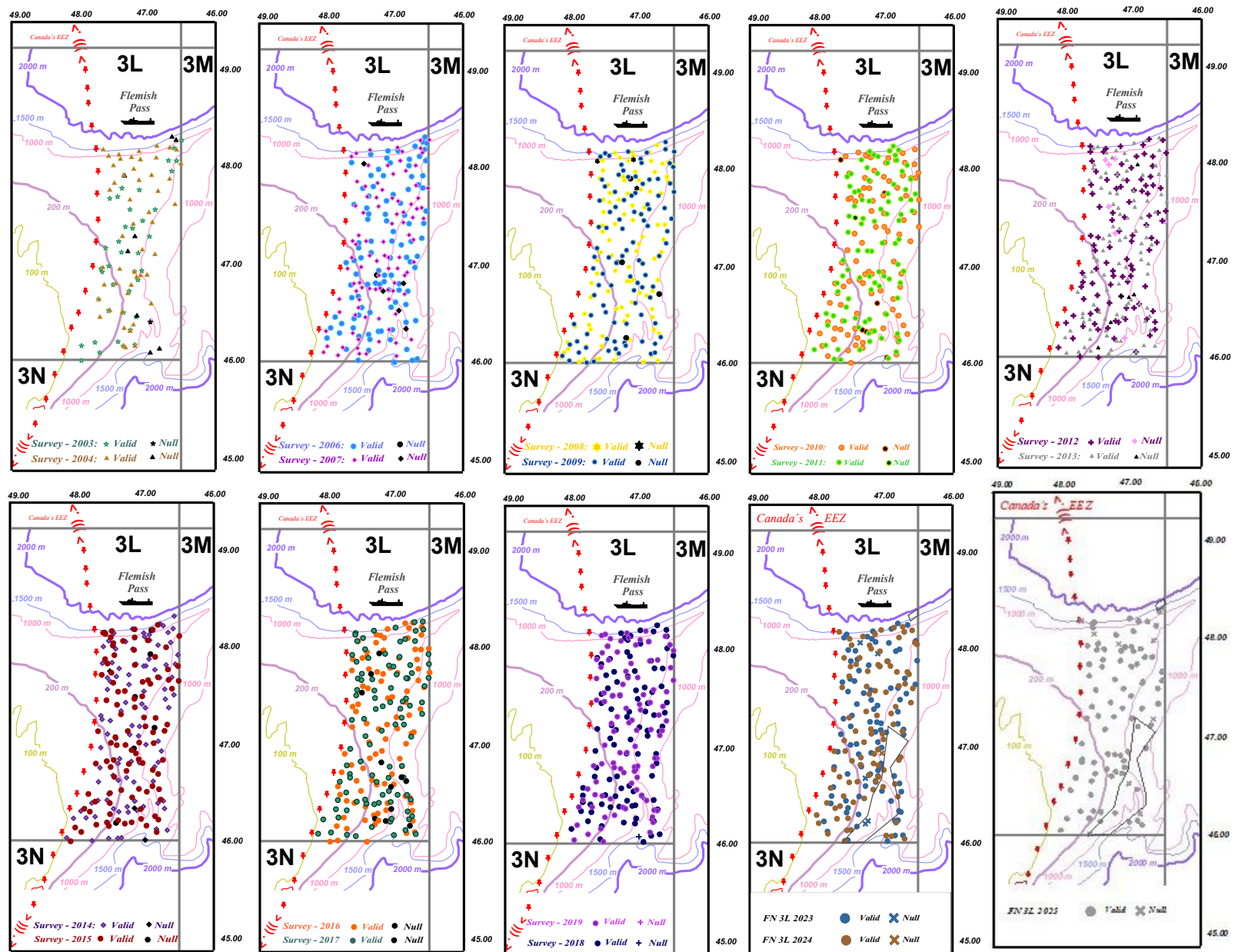


Figure 1. Haul positions of the Spanish surveys in NAFO Division 3L in the period 2003-2025 (R/V “Vizconde de Eza”).

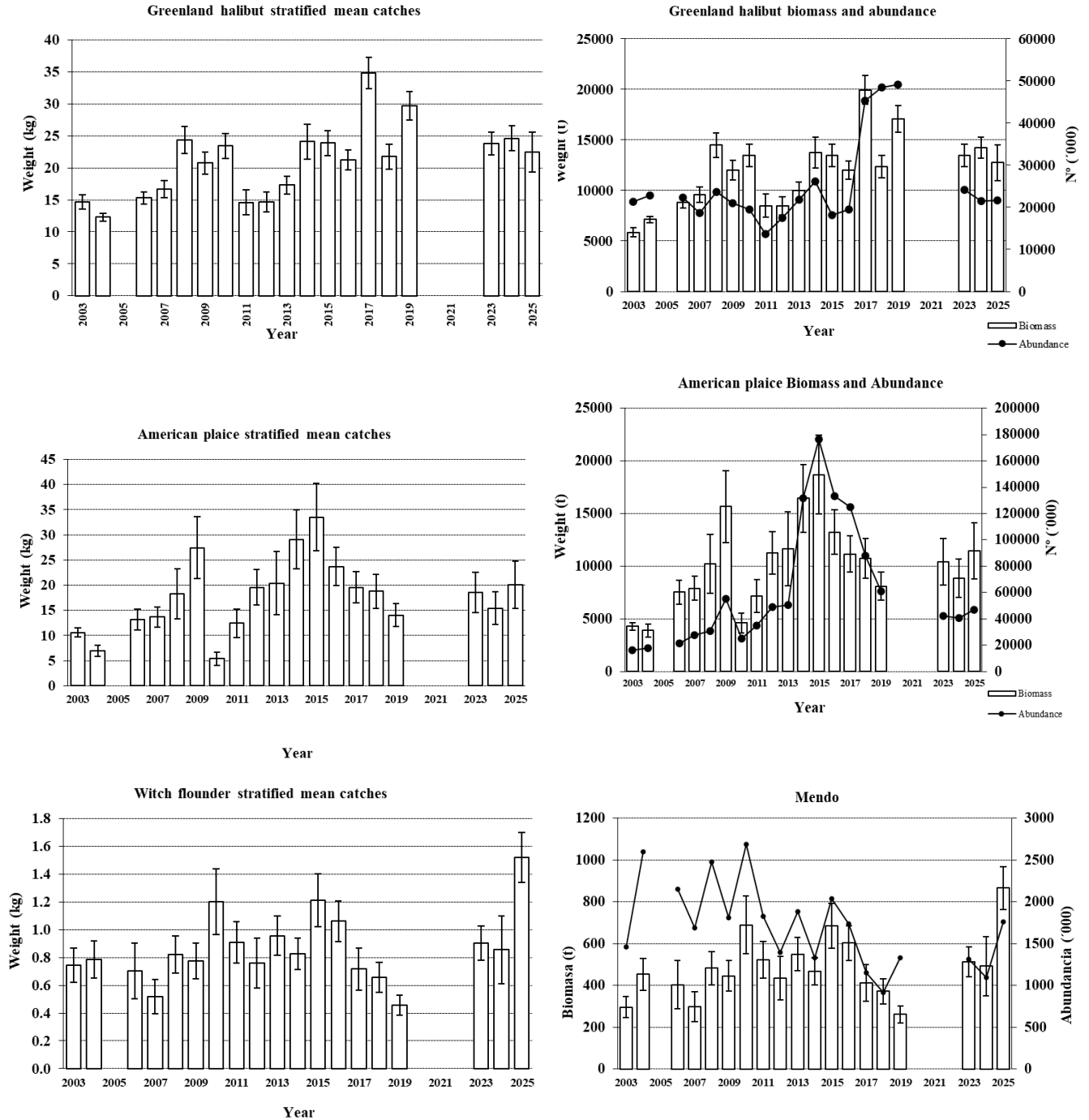


Figure 2. Stratified mean catches in Kg and $\pm$ SD by year, abundance ('000) and biomass in tonnes and $\pm$ SD by year for **Greenland halibut, American plaice and Witch flounder**. Spanish surveys in NAFO Division 3L: 2003 - 2025 (R/V "*Vizconde de Eza*"). In 2003, the data correspond to 69% of the total area prospected in 2006-2025.

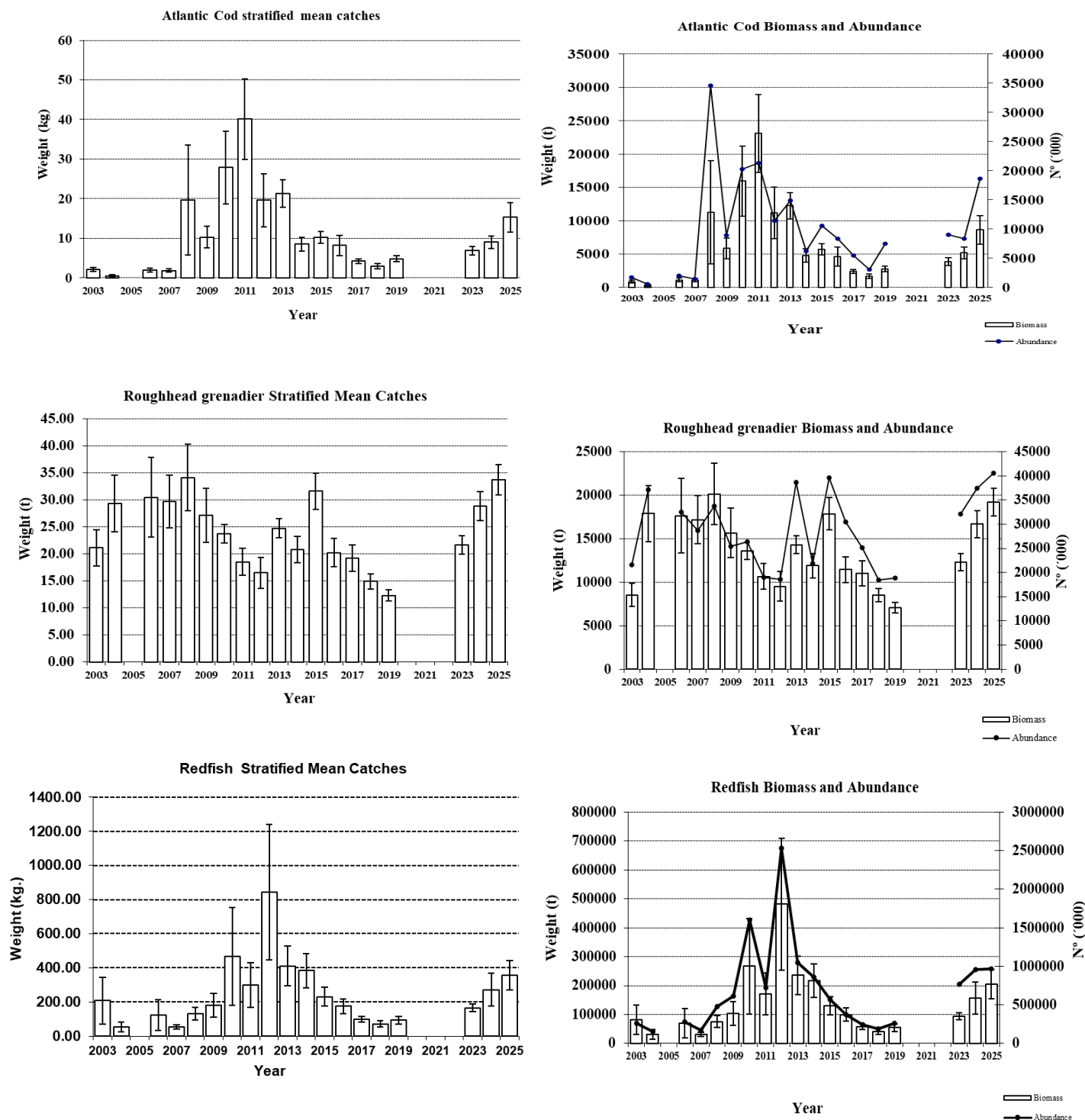


Figure 3. Stratified mean catches in Kg and $\pm$ SD by year, abundance ('000) and biomass in tonnes and $\pm$ SD by year for **Atlantic cod, roughhead grenadier and redfish**. Spanish surveys in NAFO Division 3L: 2003-2025 (R/V "Vizconde de Eza"). In 2003, the data correspond to 69% of the total area prospected in 2006-2025.

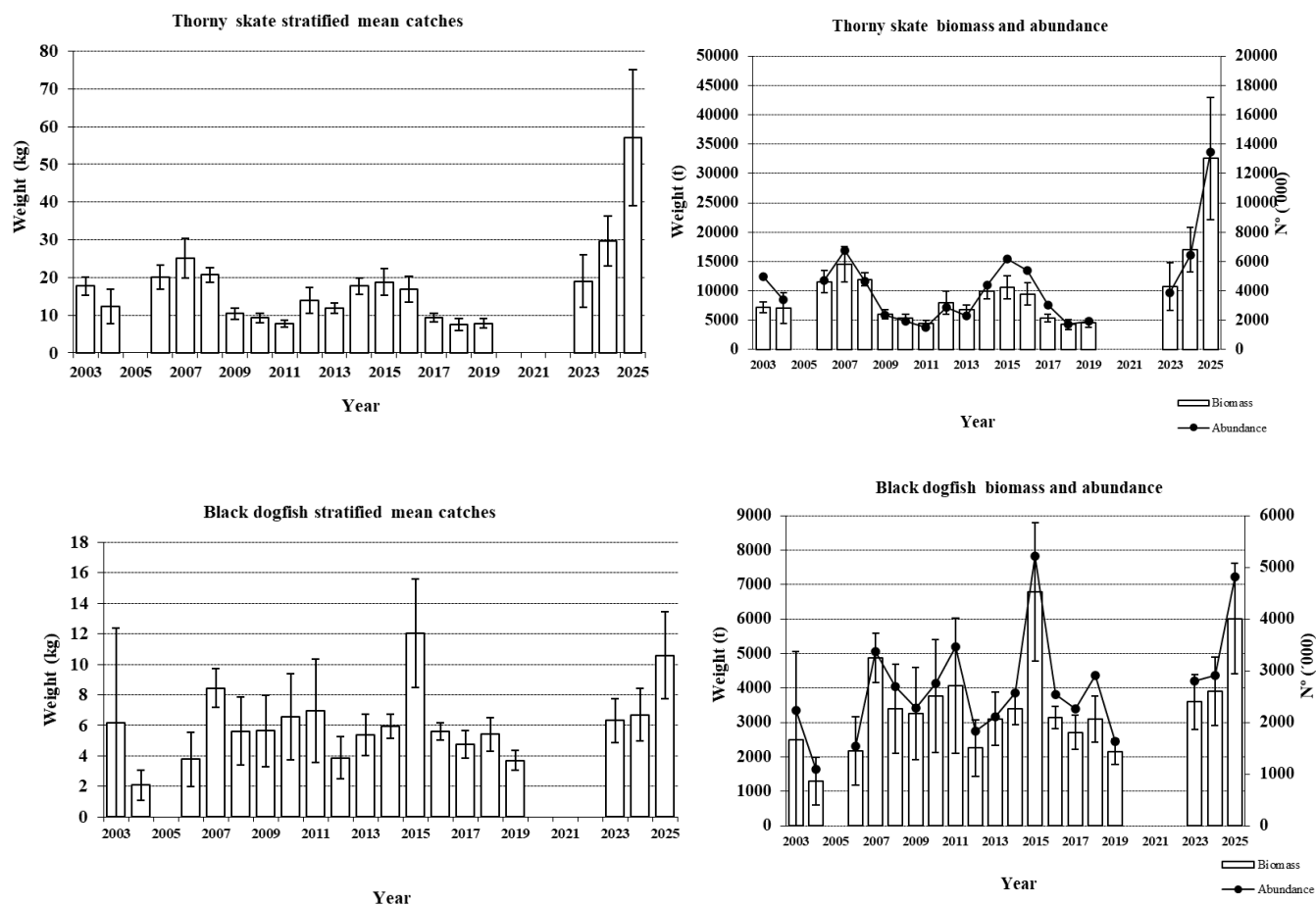


Figure 4. Stratified mean catches in Kg and $\pm$ SD by year, abundance ('000) and biomass in tonnes and $\pm$ SD by year for **thorny skate and black dogfish**. Spanish surveys in NAFO Division 3L: 2003-2025 (R/V "Vizconde de Eza"). In 2003, the data correspond to 69% of the total area prospected in 2006-2025.

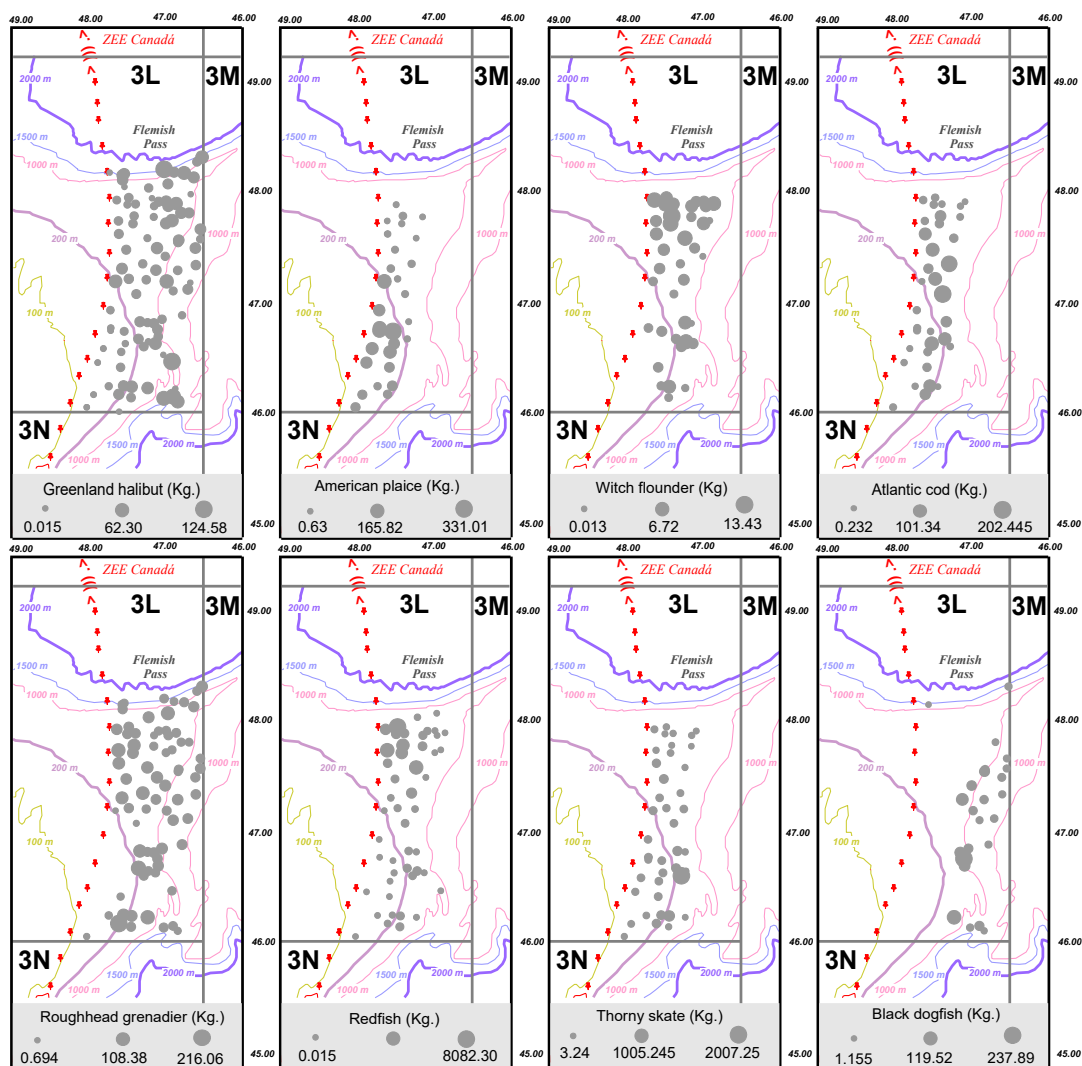


Figure 5. Distribution of the catches per haul for **Greenland halibut, American plaice, witch flounder, Atlantic cod, roughhead grenadier, redfish, thorny skate and black dogfish** in 2025 Spanish 3L survey.

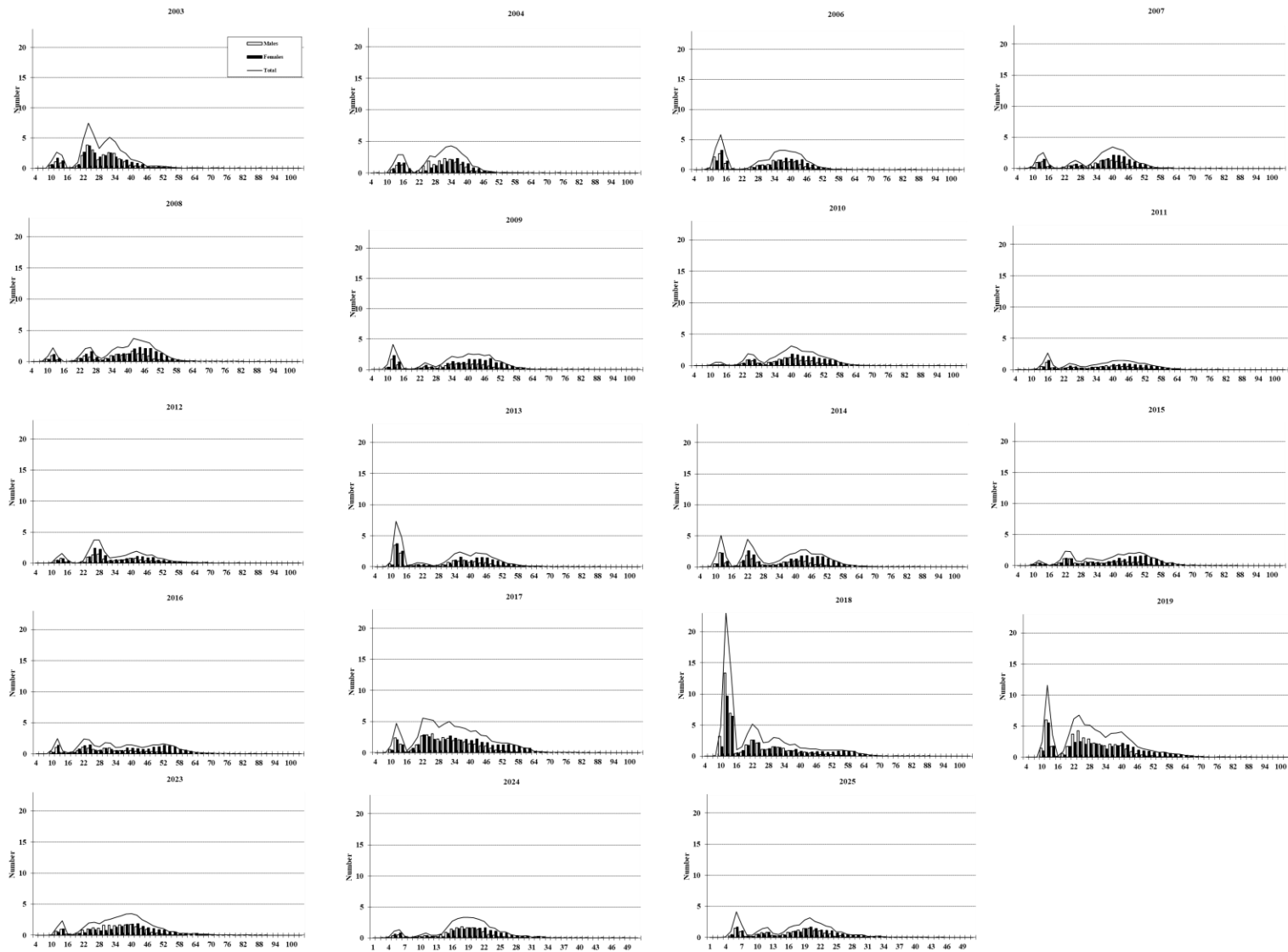


Figure 6. Greenland halibut length distribution (cm) in NAFO 3L: 2003-2025. Number per stratified mean catches. In 2003, the data correspond to 69% of the total area prospected in 2006-2025.

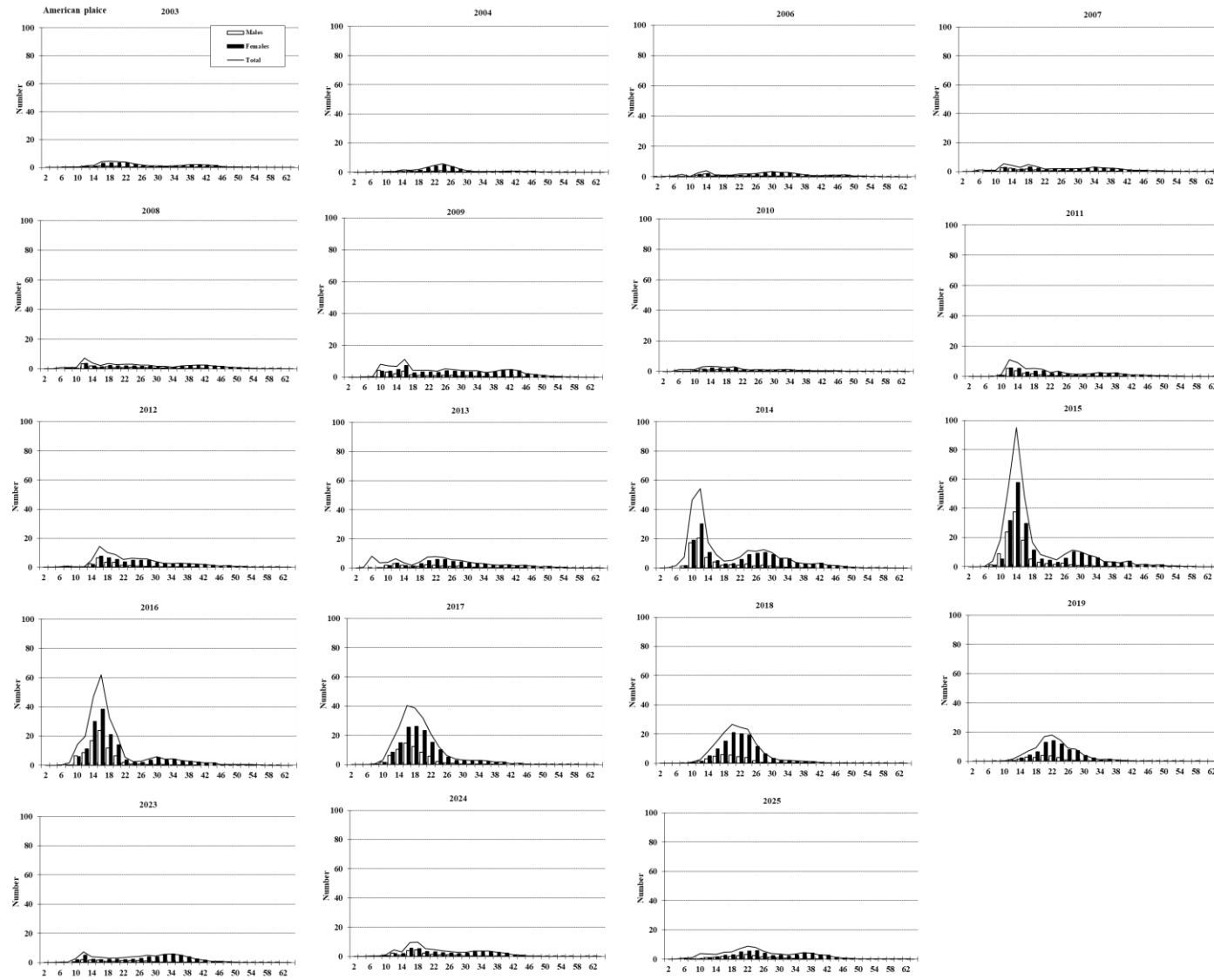


Figure 7. American plaice length distribution (cm) in NAFO 3L: 2003-2025. Number per stratified mean catches. In 2003, the data correspond to 69% of the total area prospected in 2006-2025.

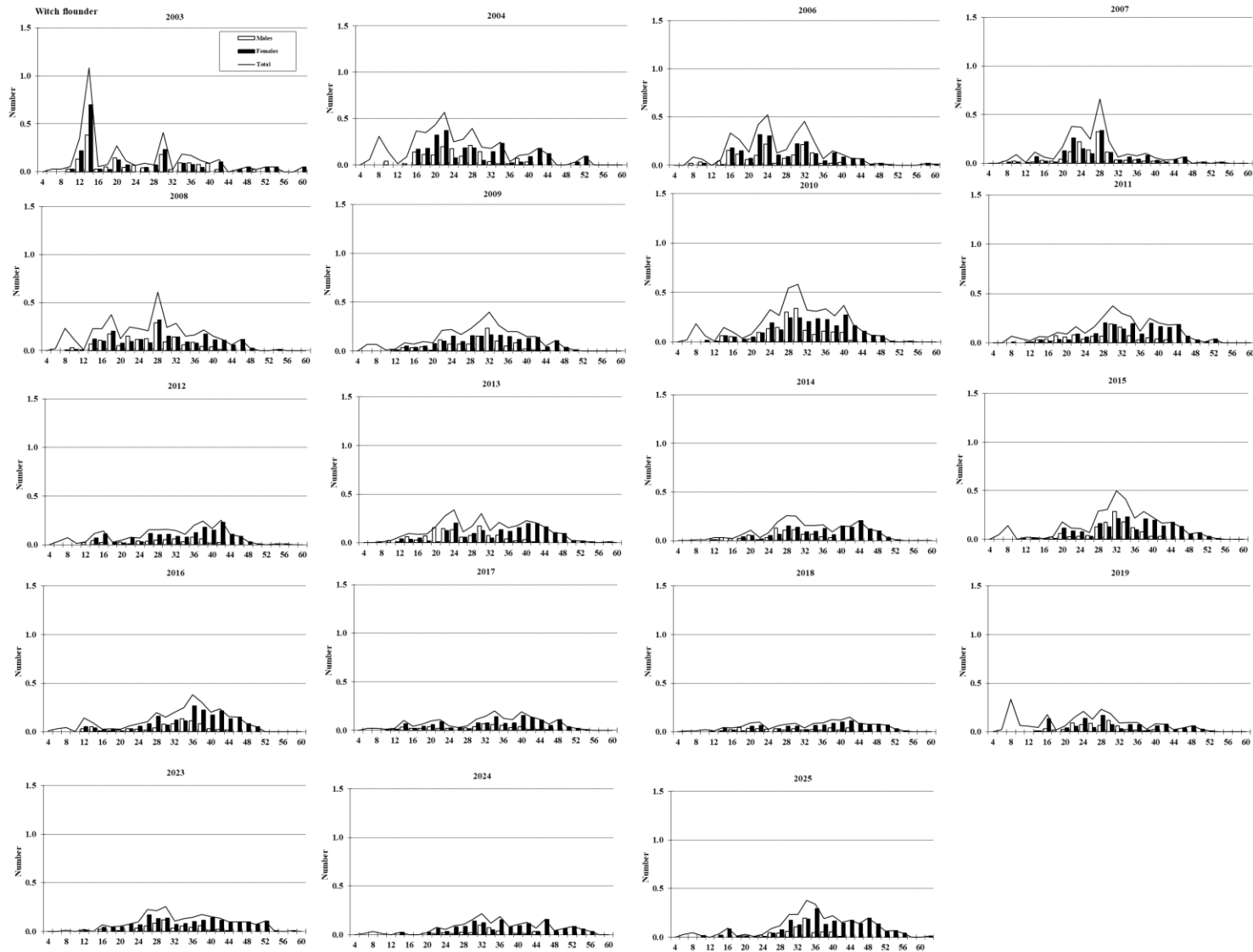


Figure 8. Witch flounder length distribution (cm) in NAFO 3L: 2003-2025. Number per stratified mean catches. In 2003, the data correspond to 69% of the total area prospected in 2006-2025.

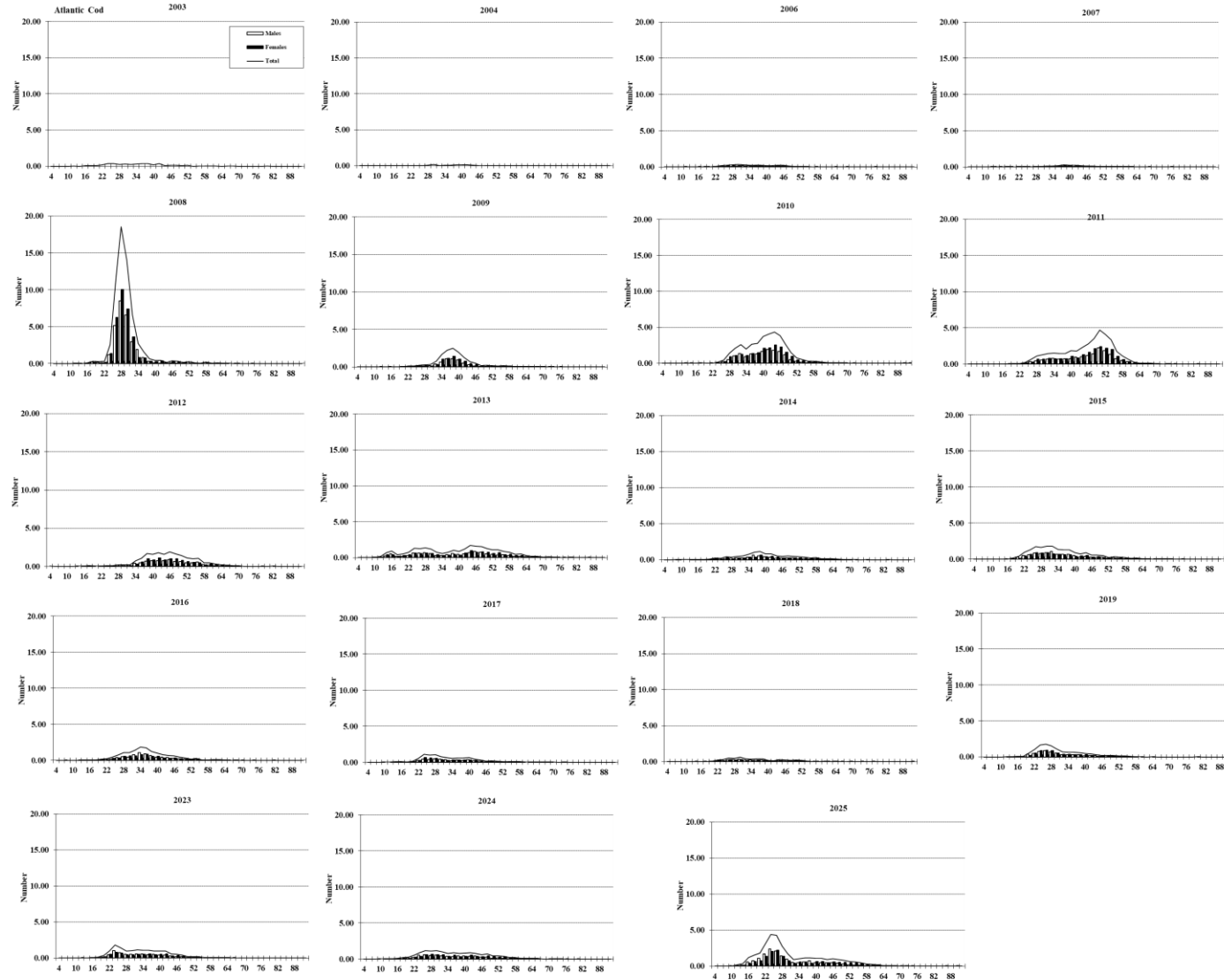


Figure 9. Atlantic cod length distribution (cm) in NAFO 3L: 2003-2025. Number per stratified mean catches. In 2003, the data correspond to 69% of the total area prospected in 2006-2025.

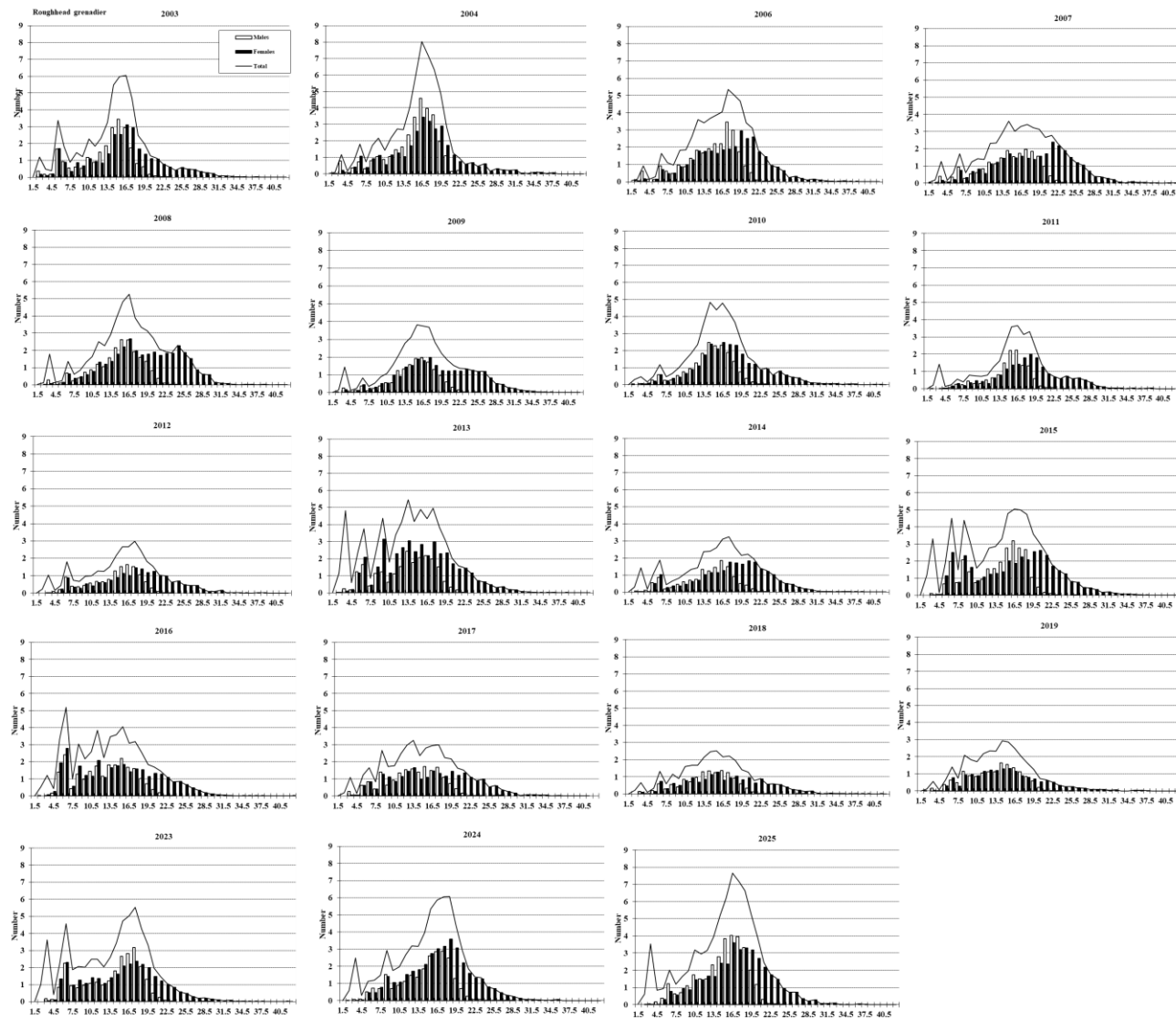


Figure 10. Roughhead grenadier length distribution (cm) in NAFO 3L: 2003-2025. Number per stratified mean catches. In 2003, the data correspond to 69% of the total area prospected in 2006-2025.

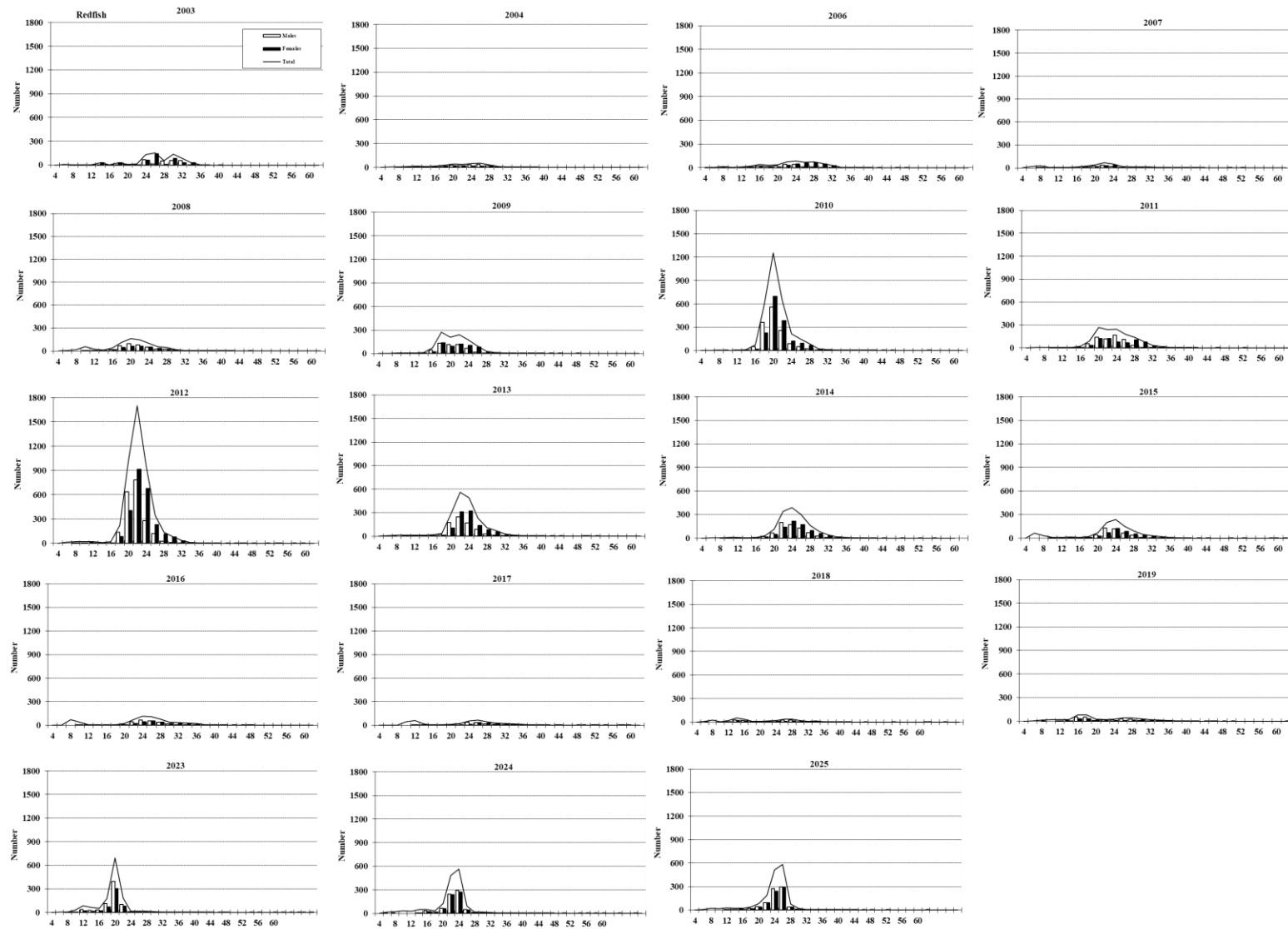


Figure 11. Redfish length distribution (cm) in NAFO 3L: 2003-2025. Number per stratified mean catches. In 2003, the data correspond to 69% of the total area prospected in 2006-2025

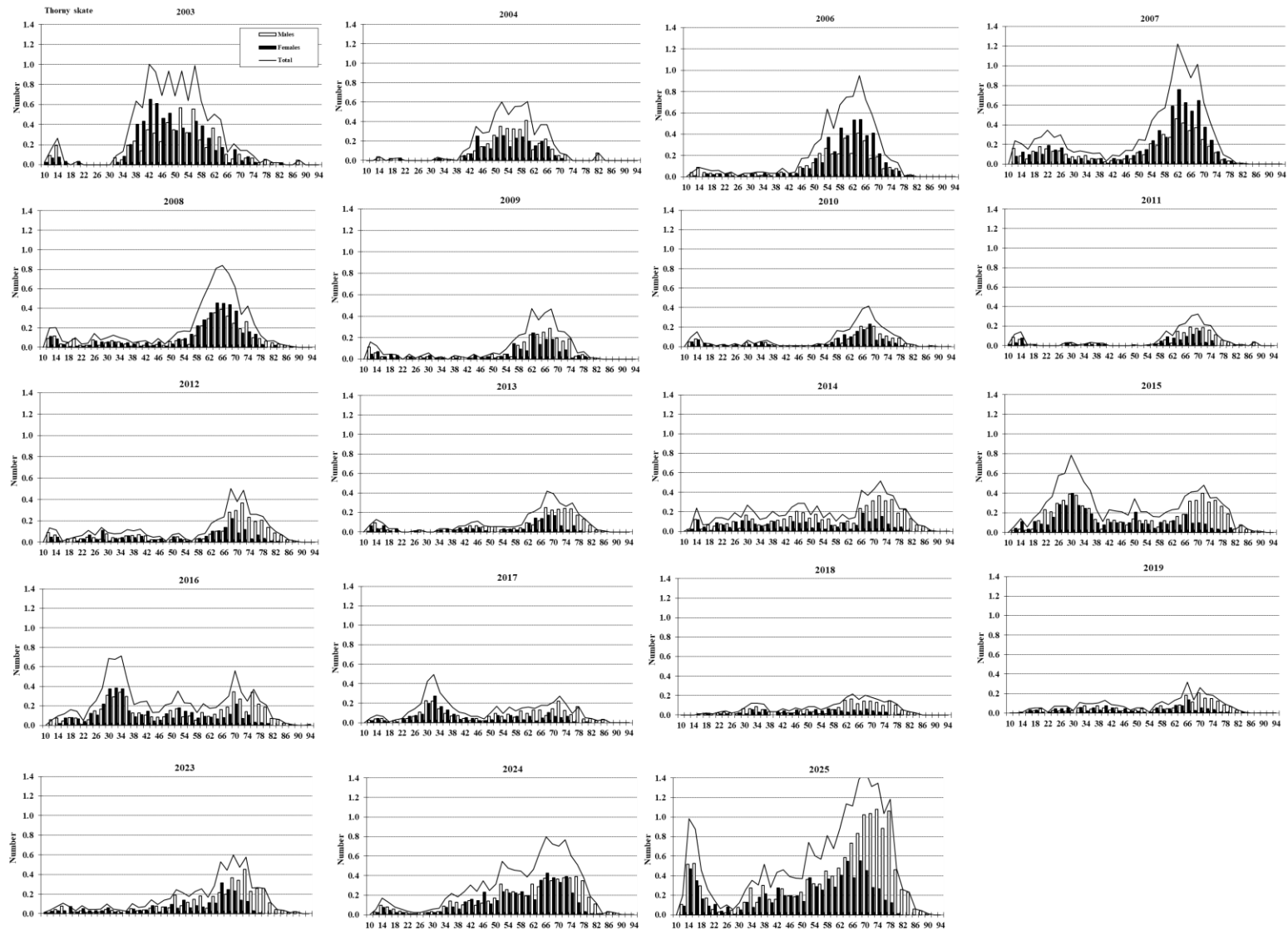


Figure 12. Thorny skate length distribution (cm) in NAFO 3L: 2003-2025. Number per stratified mean catches. In 2003, the data correspond to 69% of the total area prospected in 2006-2025.

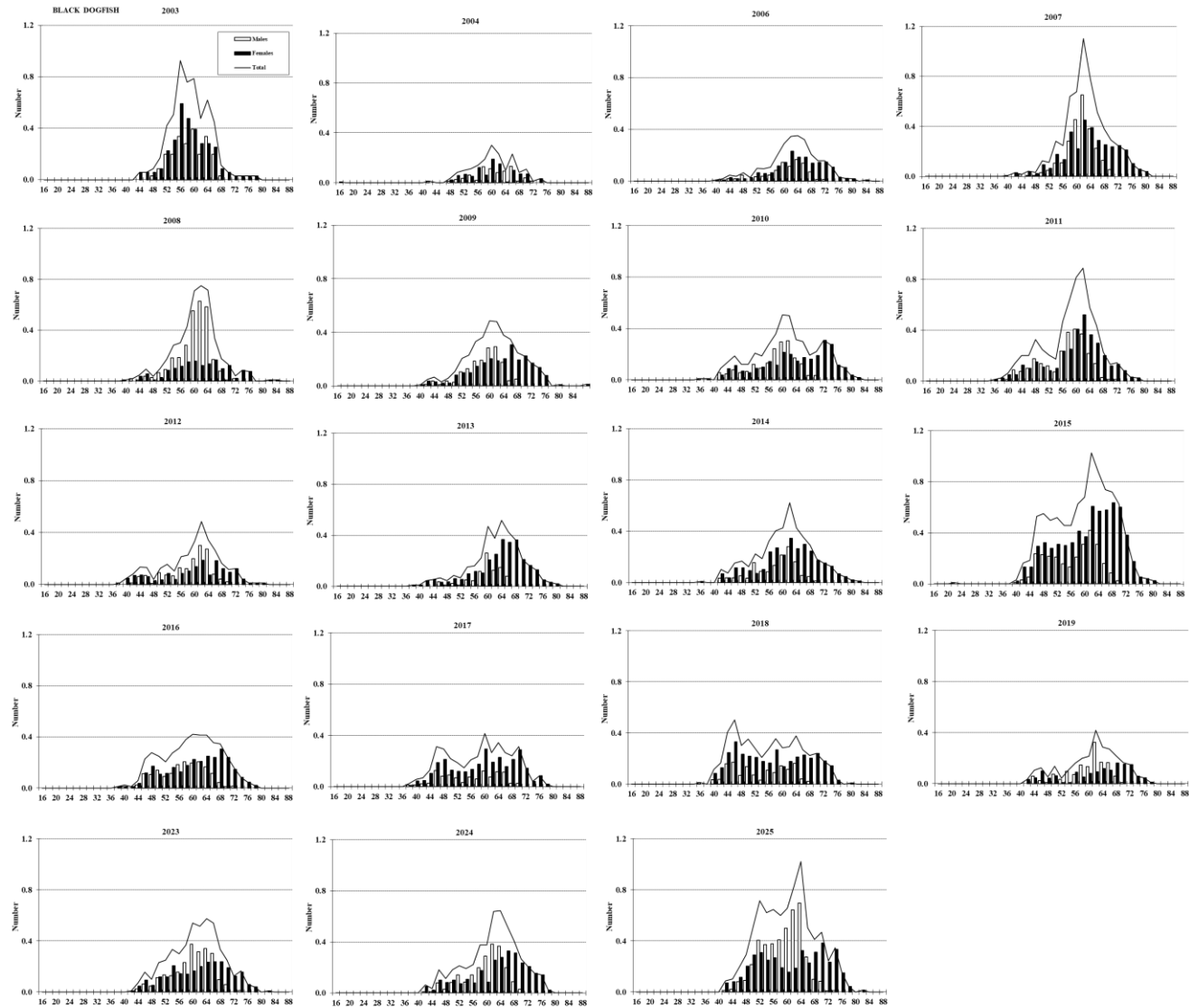


Figure 13. Black dogfish length distribution (cm) in NAFO 3L: 2003-2025. Number per stratified mean catches. In 2003, the data correspond to 69% of the total area prospected in 2006-2025.

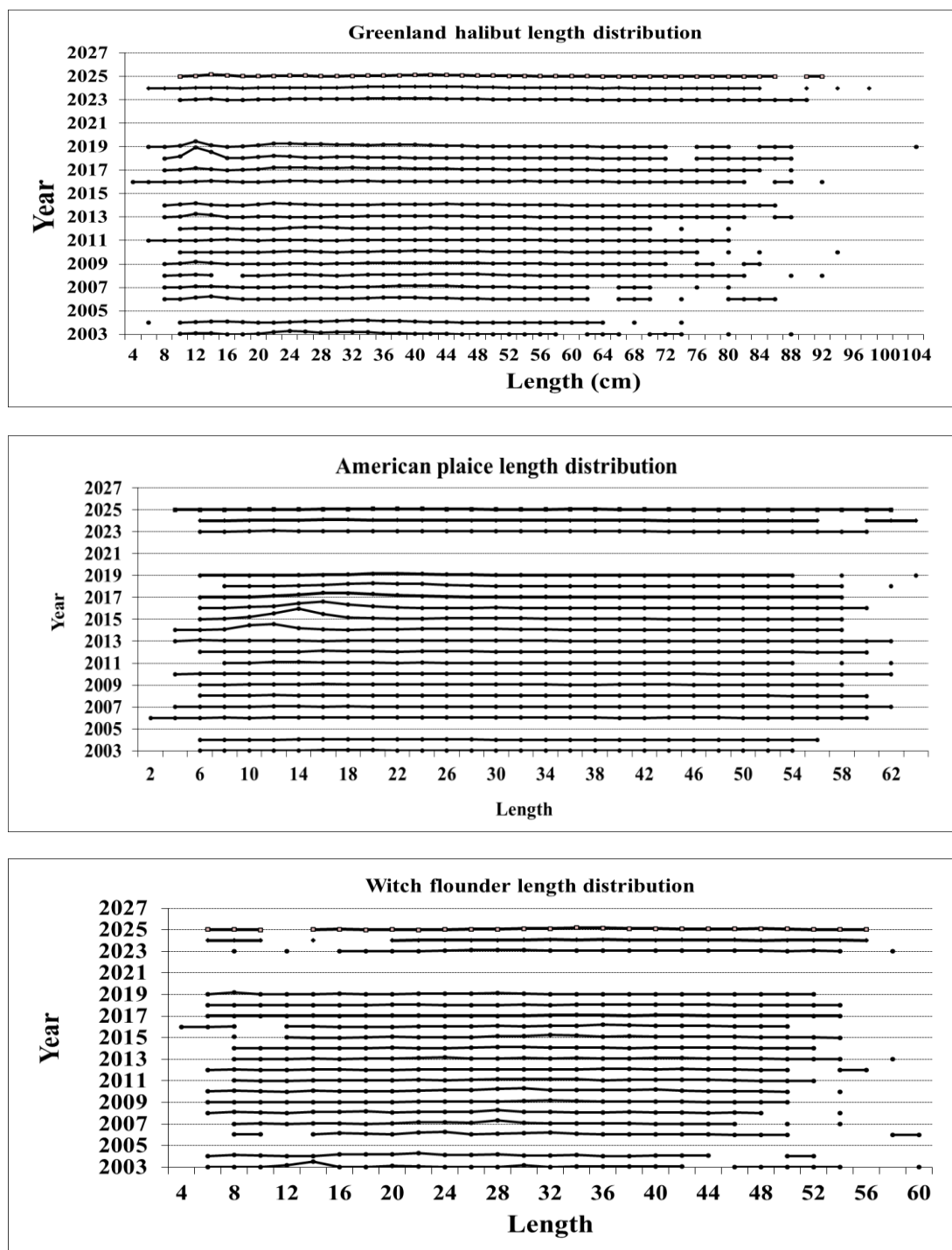


Figure 14. Greenland halibut, American plaice and witch flounder length distribution (cm) in NAFO 3L: 2003-2025.

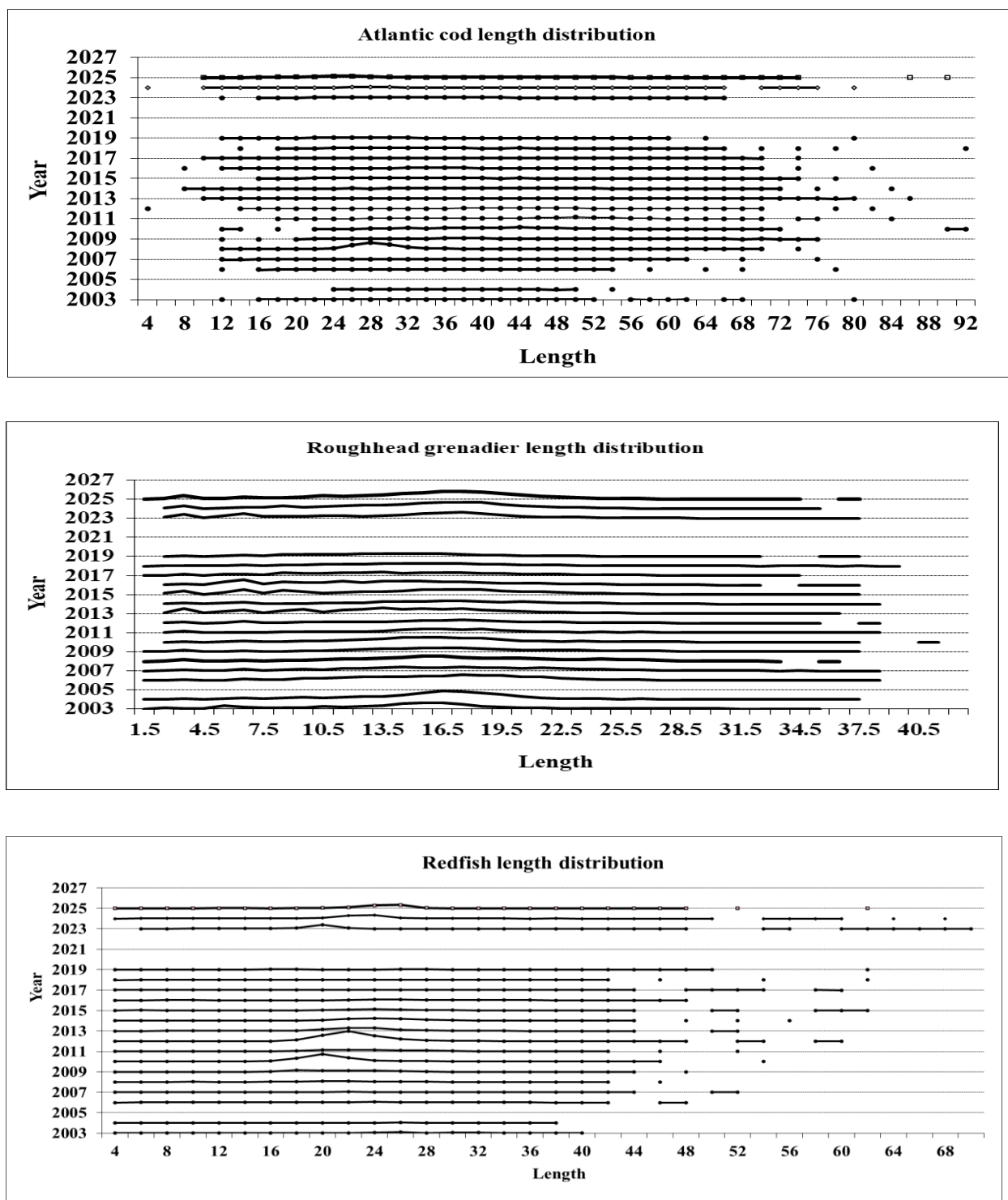


Figure 15. Atlantic cod, roughhead grenadier and redfish length distribution (cm) in NAFO 3L: 2003-2025.

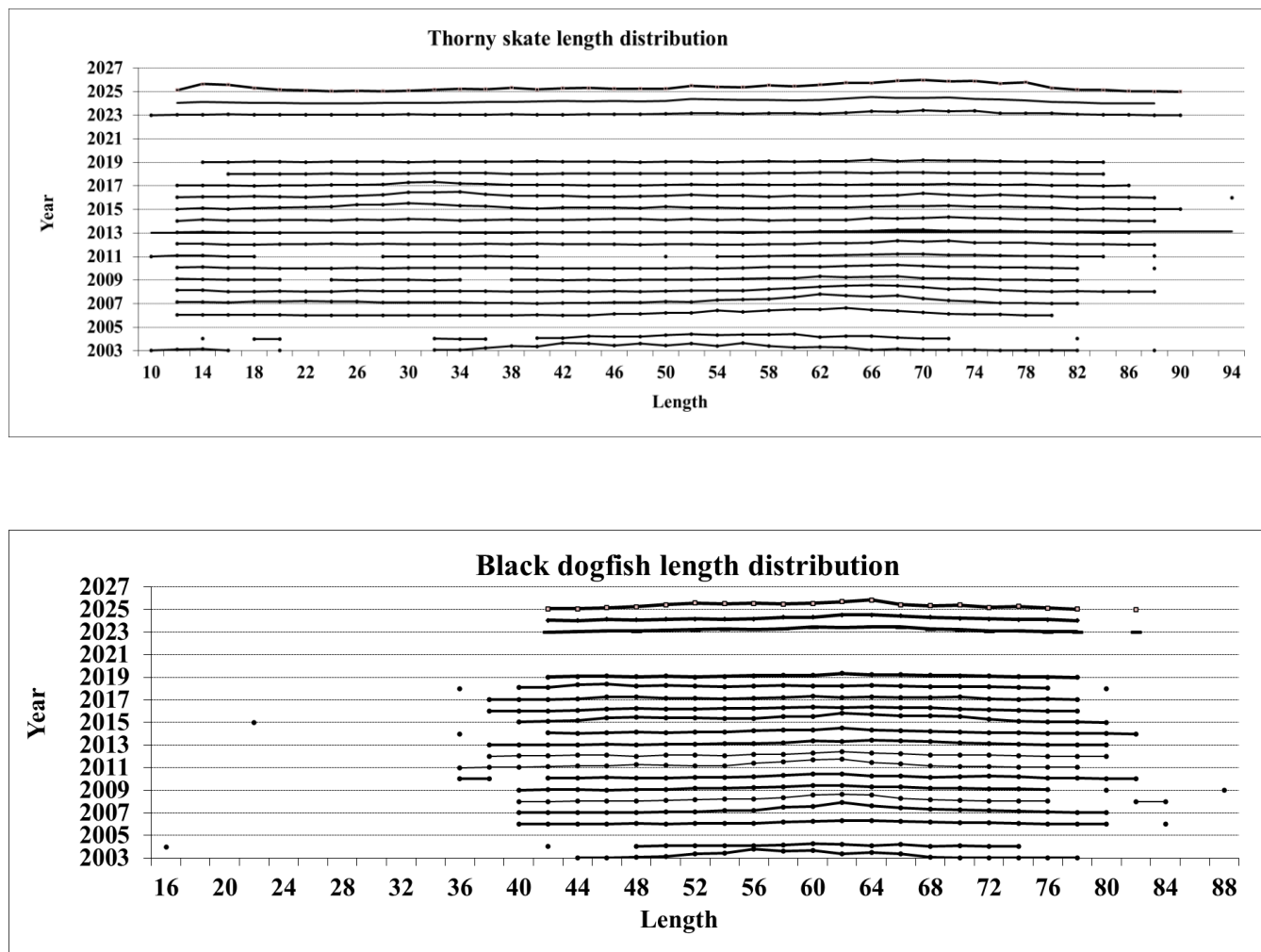


Figure 16. Thorny skate and black dogfish length distribution (cm) in NAFO 3L: 2003-2025.