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Yellowtail flounder, redfish (*Sebastes spp*) and witch flounder indices from the Spanish Survey conducted in Divisions 3NO of the NAFO Regulatory Area

by

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Abstract

Since 1995, Spain carries out a spring stratified random bottom trawl survey in Div. 3NO of the NAFO Regulatory Area. Mean catches, biomass and length distribution for yellowtail flounder (*Limanda ferruginea*) are presented for the period 1995-2012, for redfish (Sebastes spp) for the period 1997-2012 and for witch flounder (*Glyptocephalus cynoglossus*) for the period 2002-2012. Yellowtail flounder does not show a clear trend since 1998; its indices are almost constant throughout this period, with a slight increase in the last four years. Redfish indices oscillate greatly over time, probably because the gear does not sample adequately aggregating pelagic species. There was a sharp increase in 2009. Since 2010 a decreasing trend can be seen, but the indices for these years are still the highest of the series. Good year classes have not been registered recently. Witch flounder is very scarce and also lacks a clear trend in the data series, being the values always poor. Recruitment was quite good at the beginning of the series but very poor in recent years.

Material and methods

The Spanish Spring (May/June) survey in Div. 3NO of NAFO Regulatory Area was initiated by Spain in 1995. Until 2001, the survey was carried out on board the Spanish vessel C/V *Playa de Menduiña* (338 GT and 800 HP) using a *Pedreira* type bottom trawl. The R/V *Vizconde de Eza* replaced the C/V *Playa de Menduíña* in 2001, and the *Campelen* 1800 was implemented as survey gear. The main specifications and geometry of these gears, their rigging profile and the net plan, and the survey technical information are described in Walsh *et. al.*, 2001. The survey area was stratified following the standard stratification schemes (Bishop, 1994). Set number was allocated to strata proportionally to their size, with a minimum of two planned hauls per stratum and trawl positions were chosen at random (Doubleday, 1981). Biomass indices were calculated by the swept area method (Cochran, 1997), assuming catchability factor of 1. Table 1 presents the number of valid tows, the depth strata covered and the dates of the survey series. Table 2 shows the swept area and number of hauls by stratum.

The redfish series starts in 1997 because sampling depth in 1995 and 1996 was shallower than 1000 meters so the data are not representative for this species. As the strata where the yellowtail flounder is presented were well surveyed, the series for this species are presented since 1995. The witch flounder dataset used in this paper starts in 2002 because data collected with the first vessel in the earlier years have not been calibrated yet.

The catch from each haul was sorted by species and weighted. Random samples of the catch of each species were length measured (total length) to the nearest lower cm. The obtained length distribution was aggregated into 2 cm intervals (beginning with the pair number) and raised to the catch of each species.
Mean catch and variance per haul, and mean catches stratified by stratum and year, with annual variance, are presented for each species. The data are calibrated for the period 1995-2000 and no-transformed from 2002 onwards. Regarding 2001, there are both calibrated (from the first vessel) and non-transformed data (from the new vessel) for yellowtail flounder and redfish. Biomass per stratum and year stratified mean catches per haul with the variance and length distributions are also presented. More information on the calibration method can be found in González Troncoso *et al.*, 2004 and Paz *et al.*, 2004.

At the end of the document, in the Figure 14, we present maps with the distribution of the catches of the three species during the 2012 Spanish 2NO survey.

Results

Yellowtail flounder

After a moratorium between 1994 and 1997, the yellowtail flounder fishery is under TAC. According to the Report of NAFO Scientific Council Meeting, stock size reached a minimum in the mid 1990´s, but since 1994 has steadily increased and now it is estimated to be at a level well above that of the mid-1980s (NAFO, 2012).

Mean Catches and Biomass

Table 3 shows mean catch and SD per haul and stratum for yellowtail flounder. The stratified mean catches and SD per haul, stratum and year for this species are presented in Table 4.

Yellowtail flounder biomass estimates by the swept area method and their SD for the period 1995-2012 are presented in Table 5. The parameters *a* and *b* for the calculation of the length-weight relationship are presented in Table 6.

Yellowtail flounder indices show no clear trend throughout the study period. There was an increase between 1995 and 1999 but since 2001 the indices stabilised at a higher level, with a slight increase in the last four years (Figures 1 and 2).

Length Distribution

The stratified mean catches per haul length distribution by sex and year (aggregated into 2 cm intervals) besides the sampled size and catch for the period 1995-2012 are presented in Table 7 and Figure 3. There has not been good recruitment in recent years. In Figure 4, we can follow a length modal value since the beginning of the series, but the presence of juveniles is very low. This mode can be seen until 2009, year in which reach the 34-35 cm, and since 2010 the mode of the length distribution was about 30-34 cm. In 2012 the mode of the females was at 34 cm. However, there is a small proportion of individuals <20 cm (just about 1.2% in 2012), possibly due to a high exploitation rate that compensates the growth.

Redfish

There are two species of redfish that have been commercially fished in Div. 3NO; the deep-sea redfish (*Sebastes mentella*) and the Acadian redfish (*Sebastes fasciatus*). They are very difficult to distinguish, and consequently they are collectively reported as "redfish" in the commercial fishery statistics. This stock in Div. 3O has been under TAC regulation since 1974. In September 2004, the Fisheries Commission adopted an annual TAC of 20 000 t for the period 2005-2008 in the entire area of Div. 3O. In 3N there was a moratorium from 1998-2009, but the fishery reopened in 2010 and in 2012 the TAC was 6 000 tons (NAFO, 2012).

Mean Catches and Biomass

Redfish mean catches and SD by stratum are presented in Table 8. Stratified mean catch and SD per haul are presented in Table 9 and Figure 5. Annual biomass and SD estimates for the period 1997-2012 are presented in Table 10 and Figure 6. The length-weight relationship parameters *a* and *b* are presented in Table 12.

The redfish indices show a quick increase from 1997 to 2000, followed by a sudden drop until 2002, after which they have increased to the levels of the early years of the time series. The index increased nearly fivefold in 2009 in comparison with 2005, the second higher value of the series (Fig. 5 and 6). This was not just due to very large catches in few hauls, as redfish catch was over 1 ton in 11 of the 43 hauls in which redfish was caught. Furthermore, redfish catch was over 15 tons in three hauls. Since 2010 a decreasing trend can be seen in the figures, but the indices for these years are still the highest of the series.

Biomass and mean catch per haul and Division, the number of strata covered in each case, and the percentage of biomass in 3N respect to the total are presented in table 11. Biomass is always larger in 3N than in 3O, although the percentage is very spread over the time. Since 2005, more than 83% of redfish catches have occurred in Division 3N. However, the mean catch per town is usually higher in Division 3O. Mean catch per tow in 3O in 2010 was almost four times higher than in 2009, whereas mean catch per tow in 3N was lower in 2010 than in 2009.

Length Distribution

Table 13 presents redfish number per tow and sex, sample size and catch for the period 1997-2012. Figures 7 and 8 show the trend of the mean abundance per tow. The y-axis upper limit of Figure 7 was changed for years 1997-2008 to see the length distribution despite the large catches registered in the period 2009-2012. Figure 9 shows the same data as Figure 8 excluding the years 2009-2012. The last good yearclass was recorded in 2004 and this cohort can be tracked until 2012. In recent years there is only a discrete presence of juveniles. The clear 18 cm mode (20 cm in 2011) in 2009 seems to be a consequence of the 2004 recruitment. In 2012 the mode is in 20 cm.

Witch flounder

This stock occurs mainly in Div. 3O, along the southwestern slopes of the Grand Bank, but it seems to migrate seasonally onto the shallow banks. It has been fished mainly in winter and springtime, targeting the spawning concentrations. Survey mean weights per tow in the Canadian spring series indicate no clear trend since 1990 and the stock remains at a low level compared with the 1980s. Recruitment (fish less than 20 cm) has been poor since 2002. This stock remains at low level, and no directed fishing on this species was recommended by the Scientific Council (NAFO, 2012).

Mean Catches and Biomass

Witch flounder mean catches and SD by stratum are presented in Table 14. Stratified mean catch and SD per tow are presented in Table 15 and Figure 10. Biomass and SD estimates for the period 2002-2012 are presented in Table 16 and Figure 11. The length-weight relationship parameters *a* and *b* are presented in Table 17.

Witch flounder indices show no clear trend throughout the period 2002-2012 (Figs. 10 and 11). Always through poor values, the index peaked in 2004, and reached very similar values in 2010 and 2003. However, biomass declined again in 2011 to 2007 levels, although increased again in 2012 but no to the level of 2010.

Length Distribution

Table 18 presents witch flounder number per tow and sex, sample size and catch for the period 2002-2012. Figures 12 and 13 show the trend of mean number per tow throughout the years. The best recruitment events occurred in the period 2002-2005 and have been very poor since 2008. Some modes can be tracked in Figure

13, probably due to the recruitments at the beginning of the series. In 2012 there were a quite good presence of individuals of lengths 38-42 cm.

References

Bishop, C A.. 1994. Revisions and additions to stratification schemes used during research vessel surveys in NAFO subareas 2 and 3. NAFO SCR Doc. 94/43, Serial nº N2413, 23 pp.

Cochran, W. G.. 1997. Sampling techniques. J. Wiley and Sons, N.Y., 428 pp.

Doubleday, W. G.. 1981. Manual on groundfish surveys in the Northwest Atlantic. NAFO Sci. Coun. Studies, 2, 55.

González Troncoso, D., X. Paz and C. González. 2004. Atlantic cod population indices obtained from the Spring surveys conducted by Spain in the NAFO Regulatory Area of Divisions 3NO, 1995-2003. NAFO SCR Doc. 04/12, Serial Number N4957, 21 pp.

NAFO, 2006. Report of Scientific Council Meeting, 1-15 June 2006

NAFO, 2012. Report of Scientific Council Meeting, 1-14 June 2012

Paz, X., D. González Troncoso and E. Román. 2004. New time series for Yellowtail flounder from the comparative experience between the C/V *Playa de Menduíña* and the R/V *Vizconde de Eza* in the NAFO Regulatory Area of Divisions 3NO, 1995-2003. NAFO SCR Doc. 04/10, Serial Number N4955, 19 pp.

Walsh, J.S., X. Paz and P. Durán. 2001. A preliminary investigation of the efficiency of Canadian and Spanish Survey bottom trawls on the Southern Bank. NAFO SCR Doc., 01/74, Serial nº N4453, 18 pp.

TABLE 1.- Spanish spring bottom trawl surveys in NAFO Div. 3NO: 1995-2012

Year	Vessel	Valid tows	Depth strata covered (m)	Dates
1995	C/V *Playa de Menduíña*	77	42-684	May 18-May 29
1996	C/V *Playa de Menduíña*	112	41-1135	May 07-May 24
1997	C/V *Playa de Menduíña*	128	42-1263	April 26-May 18
1998	C/V *Playa de Menduíña*	124	42-1390	May 06-May 26
1999	C/V *Playa de Menduíña*	114	41-1381	May 07-May 26
2000	C/V *Playa de Menduíña*	118	42-1401	May 07-May 28
2001(*)	R/V *Vizconde de Eza*	83	36-1156	May 03-May 24
	C/V *Playa de Menduíña*	121	40-1500	May 05-May 23
2002	R/V *Vizconde de Eza*	125	38-1540	April 29-May 19
2003	R/V *Vizconde de Eza*	118	38-1666	May 11-June 02
2004	R/V *Vizconde de Eza*	120	43-1539	June 06–June 24
2005	R/V *Vizconde de Eza*	119	47-1485	June 10–June 29
2005	R/V *Vizconde de Eza*	119	47-1485	June 10–June 29
2006	R/V *Vizconde de Eza*	120	45-1480	June 7–June 27
2007	R/V *Vizconde de Eza*	110	45-1374	May 29–June 19
2008	R/V *Vizconde de Eza*	122	45-1374	May 27–June 16
2009	R/V *Vizconde de Eza*	109	45-1374	May 31–June 18
2010	R/V *Vizconde de Eza*	95	45-1374	May 30–June 18
2011	R/V *Vizconde de Eza*	122	44-1450	June 5–June 24
2012	R/V *Vizconde de Eza*	122	44-1450	June 3–June 21

(*)For the calculation of the series, 83 hauls were taken from the R/V *Vizconde de Eza* and 40 hauls from the C/V *Playa de Menduíña* (123 hauls in total)

TABLE 2.- Swept area and number of hauls by stratum. Spanish Spring Surveys in NAFO Div. 3NO: 1995-2012. Swept area in square miles. n.s. means stratum not surveyed. 1995-2000 data are from C/V *Playa de Menduíña*, and 2002-2012 data are from R/V *Vizconde de Eza*. For 2001 there are data from the two vessels.

	1995		1996		1997		1998		1999		2000		2001		2002		2003	
Stratum	Swept area	Tow number	Swept area	Tow number	Swept area	Tow number	Swept area	Tow number	Swept area	Tow number	Swept area	Tow number	Swept area	Tow number	Swept area	Tow number	Swept area	Tow number
353	0.0353	3	0.0371	3	0.0480	4	0.0465	4	0.0360	3	0.0356	3	0.0341	3	0.0476	4	0.0334	3
354	0.0353	3	0.0319	3	0.0233	2	0.0356	3	0.0218	2	0.0356	3	0.0338	3	0.0356	3	0.0338	3
355	n.s.	n.s.	0.0221	2	0.0233	2	0.0221	2	0.0229	2	0.0233	2	0.0240	2	0.0236	2	0.0229	2
356	n.s.	n.s.	0.0203	2	0.0225	2	0.0221	2	0.0229	2	0.0225	2	0.0240	2	0.0233	2	0.0225	2
357	0.0109	1	0.0218	2	0.0443	4	0.0240	2	0.0236	2	0.0124	1	0.0244	2	0.0240	2	0.0229	2
358	0.0319	3	0.0319	3	0.0563	5	0.0236	3	0.0349	3	0.0341	3	0.0345	3	0.0345	3	0.0338	3
359	0.0345	3	0.0548	5	0.0690	6	0.0698	6	0.0364	3	0.0469	4	0.0803	7	0.0686	6	0.0791	7
360	0.3563	31	0.3761	31	0.3754	32	0.2561	25	0.2325	19	0.2396	20	0.2423	20	0.2865	25	0.2254	20
374	0.0225	2	0.0233	2	0.0353	3	0.0353	3	0.0244	2	0.0240	2	0.0240	2	0.0345	3	0.0225	2
375	0.0225	2	0.0229	2	0.0116	1	0.0345	3	0.0236	2	0.0244	2	0.0338	3	0.0353	3	0.0330	3
376	0.1729	15	0.1650	14	0.1583	14	0.0930	10	0.1219	10	0.1200	10	0.1155	10	0.1140	10	0.1125	10
377	0.0221	2	0.0229	2	0.0116	1	0.0229	2	0.0240	2	0.0229	2	0.0229	2	0.0229	2	0.0225	2
378	0.0435	4	0.0330	3	0.0210	2	0.0120	2	0.0229	2	0.0233	2	0.0236	2	0.0233	2	0.0225	2
379	0.0221	2	0.0113	1	0.0206	2	0.0356	3	0.0236	2	0.0225	2	0.0229	2	0.0229	2	0.0229	2
380	n.s.	n.s.	0.0221	2	0.0210	2	0.0113	2	0.0236	2	0.0236	2	0.0206	2	0.0225	2	0.0229	2
381	n.s.	n.s.	0.0229	2	0.0221	2	0.0229	2	0.0229	2	0.0236	2	0.0236	2	0.0229	2	0.0229	2
382	n.s.	n.s.	0.0338	3	0.0461	4	0.0229	3	0.0484	4	0.0499	4	0.0469	4	0.0341	3	0.0454	4
721	n.s.	n.s.	0.0214	2	0.0221	2	0.0203	2	0.0244	2	0.0236	2	0.0248	2	0.0233	2	0.0225	2
722	n.s.	n.s.	0.0206	2	0.0214	2	0.0101	2	0.0229	2	0.0218	2	0.0233	2	0.0236	2	0.0221	2
723	n.s.	n.s.	0.0109	1	0.0210	2	0.0233	2	0.0229	2	0.0248	2	0.0240	2	0.0233	2	0.0229	2
724	0.0105	1	0.0203	2	0.0225	2	0.0206	2	0.0225	2	0.0233	2	0.0353	3	0.0225	2	0.0225	2
725	0.0334	3	0.0225	2	0.0206	2	0.0086	1	0.0229	2	0.0210	2	0.0116	1	0.0225	2	0.0229	2
726	0.0214	2	0.0218	2	n.s.	n.s.	0.0094	2	0.0225	2	0.0221	2	0.0116	1	0.0214	2	0.0225	2
727	n.s.	n.s.	0.0210	2	0.0094	1	0.0233	2	0.0236	2	0.0210	2	0.0225	2	0.0233	2	0.0218	2
728	n.s.	n.s.	0.0218	2	0.0214	2	0.0206	2	0.0233	2	0.0210	2	0.0229	2	0.0229	2	0.0225	2
752	n.s.	n.s.	0.0109	1	0.0218	2	0.0229	2	0.0233	2	0.0206	2	0.0210	2	0.0116	1	0.0229	2
753	n.s.	n.s.	0.0199	2	0.0214	2	0.0218	2	0.0229	2	0.0218	2	0.0214	2	0.0229	2	0.0229	2
754	n.s.	n.s.	n.s.	n.s.	0.0330	3	0.0210	2	0.0206	2	0.0195	2	0.0195	2	0.0341	3	0.0218	2
755	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	0.0206	2	0.0311	3	0.0431	4	0.0416	4	0.0338	3	0.0221	2
756	n.s.	n.s.	0.0210	2	0.0109	1	0.0225	2	0.0225	2	0.0203	2	0.0113	1	0.0229	2	0.0221	2
757	n.s.	n.s.	0.0188	2	0.0304	3	0.0206	2	0.0233	2	0.0214	2	0.0233	2	0.0225	2	0.0221	2
758	n.s.	n.s.	n.s.	n.s.	0.0214	2	0.0105	2	0.0214	2	0.0210	2	0.0218	2	0.0225	2	0.0221	2
759	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	0.0214	2	0.0218	2	0.0210	2	0.0221	2	0.0225	2	0.0113	1
760	n.s.	n.s.	0.0210	2	0.0105	1	0.0214	2	0.0225	2	0.0210	2	0.0229	2	0.0229	2	0.0218	2
761	n.s.	n.s.	0.0199	2	0.0315	3	0.0206	2	0.0210	2	0.0221	2	0.0225	2	0.0225	2	0.0225	2
762	n.s.	n.s.	n.s.	n.s.	0.0308	3	0.0094	2	0.0210	2	0.0203	2	0.0116	1	0.0225	2	0.0225	2
763	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	0.0218	2	0.0311	3	0.0416	4	0.0330	3	0.0225	2	0.0311	3
764	n.s.	n.s.	0.0210	2	0.0206	2	0.0218	2	0.0225	2	0.0218	2	0.0240	2	0.0236	2	0.0221	2
765	n.s.	n.s.	0.0199	2	0.0206	2	0.0098	2	0.0221	2	0.0203	2	0.0113	1	0.0236	2	0.0113	1
766	n.s.	n.s.	n.s.	n.s.	0.0308	3	0.0191	2	0.0218	2	0.0214	2	0.0203	2	0.0233	2	0.0225	2
767	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	0.0109	2	0.0214	2	0.0210	2	0.0218	2	0.0225	2	0.0229	2

TABLE 2 (cont.).- Swept area and number of hauls by stratum. Spanish Spring Surveys in NAFO Div. 3NO: 1997-2012. Swept area in square miles. n.s. means stratum not surveyed. 1997-2000 data are from C/V *Playa de Menduíña*, and 2002-2012 data are from R/V *Vizconde de Eza*. For 2001 there are data from the two vessels.

	2004		2005		2006		2007		2008		2009		2010		2011		2012	
Stratum	Swept area	Tow number	Swept area	Tow number	Swept area	Tow number	Swept area	Tow number	Swept area	Tow number	Swept area	Tow number	Swept area	Tow number	Swept area	Tow number	Swept area	Tow number
353	0.0338	3	0.0353	3	0.0371	3	0.0364	3	0.0341	3	0.0345	3	0.0225	2	0.0349	3	0.0338	3
354	0.0345	3	0.0353	3	0.0364	3	0.0364	3	0.0345	3	0.0338	3	0.0225	2	0.0345	3	0.0338	3
355	0.0229	2	0.0225	2	0.0248	2	0.0240	2	0.0221	2	0.0233	2	0.0229	2	0.0233	2	0.0229	2
356	0.0221	2	0.0233	2	0.0240	2	0.0240	2	0.0236	2	0.0229	2	0.0225	2	0.0229	2	0.0225	2
357	0.0229	2	0.0233	2	0.0244	2	0.0360	3	0.0233	2	0.0116	2	0.0225	2	0.0225	2	0.0229	2
358	0.0330	3	0.0349	3	0.0349	3	0.0368	3	0.0345	3	0.0341	3	0.0225	2	0.0345	3	0.0330	3
359	0.0791	7	0.0814	7	0.0975	8	0.0855	7	0.0799	7	0.0795	7	0.0705	6	0.0806	7	0.0806	7
360	0.2310	20	0.2325	20	0.2340	19	0.2378	20	0.2340	20	0.2273	20	0.1628	14	0.2374	20	0.2344	20
374	0.0233	2	0.0229	2	0.0236	2	0.0240	2	0.0233	2	0.0225	2	0.0225	2	0.0225	2	0.0229	2
375	0.0338	3	0.0349	3	0.0364	3	0.0364	3	0.0334	3	0.0341	3	0.0364	3	0.0360	3	0.0349	3
376	0.1166	10	0.1174	10	0.1219	10	0.1185	10	0.1129	10	0.1133	10	0.0788	7	0.1178	10	0.1181	10
377	0.0218	2	0.0233	2	0.0236	2	0.0240	2	0.0233	2	0.0225	2	0.0233	2	0.0233	2	0.0229	2
378	0.0225	2	0.0225	2	0.0240	2	0.0233	2	0.0240	2	0.0229	2	0.0225	2	0.0240	2	0.0229	2
379	0.0124	1	0.0236	2	0.0236	2	0.0240	2	0.0229	2	0.0229	2	0.0229	2	0.0221	2	0.0225	2
380	0.0221	2	0.0229	2	0.0229	2	0.0240	2	0.0225	2	0.0229	2	0.0236	2	0.0229	2	0.0229	2
381	0.0225	2	0.0233	2	0.0229	2	0.0240	2	0.0229	2	0.0229	2	0.0244	2	0.0233	2	0.0221	2
382	0.0461	4	0.0458	4	0.0469	4	0.0484	4	0.0458	4	0.0450	4	0.0233	2	0.0450	4	0.0454	4
721	0.0221	2	0.0229	2	0.0236	2	0.0116	1	0.0225	2	0.0229	2	0.0225	2	0.0229	2	0.0233	2
722	0.0218	2	0.0233	2	0.0240	2	0.0225	2	0.0206	2	0.0225	2	0.0225	2	0.0225	2	0.0221	2
723	0.0229	2	0.0233	2	0.0236	2	0.0240	2	0.0225	2	0.0225	2	0.0225	2	0.0218	2	0.0225	2
724	0.0214	2	0.0225	2	0.0233	2	0.0233	2	0.0221	2	0.0233	2	0.0229	2	0.0233	2	0.0225	2
725	0.0225	2	0.0236	2	0.0233	2	0.0225	2	0.0229	2	0.0229	2	0.0233	2	0.0240	2	0.0225	2
726	0.0225	2	0.0113	1	0.0225	2	0.0229	2	0.0225	2	0.0229	2	0.0233	2	0.0225	2	0.0221	2
727	0.0233	2	0.0229	2	0.0225	2	0.0240	2	0.0221	2	0.0113	1	0.0240	2	0.0225	2	0.0233	2
728	0.0180	2	0.0109	1	0.0225	2	0.0225	2	0.0221	2	0.0229	2	0.0240	2	0.0229	2	0.0229	2
752	0.0214	2	0.0236	2	0.0225	2	0.0225	2	0.0218	2	0.0229	2	0.0240	2	0.0236	2	0.0229	2
753	0.0218	2	0.0225	2	0.0225	2	0.0225	2	0.0221	2	0.0116	1	n.s.	n.s.	0.0225	2	0.0221	2
754	0.0214	2	0.0225	2	0.0225	2	0.0225	2	0.0218	2	0.0113	1	0.0225	2	0.0225	2	0.0221	2
755	0.0319	3	0.0450	4	0.0338	3	0.0338	3	0.0431	4	0.0116	1	0.0120	1	0.0454	4	0.0446	4
756	0.0218	2	0.0233	2	0.0229	2	0.0225	2	0.0218	2	0.0225	2	0.0225	2	0.0206	2	0.0221	2
757	0.0218	2	0.0225	2	0.0225	2	0.0229	2	0.0221	2	0.0229	2	0.0221	2	0.0236	2	0.0214	2
758	0.0214	2	0.0225	2	0.0225	2	0.0225	2	0.0218	2	0.0225	2	0.0225	2	0.0225	2	0.0221	2
759	0.0214	2	0.0229	2	0.0225	2	n.s.	n.s.	0.0221	2	0.0113	1	0.0225	2	0.0218	2	0.0221	2
760	0.0221	2	0.0229	2	0.0225	2	0.0233	2	0.0225	2	0.0229	2	0.0225	2	0.0214	2	0.0225	2
761	0.0221	2	0.0221	2	0.0233	2	0.0225	2	0.0214	2	0.0225	2	0.0229	2	0.0236	2	0.0221	2
762	0.0233	2	0.0225	2	0.0233	2	n.s.	n.s.	0.0214	2	0.0225	2	0.0229	2	0.0225	2	0.0225	2
763	0.0326	3	0.0334	3	0.0225	2	n.s.	n.s.	0.0311	3	n.s.	n.s.	n.s.	n.s.	0.0349	3	0.0330	3
764	0.0229	2	0.0233	2	0.0233	2	0.0225	2	0.0221	2	0.0116	1	n.s.	n.s.	0.0225	2	0.0225	2
765	0.0225	2	0.0229	2	0.0236	2	0.0225	2	0.0214	2	0.0225	2	0.0225	2	0.0225	2	0.0229	2
766	0.0225	2	0.0229	2	0.0229	2	n.s.	n.s.	0.0218	2	0.0225	2	0.0225	2	0.0225	2	0.0225	2
767	0.0218	2	0.0113	1	0.0233	2	n.s.	n.s.	0.0214	2	n.s.	n.s.	n.s.	n.s.	0.0233	2	0.0203	2

TABLE 3.- Yellowtail flounder mean catch (kg) and SD by stratum. Spanish Spring Surveys in NAFO Div. 3NO: 1995-2012. Swept area in square miles. n.s. means stratum not surveyed. 1995-2000 data are transformed from the C/V *Playa de Menduíña* series, and 2002-2012 data are original from R/V *Vizconde de Eza*. For 2001 there are data from the two vessels.

	1995		1996		1997		1998		1999		2000		2001		2002		2003	
Stratum	Y. flounder Mean catch	Y. flounder SD	Y. flounder Mean catch	Y. flounder SD	Y. flounder Mean catch	Y. flounder SD	Y. flounder Mean catch	Y. flounder SD	Y. flounder Mean catch	Y. flounder SD	Y. flounder Mean catch	Y. flounder SD	Y. flounder Mean catch	Y. flounder SD	Y. flounder Mean catch	Y. flounder SD	Y. flounder Mean catch	Y. flounder SD
353	5.82	4.105	74.88	94.62	12.55	14.26	12.22	20.16	150.18	182.44	67.87	91.37	61.42	102.797	75.13	88.259	11.15	19.307
354	1.78	3.089	1.11	0.84	1.41	1.56	1.22	0.24	0.08	0.12	1.79	1.93	0.34	0.322	0.17	0.289	0.00	0.000
355	n.s.	n.s.	0.25	0.35	2.20	0.31	0.13	0.18	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	0.000
356	n.s.	n.s.	0.00	0.00	0.32	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.007	0.00	0.000	0.00	0.000
357	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00	0.000	0.00	0.000	0.00	0.000
358	0.00	0.000	0.13	0.23	0.02	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	0.000
359	1.35	2.336	0.92	0.83	0.08	0.14	0.17	0.22	0.34	0.47	2.36	2.93	1.42	2.836	0.11	0.261	0.00	0.000
360	20.44	40.707	142.09	128.86	80.92	155.59	373.90	629.84	545.18	424.37	391.18	331.64	536.80	488.657	340.23	356.687	360.55	298.992
374	0.00	0.000	0.00	0.00	0.00	0.00	0.04	0.02	74.16	103.18	20.47	23.55	238.75	111.369	32.04	52.542	16.13	8.238
375	1.48	1.875	41.40	58.54	0.20	-	12.37	21.37	347.15	168.25	153.36	2.06	100.33	68.319	48.61	68.927	28.45	35.557
376	35.06	58.691	71.40	86.94	162.35	179.83	279.27	181.29	551.60	165.61	435.27	236.60	443.12	196.619	533.62	416.745	391.60	257.289
377	0.00	0.000	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.05	0.06	0.00	0.000	0.00	0.000	0.70	0.990
378	0.00	0.000	0.06	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	0.000
379	0.00	0.000	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	0.000
380	n.s.	n.s.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	0.000
381	n.s.	n.s.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	0.000
382	n.s.	n.s.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.030	0.00	0.000	0.00	0.000
721	n.s.	n.s.	0.03	0.05	0.75	1.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	0.000
722	n.s.	n.s.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	0.000
723	n.s.	n.s.	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	0.000
724	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.52	0.735
725	0.00	0.000	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	0.000
726	0.00	0.000	0.00	0.00	n.s.	n.s.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	0.000
727	n.s.	n.s.	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	0.000
728	n.s.	n.s.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	0.000
752	n.s.	n.s.	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.083	0.00	-	0.00	0.000
753	n.s.	n.s.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	0.000
754	n.s.	n.s.	n.s.	n.s.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	0.000
755	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	0.000
756	n.s.	n.s.	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	0.000
757	n.s.	n.s.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	0.000
758	n.s.	n.s.	n.s.	n.s.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	0.000
759	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	-
760	n.s.	n.s.	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	0.000
761	n.s.	n.s.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	0.000
762	n.s.	n.s.	n.s.	n.s.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	0.000
763	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	0.000
764	n.s.	n.s.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	0.000
765	n.s.	n.s.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	-
766	n.s.	n.s.	n.s.	n.s.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	0.000
767	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.000	0.00	0.000

TABLE 3 (cont.).- Yellowtail flounder mean catch (kg) and SD by stratum. Spanish Spring Surveys in NAFO Div. 3NO: 1995-2012. Swept area in square miles. n.s. means stratum not surveyed. 1995-2000 data are transformed from the C/V *Playa de Menduíña* series, and 2002-2012 data are original from R/V *Vizconde de Eza*. For 2001 there are data from the two vessels.

	2004		2005		2006		2007		2008		2009		2010		2011		2012	
Stratum	Y. flounder Mean catch	Y. flounder SD	Y. flounder Mean catch	Y. flounder SD	Y. flounder Mean catch	Y. flounder SD	Y. flounder Mean catch	Y. flounder SD	Y. flounder Mean catch	Y. flounder SD	Y. flounder Mean catch	Y. flounder SD	Y. flounder Mean catch	Y. flounder SD	Y. flounder Mean catch	Y. flounder SD	Y. flounder Mean catch	Y. flounder SD
353	8.79	14.005	58.83	99.610	71.98	122.954	0.64	0.172	18.63	30.202	0.15	0.259	0.71	1.004	102.27	174.277	8.95	11.397
354	0.62	1.065	0.21	0.188	0.21	0.371	0.16	0.283	1.03	0.775	0.00	0.000	0.69	0.205	0.73	1.264	0.70	0.718
355	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.38	0.530
356	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
357	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
358	0.26	0.442	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.40	0.515	0.33	0.566
359	25.01	38.371	99.52	142.727	169.33	359.779	102.63	116.690	26.40	38.865	11.16	31.077	12.37	23.155	185.14	189.098	119.95	124.259
360	403.19	333.463	342.14	223.566	361.02	266.205	349.70	307.902	339.09	220.066	358.38	377.704	334.16	217.326	387.48	461.995	488.22	421.608
374	193.46	225.058	300.46	128.092	610.03	73.518	1057.60	455.094	696.25	157.331	1392.90	938.048	482.80	229.385	1395.85	984.363	866.88	184.873
375	543.04	155.015	288.64	138.290	287.65	109.715	145.73	86.977	574.00	461.113	335.84	149.894	330.53	153.295	525.01	446.254	208.41	145.083
376	481.06	140.810	500.53	238.908	489.81	231.495	460.24	203.990	421.05	280.644	514.96	250.661	691.28	309.955	492.44	283.950	428.35	131.408
377	0.00	0.000	42.84	60.518	6.09	8.605	165.35	233.840	173.40	8.202	0.12	0.163	122.58	75.066	325.75	399.735	405.96	79.047
378	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
379	0.00	-	0.00	0.000	0.00	0.000	0.00	0.000	0.05	0.067	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
380	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
381	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
382	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	325.95	460.963	223.67	447.338	67.41	80.325
721	0.00	0.000	0.00	0.000	0.00	0.000	0.00	-	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
722	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
723	0.00	0.000	0.00	0.000	0.18	0.247	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
724	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
725	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
726	0.00	0.000	0.00	-	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
727	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	-	0.00	0.000	0.00	0.000	0.00	0.000
728	0.00	0.000	0.00	-	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
752	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
753	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	-	n.s.	n.s.	0.00	0.000	0.00	0.000
754	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	-	0.00	0.000	0.00	0.000	0.00	0.000
755	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	-	0.00	-	0.00	0.000	0.00	0.000
756	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
757	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
758	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
759	0.00	0.000	0.00	0.000	0.00	0.000	n.s.	n.s.	0.00	0.000	0.00	-	0.00	0.0000	0.00	0.000	0.00	0.000
760	0.00	0.000	0.35	0.488	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
761	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
762	0.00	0.000	0.00	0.000	0.00	0.000	n.s.	n.s.	0.00	0.000	0.00	0.0000	0.00	0.0000	0.00	0.000	0.00	0.000
763	0.00	0.000	0.00	0.000	0.00	0.000	n.s.	n.s.	0.00	0.000	n.s.	n.s.	n.s.	n.s.	0.00	0.000	0.00	0.000
764	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	-	n.s.	n.s.	0.00	0.000	0.00	0.000
765	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
766	0.00	0.000	0.00	0.000	0.00	0.000	n.s.	n.s.	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
767	0.00	0.000	0.00	-	0.00	0.000	n.s.	n.s.	0.00	0.000	n.s.	n.s.	n.s.	n.s.	0.00	0.000	0.00	0.000

TABLE 4.- Stratified mean catches by stratum (tons) and year (Kg) and SD by year (Kg) of yellowtail flounder (1995-2012). n.s. means stratum not surveyed. 1995-2000 data are transformed from the C/V *Playa de Menduíña* series. 2002-2012 data are original from R/V *Vizconde de Eza*. For 2001 there are data from the two vessels.

Stratum	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
353	1.57	20.14	3.38	3.29	40.40	18.26	16.52	20.21	3.00	2.36	15.83	19.36	0.17	5.01	0.04	0.19	27.51	2.41
354	0.44	0.00	0.35	0.30	0.02	0.44	0.08	0.04	0.00	0.15	0.05	0.05	0.04	0.25	0.00	0.17	0.18	0.17
355	n.s.	0.00	0.16	0.01	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	0.03
356	n.s.	0.00	0.02	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
357	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	0.00	0.00
358	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.07
359	0.57	0.39	0.03	0.07	0.14	0.99	0.60	0.04	0.00	10.53	41.90	71.29	43.21	11.11	4.70	5.21	77.95	50.50
360	56.88	395.45	225.20	1040.56	1517.23	1088.65	1493.91	946.85	1003.41	1122.08	952.16	1004.71	973.22	943.69	997.38	929.98	1078.35	1358.71
374	0.00	0.00	0.00	0.01	15.87	4.38	51.09	6.86	3.45	41.40	64.30	130.55	226.33	149.00	298.08	103.32	298.71	185.51
375	0.40	11.22	0.05	3.35	94.08	41.56	27.19	13.17	7.71	147.16	78.22	77.95	39.49	155.55	91.01	89.57	142.28	56.48
376	46.77	95.25	216.58	372.55	735.84	580.65	591.13	711.85	522.39	641.74	667.71	653.41	613.96	561.68	686.96	922.17	656.92	571.42
377	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	4.28	0.61	16.54	17.34	0.01	12.26	32.57	40.60
378	0.00	0.01	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
379	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	0.00	0.00	0.00
380	n.s.	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	0.00
381	n.s.	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	0.00
382	n.s.	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	111.80	76.72	23.12
721	n.s.	0.00	0.05	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
722	n.s.	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	0.00
723	n.s.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
724	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
725	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	0.00	0.00
726	0.00	0.00	n.s.	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
727	n.s.	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	0.00
728	n.s.	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	0.00
752	n.s.	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
753	n.s.	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	n.s.	0.00	0.00
754	n.s.	n.s.	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
755	n.s.	n.s.	n.s.	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
756	n.s.	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	0.00
757	n.s.	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	0.00
758	n.s.	n.s.	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
759	n.s.	n.s.	n.s.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n.s.	0.00	0.00	0.00	0.00	0.00
760	n.s.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
761	n.s.	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	0.00
762	n.s.	n.s.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n.s.	0.00	0.00	0.00	0.00	0.00
763	n.s.	n.s.	n.s.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n.s.	0.00	n.s.	n.s.	0.00	0.00
764	n.s.	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	n.s.	0.00	0.00
765	n.s.	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	0.00
766	n.s.	n.s.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n.s.	0.00	0.00	0.00	0.00	0.00
767	n.s.	n.s.	n.s.	0.00 0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n.s.	0.00	n.s.	n.s.	0.00	0.00
TOTAL	106.63	522.48	445.82	1420.14	2403.58	1734.94	2180.53	1699.02	1540.10	1965.48	1824.50	1957.96	1912.96	1843.64	2078.19	2174.67	2391.28	2289.02
$\bar{Y}$	16.22	59.54	47.74	137.32	232.41	167.76	210.84	164.28	148.92	190.05	176.42	0.19	202.64	178.27	209.43	224.54	231.22	221.33
S.D.	4.37	8.41	10.69	34.70	27.41	22.21	30.58	24.92	20.84	21.27	17.06	19.83	23.61	19.00	29.75	26.30	35.18	26.27

TABLE 5.- Survey estimates (by the swept area method) of yellowtail flounder biomass (t) and SD by stratum and year in NAFO Div. 3NO. n.s. means stratum not surveyed. 1995-2000 data are transformed from the C/V *Playa de Menduíña* series. 2002-2012 data are original from R/V *Vizconde de Eza*. For 2001 there are data from the two vessels.

Stratum	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
353	133	1628	281	282	3367	1537	1452	1697	270	210	1347	1565	14	440	4	17	2366	214
354	37	26	30	25	2	37	7	3	0	13	4	4	3	22	0	15	16	15
355	n.s.	2	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
356	n.s.	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
357	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
358	0	3	0	0	0	0	0	0	0	5	0	0	0	0	0	0	8	7
359	49	35	3	6	12	85	52	4	0	931	3604	5849	3538	974	473	443	6767	4384
360	4950	32593	19198	89742	123989	90863	123341	82622	89057	97150	81907	81579	81869	80657	87779	79998	90856	115943
374	0	0	0	0	1302	365	4258	596	307	3561	5622	11051	18861	12817	26496	9184	26552	16220
375	36	981	5	291	7964	3410	2417	1121	701	13081	6729	6429	3257	13982	8001	7388	11857	4858
376	4059	8082	19160	32255	60376	48388	51175	62443	46435	55026	56887	53613	51811	49761	60659	81971	55789	48374
377	0	0	0	0	0	0	0	0	6	0	368	52	1378	1492	1	1054	2802	3549
378	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
379	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
380	n.s.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
381	n.s.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
382	n.s.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9617	6819	2038
721	n.s.	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
722	n.s.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
723	n.s.	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
724	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
725	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
726	0	0	n.s.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
727	n.s.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
728	n.s.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
752	n.s.	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
753	n.s.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	n.s.	0	0
754	n.s.	n.s.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
755	n.s.	n.s.	n.s.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
756	n.s.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
757	n.s.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
758	n.s.	n.s.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
759	n.s.	n.s.	n.s.	0	0	0	0	0	0	0	0	0	n.s.	0	0	0	0	0
760	n.s.	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0
761	n.s.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
762	n.s.	n.s.	0	0	0	0	0	0	0	0	0	0	n.s.	0	0	0	0	0
763	n.s.	n.s.	n.s.	0	0	0	0	0	0	0	0	0	n.s.	0	0	n.s.	0	0
764	n.s.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	n.s.	0	0
765	n.s.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
766	n.s.	n.s.	0	0	0	0	0	0	0	0	0	0	n.s.	0	0	0	0	0
767	n.s.	n.s.	n.s.	0	0	0	0	0	0	0	0	0	n.s.	0	0	n.s.	0	0
TOTAL	9264	43349	38697	122601	197012	144685	182704	148487	136775	169978	156472	160145	160731	160146	183412	189687	203833	195606
S.D.	2484	6032	8527	31359	22938	19097	25847	23368	19287	18869	15271	16458	18852	17297	25736	22611	30743	23679

TABLE 6.- Length weight relationships in the calculation of yellowtail flounder biomass. The equation is $Weight = a(l + 0.5)^b$ Spanish Spring Surveys in NAFO Div. 3NO: 1995-2012. To calculate the parameters for the indeterminate individuals, total number of individuals (males + females + indeterminate individuals) was used. *E* means Error.

		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Males	a	0.0079	0.0080	0.0081	0.0075	0.0084	0.0036	0.0081	0.0075	0.0121	0.0053	0.0027	0.0096	0.0074	0.0085	0.0051	0.0084	0.0121	0.0094
		E = 0.2653	E = 0.0907	E = 0.0936	E = 0.1034	E = 0.2119	E = 0.0994	E = 0.1248	E = 0.0729	E = 0.1109	E = 0.1352	E = 0.0882	E = 0.0825	E = 0.0655	E = 0.1149	E = 0.1710	E = 0.1175	E = 0.2513	E = 0.3281
	b	3.0416	3.0342	3.0197	3.0376	3.0098	3.2403	3.0176	3.0271	2.8978	3.1236	3.3274	2.9463	3.0190	2.9716	3.1109	2.9841	2.8712	2.9445
		E = 0.0799	E = 0.0269	E = 0.0281	E = 0.0313	E = 0.0610	E = 0.0300	E = 0.0374	E = 0.0226	E = 0.0348	E = 0.0419	E = 0.0274	E = 0.0263	E = 0.0201	E = 0.0353	E = 0.0519	E = 0.0367	E = 0.0758	E = 0.1018
		R^2 = 0.984	R^2 = 0.998	R^2 = 0.997	R^2 = 0.997	R^2 = 0.994	R^2 = 0.997	R^2 = 0.995	R^2 = 0.998	R^2 = 0.995	R^2 = 0.995	R^2 = 0.997	R^2 = 0.999	R^2 = 0.999	R^2 = 0.998	R^2 = 0.993	R^2 = 0.995	R2 = 0.981	R2 = 0.984
		N=137	N=430	N=556	N=523	N=56	N=270	N=271	N=274	N=316	N=411	N=311	N=371	N= 578	N= 479	N= 270	N= 313	N= 435	N= 417
Females	a	0.0063	0.0056	0.0056	0.0067	0.0073	0.0026	0.006	0.0051	0.0061	0.0047	0.0027	0.0069	0.0043	0.0060	0.0066	0.0058	0.0063	0.0047
		E = 0.1251	E = 0.0632	E = 0.0517	E = 0.1290	E = 0.2607	E = 0.0914	E = 0.0841	E = 0.0901	E = 0.0995	E = 0.0630	E = 0.0634	E = 0.1137	E = 0.1973	E = 0.0801	E = 0.1594	E = 0.0809	E = 0.1587	E = 0.2378
	b	3.1083	3.1496	3.1382	3.0788	3.0577	3.3504	3.1122	3.1448	3.1079	3.1768	3.329	3.0584	3.1915	3.0850	3.0549	3.0980	3.0725	3.1527
		E = 0.0367	E = 0.0179	E = 0.0152	E = 0.0384	E = 0.0739	E = 0.0267	E = 0.0249	E = 0.0274	E = 0.0307	E = 0.0191	E = 0.0177	E = 0.0.347	E = 0.0582	E = 0.0237	E = 0.0464	E = 0.0241	E = 0.0462	E = 0.0712
		R^2 = 0.995	R^2 = 0.999	R^2 = 0.999	R^2 = 0.994	R^2 = 0.989	R^2 = 0.998	R^2 = 0.997	R^2 = 0.997	R^2 = 0.996	R^2 = 0.999	R^2 = 0.998	R^2 = 0.997	R^2 = 0.987	R^2 = 0.999	R^2 = 0.991	R^2 = 0.998	R2 = 0.992	R2 = 0.992
		N=246	N=735	N=910	N=682	N=62	N=344	N=378	N=343	N=513	N=547	N=569	N=507	N= 731	N= 594	N= 378	N= 444	N= 575	N= 494
Indet.	a	0.0088	0.006	0.006	0.0071	0.0078	0.0026	0.0092	0.006	0.0069	0.004	0.0025	0.0102	0.0068	0.0065	0.0067	0.0052	0.0080	0.0048
		E = 0.1109	E = 0.0656	E = 0.0580	E = 0.0652	E = 0.1656	E = 0.0835	E = 0.1075	E = 0.0402	E = 0.1095	E = 0.0608	E = 0.0523	E = 0.1453	E = 0.1078	E = 0.0785	E = 0.1293	E = 0.0966	E = 0.1225	E = 0.2299
	b	3.0144	3.1285	3.1166	3.0614	3.0406	3.3423	2.9883	3.0977	3.0737	3.2137	3.3552	2.9471	3.0606	3.0642	3.0502	3.1285	3.0081	3.1471
		E = 0.0330	E = 0.0188	E = 0.0171	E = 0.0195	E = 0.0477	E = 0.0245	E = 0.0329	E = 0.0123	E = 0.0337	E = 0.0186	E = 0.0148	E = 0.0448	E = 0.0327	E = 0.0233	E = 0.0379	E = 0.0290	E = 0.0366	E = 0.0699
		R^2 = 0.996	R^2 = 0.999	R^2 = 0.999	R^2 = 0.994	R^2 = 0.995	R^2 = 0.999	R^2 = 0.994	R^2 = 0.999	R^2 = 0.995	R^2 = 0.999	R^2 = 0.999	R^2 = 0.995	R^2 = 0.995	R^2 = 0.999	R^2 = 0.994	R^2 = 0.996	R2 = 0.994	R2 = 0.992
		N=391	N=1181	N=1466	N=1211	N=118	N=614	N=703	N=620	N=833	N=969	N=884	N=887	N= 1312	N= 1074	N= 648	N= 759	N= 1015	N= 914

TABLE 7.- Yellowtail flounder length distribution. Estimated numbers per haul mean catch. Spanish Spring Survey on NAFO 3NO: 1995-2012. Indet. means indeterminate. 1995-2000 data are transformed from C/V *Playa de Menduíña* series. 2002-2012 data are original R/V *Vizconde de Eza* data. For 2001 there are data from the two vessels. (*) indicates untransformed data.

	1995				1996				1997				1998				1999			
Length (cm.)	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	0.000	0.000	0.185	0.185	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.516	1.516
10	0.000	0.000	0.456	0.456	0.000	0.000	0.498	0.498	0.000	0.000	0.000	0.000	0.000	0.000	0.071	0.071	5.154	3.352	2.960	11.465
12	0.103	0.870	2.350	3.323	0.000	0.000	0.877	0.877	1.356	0.560	0.000	1.916	0.000	0.000	1.538	1.538	12.807	8.911	0.000	21.718
14	1.557	1.441	2.842	5.840	0.000	0.048	2.711	2.759	0.155	0.819	0.000	0.974	0.121	0.157	0.000	0.278	19.227	16.710	0.000	35.938
16	2.045	3.581	0.277	5.903	0.288	3.152	5.167	8.607	2.947	1.811	0.000	4.758	1.500	1.535	0.000	3.034	13.999	15.356	0.000	29.355
18	2.649	3.358	0.031	6.038	2.334	15.279	3.167	20.780	5.076	4.415	0.000	9.491	8.365	5.129	0.000	13.495	8.893	10.757	0.000	19.650
20	2.984	3.212	0.000	6.196	5.319	26.981	0.750	33.050	13.857	15.055	0.000	28.912	8.974	10.166	0.000	19.140	14.809	10.199	0.000	25.008
22	4.807	6.015	0.000	10.823	8.522	32.231	0.065	40.818	28.296	23.048	0.000	51.345	25.957	20.452	0.000	46.409	33.285	22.789	0.000	56.073
24	4.810	6.082	0.000	10.892	10.962	32.203	0.000	43.165	31.348	27.786	0.000	59.134	44.950	37.421	0.000	82.371	61.756	39.009	0.000	100.765
26	2.340	2.446	0.000	4.786	9.552	16.875	0.000	26.427	24.015	26.970	0.000	50.985	72.376	60.520	0.000	132.896	98.561	59.521	0.000	158.083
28	2.704	2.544	0.000	5.248	9.151	11.591	0.000	20.742	13.921	21.248	0.000	35.169	57.459	62.401	0.000	119.861	107.816	84.193	0.000	192.009
30	2.588	4.738	0.000	7.325	7.206	9.915	0.000	17.122	6.159	10.349	0.000	16.508	32.472	56.275	0.000	88.747	72.947	92.236	0.000	165.183
32	1.664	4.451	0.000	6.115	6.379	6.166	0.000	12.545	3.761	5.090	0.000	8.851	15.566	32.294	0.000	47.859	28.850	75.169	0.000	104.018
34	1.290	3.070	0.000	4.361	5.565	6.928	0.000	12.493	1.894	2.803	0.000	4.698	5.840	22.613	0.000	28.453	15.810	43.595	0.000	59.405
36	0.661	1.797	0.000	2.459	4.143	9.508	0.000	13.651	1.195	2.683	0.000	3.878	2.638	12.385	0.000	15.023	9.185	24.775	0.000	33.960
38	0.475	1.395	0.000	1.870	2.083	6.687	0.000	8.771	0.485	2.407	0.000	2.892	2.475	8.439	0.000	10.914	3.658	14.964	0.000	18.623
40	0.373	0.937	0.000	1.310	0.724	5.018	0.000	5.742	0.245	1.723	0.000	1.968	1.060	7.705	0.000	8.765	1.466	8.582	0.000	10.049
42	0.059	0.588	0.000	0.647	0.694	3.305	0.000	4.000	0.099	0.801	0.000	0.899	0.065	3.260	0.000	3.324	0.262	5.318	0.000	5.580
44	0.004	0.471	0.000	0.475	0.087	1.550	0.000	1.637	0.031	0.281	0.000	0.311	0.008	1.729	0.000	1.737	0.111	2.620	0.000	2.731
46	0.004	0.081	0.000	0.085	0.081	0.969	0.000	1.050	0.006	0.044	0.000	0.049	0.000	0.600	0.000	0.600	0.028	0.988	0.000	1.016
48	0.000	0.191	0.000	0.191	0.018	0.286	0.000	0.304	0.000	0.052	0.000	0.052	0.004	0.273	0.000	0.277	0.096	0.486	0.000	0.582
50	0.000	0.027	0.000	0.027	0.000	0.045	0.000	0.045	0.000	0.018	0.000	0.018	0.000	0.000	0.000	0.000	0.000	0.140	0.000	0.140
52	0.000	0.052	0.000	0.052	0.000	0.053	0.000	0.053	0.000	0.018	0.000	0.018	0.000	0.000	0.000	0.000	0.000	0.032	0.000	0.032
54	0.000	0.005	0.000	0.005	0.000	0.039	0.000	0.039	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
56	0.000	0.005	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
58	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	31.117	47.358	6.141	84.616	73.109	188.829	13.235	275.173	134.845	147.982	0.000	282.827	279.828	343.354	1.609	624.791	508.721	539.702	4.475	1052.898
Nº samples (*):				43				33				54				48				39
Nº Ind. (*):	1876	3003	81	4960	1837	4584	249	6670	3635	4469	0	8104	2848	3693	3	6544	4616	5076	6	9698
Sampled catch:				375				532				585				536				796
Range (*):				9-56				10-55				12-53				11-49				8-52
Total catch:				2731				5721				4956				12231				17169
Total hauls (*):				77				112				128				124				114

TABLE 7 (cont.).- Yellowtail flounder length distribution. Estimated numbers per haul mean catch. Spanish Spring Survey on NAFO 3NO: 1995-2012. Indet. means indeterminate. 1995-2000 data are transformed from C/V *Playa de Menduíña* series. 2002-2012 data are original R/V *Vizconde de Eza* data. For 2001 there are data from the two vessels. (*) indicates untransformed data.

	2000				2001				2002				2003				2004			
Length (cm.)	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.009	0.000	0.000	0.116	0.116
6	0.000	0.000	0.000	0.000	0.000	0.000	0.325	0.325	0.000	0.141	0.475	0.616	0.000	0.107	0.297	0.404	0.000	0.000	0.337	0.337
8	0.000	0.000	0.000	0.000	0.000	0.000	1.937	1.937	0.349	0.639	0.332	1.321	0.036	0.121	0.274	0.431	0.109	0.049	0.741	0.899
10	0.000	0.793	0.000	0.793	0.104	0.356	1.850	2.310	1.315	0.712	0.000	2.027	0.847	0.572	0.140	1.559	0.528	0.637	0.000	1.165
12	3.716	1.266	0.000	4.982	0.320	1.239	1.187	2.746	0.620	0.675	0.000	1.295	0.969	1.205	0.000	2.174	2.005	1.577	0.000	3.582
14	7.773	11.915	0.000	19.687	0.952	1.477	1.114	3.543	1.544	1.064	0.000	2.608	0.977	0.869	0.000	1.846	3.503	2.632	0.000	6.135
16	10.311	10.506	0.000	20.817	3.575	4.509	0.412	8.497	1.889	2.134	0.000	4.023	0.946	0.289	0.000	1.234	4.580	3.608	0.000	8.188
18	14.266	16.475	0.000	30.741	10.107	10.530	0.149	20.786	3.180	2.479	0.000	5.660	1.665	1.689	0.000	3.355	4.649	3.543	0.000	8.192
20	16.177	19.576	0.000	35.753	17.815	24.898	0.000	42.713	7.908	6.122	0.000	14.030	1.695	2.233	0.000	3.928	5.414	6.205	0.000	11.619
22	17.231	18.660	0.000	35.891	21.299	29.178	0.000	50.477	16.552	12.664	0.000	29.217	4.214	4.602	0.000	8.817	5.563	5.757	0.000	11.321
24	21.395	20.983	0.000	42.378	24.254	23.840	0.000	48.094	21.724	22.245	0.000	43.968	11.364	8.741	0.000	20.105	8.232	7.732	0.000	15.964
26	48.000	33.100	0.000	81.100	28.911	24.809	0.000	53.720	27.246	24.307	0.000	51.553	27.765	19.581	0.000	47.347	25.572	16.572	0.000	42.145
28	67.229	39.182	0.000	106.412	58.237	33.305	0.000	91.542	40.151	22.443	0.000	62.594	37.413	29.153	0.000	66.566	57.974	27.637	0.000	85.611
30	64.336	44.684	0.000	109.020	72.412	45.107	0.000	117.519	57.549	34.445	0.000	91.994	52.296	29.328	0.000	81.624	87.376	52.285	0.000	139.661
32	36.450	53.416	0.000	89.865	49.179	59.052	0.000	108.232	46.938	50.680	0.000	97.618	45.761	40.076	0.000	85.836	74.712	58.683	0.000	133.396
34	12.695	39.970	0.000	52.665	22.267	64.772	0.000	87.039	18.047	57.599	0.000	75.646	19.769	52.100	0.000	71.869	30.847	58.596	0.000	89.443
36	6.653	25.712	0.000	32.365	8.702	46.598	0.000	55.300	7.014	45.699	0.000	52.713	6.757	39.555	0.000	46.312	7.531	46.290	0.000	53.820
38	3.526	15.747	0.000	19.274	6.293	30.315	0.000	36.608	2.651	25.514	0.000	28.165	2.130	23.649	0.000	25.779	2.056	26.594	0.000	28.650
40	1.996	10.642	0.000	12.638	2.145	12.925	0.000	15.070	1.183	12.427	0.000	13.610	0.832	9.444	0.000	10.276	1.716	10.932	0.000	12.648
42	0.286	6.803	0.000	7.089	0.857	7.788	0.000	8.645	0.616	6.257	0.000	6.873	0.256	3.895	0.000	4.151	0.514	3.725	0.000	4.240
44	0.013	4.005	0.000	4.018	0.614	4.596	0.000	5.210	0.042	2.690	0.000	2.732	0.268	2.432	0.000	2.700	0.028	2.033	0.000	2.061
46	0.000	1.806	0.000	1.806	0.221	1.968	0.000	2.190	0.024	1.150	0.000	1.174	0.000	1.113	0.000	1.113	0.000	0.575	0.000	0.575
48	0.003	0.845	0.000	0.848	0.000	0.775	0.000	0.775	0.000	0.818	0.000	0.818	0.000	0.525	0.000	0.525	0.000	0.303	0.000	0.303
50	0.000	0.246	0.000	0.246	0.000	0.242	0.000	0.242	0.020	0.149	0.000	0.169	0.000	0.202	0.000	0.202	0.000	0.009	0.000	0.009
52	0.000	0.000	0.000	0.000	0.000	0.051	0.000	0.051	0.000	0.038	0.000	0.038	0.000	0.009	0.000	0.009	0.000	0.055	0.000	0.055
54	0.000	0.033	0.000	0.033	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
56	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
58	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	332.057	376.364	0.000	708.421	328.265	428.326	6.975	763.567	256.565	333.090	0.807	590.462	215.959	271.489	0.721	488.169	322.910	336.032	1.193	660.136
Nº samples (*):				42				43				43				37				45
Nº Ind. (*):	3323	4100	0	7423	3358	4684	80	8122	3419	4576	7	8002	2424	3254	12	5690	3703	4234	16	7953
Sampled catch:				717				2298				2269				1864				2587
Range (*):				11-54				6-53				6-52				5-52				5-53
Total catch:				12742				16141				14385				11280				15117
Total hauls (*):				118				123				125				118				120

TABLE 7 (cont.).- Yellowtail flounder length distribution. Estimated numbers per haul mean catch. Spanish Spring Survey on NAFO 3NO: 1995-2012. Indet. means indeterminate. 1995-2000 data are transformed from C/V *Playa de Menduíña* series. 2002-2012 data are original R/V *Vizconde de Eza* data. For 2001 there are data from the two vessels. (*) indicates untransformed data.

	2005				2006				2007				2008			
Length (cm.)	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total
4	0.000	0.000	0.000	0.000	0.060	0.000	0.000	0.060	0.000	0.000	0.000	0.000	0.000	0.000	0.054	0.054
6	0.000	0.013	0.192	0.205	0.000	0.000	0.079	0.079	0.000	0.000	0.103	0.103	0.000	0.000	0.000	0.000
8	0.269	0.018	0.054	0.341	0.187	0.162	0.245	0.594	0.000	0.000	0.000	0.000	0.013	0.000	0.000	0.013
10	1.725	0.467	0.051	2.243	0.686	0.384	0.276	1.346	0.041	0.059	0.000	0.101	0.039	0.000	0.037	0.076
12	2.353	1.877	0.000	4.229	2.026	1.734	0.000	3.760	0.536	0.449	0.000	0.985	0.184	0.183	0.000	0.367
14	4.728	3.053	0.000	7.780	3.645	3.862	0.000	7.507	1.148	0.578	0.000	1.725	0.238	0.331	0.054	0.624
16	4.674	3.630	0.000	8.304	5.776	6.009	0.000	11.785	2.222	2.551	0.000	4.773	0.741	0.964	0.000	1.705
18	3.334	3.348	0.000	6.682	5.989	5.547	0.000	11.536	5.728	4.614	0.000	10.342	2.364	2.973	0.000	5.337
20	4.905	4.847	0.000	9.752	9.721	8.196	0.000	17.917	9.024	7.293	0.000	16.317	7.593	6.160	0.000	13.753
22	8.934	6.836	0.000	15.770	10.735	10.545	0.000	21.280	13.286	14.190	0.000	27.476	11.867	13.532	0.000	25.399
24	8.930	7.162	0.000	16.092	11.073	12.977	0.000	24.050	17.380	19.046	0.000	36.426	18.209	18.285	0.000	36.495
26	15.997	8.451	0.000	24.447	13.117	13.439	0.000	26.556	20.689	18.113	0.000	38.802	23.627	25.866	0.000	49.493
28	34.840	17.504	0.000	52.344	26.251	15.412	0.000	41.663	35.157	19.170	0.000	54.327	37.293	23.056	0.000	60.349
30	75.001	34.103	0.000	109.105	64.180	25.059	0.000	89.238	75.144	25.235	0.000	100.379	67.815	22.281	0.000	90.096
32	70.556	58.866	0.000	129.423	74.126	52.415	0.000	126.541	76.329	50.253	0.000	126.582	73.491	42.910	0.000	116.401
34	28.072	62.961	0.000	91.032	38.379	67.737	0.000	106.116	42.232	68.548	0.000	110.780	38.260	59.348	0.000	97.609
36	8.105	48.672	0.000	56.777	11.021	63.706	0.000	74.727	12.733	61.691	0.000	74.424	9.789	54.190	0.000	63.979
38	1.965	26.547	0.000	28.512	3.046	39.877	0.000	42.923	3.973	41.839	0.000	45.812	2.389	37.201	0.000	39.590
40	0.908	11.697	0.000	12.606	0.981	17.493	0.000	18.474	1.430	20.920	0.000	22.350	0.914	16.185	0.000	17.099
42	0.172	4.746	0.000	4.918	0.081	5.709	0.000	5.789	0.213	6.891	0.000	7.104	0.288	6.719	0.000	7.007
44	0.050	2.020	0.000	2.070	0.072	2.190	0.000	2.262	0.000	2.454	0.000	2.454	0.000	3.120	0.000	3.120
46	0.000	1.128	0.000	1.128	0.000	1.341	0.000	1.341	0.071	1.043	0.000	1.114	0.000	1.097	0.000	1.097
48	0.000	0.200	0.000	0.200	0.000	0.560	0.000	0.560	0.000	0.367	0.000	0.367	0.000	0.616	0.000	0.616
50	0.000	0.030	0.000	0.030	0.000	0.231	0.000	0.231	0.000	0.107	0.000	0.107	0.000	0.077	0.000	0.077
52	0.000	0.000	0.000	0.000	0.000	0.012	0.000	0.012	0.000	0.120	0.000	0.120	0.000	0.000	0.000	0.000
54	0.000	0.079	0.000	0.079	0.000	0.091	0.000	0.091	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
56	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
58	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	275.518	308.254	0.297	584.069	281.150	354.688	0.601	636.440	317.336	365.532	0.103	682.971	295.113	335.096	0.145	630.355
Nº samples (*):				48				45				47				50
Nº Ind. (*):	4790	6556	6	11352	4404	6012	10	10426	5083	5533	1	10617	4795	5147	3	9945
Sampled catch:				3784				3407				2761				2759
Range (*):				6-55				5-54				7-52				5-51
Total catch:				14275				15424				15200				14697
Total hauls (*):				119				120				110				122

TABLE 7 (cont.).- Yellowtail flounder length distribution. Estimated numbers per haul mean catch. Spanish Spring Survey on NAFO 3NO: 1995-2012. Indet. means indeterminate. 1995-2000 data are transformed from C/V *Playa de Menduíña* series. 2002-2012 data are original R/V *Vizconde de Eza* data. For 2001 there are data from the two vessels. (*) indicates untransformed data.

	2009				2010				2011				2012			
Length (cm.)	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	0.000	0.000	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	0.000	0.000	0.057	0.057	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.066	0.066
10	0.000	0.155	0.000	0.155	0.302	0.302	0.000	0.605	0.000	0.000	0.000	0.000	0.000	0.000	0.096	0.096
12	0.000	0.063	0.370	0.433	1.243	0.364	0.000	1.607	0.000	0.000	0.000	0.000	0.294	0.096	0.085	0.475
14	0.000	0.096	0.000	0.096	0.387	0.400	0.000	0.787	0.077	0.013	0.000	0.090	0.683	0.292	0.210	1.185
16	0.920	0.498	0.000	1.418	0.489	0.107	0.000	0.596	0.698	0.627	0.000	1.324	0.548	0.507	0.000	1.055
18	2.260	1.452	0.000	3.712	1.276	0.982	0.000	2.259	2.421	2.221	0.000	4.642	0.845	0.663	0.289	1.797
20	4.032	3.251	0.000	7.283	3.363	2.601	0.000	5.964	2.628	3.051	0.000	5.678	2.130	2.825	0.000	4.955
22	11.271	7.825	0.000	19.096	6.263	8.252	0.000	14.515	2.412	2.282	0.000	4.694	7.317	6.789	0.000	14.106
24	15.826	15.693	0.000	31.518	19.027	15.268	0.000	34.295	8.451	5.504	0.000	13.954	11.515	10.017	0.000	21.532
26	28.577	26.217	0.000	54.793	44.312	25.334	0.000	69.646	25.580	14.079	0.000	39.659	29.809	19.368	0.000	49.177
28	38.271	24.052	0.000	62.323	60.163	45.618	0.000	105.781	52.525	34.993	0.000	87.517	69.232	42.103	0.000	111.335
30	59.751	26.094	0.000	85.844	86.814	52.865	0.000	139.679	70.813	52.249	0.000	123.062	81.097	64.012	0.000	145.109
32	73.655	42.701	0.000	116.356	92.461	52.351	0.000	144.811	80.108	53.396	0.000	133.504	66.077	63.104	0.000	129.181
34	44.085	74.201	0.000	118.285	40.660	66.701	0.000	107.361	44.691	75.990	0.000	120.681	33.748	73.592	0.000	107.340
36	13.976	81.708	0.000	95.684	9.675	70.786	0.000	80.461	12.199	76.297	0.000	88.496	8.716	67.450	0.000	76.166
38	4.267	54.934	0.000	59.200	1.757	41.724	0.000	43.481	2.488	53.131	0.000	55.619	2.711	49.593	0.000	52.305
40	0.983	22.221	0.000	23.203	0.631	18.241	0.000	18.872	0.618	32.793	0.000	33.411	0.432	23.634	0.000	24.066
42	0.103	11.373	0.000	11.476	0.000	8.403	0.000	8.403	0.124	15.014	0.000	15.138	0.181	9.291	0.000	9.472
44	0.039	4.532	0.000	4.571	0.000	1.785	0.000	1.785	0.083	2.984	0.000	3.067	0.166	3.726	0.000	3.893
46	0.000	1.183	0.000	1.183	0.000	1.496	0.000	1.496	0.000	1.351	0.000	1.351	0.000	1.032	0.000	1.032
48	0.000	0.173	0.000	0.173	0.000	0.341	0.000	0.341	0.000	0.404	0.000	0.404	0.000	0.242	0.000	0.242
50	0.000	0.460	0.000	0.460	0.000	0.034	0.000	0.034	0.000	0.045	0.000	0.045	0.000	0.051	0.000	0.051
52	0.000	0.000	0.000	0.000	0.000	0.139	0.000	0.139	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
54	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
56	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
58	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.096	0.000	0.096
Total	298.014	398.879	0.477	697.369	368.825	414.092	0.000	782.917	305.915	426.422	0.000	732.337	315.502	438.483	0.746	754.732
Nº samples (*):				38				36				50				52
Nº Ind. (*):	3969	4682	5	8656	3085	3615	0	6700	5500	6259	0	11759	4523	6150	10	10683
Sampled catch:				2604				1805				3535				3104
Range (*):				7-50				10-52				15-50				8-58
Total catch:				16201				12449				20193				18359
Total hauls (*):				109				95				122				122

TABLE 8.- Redfish mean catch (kg) and SD by stratum. Spanish Spring Surveys in NAFO Div. 3NO: 1997-2012. Swept area in square miles. n.s. means stratum not surveyed. 1997-2000 data are transformed from C/V *Playa de Menduíña* series, and 2002-2012 data are original from R/V *Vizconde de Eza*. For 2001 there are data from the two vessels.

	1997		1998		1999		2000		2001		2002		2003		2004	
Stratum	Redfish Mean	Redfish SD	Redfish Mean	Redfish SD	Redfish Mean	Redfish SD	Redfish Mean	Redfish SD	Redfish Mean	Redfish SD	Redfish Mean	Redfish SD	Redfish Mean	Redfish SD	Redfish Mean catch	Redfish SD
353	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.03	0.052	0.00	0.000
354	0.14	0.202	438.34	759.219	5.34	6.425	0.02	0.033	60.03	101.794	0.46	0.768	0.00	0.000	48.27	83.338
355	1.80	1.334	480.45	351.492	1082.06	1440.398	886.53	626.406	161.20	145.381	246.50	46.103	425.05	8.980	336.45	14.779
356	7.60	1.212	1139.44	1071.610	2684.53	2762.311	1274.17	484.645	1069.10	766.645	397.15	375.969	252.98	85.532	759.93	64.523
357	25.36	23.238	23.72	24.085	76.52	69.991	802.95	-	60.30	2.263	49.65	26.941	125.85	80.964	511.45	555.291
358	1.73	2.382	17.10	28.548	59.42	88.506	1358.82	2353.545	3.96	2.070	3.60	2.088	181.05	226.985	143.27	91.983
359	0.00	0.000	0.00	0.000	0.04	0.076	0.10	0.194	30.02	78.721	0.57	1.013	0.07	0.154	1.17	2.841
360	0.00	0.000	0.00	0.000	0.00	0.017	0.00	0.000	0.25	1.118	0.06	0.213	0.00	0.013	0.36	1.588
374	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
375	0.00	-	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
376	0.01	0.037	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
377	0.00	-	0.00	0.000	0.56	0.788	0.20	0.283	0.00	0.000	1.60	2.263	0.61	0.863	0.00	0.000
378	1.71	2.425	0.43	0.606	1.53	0.715	2.29	0.808	0.86	1.061	2.05	1.202	3.41	3.946	150.50	202.091
379	20.31	10.054	11.14	4.068	31.66	26.024	70.72	100.016	30.15	36.699	18.35	12.233	20.88	14.177	135.50	-
380	0.09	0.024	1.37	0.323	5.77	6.466	0.00	0.000	2.29	1.859	1.17	1.174	1.61	0.841	149.70	160.372
381	0.09	0.121	0.00	0.000	0.03	0.044	0.00	0.000	0.11	0.000	0.15	0.212	0.10	0.096	0.85	0.919
382	0.00	0.000	0.00	0.000	0.00	0.000	0.10	0.200	0.06	0.089	0.46	0.626	0.00	0.000	0.00	0.000
721	169.96	217.567	143.53	125.798	2152.90	1622.771	3120.12	1232.202	466.20	229.103	43.75	20.860	105.00	38.042	274.85	201.738
722	17.28	4.793	18.77	12.568	63.92	70.759	271.74	384.305	55.00	2.121	5.80	6.134	28.11	38.311	26.71	30.533
723	37.49	22.226	107.33	120.343	418.90	326.761	1655.39	2341.070	202.75	207.112	131.50	61.518	161.65	151.109	610.30	381.131
724	22.49	17.740	64.64	72.173	140.87	183.788	628.93	889.439	4295.90	6925.13	238.00	239.992	94.50	85.418	88.58	98.818
725	46.54	14.362	17.77	-	2579.77	3537.230	12.57	17.781	37.34	14.09	51.80	9.758	51.20	62.515	163.50	27.294
726	n.s.	n.s.	2298.69	3221.013	194.45	27.600	0.00	0.000	107.85	57.07	39.80	14.566	0.05	0.064	117.51	153.265
727	3.83	-	11.77	6.870	30.23	10.749	5.56	5.072	5.80	1.50	3.61	5.077	31.33	13.824	63.65	7.990
728	35.84	2.982	61.35	19.438	108.18	35.723	0.00	0.000	61.09	47.52	19.50	27.577	82.75	13.506	10.03	1.075
752	7.63	8.688	168.19	171.260	236.17	164.431	0.00	0.000	26.40	35.16	9.15	12.940	43.95	47.023	2.55	0.308
753	0.17	0.242	0.94	0.113	7.26	10.264	0.00	0.000	1.66	2.02	0.22	0.304	0.00	0.000	0.00	0.000
754	0.19	0.330	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.00	1.33	1.226	0.00	0.000	0.00	0.000
755	n.s.	n.s.	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.00	0.00	0.000	0.00	0.000	0.00	0.000
756	4.29	-	8.57	1.863	439.22	575.003	0.00	0.000	39.40	51.76	20.23	26.828	3.32	3.910	1.50	2.114
757	0.00	0.000	1.39	1.964	85.64	77.710	0.00	0.000	0.69	0.97	66.45	92.843	8.30	11.738	0.00	0.000
758	0.00	0.000	0.03	0.040	0.35	0.065	1.75	1.026	0.00	0.00	9.05	10.819	0.00	0.000	0.00	0.000
759	n.s.	n.s.	0.00	0.000	2.83	4.001	0.00	0.000	0.00	0.00	0.05	0.071	0.00	-	0.00	0.000
760	162.94	-	43.80	34.147	214.45	303.282	11.09	15.679	99.10	132.23	3.85	5.445	12.92	14.828	3.38	1.945
761	0.29	0.286	4.43	3.673	0.00	0.000	0.43	0.614	4.75	6.72	11.60	14.001	0.00	0.000	0.55	0.778
762	0.00	0.000	0.00	0.000	17.09	24.166	0.00	0.000	0.00	0.00	4.91	6.350	0.00	0.000	0.00	0.000
763	n.s.	n.s.	0.00	0.000	0.00	0.000	115.73	231.455	0.00	0.00	0.00	0.000	0.00	0.000	0.13	0.233
764	1.34	1.899	0.00	0.000	0.05	0.069	0.00	0.000	14.86	20.28	1.05	1.485	5.51	1.047	0.00	0.000
765	0.00	0.000	13.83	19.559	0.00	0.000	5.14	7.274	1.62	1.24	9.25	13.081	0.00	-	0.00	0.000
766	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.80	1.131	0.00	0.000	0.48	0.678	0.00	0.000
767	n.s.	n.s.	0.11	0.152	0.00	0.000	0.00	0.000	0.00	0.000	0.03	0.046	0.00	0.000	0.00	0.000

TABLE 8 (cont.).- Redfish mean catch (kg) and SD by stratum. Spanish Spring Surveys in NAFO Div. 3NO: 1997-2012. Swept area in square miles. n.s. means stratum not surveyed. 1997-2000 data are transformed from C/V *Playa de Menduíña* series, and 2002-2012 data are original from R/V *Vizconde de Eza*. For 2001 there are data from the two vessels.

	2005		2006		2007		2008		2009		2010		2011		2012	
Stratum	Redfish Mean	Redfish SD	Redfish Mean	Redfish SD	Redfish Mean	Redfish SD	Redfish Mean	Redfish SD	Redfish Mean catch	Redfish SD	Redfish Mean	Redfish SD	Redfish Mean catch	Redfish SD	Redfish Mean	Redfish SD
353	0.04	0.069	1.25	2.034	0.00	0.000	0.00	0.000	0.11	0.196	0.00	0.000	0.00	0.000	0.72	1.24
354	21.34	36.380	79.99	134.667	9.95	2.685	0.73	1.270	2.67	3.866	29.30	41.436	587.53	942.287	619.75	1060.35
355	658.00	495.406	1427.34	1241.630	1023.66	498.312	604.35	633.073	851.40	56.003	5282.60	4804.932	1956.76	2348.814	1623.62	2024.90
356	1048.51	471.506	1124.70	216.509	951.50	924.189	421.60	498.652	1109.75	350.371	8633.50	10276.383	9703.11	13219.517	743.76	412.94
357	3120.47	2946.698	1533.90	1417.891	845.49	1296.007	277.50	136.472	12944.66	6837.525	2457.65	1593.465	1120.60	652.518	1854.81	578.30
358	520.71	755.878	821.37	1252.774	1269.76	921.602	1073.07	575.908	4709.51	3691.878	8024.32	2799.690	13416.77	6326.075	3834.12	2560.26
359	1.00	2.044	2.24	5.002	0.54	1.417	0.34	0.500	0.42	1.083	862.61	2111.160	303.76	788.208	39.35	71.61
360	0.08	0.202	0.00	0.000	0.00	0.000	0.20	0.678	0.20	0.883	0.05	0.179	0.00	0.000	0.00	0.00
374	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.00
375	0.00	0.000	0.73	1.270	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.00
376	0.59	1.780	0.00	0.000	0.00	0.000	0.20	0.639	0.00	0.000	0.00	0.000	0.01	0.034	0.00	0.00
377	0.00	0.000	0.49	0.693	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.00
378	3660.93	4755.328	1392.20	1375.040	31.44	40.814	456.60	152.594	1001.95	1399.435	1299.45	1820.588	5408.50	7648.774	7654.12	6271.87
379	2547.70	158.250	2008.20	692.682	4428.25	851.003	2794.83	3845.706	12745.33	5943.473	7462.75	1908.835	614.93	371.054	1554.75	1041.50
380	390.27	417.709	411.35	334.815	362.40	204.920	392.21	190.623	21.74	24.374	2655.59	1400.928	4428.38	5668.852	1702.30	1955.07
381	2.02	0.339	6.91	1.916	0.46	0.628	1.61	1.894	0.08	0.093	0.22	0.170	33.05	41.366	632.95	300.81
382	0.41	0.825	0.11	0.224	0.58	1.168	0.76	1.525	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.00
721	242.29	145.261	108.10	86.833	168.60	-	52.45	26.375	3197.60	4102.634	146.95	34.719	771.50	342.381	280.40	107.48
722	52.17	68.893	1.98	2.008	2.61	2.594	8.88	8.881	2.58	0.177	3.17	3.719	5.74	6.857	6.14	2.96
723	1141.00	1389.323	595.46	249.694	206.75	171.615	215.73	57.947	9914.19	12350.058	747.32	309.317	1372.65	1455.721	1769.92	622.99
724	83.20	11.738	17.41	23.922	174.75	179.959	164.85	27.082	173.01	122.605	125.43	48.684	73.65	34.436	101.05	23.12
725	414.15	306.955	500.75	663.195	504.10	269.973	285.92	98.458	398.45	69.367	1271.77	1290.710	117.82	15.606	287.95	8.56
726	72.20	-	72.73	63.958	119.15	69.933	100.00	98.995	301.95	427.022	261.10	349.169	45.70	57.983	24.80	14.99
727	18.00	2.263	11.70	8.910	9.47	10.621	14.42	1.011	279.10	-	63.30	25.597	43.05	37.547	16.30	0.71
728	73.50	-	6.53	1.803	8.90	5.370	7.44	0.233	30.65	7.990	26.80	16.405	4.16	0.562	12.54	6.45
752	0.17	0.233	0.63	0.884	0.51	0.725	2.06	1.771	6.16	8.704	1.94	0.728	0.85	1.195	0.66	0.06
753	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	-	n.s.	n.s.	0.00	0.000	0.00	0.00
754	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	-	0.00	0.000	0.00	0.000	0.00	0.00
755	0.00	0.000	0.08	0.144	0.00	0.000	0.00	0.000	0.00	-	0.00	-	0.00	0.000	0.00	0.00
756	1.20	1.697	0.28	0.396	9.65	13.647	18.49	24.770	4.05	5.728	0.90	0.191	0.10	0.136	0.66	0.01
757	0.72	1.011	0.00	0.000	0.00	0.000	0.09	0.115	0.20	0.283	0.00	0.000	0.00	0.000	0.00	0.00
758	0.00	0.000	1.13	1.591	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.00
759	0.18	0.247	0.37	0.516	n.s.	n.s.	0.00	0.000	0.00	-	0.00	0.000	0.00	0.000	0.00	0.00
760	22.26	1.633	24.90	21.927	5.53	5.996	0.61	0.028	7.96	0.007	2.23	3.147	10.30	14.149	0.00	0.00
761	0.37	0.516	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.00
762	0.00	0.000	0.25	0.346	n.s.	n.s.	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.00
763	0.43	0.751	0.00	0.000	n.s.	n.s.	0.68	0.302	n.s.	n.s.	n.s.	n.s.	0.71	1.224	0.00	0.00
764	1.70	0.612	0.00	0.000	0.00	0.000	0.00	0.000	0.61	-	n.s.	n.s.	2.91	4.110	0.00	0.00
765	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.00
766	1.10	0.962	0.00	0.000	n.s.	n.s.	0.11	0.151	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.00
767	0.00	-	0.00	0.000	n.s.	n.s.	0.00	0.000	n.s.	n.s.	n.s.	n.s.	0.00	0.000	0.00	0.00

TABLE 9.- Stratified mean catches (Kg) by stratum and year and SD by year of redfish (1997-2012). n.s. means stratum not surveyed. 1997-2000 data are transformed from C/V *Playa de Menduíña* series. 2002-2012 data are original from R/V *Vizconde de Eza*. For 2001 there are data from the two vessels.

Stratum	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
353	0	0	0	0	0	0	8	0	11	337	0	0	30	0	0	193
354	35	107830	1314	5	14767	114	0	11874	5250	19678	2448	180	656	7208	144533	152459
355	133	35554	80073	65603	11929	18241	31454	24897	48692	105623	75751	44722	63004	390912	144800	120148
356	357	53554	126173	59886	50248	18666	11890	35716	49280	52861	44721	19815	52158	405775	456046	34957
357	4158	3890	12550	131683	9889	8143	20639	83878	511757	251560	138660	45510	2122924	403055	183778	304189
358	389	3848	13369	305734	891	810	40736	32235	117161	184808	285696	241440	1059641	1805472	3018774	862677
359	0	0	18	41	12639	239	31	493	419	941	226	144	178	363160	127882	16566
360	0	0	11	0	696	168	9	988	225	0	0	551	550	133	0	0
374	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
375	0	0	0	0	0	0	0	0	0	199	0	0	0	0	0	0
376	19	0	0	0	0	0	0	0	782	0	0	269	0	0	14	0
377	0	0	56	20	0	160	61	0	0	49	0	0	0	0	0	0
378	238	60	213	318	120	285	474	20920	508869	193516	4370	63467	139271	180624	751782	1063922
379	2153	1181	3356	7497	3196	1945	2213	14363	270056	212869	469395	296251	1351005	791052	65182	164803
380	8	132	554	0	384	112	154	14371	37465	39490	34790	37652	2087	254937	425125	163420
381	12	0	5	0	29	22	15	122	291	994	66	232	12	32	4759	91144
382	0	0	0	34	38	157	0	0	141	38	200	262	0	0	0	0
721	11047	9329	139939	202808	30303	2844	6825	17865	15749	7027	10959	3409	207844	9552	50148	18226
722	1451	1577	5369	22827	4620	487	2361	2244	4382	166	220	746	216	266	482	515
723	5811	16636	64930	256585	31426	20383	25056	94597	176855	92296	32046	33437	1536699	115835	212761	274338
724	2789	8015	17468	77987	532692	29512	11718	10983	10317	2159	21669	20441	21453	15553	9133	12530
725	4886	1866	270876	1320	4998	5439	5375	17168	43486	52579	52931	30022	41837	133536	12371	30235
726	n.s.	165506	14000	0	9587	2866	3	8460	5198	5236	8579	7200	21740	18799	3290	1786
727	368	1130	2902	534	974	347	3007	6110	1728	1123	909	1384	26794	6077	4133	1565
728	2795	4785	8438	0	8338	1521	6455	782	5733	509	694	580	2391	2090	325	978
752	999	22033	30938	0	6052	1199	5757	334	22	82	67	270	806	253	111	87
753	24	129	1002	0	400	30	0	0	0	0	0	0	0	n.s.	0	0
754	34	0	0	0	0	240	0	0	0	0	0	0	0	0	0	0
755	n.s.	0	0	0	0	0	0	0	0	32	0	0	0	0	0	0
756	433	866	44361	0	4085	2043	335	151	121	28	975	1867	409	90	10	66
757	0	142	8735	0	122	6778	847	0	73	0	0	9	20	0	0	0
758	0	3	35	174	0	896	0	0	0	111	0	0	0	0	0	0
759	n.s.	0	359	0	0	6	0	0	22	46	n.s.	0	0	0	0	0
760	25093	6746	33026	1707	15261	593	1989	520	3427	3834	852	94	1225	343	1585	0
761	49	758	0	74	812	1984	0	94	62	0	0	0	0	0	0	0
762	0	0	3623	0	0	1041	0	0	0	52	n.s.	0	0	0	0	0
763	n.s.	0	0	30205	0	0	0	35	113	0	n.s.	178	n.s.	n.s.	184	0
764	134	0	5	0	1486	105	551	0	170	0	0	0	61	n.s.	291	0
765	0	1715	0	638	236	1147	0	0	0	0	0	0	0	0	0	0
766	0	0	0	0	202	0	69	0	158	0	n.s.	15	0	0	0	0
767	0	17	0	0	0	5	0	0	0	0	n.s.	0	n.s.	n.s.	0	0
TOTAL	63418	447300	883699	1165680	756419	128525	178032	399201	1818016	1228243	1186222	850149	6653012	4904753	5617498	3314802
$\overline{Y}$	6.79	43.25	85.45	112.71	73.14	12.43	17.21	38.60	175.79	118.76	125.66	82.20	670.46	506.43	543.17	320.52
S.D.	1.15	19.50	29.56	40.03	48.13	2.60	3.55	8.05	58.86	27.83	20.19	29.14	172.93	81.06	124.68	72.27

TABLE 10.- Survey estimates (by the swept area method) of redfish biomass (t) and SD by stratum and year in NAFO Div. 3NO. n.s. means stratum not surveyed. 1997-2000 data are transformed from C/V *Playa de Menduíña* series. 2002-2012 data are original from R/V *Vizconde de Eza*. For 2001 there are data from the two vessels.

Stratum	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
353	0	0	0	0	0	0	1	0	1	27	0	0	3	0	0	17
354	3	9080	121	0	1313	10	0	1033	447	1623	202	16	58	641	12568	13552
355	11	3214	7001	5643	994	1544	2750	2177	4328	8535	6313	4043	5420	34178	12456	10505
356	32	4841	11032	5323	4187	1606	1057	3229	4239	4405	3727	1677	4560	36069	39873	3107
357	376	324	1062	10641	812	679	1805	7334	44022	20641	11555	3915	365234	35827	16336	26596
358	35	331	1150	26878	77	70	3621	2930	10078	15897	23322	20995	93155	160486	262502	78425
359	0	0	2	3	1102	21	3	44	36	77	18	13	18	30907	11103	1438
360	0	0	1	0	57	15	1	86	19	0	0	47	48	11	0	0
374	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
375	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0
376	2	0	0	0	0	0	0	0	67	0	0	24	0	0	1	0
377	0	0	5	2	0	14	5	0	0	4	0	0	0	0	0	0
378	23	5	19	27	10	25	42	1860	45233	16126	376	5289	12177	16055	62648	93021
379	209	99	284	666	279	170	193	1161	22862	18021	39116	25902	118121	69163	5892	14649
380	1	12	47	0	21	10	13	1299	3276	3453	2899	3347	182	21582	37169	14288
381	1	0	0	0	1	2	1	11	25	87	5	20	1	3	409	8239
382	0	0	0	3	2	14	0	0	12	3	17	23	0	0	0	0
721	999	921	11482	17169	2450	245	607	1615	1377	595	943	303	18172	849	4384	1568
722	136	148	469	2099	397	41	213	206	377	14	20	72	19	24	43	47
723	553	1431	5677	20734	2619	1753	2191	8271	15213	7813	2671	2972	136596	10296	19564	24386
724	248	777	1553	6709	45323	2623	1042	1028	917	186	1864	1848	1845	1360	786	1114
725	474	216	23683	126	337	483	470	1526	3681	4523	4705	2625	3658	11487	1031	2688
726	n.s.	16049	1244	0	637	268	0	752	462	465	750	640	1901	1617	292	161
727	39	97	246	51	49	30	277	526	151	100	76	125	2382	506	367	135
728	262	464	726	0	417	133	574	87	527	45	62	52	209	174	28	86
752	92	1926	2661	0	329	105	503	31	2	7	6	25	70	21	9	8
753	2	12	88	0	21	3	0	0	0	0	0	0	0	n.s.	0	0
754	3	0	0	0	0	21	0	0	0	0	0	0	0	0	0	0
755	n.s.	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0
756	40	77	3943	0	348	179	30	14	10	2	87	172	36	8	1	6
757	0	14	751	0	6	602	77	0	6	0	0	1	2	0	0	0
758	0	0	3	17	0	80	0	0	0	10	0	0	0	0	0	0
759	n.s.	0	33	0	0	1	0	0	2	4	n.s.	0	0	0	0	0
760	2390	631	2936	163	1334	52	183	47	300	341	73	8	107	30	148	0
761	5	73	0	7	72	176	0	9	6	0	0	0	0	0	0	0
762	0	0	345	0	0	93	0	0	0	4	n.s.	0	0	0	0	0
763	n.s.	0	0	2903	0	0	0	3	10	0	n.s.	17	n.s.	n.s.	16	0
764	13	0	0	0	124	9	50	0	15	0	0	0	5	n.s.	26	0
765	0	163	0	63	18	97	0	0	0	0	0	0	0	0	0	0
766	0	0	0	0	11	0	6	0	14	0	n.s.	1	0	0	0	0
767	n.s.	2	0	0	0	0	0	0	0	0	n.s.	0	n.s.	n.s.	0	0
TOTAL	5947	40909	76564	99226	63350	11172	15714	35275	157716	103029	98805	74172	763980	431296	487655	294033
S.D.	988	20512	27740	33453	41460	2374	3224	7332	52646	23332	15893	26168	145765	69575	107982	62954

TABLE 11.- Mean catch per tow (kg) and biomass by the swept area method (t) of redfish and SD by Division and year in NAFO Div. 3NO. 1997-2000 data are transformed from C/V *Playa de Menduíña* series. 2002-2012 data are original from R/V *Vizconde de Eza*. For 2001 there are data from the two vessels. The final row shows the percentage of biomass in 3N respect to the total biomass.

		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
3N	Biomass	4753	22540	46459	68928	53855	7620	11031	27016	146918	87830	87602	68059	735743	359536	418305	265238
	SD	353	17632	25022	33109	41371	2106	3199	7174	52267	22675	15364	25890	143334	58306	99454	60304
	MCPT	6.14	26.32	58.78	90.12	71.16	9.624	13.83	33.95	187.61	115.4	124.8	86.51	721.67	473.94	533.85	330.89
	SD	0.465	18.33	30.08	45.16	55	2.614	4.045	9.056	67.31	30.96	22.09	33.12	194.48	76.53	132.71	80.20
	Nº Strata	27	31	31	31	31	31	31	31	31	31	28	31	30	29	31	31
3O	Biomass	1194	18369	30105	30298	9494	3552	4684	8259	10797	15199	11203	6113	28238	71760	69350	28795
	SD	922	10490	12129	6073	2702	1117	369.4	1326	2728	5279	3362	3258	16762	37821	41858	16754
	MCPT	11.41	159.9	269.2	268.3	86.8	31.74	40.55	70.63	94.349	141.6	132.9	52.55	280.98	772.76	607.40	249.04
	SD	8.677	87.87	107	54.27	24.47	9.778	3.103	11.68	24.188	52.04	39.93	28.27	163.87	402.81	362.85	140.90
	Nº Strata	9	10	10	10	10	10	10	10	10	10	8	10	9	8	10	10
3N/Total (%) Biomass		80	55	61	69	85	68	70	77	93	85	89	92	96	83	86	90

TABLE 12.- Length weight relationships used for the calculation of redfish biomass. The equation is $Weight = a(l + 0.5)^b$. Spanish Spring Surveys in NAFO Div. 3NO: 1997-2012. To calculate the parameters for the indeterminate individuals, total number of individuals (males + females + indeterminate individuals) was used. *E* means Error.

		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Males	a	0.0111	n.d.	n.d.	0.0066	n.d.	0.0204	0.0119	0.0079	0.0107	0.0296	0.0131	0.0152	0.0093	0.0129	0.0115	0.0115
		E = 0.3722	n.d.	n.d.	E = 0.3003	n.d.	E = 0.2048	E = 0.1119	E = 0.1549	E = 0.1094	E = 0.1458	E = 0.1337	E = 0.1044	E = 0.1059	E = 0.0784	E = 0.1013	E = 0.1234
	b	3.0152	n.d.	n.d.	3.2102	n.d.	2.8433	3.0127	3.1334	3.0481	2.7477	2.9972	2.9429	3.0825	3.0017	3.0459	2.9031
		E = 0.1116	n.d.	n.d.	E = 0.0950	n.d.	E = 0.0647	E = 0.0350	E = 0.0489	E = 0.0338	E = 0.0456	E = 0.0428	E = 0.0315	E = 0.0341	E = 0.0248	E = 0.0311	E = 0.0371
		R^2 = 0.991	n.d.	n.d.	R^2 = 0.992	n.d.	R^2 = 0.987	R^2 = 0.996	R^2 = 0.993	R^2 = 0.996	R^2 = 0.992	R^2 = 0.993	R^2 = 0.997	R^2 = 0.996	R^2 = 0.998	R^2 = 0.997	R2 = 0.998
		N=19	n.d.	n.d.	N=26	n.d.	N=181	N=417	N=203	N=281	N=336	N= 562	N= 348	N= 272	N= 282	N= 524	N= 341
Females	a	0.0061	n.d.	n.d.	0.0083	n.d.	0.0085	0.0096	0.0141	0.0071	0.0199	0.0175	0.0125	0.0121	0.0140	0.0131	0.0167
		E = 1.0881	n.d.	n.d.	E = 0.2467	n.d.	E = 0.1346	E = 0.1162	E = 0.1282	E = 0.1279	E = 0.2300	E = 0.1358	E = 0.1539	E = 0.1250	E = 0.0892	E = 0.1267	E = 0.1631
	b	3.2127	n.d.	n.d.	3.1406	n.d.	3.1207	3.0731	2.9742	3.1823	2.8736	2.9166	3.0167	3.0134	2.9864	3.0103	2.9408
		E = 0.3318	n.d.	n.d.	E = 0.0773	n.d.	E = 0.0415	E = 0.0363	E = 0.0389	E = 0.0397	E = 0.0707	E = 0.0430	E = 0.0456	E = 0.0389	E = 0.0275	E = 0.0386	E = 0.0490
		R^2 = 0.949	n.d.	n.d.	R^2 = 0.993	n.d.	R^2 = 0.996	R^2 = 0.996	R^2 = 0.996	R^2 = 0.995	R^2 = 0.981	R^2 = 0.993	R^2 = 0.993	R^2 = 0.995	R^2 = 0.998	R^2 = 0.995	R2 = 0.996
		N=21	n.d.	n.d.	N=24	n.d.	N=190	N=401	N=258	N=316	N=361	N= 563	N= 410	N= 258	N= 298	N= 588	N= 418
Indet.	a	0.0110	n.d.	n.d.	0.0070	n.d.	0.0079	0.0087	0.0065	0.0063	0.0155	0.0116	0.0054	0.0083	0.0105	0.0047	0.0158
		E = 0.4972	n.d.	n.d.	E = 0.1240	n.d.	E = 0.1031	E = 0.1063	E = 0.1368	E = 0.1138	E = 0.1350	E = 0.1405	E = 0.1191	E = 0.1427	E = 0.0668	E = 0.1154	E = 0.1171
	b	3.0254	n.d.	n.d.	3.1921	n.d.	3.1371	3.1045	3.1996	3.2109	2.9410	3.0378	3.2553	3.1239	3.0657	3.3079	2.9543
		E = 0.1487	n.d.	n.d.	E = 0.0386	n.d.	E = 0.0326	E = 0.0347	E = 0.0437	E = 0.0361	E = 0.0433	E = 0.0451	E = 0.0369	E = 0.0460	E = 0.0217	E = 0.0368	E = 0.0351
		R^2 = 0.979	n.d.	n.d.	R^2 = 0.998	n.d.	R^2 = 0.997	R^2 = 0.995	R^2 = 0.995	R^2 = 0.995	R^2 = 0.992	R^2 = 0.992	R^2 = 0.996	R^2 = 0.992	R^2 = 0.998	R^2 = 0.995	R2 = 0.998
		N=40	n.d.	n.d.	N=50	n.d.	N=374	N=844	N=466	N=616	N=781	N= 1126	N= 770	N= 532	N= 585	N= 1235	N= 759

TABLE 13.- Redfish length distribution per haul mean catches by sex and year. Number per stratified mean catches. Spanish Spring Survey on NAFO 3NO: 1997-2012. Indet. means indeterminate. 1997-2000 data are transformed from C/V *Playa de Menduíña* series. 2002-2012 data are original R/V *Vizconde de Eza* data. For 2001 there are data from the two vessels.

	1997				1998				1999				2000				2001				2002			
Length (cm.)	Males	Fem	Indet.	Total	Males	Fem	Indet.	Total	Males	Fem	Indet.	Total	Males	Fem	Indet.	Total	Males	Fem	Indet.	Total	Males	Fem	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	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03
6	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	0.09	0.00	0.64	0.73	0.01	0.00	0.82	0.83
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.37	0.24	0.00	0.00	0.24	0.07	0.14	0.25	0.46	0.01	0.00	0.15	0.16
10	0.00	0.19	0.00	0.19	0.00	0.00	0.00	0.00	0.19	0.00	0.02	0.21	0.55	0.00	0.00	0.55	0.13	0.11	0.09	0.33	0.02	0.01	0.03	0.07
12	0.02	0.04	0.00	0.06	0.04	0.01	0.01	0.06	1.95	0.73	0.00	2.68	11.08	0.37	0.00	11.45	1.11	0.25	0.13	1.50	0.12	0.01	0.01	0.14
14	0.49	0.33	0.00	0.82	0.81	0.55	0.01	1.37	3.07	1.42	0.00	4.49	26.02	2.71	0.00	28.72	3.07	0.71	0.00	3.78	0.55	0.27	0.00	0.82
16	0.95	0.62	0.00	1.57	3.58	2.25	0.00	5.84	14.14	9.65	0.00	23.79	45.21	15.70	0.00	60.90	7.26	3.30	0.00	10.56	2.83	2.45	0.01	5.28
18	3.05	1.34	0.00	4.39	3.96	2.59	0.00	6.55	25.60	16.12	0.00	41.72	95.96	65.99	0.00	161.96	30.28	11.13	0.00	41.40	8.40	6.60	0.00	15.01
20	6.77	3.98	0.00	10.75	28.66	15.41	0.00	44.07	103.94	26.87	0.00	130.81	124.02	69.84	0.00	193.86	80.85	52.39	0.00	133.24	13.84	9.66	0.00	23.50
22	3.85	2.55	0.00	6.40	38.56	40.19	0.00	78.75	92.11	54.35	0.00	146.46	164.14	62.06	0.00	226.21	93.06	29.59	0.00	122.65	11.57	9.49	0.01	21.07
24	1.60	1.55	0.00	3.15	17.12	27.57	0.00	44.69	22.12	48.20	0.00	70.32	44.64	74.52	0.00	119.16	54.15	26.85	0.00	81.00	4.95	4.36	0.00	9.31
26	1.52	1.00	0.00	2.52	7.70	14.57	0.00	22.26	11.79	22.41	0.00	34.20	5.08	26.07	0.00	31.15	5.52	25.61	0.00	31.14	1.37	1.50	0.00	2.88
28	0.86	0.64	0.00	1.50	4.15	6.01	0.00	10.16	6.48	10.95	0.00	17.42	0.96	5.88	0.00	6.84	1.11	4.95	0.00	6.06	1.35	0.93	0.00	2.27
30	1.24	1.24	0.00	2.48	1.29	2.31	0.00	3.60	4.54	5.02	0.00	9.57	0.12	2.66	0.00	2.77	1.23	1.73	0.00	2.97	0.56	0.97	0.00	1.54
32	1.52	1.03	0.00	2.54	1.26	1.94	0.00	3.20	2.67	3.13	0.00	5.80	0.26	0.58	0.00	0.84	0.91	1.08	0.00	1.99	0.61	0.73	0.00	1.35
34	0.22	0.19	0.00	0.42	0.54	0.59	0.00	1.13	0.45	1.46	0.00	1.91	0.04	0.40	0.00	0.44	0.34	0.62	0.00	0.96	0.19	0.35	0.00	0.54
36	0.10	0.05	0.00	0.15	0.19	0.06	0.00	0.25	0.15	0.26	0.00	0.41	0.00	0.03	0.00	0.03	0.21	0.35	0.00	0.56	0.08	0.16	0.00	0.24
38	0.17	0.12	0.00	0.29	0.29	0.01	0.00	0.30	0.27	0.25	0.00	0.52	0.00	0.00	0.00	0.00	0.03	0.02	0.00	0.05	0.03	0.01	0.00	0.04
40	0.02	0.07	0.00	0.10	0.14	0.03	0.00	0.17	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.04	0.01	0.00	0.05	0.00	0.00	0.00	0.00
42	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.10	0.02	0.02	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01
44	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
46	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
48	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50	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	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	22.38	14.94	0.00	37.32	108.36	114.09	0.02	222.47	289.50	200.84	0.39	490.73	518.31	326.79	0.00	845.10	279.45	158.85	1.10	439.41	46.49	37.53	1.05	85.06
Nº samples:				19				23				48				21				36				58
Nº Ind.:	1165	696	0	1861	1591	1451	2	3044	3291	2607	17	5915	2169	1499	0	3668	2651	1831	104	4586	2186	1744	157	4087
Sampled catch:				370				544				1403				578				798				685
Range:				11-45				12-42				8-45				9-37				6-42				5-43
Total catch:				1791				18553				37339				37160				17897				2794
Total hauls:				128				124				114				118				123				125

TABLE 13 (cont.).- Redfish length distribution per haul mean catches by sex and year. Number per stratified mean catches. Spanish Spring Survey on NAFO 3NO: 1997-2012. Indet. means indeterminate. 1997-2000 data are transformed from C/V *Playa de Menduíña* series. 2002-2012 data are original R/V *Vizconde de Eza* data. For 2001 there are data from the two vessels.

	2003				2004				2005				2006				2007			
Length (cm.)	Males	Fem	Indet.	Total	Males	Fem	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total
4	0.00	0.00	0.05	0.05	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	0.50	0.49	0.00	0.00	1.84	1.84	0.00	0.00	1.30	1.30	0.00	0.00	1.93	1.93	1.54	0.99	1.93	4.46
8	0.04	0.01	0.14	0.19	0.10	0.01	15.44	15.54	0.03	0.02	13.80	13.84	0.10	0.00	7.76	7.86	1.96	1.04	0.77	3.77
10	0.07	0.01	0.09	0.17	0.59	0.49	2.26	3.34	2.31	0.79	65.50	68.60	0.05	0.01	18.81	18.86	0.27	0.35	0.04	0.66
12	0.08	0.02	0.05	0.14	2.99	1.79	0.04	4.81	2.60	1.09	9.89	13.58	3.83	0.26	144.30	148.38	6.39	5.71	0.00	12.10
14	0.67	0.30	0.00	0.97	3.19	1.19	0.00	4.38	8.18	3.75	4.72	16.65	33.41	11.93	74.62	119.95	39.16	21.85	0.25	61.26
16	3.10	1.21	0.00	4.32	7.99	3.33	0.00	11.32	31.54	18.91	0.00	50.45	38.48	22.44	0.30	61.21	53.02	34.92	0.02	87.97
18	13.57	6.79	0.00	20.37	14.85	8.33	0.00	23.18	127.57	95.83	0.00	223.39	43.87	17.53	0.00	61.340	32.55	26.05	0.00	58.61
20	20.58	13.56	0.00	34.14	25.35	15.02	0.00	40.38	99.19	82.52	0.00	181.71	101.41	67.58	0.00	168.99	38.13	24.72	0.00	62.85
22	17.59	11.59	0.00	29.18	29.02	17.42	0.00	46.44	139.42	78.59	0.00	218.00	101.79	64.62	0.00	166.41	70.53	41.68	0.00	112.21
24	9.45	6.25	0.00	15.70	20.86	11.75	0.00	32.62	118.14	75.20	0.00	193.34	46.04	39.02	0.00	85.05	70.39	42.60	0.00	112.99
26	3.03	3.06	0.00	6.09	8.07	12.95	0.00	21.03	27.24	64.01	0.00	91.25	20.21	30.96	0.00	51.16	28.76	35.64	0.00	64.41
28	1.09	1.40	0.00	2.49	4.09	10.93	0.00	15.02	7.48	48.99	0.00	56.47	5.83	19.13	0.00	24.96	5.76	26.39	0.00	32.14
30	0.60	0.63	0.00	1.23	3.31	5.63	0.00	8.94	4.49	18.60	0.00	23.09	1.81	10.60	0.00	12.42	3.99	21.52	0.00	25.51
32	0.60	0.64	0.00	1.24	1.01	3.37	0.00	4.38	1.97	8.35	0.00	10.31	0.95	5.80	0.00	6.75	6.76	14.42	0.00	21.18
34	0.29	0.45	0.00	0.74	0.81	2.09	0.00	2.91	0.96	3.54	0.00	4.49	0.39	2.82	0.00	3.20	5.08	7.27	0.00	12.35
36	0.12	0.15	0.00	0.27	0.26	0.49	0.00	0.75	2.02	1.15	0.00	3.17	0.22	0.96	0.00	1.17	2.25	7.22	0.00	9.47
38	0.06	0.08	0.00	0.13	0.06	0.09	0.00	0.15	0.43	0.35	0.00	0.78	0.26	0.18	0.00	0.43	1.75	0.99	0.00	2.74
40	0.04	0.05	0.00	0.09	0.04	0.09	0.00	0.14	0.12	0.30	0.00	0.42	0.27	0.07	0.00	0.34	0.33	0.06	0.00	0.39
42	0.04	0.01	0.00	0.04	0.00	0.00	0.00	0.00	0.13	0.16	0.00	0.29	0.00	0.08	0.00	0.08	0.07	0.04	0.00	0.11
44	0.00	0.02	0.00	0.02	0.01	0.00	0.00	0.01	0.00	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01
46	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	0.00	0.00	0.00	0.00
48	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	0.00	0.00	0.00	0.00
50	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	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	71.00	46.21	0.82	118.03	122.61	94.97	19.57	237.15	573.80	502.15	95.21	1171.16	398.90	293.94	247.71	940.55	368.68	313.47	3.01	685.16
Nº samples:				45				45				55				55				42
Nº Ind.:	2854	1968	131	4953	3287	2771	688	6746	3892	3835	1387	9114	3677	3437	1408	8522	3413	3162	341	6916
Sampled catch:				908				1326				1875				1785				1378
Range:				5-44				6-44				6-45				6-43				6-44
Total catch:				3463				7270				28602				21223				22229
Total hauls:				118				120				119				120				110

TABLE 13 (cont.).- Redfish length distribution per haul mean catches by sex and year. Number per stratified mean catches. Spanish Spring Survey on NAFO 3NO: 1997-2012. Indet. means indeterminate. 1997-2000 data are transformed from C/V *Playa de Menduíña* series. 2002-2012 data are original R/V *Vizconde de Eza* data. For 2001 there are data from the two vessels.

	2008				2009				2010				2011				2012			
Length (cm.)	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total
4	0.00	0.00	0.05	0.05	0.00	0.00	0.03	0.03	0.00	0.00	0.13	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.61	0.61	0.01	0.01	0.16	0.18	0.01	0.00	0.10	0.11	0.00	0.00	0.17	0.17	0.00	0.00	0.04	0.04
8	0.00	0.00	0.24	0.24	0.56	0.21	0.38	1.16	0.02	0.02	0.00	0.03	0.00	0.00	0.16	0.16	0.00	0.00	0.18	0.18
10	0.18	0.00	0.31	0.49	17.05	1.57	0.28	18.89	0.02	0.00	0.00	0.02	0.00	0.07	0.18	0.21	0.00	0.00	0.08	0.08
12	0.91	0.71	0.08	1.70	22.49	11.62	0.19	34.30	0.02	0.01	0.00	0.02	0.99	0.46	1.29	2.74	0.00	0.04	0.01	0.05
14	13.34	6.95	0.02	20.30	69.84	31.62	0.17	101.63	0.18	0.00	0.00	0.18	11.86	8.73	7.29	27.88	1.18	1.98	0.00	3.16
16	97.93	72.09	0.52	170.54	651.96	387.07	0.00	1039.03	108.60	26.76	0.00	135.36	61.61	64.25	0.01	125.86	23.57	5.43	0.00	29.00
18	58.83	43.38	0.17	102.38	2024.11	1346.78	2.42	3373.31	823.92	542.61	0.00	1366.53	766.59	365.67	0.00	1132.26	191.48	74.15	0.00	265.62
20	27.02	19.00	0.00	46.02	435.93	536.72	0.00	972.65	610.08	704.42	0.00	1314.50	1215.75	991.60	0.00	2207.35	715.89	393.61	0.00	1109.50
22	54.63	21.27	0.00	75.90	268.64	161.72	0.00	430.36	219.54	214.98	0.00	434.52	219.50	310.02	0.00	529.52	167.95	303.96	0.00	471.91
24	52.04	37.07	0.00	89.11	188.59	165.00	0.00	353.59	178.21	127.54	0.00	305.74	85.21	73.06	0.00	158.27	50.68	80.80	0.00	131.48
26	16.62	33.13	0.00	49.75	47.41	126.40	0.00	173.81	51.76	94.47	0.00	146.23	17.26	39.55	0.00	56.81	23.26	40.97	0.00	64.22
28	2.86	15.00	0.00	17.86	16.11	49.71	0.00	65.82	9.46	49.09	0.00	58.55	4.23	28.84	0.00	33.10	7.07	43.35	0.00	50.42
30	0.99	5.35	0.00	6.35	4.67	20.09	0.00	24.77	2.31	26.48	0.00	28.78	0.38	17.28	0.00	17.67	1.46	23.10	0.00	24.57
32	2.18	2.80	0.00	4.98	1.87	4.13	0.00	6.00	1.39	12.16	0.00	13.55	0.46	4.28	0.00	4.74	0.65	6.59	0.00	7.24
34	1.54	1.83	0.00	3.36	1.65	2.31	0.00	3.96	2.26	5.43	0.00	7.68	0.59	1.46	0.00	2.05	0.57	3.61	0.00	4.18
36	0.41	0.75	0.00	1.17	3.25	1.32	0.00	4.57	1.10	1.76	0.00	2.87	0.48	0.64	0.00	1.12	0.63	2.01	0.00	2.64
38	0.23	0.27	0.00	0.49	0.17	0.18	0.00	0.35	0.67	0.78	0.00	1.45	0.20	0.24	0.00	0.43	0.37	0.50	0.00	0.86
40	0.06	0.14	0.00	0.20	0.08	0.01	0.00	0.09	0.38	0.59	0.00	0.96	0.11	0.03	0.00	0.14	0.12	0.06	0.00	0.18
42	0.02	0.05	0.00	0.07	0.09	0.02	0.00	0.11	0.00	0.24	0.00	0.24	0.00	0.04	0.00	0.04	0.01	0.01	0.00	0.01
44	0.02	0.00	0.00	0.02	0.03	0.01	0.00	0.03	0.00	0.20	0.00	0.20	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00
46	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	0.00	0.00	0.00	0.00
48	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	0.00	0.86	0.00	0.86
50	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	0.00	0.00	0.00	0.00
52	0.00	0.01	0.00	0.01	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	329.78	259.80	2.00	591.59	3754.48	2846.50	3.64	6604.62	2009.91	1807.52	0.23	3817.65	2385.24	1906.21	9.10	4300.55	1184.89	981.01	0.31	2166.20
Nº samples:				52				39				42				44				43
Nº Ind.:	3445	3398	128	6971	3418	2763	68	6249	2796	2841	32	5669	3845	3633	241	7719	4019	3986	40	8045
Sampled catch:				1453				1034				1265				1524				1517
Range:				5-52				5-44				5-45				6-45				7-49
Total catch:				14874				99847				82169				95569				50184
Total hauls:				122				109				95				122				122

TABLE 14.- Witch flounder mean catch (kg) and SD by stratum. Spanish Spring Surveys in NAFO Div. 3NO: 2002-2012. Swept area in square miles. n.s. means stratum not surveyed. Original data from R/V *Vizconde de Eza*.

Stratum	2002		2003		2004		2005		2006		2007	
	W. floun Mean catch	W. floun SD	W. floun Mean catch	W. floun SD	W. floun Mean catch	W. floun SD	W. floun Mean catch	W. floun SD	W. floun Mean catch	W. floun SD	W. floun Mean catch	W. floun SD
353	3.92	2.388	0.67	0.594	14.77	10.078	7.18	5.484	18.12	6.882	3.01	2.943
354	6.84	3.430	30.64	45.156	23.66	7.764	39.60	33.678	10.31	3.889	6.28	3.484
355	68.20	70.145	36.30	19.516	7.39	3.203	5.47	0.523	2.80	0.990	1.75	1.583
356	25.75	21.991	78.36	70.916	8.12	8.522	6.95	6.258	3.49	0.283	1.23	0.011
357	0.00	0.000	17.37	20.273	9.67	9.493	1.69	0.269	2.29	2.529	0.91	0.925
358	2.67	4.193	5.48	7.206	6.03	5.033	9.34	9.033	3.25	2.119	7.56	7.204
359	0.72	0.937	1.72	2.181	10.75	21.045	1.22	1.432	6.05	8.945	1.57	1.710
360	0.16	0.480	0.31	0.673	2.48	4.330	1.91	3.772	4.49	11.280	1.03	2.314
374	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
375	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
376	0.03	0.106	0.00	0.000	0.27	0.608	0.27	0.551	0.37	0.934	0.06	0.180
377	0.11	0.161	0.00	0.000	0.59	0.834	0.00	0.003	0.47	0.113	0.00	0.000
378	0.00	0.001	0.00	0.000	0.65	0.924	0.00	0.000	0.22	0.308	0.45	0.636
379	1.27	1.796	0.00	0.000	0.00	-	0.34	0.474	0.12	0.170	0.17	0.235
380	0.21	0.293	0.00	0.000	0.35	0.496	0.14	0.170	0.16	0.217	0.20	0.272
381	0.00	0.000	0.00	0.000	0.00	0.000	0.38	0.530	0.00	0.000	0.00	0.000
382	0.00	0.005	0.00	0.000	0.00	0.000	0.15	0.305	0.00	0.000	0.00	0.000
721	7.10	1.273	15.05	7.778	2.97	1.472	1.90	1.277	1.30	1.842	1.28	-
722	3.75	4.173	11.29	10.076	2.82	1.643	6.24	5.035	0.46	0.320	2.62	0.297
723	1.88	2.432	7.80	11.031	4.06	0.344	1.80	2.547	6.34	2.583	2.83	0.593
724	5.10	1.697	12.05	4.031	19.21	18.661	6.05	7.000	3.71	0.021	24.15	11.526
725	0.60	0.587	0.20	0.277	18.54	25.286	7.50	6.576	3.69	3.007	6.40	4.729
726	2.75	3.889	0.00	0.000	10.03	9.285	4.30	-	3.41	2.534	7.36	3.922
727	0.00	0.000	0.01	0.010	4.93	0.247	3.51	0.069	0.67	0.578	1.54	1.223
728	1.14	1.612	5.37	3.288	2.13	3.012	1.12	-	1.18	1.029	9.65	13.011
752	0.40	0.559	5.16	3.479	0.34	0.474	0.01	0.007	0.00	0.000	0.00	0.000
753	0.73	1.025	0.30	0.424	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
754	0.18	0.255	0.16	0.219	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
755	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
756	1.09	1.534	4.40	4.462	3.50	4.950	2.85	4.036	3.49	2.770	4.52	6.385
757	5.50	1.131	1.70	1.146	0.00	0.003	0.00	0.003	0.00	0.000	0.00	0.000
758	0.20	0.283	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
759	0.75	1.061	0.00	-	0.00	0.000	0.00	0.000	0.00	0.000	n.s.	n.s.
760	9.93	9.157	18.85	9.970	9.13	1.598	16.56	2.128	7.62	0.403	12.81	11.584
761	18.70	17.961	5.98	8.089	1.48	2.086	5.25	7.425	6.75	9.117	0.09	0.120
762	0.00	0.000	4.65	6.576	7.75	10.960	4.37	6.180	0.75	1.054	n.s.	n.s.
763	0.00	0.000	0.00	0.000	0.56	0.973	0.01	0.009	0.00	0.000	n.s.	n.s.
764	1.90	0.849	9.55	8.139	5.96	3.359	1.86	2.627	2.03	0.778	2.47	0.904
765	17.50	24.042	26.22	-	3.92	3.083	4.82	2.425	3.35	0.076	6.22	0.396
766	0.30	0.424	0.22	0.311	3.87	1.881	5.41	7.651	5.41	5.435	n.s.	n.s.
767	0.05	0.071	0.26	0.362	0.00	0.000	0.00	-	0.00	0.000	n.s.	n.s.

TABLE 14 (cont.).- Witch flounder mean catch (kg) and SD by stratum. Spanish Spring Surveys in NAFO Div. 3NO: 2002-2012. Swept area in square miles. n.s. means stratum not surveyed. Original data from R/V Vizconde de Eza.

Stratum	2008		2009		2010		2011		2012	
	W. floun Mean catch	W. floun SD	W. floun Mean catch	W. floun SD	W. floun Mean catch	W. floun SD	W. floun Mean catch	W. floun SD	W. floun Mean catch	W. floun SD
353	8.17	4.454	0.36	0.308	39.92	28.256	2.41	1.948	16.99	26.781
354	7.52	2.293	12.07	9.067	4.96	2.360	5.13	4.970	4.02	1.782
355	2.07	1.436	5.58	1.308	2.20	1.672	3.29	0.305	3.16	1.894
356	0.73	1.030	4.12	5.208	0.74	0.081	0.51	0.346	0.42	0.596
357	3.23	0.908	2.89	3.660	1.33	1.882	1.99	1.534	1.08	1.520
358	11.24	6.353	4.16	2.878	9.24	4.757	3.06	1.637	7.32	7.136
359	11.77	30.662	1.69	2.561	2.18	3.385	4.28	3.667	10.55	10.807
360	1.08	2.843	0.00	0.000	3.11	8.671	1.19	3.597	3.93	9.011
374	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
375	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.26	0.450
376	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.01	0.038
377	0.21	0.297	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
378	0.77	0.127	0.00	0.000	0.00	0.000	0.00	0.000	0.18	0.255
379	0.45	0.636	0.65	0.919	0.73	0.636	0.18	0.260	0.64	0.482
380	0.00	0.000	0.05	0.056	0.92	1.294	0.22	0.302	0.72	1.011
381	0.00	0.001	0.00	0.000	0.00	0.000	1.81	0.566	3.38	4.780
382	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000
721	0.38	0.534	11.32	11.990	3.19	2.857	2.01	1.840	0.75	0.419
722	2.40	0.135	3.26	3.118	1.98	1.183	0.72	0.612	0.60	0.778
723	3.34	4.405	5.75	2.616	11.45	1.937	5.93	2.877	1.55	0.035
724	19.99	1.110	15.65	18.272	10.10	6.086	8.23	7.436	14.94	19.037
725	1.75	2.468	4.94	2.920	3.18	3.239	2.09	1.021	1.48	0.464
726	5.59	3.386	64.76	75.604	5.78	1.003	7.45	5.556	3.51	2.065
727	6.11	3.175	3.42	-	11.71	9.080	3.55	3.910	6.47	9.149
728	1.55	0.310	11.28	8.111	21.82	16.518	8.07	3.577	17.53	3.189
752	0.00	0.000	0.74	1.039	0.22	0.317	1.29	1.829	1.80	1.985
753	0.00	0.000	0.00	-	n.s.	n.s.	1.06	1.499	0.00	0.000
754	0.00	0.000	0.00	-	0.00	0.000	0.00	0.000	0.00	0.000
755	0.00	0.000	0.00	-	0.00	-	0.00	0.000	0.00	0.000
756	8.26	1.921	17.15	21.072	25.45	10.901	7.74	4.111	4.73	6.238
757	0.00	0.000	2.52	3.564	3.91	5.532	1.73	2.447	1.60	1.807
758	0.00	0.000	0.00	0.000	0.69	0.975	0.00	0.000	0.00	0.000
759	0.00	0.000	0.00	-	0.00	0.000	0.00	0.000	0.00	0.000
760	16.61	7.396	13.95	4.596	3.50	0.367	8.66	7.101	7.82	10.161
761	0.00	0.000	1.09	1.536	9.75	13.782	5.58	7.069	5.99	5.462
762	0.00	0.000	0.00	0.000	1.06	1.496	0.00	0.000	0.00	0.000
763	0.07	0.128	n.s.	n.s.	n.s.	n.s.	0.00	0.000	0.00	0.000
764	1.47	0.332	0.6440	-	n.s.	n.s.	1.35	0.383	0.99	0.453
765	3.52	3.615	3.38	1.824	1.81	0.479	0.68	0.598	0.16	0.219
766	0.68	0.955	0.71	1.010	0.83	1.174	0.35	0.495	0.27	0.064
767	0.00	0.000	n.s.	n.s.	n.s.	n.s.	0.00	0.000	0.00	0.000

TABLE 15.- Stratified mean catches (Kg) by stratum and year and SD by year of witch flounder (2002-2012) n.s. means stratum not surveyed. Original data from R/V *Vizconde de Eza*.

Stratum	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
353	1053.14	180.23	3972.50	1930.52	4873.38	809.69	2198.27	95.58	10738.48	647.03	4571.21
354	1681.82	7538.10	5819.70	9741.60	2536.92	1544.06	1850.99	2970.04	1220.41	1263.05	988.76
355	5046.80	2686.20	546.49	404.78	207.20	129.43	153.22	412.55	162.95	243.79	233.91
356	1210.25	3682.69	381.83	326.42	164.03	57.72	34.22	193.52	34.57	23.74	19.81
357	0.00	2847.86	1586.29	277.16	375.48	149.73	530.38	474.29	218.20	325.54	176.30
358	600.00	1232.25	1356.00	2102.25	730.50	1700.25	2528.78	935.40	2078.10	688.95	1647.00
359	302.00	724.30	4524.79	514.94	2545.47	659.35	4954.63	710.44	917.22	1803.20	4442.27
360	437.49	850.21	6905.46	5306.49	12483.95	2871.78	2999.24	0.00	8657.12	3318.59	10935.24
374	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	70.46
376	44.82	0.00	354.84	362.85	489.18	76.04	0.00	0.00	0.00	0.00	16.01
377	11.40	0.00	59.00	0.20	47.00	0.00	21.00	0.00	0.00	0.00	0.00
378	0.07	0.00	90.84	0.00	30.30	62.55	107.03	0.00	0.00	0.00	25.02
379	134.62	0.00	0.00	35.51	12.72	17.65	47.70	68.90	77.38	19.50	67.89
380	19.87	0.00	33.70	13.39	15.02	18.86	0.00	4.46	87.84	20.88	68.64
381	0.00	0.00	0.00	54.00	0.00	0.00	0.07	0.00	0.00	260.64	486.72
382	0.91	0.00	0.00	52.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
721	461.50	978.25	193.31	123.37	84.66	83.20	24.54	735.93	207.32	130.85	49.01
722	314.96	947.94	236.75	524.16	38.98	220.08	201.56	273.42	166.36	60.27	50.06
723	291.40	1209.00	629.77	279.16	983.24	438.81	516.93	891.25	1774.75	918.45	239.48
724	632.40	1494.20	2381.42	750.20	459.42	2994.60	2478.14	1940.60	1251.97	1020.27	1852.37
725	62.48	20.58	1946.70	787.50	386.93	672.42	183.23	518.18	333.74	219.35	155.19
726	198.00	0.00	722.48	309.60	245.41	530.14	402.19	4662.72	416.23	536.47	252.76
727	0.00	0.67	472.80	337.06	64.51	147.36	586.08	328.32	1124.11	340.32	621.17
728	88.92	418.47	166.14	87.36	92.24	752.70	120.94	879.45	1701.96	629.54	1366.95
752	51.75	675.96	43.89	0.66	0.00	0.00	0.00	96.29	29.34	169.58	235.34
753	100.05	41.40	0.00	0.00	0.00	0.00	0.00	0.00	n.s.	146.28	0.00
754	32.40	27.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
755	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
756	109.59	443.90	353.50	288.25	352.59	456.02	834.41	1732.15	2570.30	782.04	477.83
757	561.00	173.40	0.20	0.20	0.00	0.00	0.00	257.04	399.02	176.46	162.95
758	19.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.26	0.00	0.00
759	95.25	0.00	0.00	0.00	0.00	n.s.	0.00	0.00	0.00	0.00	0.00
760	1528.45	2902.90	1406.02	2549.47	1172.71	1972.59	2557.94	2148.30	538.92	1333.79	1203.51
761	3197.70	1022.58	252.23	897.75	1154.85	14.54	0.00	185.71	1666.40	953.92	1024.63
762	0.00	985.80	1643.00	926.44	157.94	n.s.	0.00	0.00	224.30	0.00	0.00
763	0.00	0.00	146.68	1.31	0.00	n.s.	19.23	n.s.	n.s.	0.00	0.00
764	190.00	954.50	595.50	186.25	203.00	246.90	147.45	64.40	n.s.	135.10	99.00
765	2170.00	3251.28	486.08	597.06	415.46	771.28	436.98	419.12	224.32	84.44	19.22
766	43.20	31.68	557.28	779.04	778.61	n.s.	97.20	102.82	119.52	50.40	38.16
767	7.90	40.45	0.00	0.00	0.00	n.s.	0.00	n.s	n.s.	0.00	0.00
TOTAL	20700	35363	37865	30547	31102	17398	24032	21101	37009	16302	31597
$\overline{Y}$	2.00	3.42	3.66	2.95	3.01	1.84	2.32	2.13	3.82	1.58	3.06
S.D.	0.49	0.75	0.56	0.56	0.73	0.28	0.52	0.48	0.91	0.28	0.74

TABLE 16.- Survey estimates (by the swept area method) of which flounder biomass (t) and SD by stratum and year in NAFO Div. 3NO. n.s. means stratum not surveyed. Original data from R/V *Vizconde de Eza* 2002-2012.

Stratum	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
353	88	16	353	164	394	67	193	8	955	56	406
354	142	670	506	829	209	127	161	264	108	110	88
355	427	235	48	36	17	11	14	35	14	21	20
356	104	327	35	28	14	5	3	17	3	2	2
357	0	249	139	24	31	12	46	82	19	29	15
358	52	110	123	181	63	139	220	82	185	60	150
359	26	64	400	44	209	54	434	42	78	157	386
360	38	75	598	456	1014	242	256	0	745	280	933
374	0	0	0	0	0	0	0	0	0	0	0
375	0	0	0	0	0	0	0	0	0	0	6
376	4	0	30	31	40	6	0	0	0	0	1
377	1	0	5	0	4	0	2	0	0	0	0
378	0	0	8	0	3	5	9	0	0	0	2
379	12	0	0	3	1	1	4	6	7	2	6
380	2	0	3	1	1	2	0	0	7	2	6
381	0	0	0	5	0	0	0	0	0	22	44
382	0	0	0	5	0	0	0	0	0	0	0
721	40	87	17	11	7	7	2	64	18	11	4
722	27	86	22	45	3	20	20	24	15	5	5
723	25	106	55	24	83	37	46	79	158	84	21
724	56	133	223	67	40	258	224	167	109	88	165
725	6	2	173	67	33	60	16	45	29	18	14
726	19	0	64	28	22	46	36	408	36	48	23
727	0	0	41	29	6	12	53	29	94	30	53
728	8	37	18	8	8	67	11	77	142	55	120
752	5	59	4	0	0	0	0	8	2	14	21
753	9	4	0	0	0	0	0	0	n.s.	13	0
754	3	3	0	0	0	0	0	0	0	0	0
755	0	0	0	0	0	0	0	0	0	0	0
756	10	40	33	25	31	41	77	154	228	76	43
757	50	16	0	0	0	0	0	22	36	15	15
758	2	0	0	0	0	0	0	0	6	0	0
759	8	0	0	0	0	n.s.	0	0	0	0	0
760	134	267	127	223	104	170	227	188	48	125	107
761	284	91	23	81	99	1	0	17	146	81	93
762	0	88	141	82	14	n.s.	0	0	20	0	0
763	0	0	13	0	0	n.s.	2	n.s.	n.s.	0	0
764	16	86	52	16	17	22	13	6	n.s.	12	9
765	184	289	43	52	35	69	41	37	20	8	2
766	4	3	50	68	68	n.s.	9	9	11	4	3
767	1	4	0	0	0	n.s.	0	n.s.	n.s.	0	0
TOTAL	1784	3145	3348	2633	2570	1480	2118	1872	3239	1428	2763
S.D.	426	690	523	488	629	229	481	423	777	248	648

TABLE 17.- Length weight relationships used for the calculation of witch flounder biomass. The equation is $Weight = a(l + 0.5)^b$ Spanish Spring Surveys in NAFO Div. 3NO: 2002-2012

		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Males	a	0.0010	0.0016	0.0023	0.0022	0.0066	0.0013	0.0010	0.0015	0.0025	0.0015	0.0020
		E = 0.1560	E = 0.1086	E = 0.2776	E = 0.1856	E = 0.4366	E = 0.1351	E = 0.1775	E = 0.2014	E = 0.1923	E= 0.2368	E = 0.1945
	b	3.4929	3.3691	3.2798	3.2876	2.9782	3.4493	3.5092	3.3979	3.2594	3.4047	3.3192
		E = 0.0440	E = 0.0318	E = 0.0809	E = 0.0574	E = 0.1313	E = 0.0400	E = 0.0515	E = 0.0595	E = 0.0562	E = 0.0681	E = 0.0557
		R^2 = 0.996	R^2 = 0.997	R^2 = 0.982	R^2 = 0.991	R^2 = 0.941	R^2 = 0.997	R^2 = 0.994	R^2 = 0.991	R^2 = 0.992	R^2 = 0.991	R2 = 0.996
		N=196	N=284	N=254	N=198	N=255	N= 206	N= 186	N= 163	N= 193	N= 180	N= 199
Females	a	0.0008	0.0017	0.0018	0.0014	0.0015	0.0006	0.0016	0.0011	0.0016	0.0015	0.0015
		E = 0.1576	E = 0.1149	E = 0.2106	E = 0.1542	E = 0.1898	E = 0.2700	E = 0.1032	E = 0.1242	E = 0.2761	E = 0.1470	E = 0.1746
	b	3.5660	3.3552	3.3483	3.4245	3.3950	3.6648	3.3855	3.4793	3.3859	3.4128	3.3988
		E = 0.0446	E = 0.0332	E = 0.0589	E = 0.0456	E = 0.0552	E = 0.0769	E = 0.0291	E = 0.0356	E = 0.0779	E = 0.0418	E = 0.0484
		R^2 = 0.994	R^2 = 0.996	R^2 = 0.988	R^2 = 0.992	R^2 = 0.989	R^2 = 0.984	R^2 = 0.997	R^2 = 0.997	R^2 = 0.983	R^2 = 0.995	R2 = 0.997
		N=258	N=376	N=344	N=289	N=370	N= 343	N= 355	N= 232	N= 327	N= 344	N= 281
Indet.	a	0.0008	0.0017	0.0019	0.0015	0.0025	0.0013	0.0012	0.0049	0.0022	0.0016	0.0016
		E = 0.1673	E = 0.0787	E = 0.1527	E = 0.1330	E = 0.1837	E = 0.1605	E = 0.0928	E = 0.4298	E = 0.2230	E = 0.1040	E = 0.1171
	b	3.5570	3.3650	3.3502	3.4104	3.2651	3.4524	3.4525	3.0599	3.3019	3.3887	3.3887
		E = 0.0493	E = 0.0228	E = 0.0441	E = 0.0400	E = 0.0543	E = 0.0461	E = 0.0269	E = 0.1269	E = 0.0641	E = 0.0333	E = 0.0346
		R^2 = 0.992	R^2 = 0.998	R^2 = 0.992	R^2 = 0.994	R^2 = 0.988	R^2 = 0.993	R^2 = 0.997	R^2 = 0.940	R^2 = 0.986	R^2 = 0.997	R2 = 0.998
		N=522	N=666	N=607	N=546	N=632	N= 555	N= 546	N= 397	N= 520	N= 529	N= 487

TABLE 18.- Witch flounder length distribution per haul mean catches by sex and year. Number per stratified mean catches. Spanish Spring Survey on NAFO 3NO: 2002-2012. Indet. means indeterminate. Original data from R/V *Vizconde de Eza*.

	2002				2003				2004				2005				2006				2007			
Length (cm.)	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	0.000	0.000	0.125	0.125	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.005	0.000	0.000	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.006
8	0.000	0.006	0.329	0.335	0.000	0.000	0.000	0.000	0.000	0.000	0.166	0.166	0.117	0.097	0.287	0.501	0.005	0.000	0.016	0.021	0.014	0.008	0.050	0.072
10	0.000	0.003	0.000	0.003	0.010	0.019	0.000	0.028	0.000	0.000	0.039	0.039	0.055	0.089	0.200	0.344	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.006
12	0.000	0.000	0.006	0.006	0.056	0.125	0.057	0.238	0.000	0.000	0.000	0.000	0.044	0.036	0.063	0.143	0.028	0.029	0.006	0.062	0.000	0.000	0.000	0.000
14	0.000	0.007	0.000	0.007	0.015	0.061	0.000	0.077	0.011	0.002	0.000	0.013	0.217	0.118	0.024	0.360	0.115	0.101	0.014	0.231	0.000	0.000	0.000	0.000
16	0.000	0.011	0.000	0.011	0.008	0.012	0.000	0.019	0.020	0.045	0.000	0.065	0.029	0.042	0.000	0.072	0.072	0.091	0.004	0.166	0.000	0.004	0.000	0.004
18	0.000	0.014	0.000	0.014	0.011	0.015	0.000	0.026	0.061	0.056	0.000	0.116	0.024	0.031	0.015	0.070	0.072	0.078	0.000	0.150	0.006	0.029	0.000	0.035
20	0.014	0.011	0.000	0.025	0.006	0.012	0.000	0.018	0.073	0.082	0.000	0.155	0.045	0.045	0.000	0.090	0.021	0.022	0.000	0.043	0.013	0.020	0.000	0.034
22	0.062	0.011	0.000	0.074	0.020	0.025	0.000	0.045	0.034	0.031	0.000	0.065	0.067	0.090	0.000	0.158	0.035	0.029	0.000	0.065	0.032	0.041	0.000	0.073
24	0.040	0.078	0.000	0.118	0.095	0.059	0.000	0.155	0.033	0.015	0.000	0.048	0.066	0.081	0.000	0.147	0.061	0.052	0.000	0.112	0.069	0.042	0.000	0.111
26	0.074	0.176	0.000	0.251	0.225	0.240	0.000	0.465	0.121	0.087	0.000	0.208	0.172	0.144	0.000	0.316	0.068	0.041	0.000	0.109	0.121	0.050	0.000	0.171
28	0.219	0.217	0.000	0.436	0.374	0.496	0.000	0.870	0.224	0.278	0.000	0.502	0.361	0.226	0.000	0.587	0.175	0.236	0.000	0.410	0.153	0.148	0.000	0.301
30	0.240	0.256	0.000	0.496	0.580	0.772	0.000	1.352	0.373	0.543	0.000	0.916	0.474	0.507	0.000	0.981	0.304	0.324	0.000	0.627	0.187	0.092	0.000	0.278
32	0.302	0.370	0.000	0.672	0.572	0.493	0.000	1.065	0.629	0.624	0.000	1.253	0.570	0.525	0.000	1.095	0.414	0.338	0.000	0.752	0.180	0.220	0.000	0.399
34	0.399	0.382	0.000	0.780	0.495	0.480	0.000	0.975	0.635	0.800	0.000	1.435	0.626	0.510	0.000	1.136	0.331	0.305	0.000	0.636	0.240	0.380	0.000	0.620
36	0.388	0.387	0.000	0.775	0.455	0.482	0.000	0.936	0.599	0.643	0.000	1.243	0.491	0.658	0.000	1.149	0.484	0.391	0.000	0.875	0.336	0.396	0.000	0.732
38	0.344	0.361	0.000	0.706	0.571	0.629	0.000	1.200	0.726	0.695	0.000	1.420	0.401	0.559	0.000	0.960	0.518	0.395	0.000	0.913	0.188	0.420	0.000	0.608
40	0.213	0.292	0.000	0.505	0.446	0.452	0.000	0.898	0.322	0.577	0.000	0.899	0.236	0.483	0.000	0.718	0.438	0.625	0.000	1.063	0.295	0.331	0.000	0.626
42	0.198	0.331	0.000	0.528	0.283	0.486	0.000	0.769	0.172	0.511	0.000	0.683	0.113	0.560	0.000	0.673	0.179	0.719	0.000	0.898	0.090	0.317	0.000	0.407
44	0.083	0.224	0.000	0.307	0.181	0.407	0.000	0.589	0.086	0.448	0.000	0.534	0.050	0.374	0.000	0.424	0.046	0.556	0.000	0.602	0.029	0.257	0.000	0.286
46	0.017	0.130	0.000	0.147	0.040	0.227	0.000	0.267	0.037	0.290	0.000	0.327	0.000	0.162	0.000	0.162	0.014	0.432	0.000	0.446	0.000	0.185	0.000	0.185
48	0.002	0.117	0.000	0.119	0.044	0.158	0.000	0.201	0.028	0.194	0.000	0.222	0.000	0.104	0.000	0.104	0.000	0.088	0.000	0.088	0.000	0.040	0.000	0.040
50	0.000	0.035	0.000	0.035	0.013	0.084	0.000	0.097	0.000	0.081	0.000	0.081	0.000	0.065	0.000	0.065	0.000	0.037	0.000	0.037	0.000	0.039	0.000	0.039
52	0.000	0.029	0.000	0.029	0.000	0.082	0.000	0.082	0.000	0.020	0.000	0.020	0.000	0.030	0.000	0.030	0.005	0.009	0.000	0.014	0.000	0.021	0.000	0.021
54	0.006	0.007	0.000	0.013	0.000	0.027	0.000	0.027	0.000	0.035	0.000	0.035	0.000	0.013	0.000	0.013	0.000	0.004	0.000	0.004	0.000	0.010	0.000	0.010
56	0.000	0.022	0.000	0.022	0.000	0.021	0.000	0.021	0.000	0.005	0.000	0.005	0.000	0.006	0.000	0.006	0.000	0.008	0.000	0.008	0.000	0.000	0.000	0.000
58	0.000	0.010	0.000	0.010	0.000	0.000	0.000	0.000	0.000	0.025	0.000	0.025	0.000	0.000	0.000	0.000	0.000	0.014	0.000	0.014	0.000	0.000	0.000	0.000
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.013	0.000	0.013	0.000	0.013	0.000	0.013	0.000	0.000	0.000	0.000
62	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
64	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	2.602	3.488	0.459	6.548	4.499	5.864	0.057	10.420	4.182	6.088	0.211	10.480	4.160	5.570	0.605	10.336	3.384	4.937	0.040	8.360	1.952	3.050	0.061	5.063
Nº samples:				55				52				65				68				69				56
Nº Ind.:	469	604	69	1142	721	891	7	1619	631	925	45	1601	550	751	106	1407	420	634	9	1063	275	450	11	736
Sampled catch:				344				560				517				362				351				256
Range:				6-58				10-57				7-59				5-61				8-60				7-55
Total catch:				403				626				517				394				352				256
Total hauls:				125				118				120				119				120				110

TABLE 18 (cont.).- Witch flounder length distribution per haul mean catches by sex and year. Number per stratified mean catches. Spanish Spring Survey on NAFO 3NO: 2002-2012 Indet. means indeterminate. Original data from R/V *Vizconde de Eza*.

	2008				2009				2010				2011				2012			
Length (cm.)	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	0.000	0.000	0.013	0.013	0.000	0.000	0.005	0.005	0.000	0.000	0.000	0.000	0.003	0.000	0.019	0.022	0.000	0.000	0.005	0.005
8	0.000	0.000	0.010	0.010	0.000	0.000	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.003	0.013	0.016	0.000	0.000	0.000	0.000
10	0.000	0.003	0.004	0.007	0.005	0.000	0.002	0.008	0.005	0.004	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.014	0.014
12	0.000	0.018	0.000	0.018	0.000	0.000	0.002	0.002	0.018	0.028	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.011	0.011
14	0.003	0.008	0.000	0.011	0.039	0.021	0.005	0.065	0.015	0.027	0.000	0.042	0.000	0.005	0.000	0.005	0.000	0.000	0.020	0.020
16	0.000	0.000	0.000	0.000	0.020	0.056	0.008	0.084	0.015	0.000	0.000	0.015	0.010	0.025	0.000	0.035	0.009	0.006	0.006	0.021
18	0.003	0.000	0.000	0.003	0.009	0.037	0.000	0.046	0.004	0.012	0.000	0.016	0.023	0.023	0.000	0.046	0.004	0.002	0.000	0.007
20	0.018	0.021	0.000	0.039	0.029	0.019	0.000	0.048	0.016	0.011	0.000	0.027	0.003	0.025	0.000	0.028	0.013	0.013	0.000	0.025
22	0.031	0.032	0.000	0.063	0.034	0.050	0.000	0.084	0.035	0.023	0.000	0.058	0.015	0.006	0.000	0.022	0.009	0.031	0.000	0.039
24	0.066	0.037	0.000	0.104	0.068	0.138	0.000	0.206	0.016	0.059	0.000	0.074	0.010	0.013	0.000	0.023	0.024	0.030	0.000	0.054
26	0.063	0.045	0.000	0.108	0.068	0.124	0.000	0.192	0.080	0.061	0.000	0.141	0.020	0.016	0.000	0.036	0.070	0.022	0.000	0.092
28	0.076	0.124	0.000	0.199	0.206	0.217	0.000	0.422	0.134	0.096	0.000	0.231	0.032	0.047	0.000	0.079	0.116	0.125	0.000	0.241
30	0.150	0.133	0.000	0.283	0.241	0.263	0.000	0.504	0.171	0.141	0.000	0.312	0.115	0.084	0.000	0.199	0.262	0.138	0.000	0.400
32	0.155	0.141	0.000	0.295	0.344	0.373	0.000	0.718	0.181	0.234	0.000	0.415	0.186	0.146	0.000	0.332	0.345	0.222	0.000	0.567
34	0.243	0.283	0.000	0.526	0.324	0.462	0.000	0.785	0.294	0.379	0.000	0.673	0.222	0.205	0.000	0.426	0.431	0.323	0.000	0.755
36	0.365	0.220	0.000	0.586	0.355	0.432	0.000	0.786	0.775	0.513	0.000	1.288	0.214	0.276	0.000	0.490	0.474	0.324	0.000	0.798
38	0.367	0.408	0.000	0.775	0.261	0.466	0.000	0.727	0.764	0.778	0.000	1.542	0.235	0.293	0.000	0.528	0.556	0.437	0.000	0.993
40	0.332	0.368	0.000	0.700	0.174	0.371	0.000	0.545	0.534	0.718	0.000	1.252	0.179	0.308	0.000	0.487	0.514	0.570	0.000	1.085
42	0.143	0.507	0.000	0.649	0.105	0.361	0.000	0.466	0.349	1.023	0.000	1.371	0.051	0.365	0.000	0.416	0.358	0.610	0.000	0.969
44	0.035	0.424	0.000	0.459	0.058	0.422	0.000	0.480	0.106	0.505	0.000	0.611	0.009	0.388	0.000	0.397	0.148	0.582	0.000	0.730
46	0.007	0.282	0.000	0.289	0.009	0.124	0.000	0.134	0.028	0.406	0.000	0.434	0.000	0.171	0.000	0.171	0.012	0.433	0.000	0.445
48	0.000	0.140	0.000	0.140	0.004	0.105	0.000	0.109	0.000	0.226	0.000	0.226	0.000	0.065	0.000	0.065	0.004	0.142	0.000	0.146
50	0.004	0.053	0.000	0.056	0.000	0.052	0.000	0.052	0.000	0.125	0.000	0.125	0.000	0.058	0.000	0.058	0.000	0.053	0.000	0.053
52	0.000	0.082	0.000	0.082	0.000	0.000	0.000	0.000	0.000	0.033	0.000	0.033	0.000	0.007	0.000	0.007	0.000	0.006	0.000	0.006
54	0.000	0.024	0.000	0.024	0.000	0.014	0.000	0.014	0.000	0.005	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.008	0.000	0.008
56	0.000	0.012	0.000	0.012	0.000	0.000	0.000	0.000	0.000	0.007	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
58	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.019	0.000	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
62	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
64	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	2.061	3.384	0.027	5.472	2.352	4.107	0.043	6.502	3.538	5.411	0.000	8.949	1.326	2.529	0.033	3.887	3.350	4.078	0.056	7.483
Nº samples:				52				44				48				64				67
Nº Ind.:	315	496	5	816	418	625	12	1055	350	609	0	959	193	377	5	575	392	541	11	944
Sampled catch:				337				350				399				220				398
Range:				7-61				6-55				11-56				7-52				7-55
Total catch:				343				401				410				235				398
Total hauls:				122				109				95				122				122

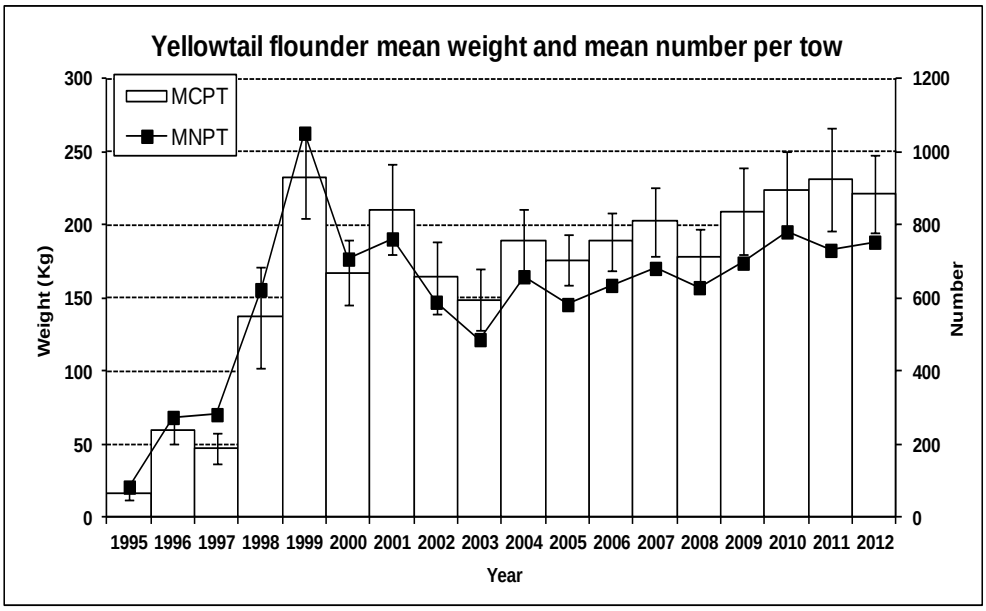

FIGURE 1.- Yellowtail flounder stratified mean catches in Kg and ±SD by year and mean number by year. Spanish Spring surveys in NAFO Div. 3NO: 1995-2012 (1995-2000 transformed data from C/V *Playa de Menduíña*; 2002-2012 original data from R/V *Vizconde de Eza*. For 2001 there are data from the two vessels).

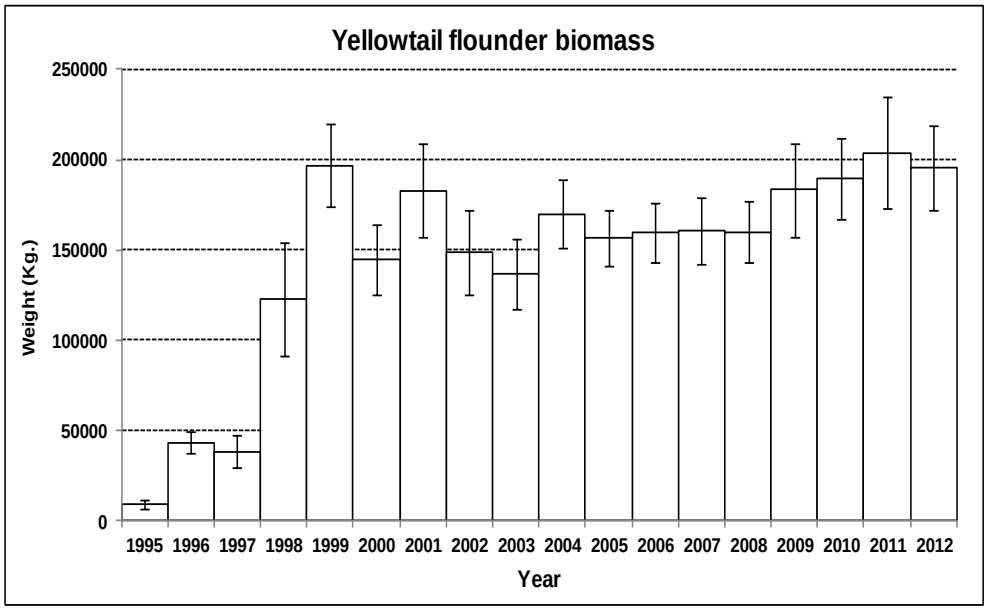

FIGURE 2.- Yellowtail flounder biomass calculated by the swept area method in tons and ±SD by year. Spanish Spring surveys in NAFO Div. 3NO: 1995-2012 (1995-2000 transformed data from C/V *Playa de Menduíña*; 2002-2012 original data from R/V *Vizconde de Eza*. For 2001 there are data from the two vessels.

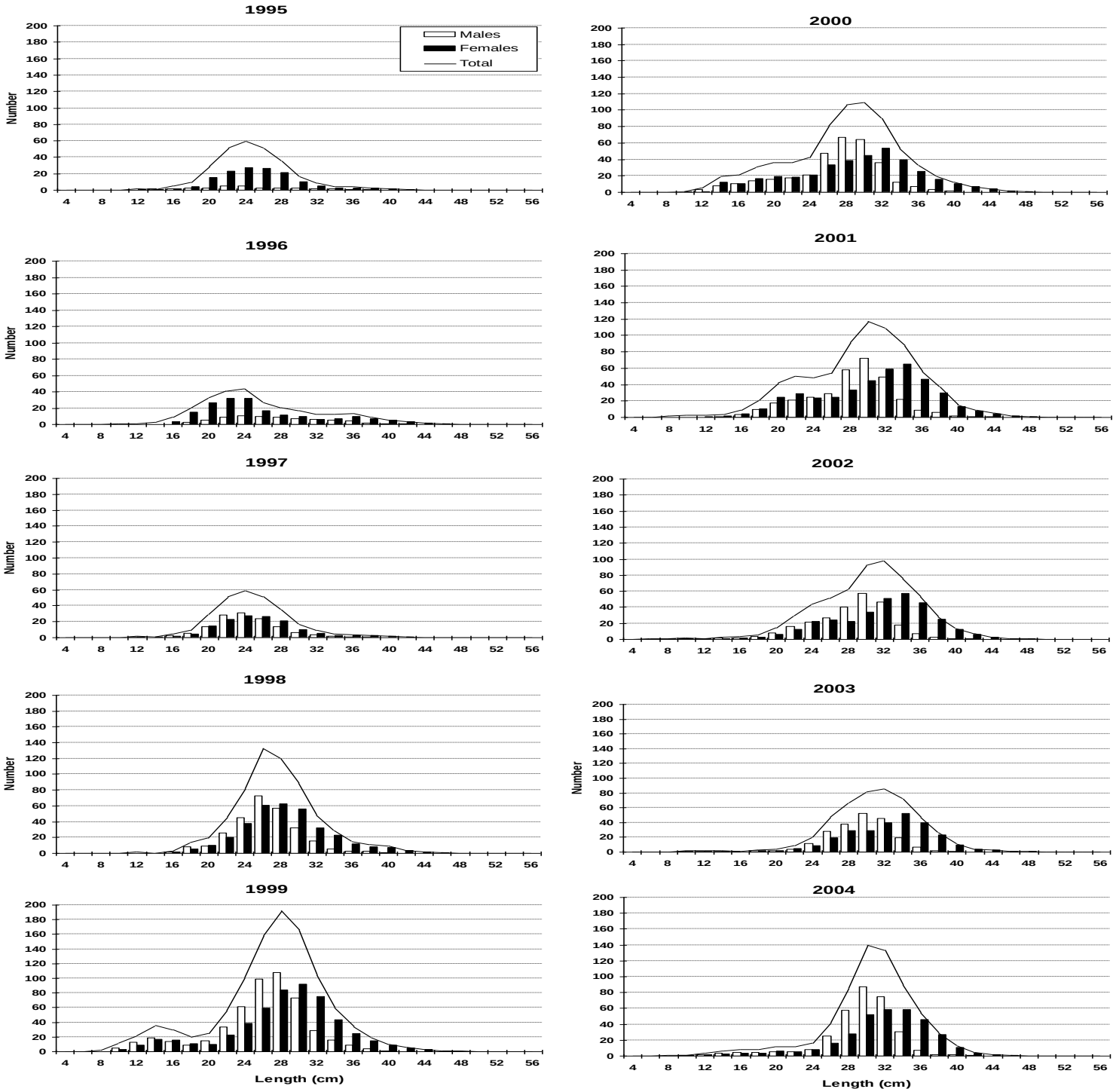

FIGURE 3.- Yellowtail flounder length distribution (cm) on NAFO 3NO: 1995-2012. Mean catches per tow number. 1995-2000 data are transformed from C/V *Playa de Menduíña* series, and 2002-2012 data are original from R/V *Vizconde de Eza*. For 2001 there are data from the two vessels.

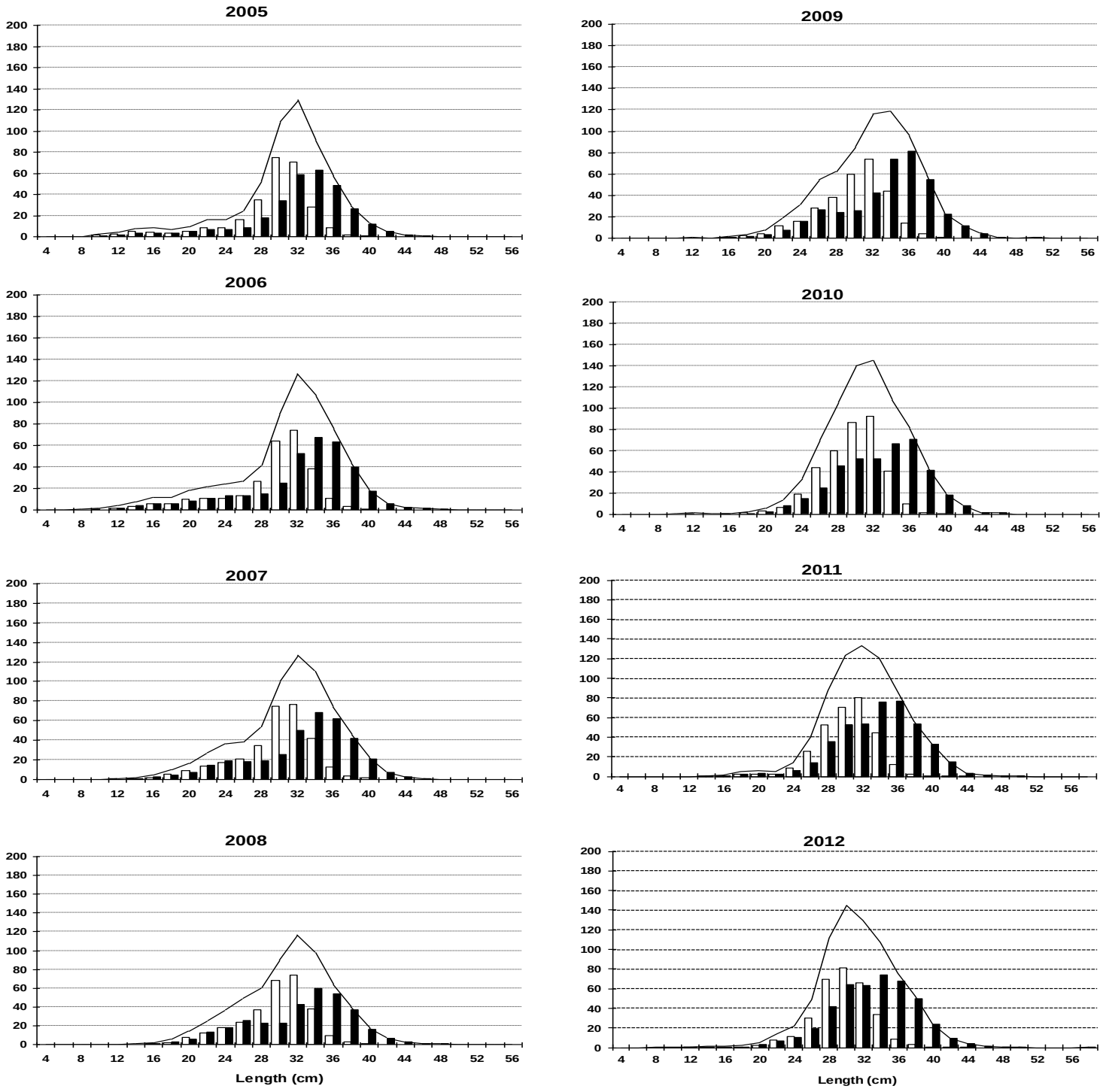

FIGURE 3 (Cont.).- Yellowtail flounder length distribution (cm) on NAFO 3NO: 1995-2012. Mean catches per tow number. 1995-2000 data are transformed from C/V *Playa de Menduíña* series, and 2002-2012 data are original from R/V *Vizconde de Eza*. For 2001 there are data from the two vessels.

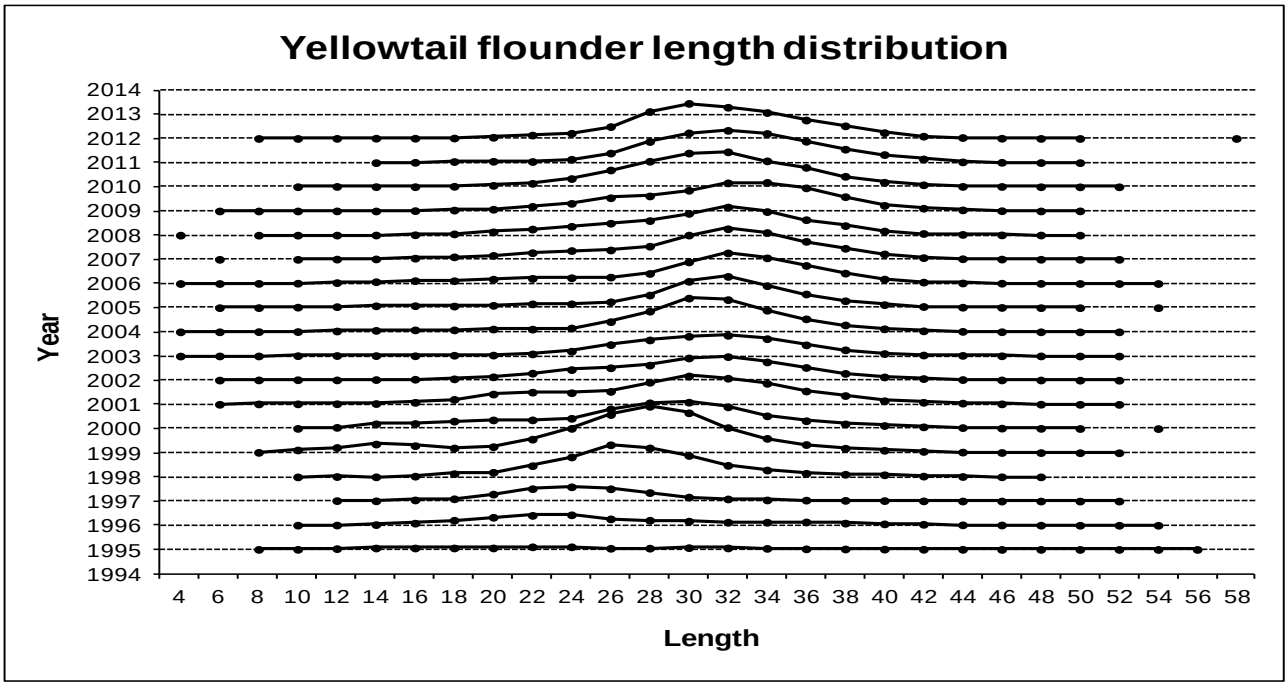

FIGURE 4.- Yellowtail flounder mean catches per tow length distribution (cm) on NAFO 3NO: 1995-2012.

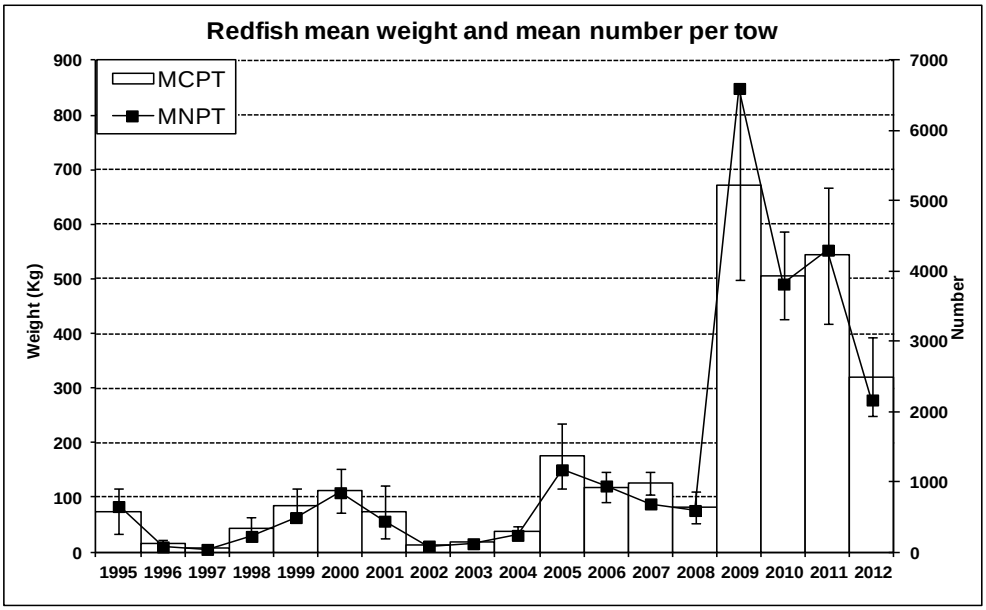

FIGURE 5.- Redfish stratified mean catches in Kg and ±SD by year and mean number by year. Spanish Spring surveys in NAFO Div. 3NO: 1997-2012 (1997-2000 transformed data from C/V *Playa de Menduíña*; 2002-2012 original data from R/V *Vizconde de Eza*. For 2001 there are data from the two vessels).

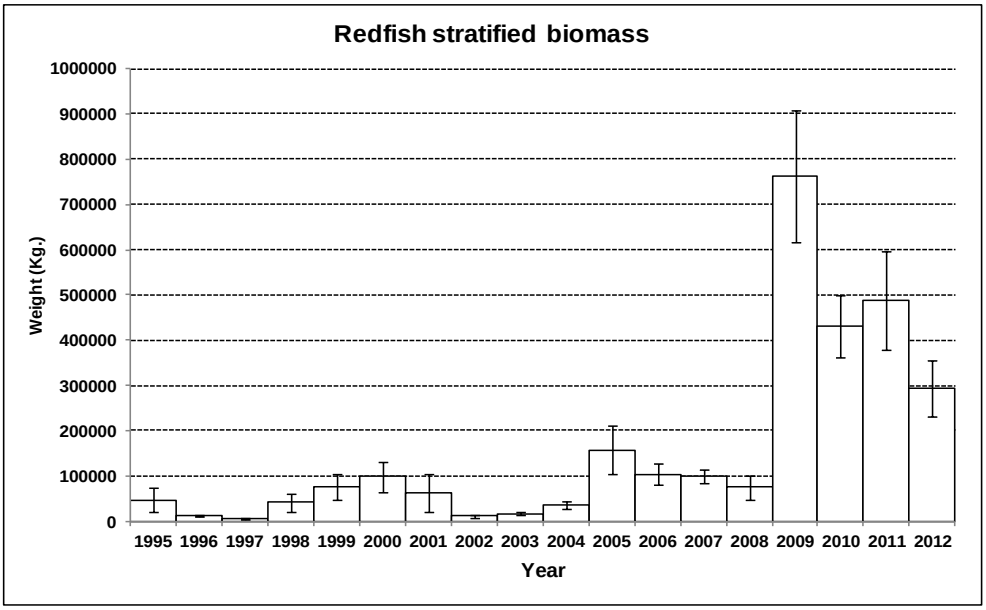

FIGURE 6.- Redfish biomass calculated by the swept area method in tons and ±SD by year. Spanish Spring surveys in NAFO Div. 3NO: 1997-2012 (1997-2000 transformed data from C/V *Playa de Menduíña*; 2002-2012 original data from R/V *Vizconde de Eza*. For 2001 there are data from the two vessels).

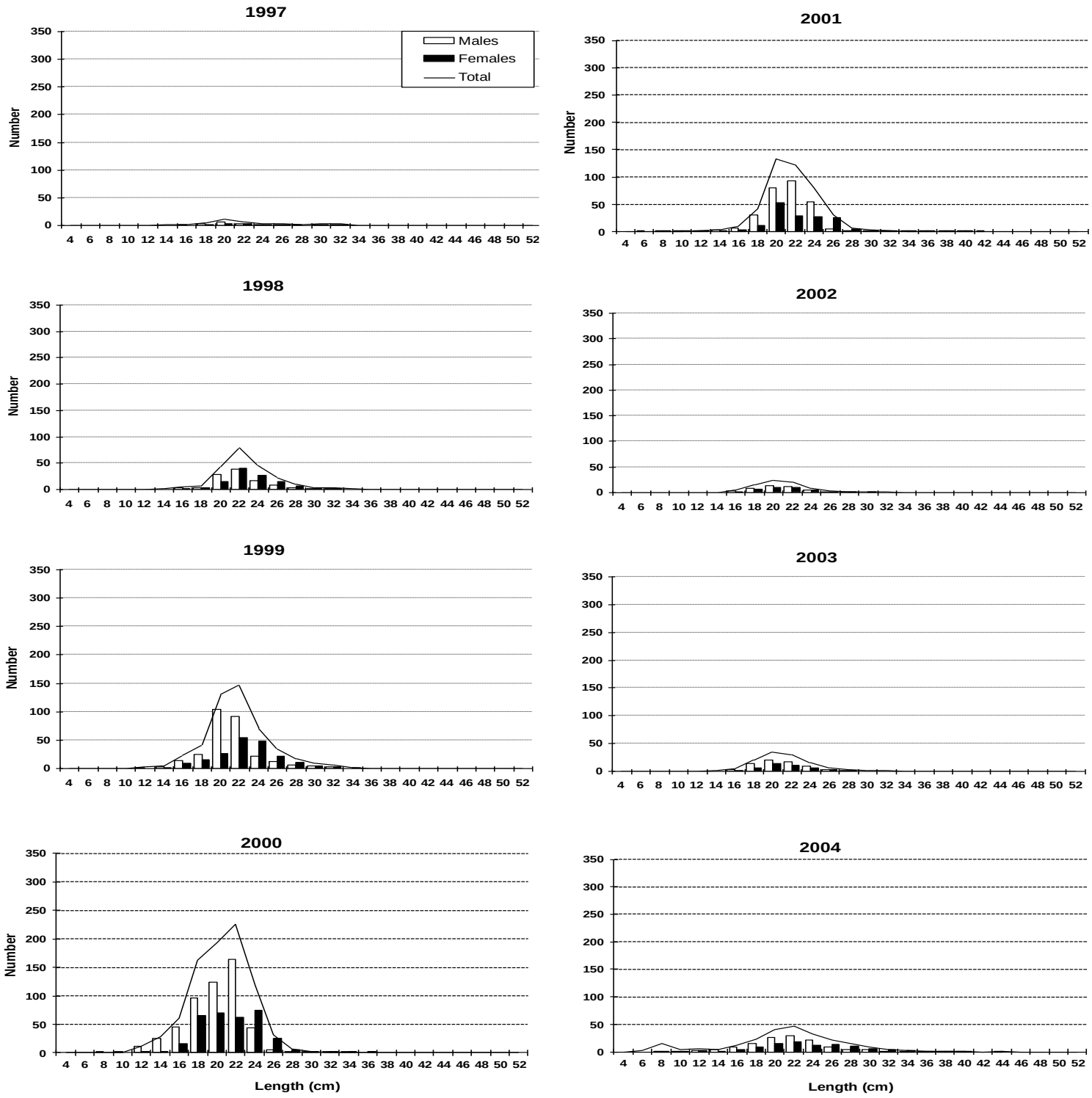

FIGURE 7.- Redfish length distribution (cm) on NAFO 3NO: 1997-2012. Mean catches per tow numbers. 1997-2000 data are transformed data from C/V *Playa de Menduíña*, and 2002-2012 data are original from R/V *Vizconde de Eza*. For 2001 there are data from the two vessels.

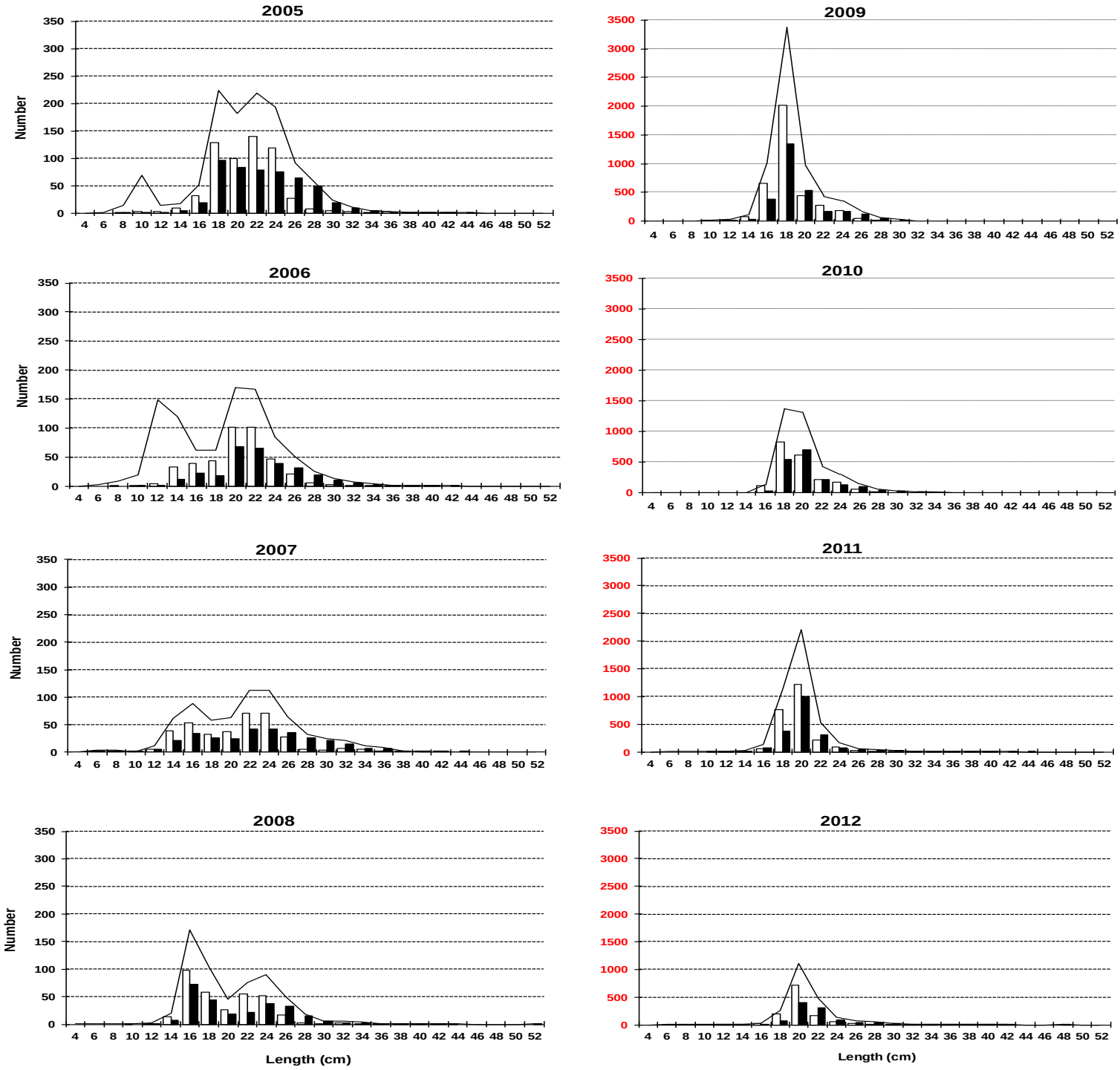

FIGURE 7 (cont.).- Redfish length distribution (cm) on NAFO 3NO: 1997-2012. Mean catches per tow numbers. 1997-2000 data are transformed data from C/V *Playa de Menduíña*, and 2002-2012 data are original from R/V *Vizconde de Eza*. For 2001 there are data from the two vessels. The 2009-2012 graphs have a different y-axis upper limit.

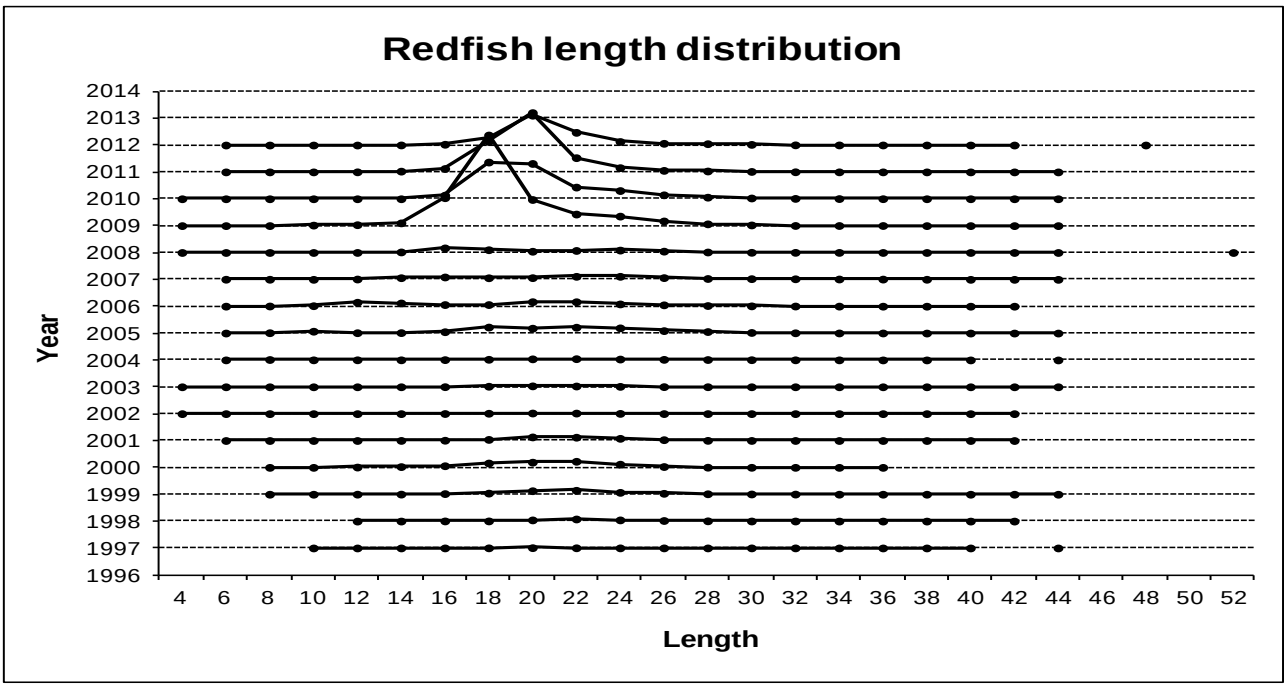

FIGURE 8.- Redfish mean catches per tow length distribution (cm) on NAFO 3NO: 1997-2012.

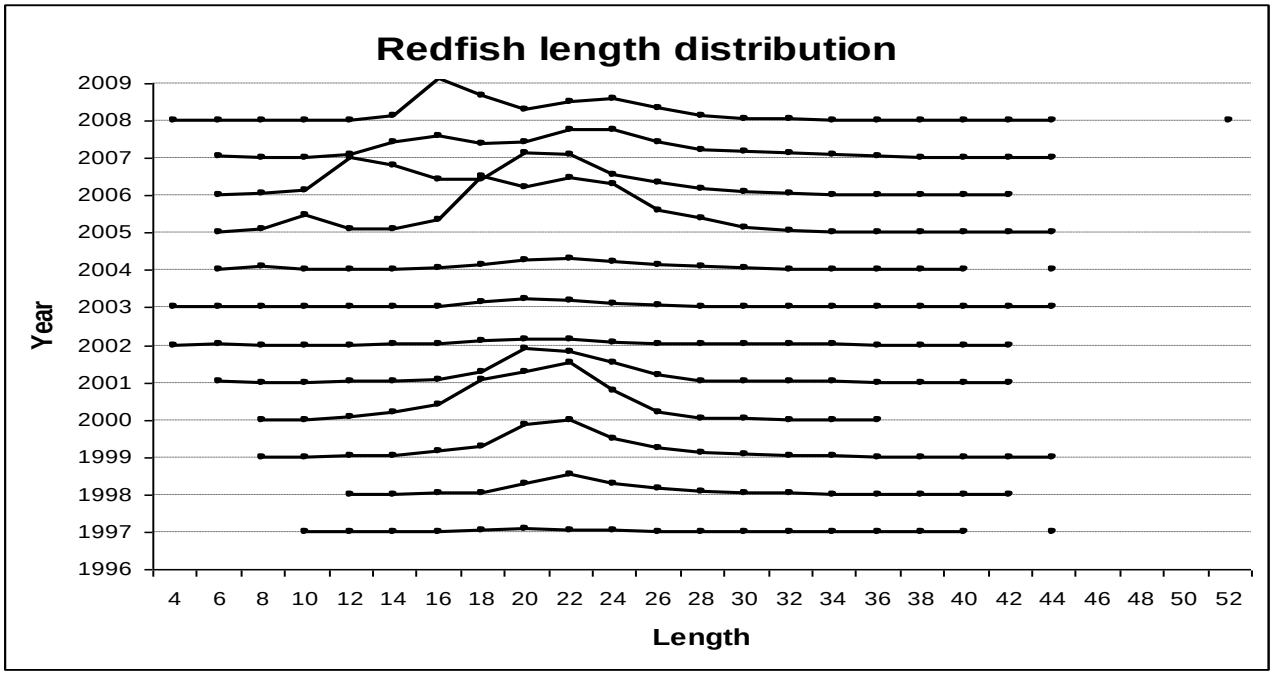

FIGURE 9.- Redfish mean catches per tow length distribution (cm) on NAFO 3NO: 1997-2008.

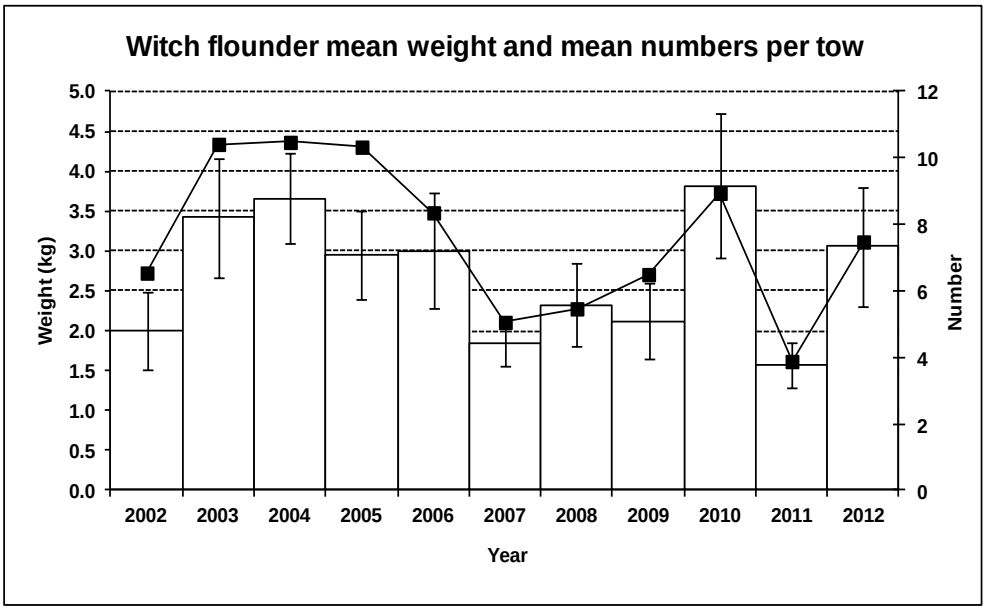

FIGURE 10.- Witch flounder stratified mean catches in Kg and ±SD by year and mean number by year. Spanish Spring surveys in NAFO Div. 3NO: 2002-2012. Original data from R/V *Vizconde de Eza*.

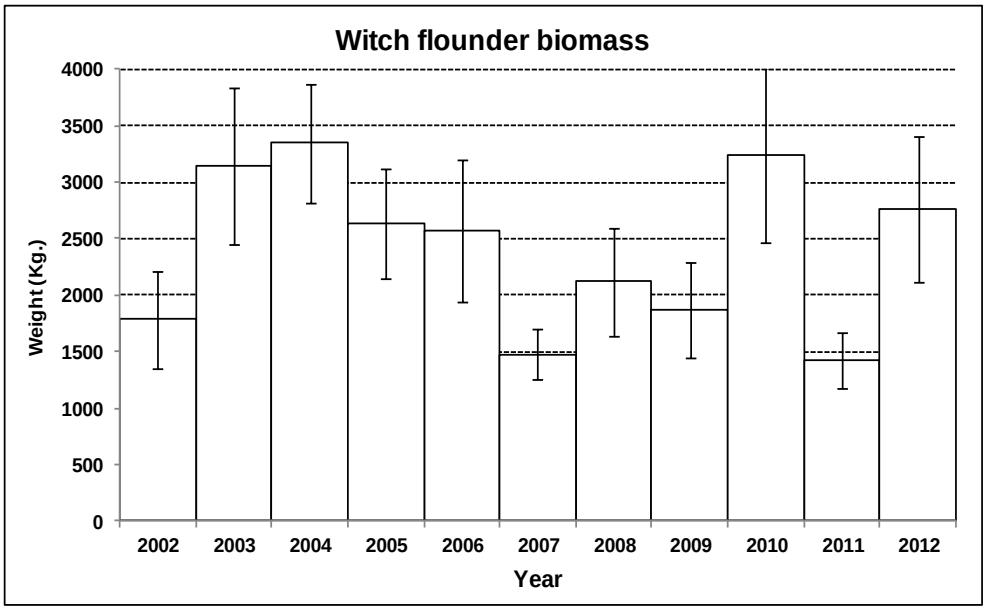

FIGURE 11.- Witch flounder biomass calculated by the swept area method in tons and ±SD by year. Spanish Spring surveys in NAFO Div. 3NO: 2002-2012. Original data from R/V *Vizconde de Eza*.

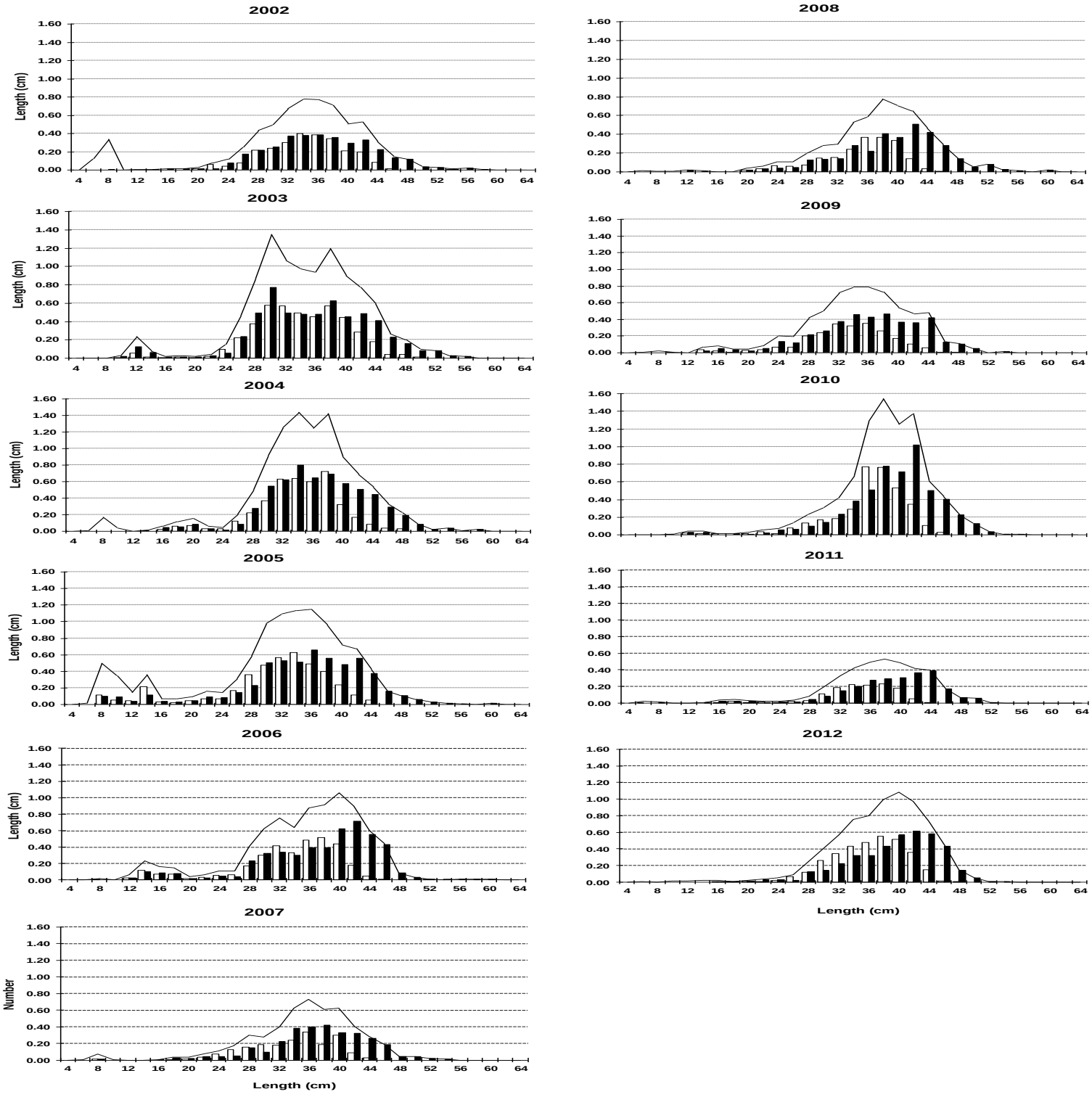

FIGURE 12.- Witch flounder length distribution (cm) on NAFO 3NO: 2002-2012. Mean catches per tow numbers. Original data from R/V *Vizconde de Eza*.

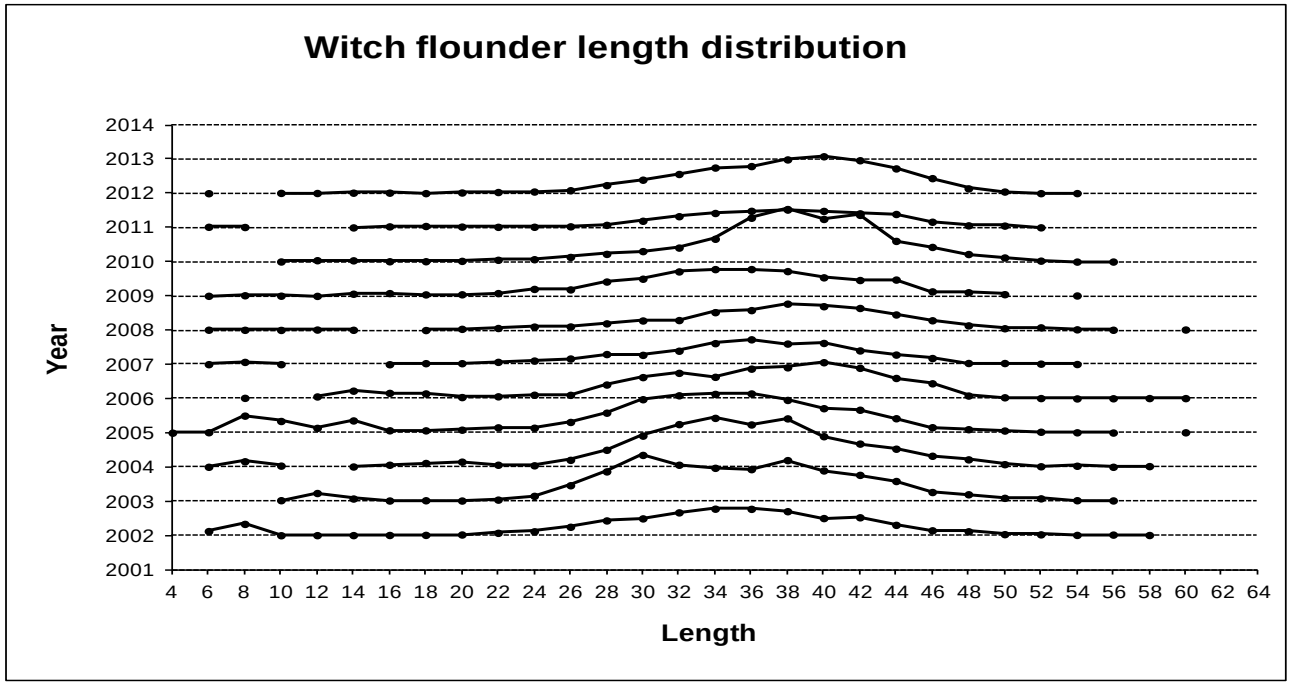

FIGURE 13.- Witch flounder mean catches per tow length distribution (cm) on NAFO 3NO: 2002-2012. Original data from R/V *Vizconde de Eza*.

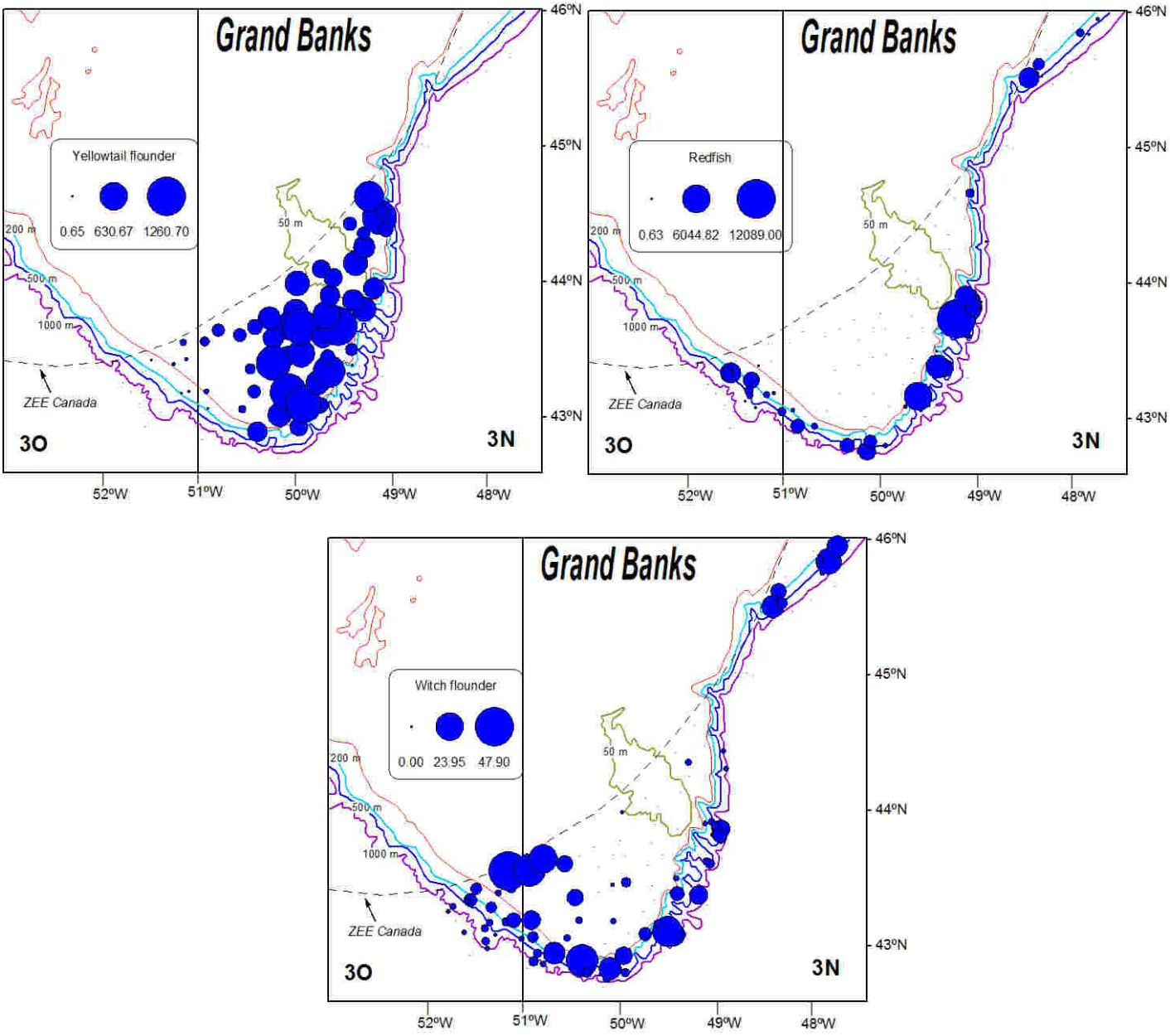

FIGURE 14.- Position of the hauls and the catch of yellowtail flounder, redfish and witch flounder during the 2012 Spanish 3NO survey