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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 stratified random spring bottom trawl survey in Div. 3NO of the NAFO Regulatory Area. The entire series of mean catches, biomass and length distribution for Yellowtail flounder (*Limanda ferruginea*) are presented for the period 1995-2010, for redfish (Sebastes spp) for the period 1997-2010 and for Witch flounder (*Glyptocephalus cynoglossus*) for the period 2002-2010. For Yellowtail flounder, there is no a clear trend since 1998; its indices are almost constant along this period, with a slight increase in the last two years. The indices of redfish were variable over the time; its pelagic and aggregated behaviour makes that the accessibility to the gear is very variable. We can see a sharp increase in year 2009 following with a slight decrease in 2010 but still very high with regards to the previous values. There are no recent good recent recruitments. For Witch flounder there is no clear trend in the entire presented series, being the values always poor. The recruitment at the beginning of the series was quite good, but in recent years it is very poor.

Material and methods

The survey in Div. 3NO of NAFO Regulatory Area was initiated by Spain in 1995. Until 2001, the survey was carried out in Spring (May), on board the Spanish vessel C/V *Playa de Menduiña* (338 GT and 800 HP) using bottom trawl net type *Pedreira*. Since 2001, the R/V *Vizconde de Eza* replaced the C/V *Playa de Menduíña* as the research vessel for the survey, and *Campelen* net replaced *Pedreira* net as survey gear. The main specifications and geometry of these gears, as the rigging profile and the net plan, and a sheet with the resume of the main technical data of the survey are described in a previous paper (Walsh *et. al.*, 2001). Table 1 presents the number of valid tows, the depth strata covered and the dates of the survey series. 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 the trawl positions were chosen at random (Doubleday, 1981). Biomass indices were calculated by the swept area method (Cochran, 1997), assuming catchability factor of 1.

For redfish the series are presented since 1997 because in years 1995 and 1996 the surveyed depth strata were only until 1000 meters, so they are not representative. As the strata where the Yellowtail flounder is presented were well surveyed, the series for this species are presented since 1995. For Witch flounder the series has not been transformed yet, so we only present the data for the new vessel, the R/V *Vizconde de Eza*, since the first year with total coverage of this vessel, 2002.

The catch from each haul was sorted by species and weighted. Random samples of each species catches were measured to total length to the nearest lower cm. Length distribution scaled from catches was estimated for the respective period for each species in two cm range. Data were grouping beginning with the pair number.

For each species, the haul mean catch, with its variance, and the stratified mean catches by stratum and year, with the annual variance, are presented, transformed until 2000 and no-transformed in the period 2002-2010. In the year 2001, for Yellowtail flounder and redfish there are data transformed from the former vessel with original data from the new vessel. Besides this, the biomass per stratum and year, with the annual variance, are presented, as the stratified mean catches per haul length distribution. To more information about the calculation of these calibrated indices, see González Troncoso *et al.*, 2004 and Paz *et al.*, 2004.

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, the stock size had 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, 2010).

Mean Catches and Biomass

In Table 2 we present the haul mean catches by stratum for Yellowtail flounder, included swept area, number of hauls and SD. The stratified mean catches per tow by stratum and year and their SD are presented in Table 3 for this species.

The entire time series (1995-2010) of biomass by the swept area method and their SD estimates of Yellowtail flounder are presented in Table 4. The parameters *a* and *b* for the calculation of the length-weight relationship are presented in Table 5.

The Yellowtail flounder indices show no clear trend along the time (in the entire series). There was an increasing between 1995 and 1999 and since 2001 the indices are stabilised at a high level, with a slight increase in the last two years. (Figures 1 and 2).

Length Distribution

The stratified mean catches per haul length distribution by sex and year, besides the sampled size and its catch, are presented in Table 6 and Figure 3 the period 1995-2010. The data have been grouped two by two**,** so we present the data every two cm. There is no presence of good recruitment in last years. In Figure 4, we can see the evolution of a modal value since the beginning of the series, but, although there is a presence of juveniles in the lengths, this presence is very low. In the length distribution it can be seen a small change of the adult segment for several years, with a mode in the last two years for males of 33 cm, only 2 cm more than in the five previous years, and a mode for females of 36 cm, only 1 cm more than in the two previous years. Despite that, there is a small proportion of individuals with lengths lower than 20 cm. This situation is 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*). The external characteristics are very similar, making them difficult to distinguish, and as a consequence they are reported collectively as "redfish" in the commercial fishery statistics. Div. 3O has been under TAC regulation since 1974 and a minimum size limit of 22 cm since 1995, whereas catch was only regulated by mesh size in the NRA of Div. 3O. In September 2004, the Fisheries Commission adopted TAC regulation for redfish in Div. 3O, implementing a level of 20 000 t per year for 2005-2008. This TAC applies to the entire area of Div. 3O. In 3N there is no TAC for this species, being the catch in the last years around 650 tons (NAFO, 2010).

Mean Catches and Biomass

The redfish mean catches by stratum are presented in Table 7, included swept area, number of hauls and SD. Stratified mean catch per tow and its SD are presented in Table 8 and Figure 5. The entire time series (1997-2010)

of biomass and their SD estimates are presented in Table 9 and Figure 6. The length-weight relationship parameters *a* and *b* are presented in Table 11.

The redfish indices show a quick increase from 1997 to 2000 following by a deeper decrease until 2002, and started increasing since then up to the levels of the first years of the time series. But in 2009 a sharp increase was occurred, reaching almost 5 times the second value of the series, which happened in 2005 (Fig. 5 and 6). This was not due only for just a few hauls, because of the 43 hauls in which redfish was caught, in 11 of them the catch was more than 1 ton, and there were three hauls with more than 15 tons of catch. In 2010 there was a little decrease with regards to 2009, but the index is still very higher than in the rest of the series, being almost 3 times the value of 2005.

In table 10 there are presented the biomass and the mean catch per tow by Division, as the number of strata covered in each case, and the percentage of the biomass that the 3N has have over the total. We can see that in the 3N there is always more biomass than in the 3O, although that percentage is very spread over the time. In last years (since 2006), the main percentage of the biomass (always more than the 80%) was occurred in Division 3N. However, the mean catch per town is always higher in the Division 3O, and in 2010 this index was very high in 3O, almost four times the value of 2009, whereas the 3N mean catch per town was lower than last year.

Length Distribution

In Table 12 is shown redfish number per tow by sex, besides the sampled size and its catch for the period 1997-2010. In Figures 7 and 8 we can see the mean number per tow evolution along the years. Due to the large catch in years 2009 and 2010, in Figure 7 the y-axis upper limit was changed in the period 1997-2008 in order to see the length distribution, and the same data as in Figure 8 are presented in Figure 9 without the 2009 and 2010 data. The last good recruit was in 2004, and since then we can follow the cohort up to 2010. In recent years there is only a discrete presence of juveniles. In 2009 there is a clear mode in 18 cm that seems to be a consequence of the 2004 recruitment.

Witch flounder

The stock mainly occurs in Div. 3O along the southwestern slopes of the Grand Bank but appear to move onto the shallow banks seasonally. It has been fished mainly in winter and springtime on 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. Stock remains at a low level, and no directed fishing on this species was recommended by the Scientific Council (NAFO, 2010).

Mean Catches and Biomass

The Witch flounder mean catches by stratum are presented in Table 13, included swept area, number of hauls and SD. Stratified mean catch per tow and its SD are presented in Table 14 and Figure 10. The entire time series (2002-2010) of biomass and their SD estimates are presented in Table 15 and Figure 11. The length-weight relationship parameters *a* and *b* are presented in Table 16.

The Witch flounder indices show no clear trend along the period 2002-2010 (Fig. 10 and 11). Always through poor values, the highest value of the series occurred in 2004, following very close for the 2010 and the 2003 indices.

Length Distribution

In Table 17 is shown Witch flounder number per tow by sex, besides the sampled size and its catch for the period 2002-2010. In Figures 12 and 13 we can see the mean number per tow evolution along the years. The best recruitments occurred in the period 2002-2005, and since 2008 they have been very poor. Some modes can be followed in Figure 13, probably due to the recruitments of the beginning of the series.

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TABLE 1.- Spanish spring bottom trawl surveys on NAFO Div. 3NO: 1995-2010

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

(*) We took, for the calculation of the series, 83 hauls 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, number of hauls and Yellowtail flounder mean catch (kg) and SD by stratum. Spanish Spring Surveys on NAFO Div. 3NO: 1995-2010. Swept area in square miles. n.s. means stratum not surveyed. 1995-2000 data are transformed C/V *Playa de Menduíña* data, and 2002-2010 data are original from R/V *Vizconde de Eza*. In 2001, there are data from the two vessels.

	1995				1996				1997				1998				1999			
Stratum	Swept area	Tow number	Y. flounder Mean catch	Y. flounder SD	Swept area	Tow number	Y. flounder Mean catch	Y. flounder SD	Swept area	Tow number	Y. flounder Mean catch	Y. flounder SD	Swept area	Tow number	Y. flounder Mean catch	Y. flounder SD	Swept area	Tow number	Y. flounder Mean catch	Y. flounder SD
353	0.0353	3	5.82	4.105	0.0371	3	74.88	94.62	0.0480	4	12.55	14.26	0.0465	4	12.22	20.16	0.0360	3	150.18	182.44
354	0.0353	3	1.78	3.089	0.0319	3	1.11	0.84	0.0233	2	1.41	1.56	0.0356	3	1.22	0.24	0.0218	2	0.08	0.12
355	n.s.	n.s.	n.s.	n.s.	0.0221	2	0.25	0.35	0.0233	2	2.20	0.31	0.0221	2	0.13	0.18	0.0229	2	0.00	0.00
356	n.s.	n.s.	n.s.	n.s.	0.0203	2	0.00	0.00	0.0225	2	0.32	0.46	0.0221	2	0.00	0.00	0.0229	2	0.00	0.00
357	0.0109	1	0.00	-	0.0218	2	0.00	0.00	0.0443	4	0.00	0.00	0.0240	2	0.00	0.00	0.0236	2	0.00	0.00
358	0.0319	3	0.00	0.000	0.0319	3	0.13	0.23	0.0563	5	0.02	0.04	0.0236	3	0.00	0.00	0.0349	3	0.00	0.00
359	0.0345	3	1.35	2.336	0.0548	5	0.92	0.83	0.0690	6	0.08	0.14	0.0698	6	0.17	0.22	0.0364	3	0.34	0.47
360	0.3563	31	20.44	40.707	0.3761	31	142.09	128.86	0.3754	32	80.92	155.59	0.2561	25	373.90	629.84	0.2325	19	545.18	424.37
374	0.0225	2	0.00	0.000	0.0233	2	0.00	0.00	0.0353	3	0.00	0.00	0.0353	3	0.04	0.02	0.0244	2	74.16	103.18
375	0.0225	2	1.48	1.875	0.0229	2	41.40	58.54	0.0116	1	0.20	-	0.0345	3	12.37	21.37	0.0236	2	347.15	168.25
376	0.1729	15	35.06	58.691	0.1650	14	71.40	86.94	0.1583	14	162.35	179.83	0.0930	10	279.27	181.29	0.1219	10	551.60	165.61
377	0.0221	2	0.00	0.000	0.0229	2	0.00	0.00	0.0116	1	0.00	-	0.0229	2	0.00	0.00	0.0240	2	0.00	0.00
378	0.0435	4	0.00	0.000	0.0330	3	0.06	0.10	0.0210	2	0.00	0.00	0.0120	2	0.00	0.00	0.0229	2	0.00	0.00
379	0.0221	2	0.00	0.000	0.0113	1	0.00	-	0.0206	2	0.00	0.00	0.0356	3	0.00	0.00	0.0236	2	0.00	0.00
380	n.s.	n.s.	n.s.	n.s.	0.0221	2	0.00	0.00	0.0210	2	0.00	0.00	0.0113	2	0.00	0.00	0.0236	2	0.00	0.00
381	n.s.	n.s.	n.s.	n.s.	0.0229	2	0.00	0.00	0.0221	2	0.00	0.00	0.0229	2	0.00	0.00	0.0229	2	0.00	0.00
382	n.s.	n.s.	n.s.	n.s.	0.0338	3	0.00	0.00	0.0461	4	0.00	0.00	0.0229	3	0.00	0.00	0.0484	4	0.00	0.00
721	n.s.	n.s.	n.s.	n.s.	0.0214	2	0.03	0.05	0.0221	2	0.75	1.06	0.0203	2	0.00	0.00	0.0244	2	0.00	0.00
722	n.s.	n.s.	n.s.	n.s.	0.0206	2	0.00	0.00	0.0214	2	0.00	0.00	0.0101	2	0.00	0.00	0.0229	2	0.00	0.00
723	n.s.	n.s.	n.s.	n.s.	0.0109	1	0.00	-	0.0210	2	0.00	0.00	0.0233	2	0.00	0.00	0.0229	2	0.00	0.00
724	0.0105	1	0.00	-	0.0203	2	0.00	0.00	0.0225	2	0.00	0.00	0.0206	2	0.00	0.00	0.0225	2	0.00	0.00
725	0.0334	3	0.00	0.000	0.0225	2	0.00	0.00	0.0206	2	0.00	0.00	0.0086	1	0.00	-	0.0229	2	0.00	0.00
726	0.0214	2	0.00	0.000	0.0218	2	0.00	0.00	n.s.	n.s.	n.s.	n.s.	0.0094	2	0.00	0.00	0.0225	2	0.00	0.00
727	n.s.	n.s.	n.s.	n.s.	0.0210	2	0.00	0.00	0.0094	1	0.00	-	0.0233	2	0.00	0.00	0.0236	2	0.00	0.00
728	n.s.	n.s.	n.s.	n.s.	0.0218	2	0.00	0.00	0.0214	2	0.00	0.00	0.0206	2	0.00	0.00	0.0233	2	0.00	0.00
752	n.s.	n.s.	n.s.	n.s.	0.0109	1	0.00	-	0.0218	2	0.00	0.00	0.0229	2	0.00	0.00	0.0233	2	0.00	0.00
753	n.s.	n.s.	n.s.	n.s.	0.0199	2	0.00	0.00	0.0214	2	0.00	0.00	0.0218	2	0.00	0.00	0.0229	2	0.00	0.00
754	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	0.0330	3	0.00	0.00	0.0210	2	0.00	0.00	0.0206	2	0.00	0.00
755	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	0.0206	2	0.00	0.00	0.0311	3	0.00	0.00
756	n.s.	n.s.	n.s.	n.s.	0.0210	2	0.00	0.00	0.0109	1	0.00	-	0.0225	2	0.00	0.00	0.0225	2	0.00	0.00
757	n.s.	n.s.	n.s.	n.s.	0.0188	2	0.00	0.00	0.0304	3	0.00	0.00	0.0206	2	0.00	0.00	0.0233	2	0.00	0.00
758	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	0.0214	2	0.00	0.00	0.0105	2	0.00	0.00	0.0214	2	0.00	0.00
759	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	0.0214	2	0.00	0.00	0.0218	2	0.00	0.00
760	n.s.	n.s.	n.s.	n.s.	0.0210	2	0.00	0.00	0.0105	1	0.00	-	0.0214	2	0.00	0.00	0.0225	2	0.00	0.00
761	n.s.	n.s.	n.s.	n.s.	0.0199	2	0.00	0.00	0.0315	3	0.00	0.00	0.0206	2	0.00	0.00	0.0210	2	0.00	0.00
762	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	0.0308	3	0.00	0.00	0.0094	2	0.00	0.00	0.0210	2	0.00	0.00
763	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	0.0218	2	0.00	0.00	0.0311	3	0.00	0.00
764	n.s.	n.s.	n.s.	n.s.	0.0210	2	0.00	0.00	0.0206	2	0.00	0.00	0.0218	2	0.00	0.00	0.0225	2	0.00	0.00
765	n.s.	n.s.	n.s.	n.s.	0.0199	2	0.00	0.00	0.0206	2	0.00	0.00	0.0098	2	0.00	0.00	0.0221	2	0.00	0.00
766	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	0.0308	3	0.00	0.00	0.0191	2	0.00	0.00	0.0218	2	0.00	0.00
767	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	0.0109	2	0.00	0.00	0.0214	2	0.00	0.00

TABLE 2 (cont.).- Swept area, number of hauls and Yellowtail flounder mean catch (kg) and SD by stratum. Spanish Spring Surveys on NAFO Div. 3NO: 1995-2010. Swept area in square miles. n.s. means stratum not surveyed. 1995-2000 data are transformed C/V *Playa de Menduíña* data, and 2002-2010 data are original from R/V *Vizconde de Eza*. In 2001, there are data from the two vessels.

	2000				2001				2002				2003			
Stratum	Swept area	Tow number	Y. flounder Mean catch	Y. flounder SD	Swept area	Tow number	Y. flounder Mean catch	Y. flounder SD	Swept area	Tow number	Y. flounder Mean catch	Y. flounder SD	Swept area	Tow number	Y. flounder Mean catch	Y. flounder SD
353	0.0356	3	67.87	91.37	0.0341	3	61.42	102.797	0.0476	4	75.13	88.259	0.0334	3	11.15	19.307
354	0.0356	3	1.79	1.93	0.0338	3	0.34	0.322	0.0356	3	0.17	0.289	0.0338	3	0.00	0.000
355	0.0233	2	0.00	0.00	0.0240	2	0.00	0.000	0.0236	2	0.00	0.000	0.0229	2	0.00	0.000
356	0.0225	2	0.00	0.00	0.0240	2	0.01	0.007	0.0233	2	0.00	0.000	0.0225	2	0.00	0.000
357	0.0124	1	0.00	-	0.0244	2	0.00	0.000	0.0240	2	0.00	0.000	0.0229	2	0.00	0.000
358	0.0341	3	0.00	0.00	0.0345	3	0.00	0.000	0.0345	3	0.00	0.000	0.0338	3	0.00	0.000
359	0.0469	4	2.36	2.93	0.0803	7	1.42	2.836	0.0686	6	0.11	0.261	0.0791	7	0.00	0.000
360	0.2396	20	391.18	331.64	0.2423	20	536.80	488.657	0.2865	25	340.23	356.687	0.2254	20	360.55	298.992
374	0.0240	2	20.47	23.55	0.0240	2	238.75	111.369	0.0345	3	32.04	52.542	0.0225	2	16.13	8.238
375	0.0244	2	153.36	2.06	0.0338	3	100.33	68.319	0.0353	3	48.61	68.927	0.0330	3	28.45	35.557
376	0.1200	10	435.27	236.60	0.1155	10	443.12	196.619	0.1140	10	533.62	416.745	0.1125	10	391.60	257.289
377	0.0229	2	0.05	0.06	0.0229	2	0.00	0.000	0.0229	2	0.00	0.000	0.0225	2	0.70	0.990
378	0.0233	2	0.00	0.00	0.0236	2	0.00	0.000	0.0233	2	0.00	0.000	0.0225	2	0.00	0.000
379	0.0225	2	0.00	0.00	0.0229	2	0.00	0.000	0.0229	2	0.00	0.000	0.0229	2	0.00	0.000
380	0.0236	2	0.00	0.00	0.0206	2	0.00	0.000	0.0225	2	0.00	0.000	0.0229	2	0.00	0.000
381	0.0236	2	0.00	0.00	0.0236	2	0.00	0.000	0.0229	2	0.00	0.000	0.0229	2	0.00	0.000
382	0.0499	4	0.00	0.00	0.0469	4	0.02	0.030	0.0341	3	0.00	0.000	0.0454	4	0.00	0.000
721	0.0236	2	0.00	0.00	0.0248	2	0.00	0.000	0.0233	2	0.00	0.000	0.0225	2	0.00	0.000
722	0.0218	2	0.00	0.00	0.0233	2	0.00	0.000	0.0236	2	0.00	0.000	0.0221	2	0.00	0.000
723	0.0248	2	0.00	0.00	0.0240	2	0.00	0.000	0.0233	2	0.00	0.000	0.0229	2	0.00	0.000
724	0.0233	2	0.00	0.00	0.0353	3	0.00	0.000	0.0225	2	0.00	0.000	0.0225	2	0.52	0.735
725	0.0210	2	0.00	0.00	0.0116	2	0.00	0.000	0.0225	2	0.00	0.000	0.0229	2	0.00	0.000
726	0.0221	2	0.00	0.00	0.0116	2	0.00	0.000	0.0214	2	0.00	0.000	0.0225	2	0.00	0.000
727	0.0210	2	0.00	0.00	0.0225	2	0.00	0.000	0.0233	2	0.00	0.000	0.0218	2	0.00	0.000
728	0.0210	2	0.00	0.00	0.0229	2	0.00	0.000	0.0229	2	0.00	0.000	0.0225	2	0.00	0.000
752	0.0206	2	0.00	0.00	0.0210	2	0.06	0.083	0.0116	1	0.00	-	0.0229	2	0.00	0.000
753	0.0218	2	0.00	0.00	0.0214	2	0.00	0.000	0.0229	2	0.00	0.000	0.0229	2	0.00	0.000
754	0.0195	2	0.00	0.00	0.0195	2	0.00	0.000	0.0341	3	0.00	0.000	0.0218	2	0.00	0.000
755	0.0431	4	0.00	0.00	0.0416	4	0.00	0.000	0.0338	3	0.00	0.000	0.0221	2	0.00	0.000
756	0.0203	2	0.00	0.00	0.0113	2	0.00	0.000	0.0229	2	0.00	0.000	0.0221	2	0.00	0.000
757	0.0214	2	0.00	0.00	0.0233	2	0.00	0.000	0.0225	2	0.00	0.000	0.0221	2	0.00	0.000
758	0.0210	2	0.00	0.00	0.0218	2	0.00	0.000	0.0225	2	0.00	0.000	0.0221	2	0.00	0.000
759	0.0210	2	0.00	0.00	0.0221	2	0.00	0.000	0.0225	2	0.00	0.000	0.0113	1	0.00	-
760	0.0210	2	0.00	0.00	0.0229	2	0.00	0.000	0.0229	2	0.00	0.000	0.0218	2	0.00	0.000
761	0.0221	2	0.00	0.00	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000
762	0.0203	2	0.00	0.00	0.0116	2	0.00	0.000	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000
763	0.0416	4	0.00	0.00	0.0330	3	0.00	0.000	0.0225	2	0.00	0.000	0.0311	3	0.00	0.000
764	0.0218	2	0.00	0.00	0.0240	2	0.00	0.000	0.0236	2	0.00	0.000	0.0221	2	0.00	0.000
765	0.0203	2	0.00	0.00	0.0113	2	0.00	0.000	0.0236	2	0.00	0.000	0.0113	1	0.00	-
766	0.0214	2	0.00	0.00	0.0203	2	0.00	0.000	0.0233	2	0.00	0.000	0.0225	2	0.00	0.000
767	0.0210	2	0.00	0.00	0.0218	2	0.00	0.000	0.0225	2	0.00	0.000	0.0229	2	0.00	0.000

TABLE 2 (cont.).- Swept area, number of hauls and Yellowtail flounder mean catch (kg) and SD by stratum. Spanish Spring Surveys on NAFO Div. 3NO: 1995-2010. Swept area in square miles. n.s. means stratum not surveyed. 1995-2000 data are transformed C/V *Playa de Menduíña* data, and 2002-2010 data are original from R/V *Vizconde de Eza*. In 2001, there are data from the two vessels.

	2004				2005				2006				2007			
Stratum	Swept area	Tow number	Y. flounder Mean catch	Y. flounder SD	Swept area	Tow number	Y. flounder Mean catch	Y. flounder SD	Swept area	Tow number	Y. flounder Mean catch	Y. flounder SD	Swept area	Tow number	Y. flounder Mean catch	Y. flounder SD
353	0.0338	3	8.79	14.005	0.0353	3	58.83	99.610	0.0371	3	71.98	122.954	0.0364	3	0.64	0.172
354	0.0345	3	0.62	1.065	0.0353	3	0.21	0.188	0.0364	3	0.21	0.371	0.0364	3	0.16	0.283
355	0.0229	2	0.00	0.000	0.0225	2	0.00	0.000	0.0248	2	0.00	0.000	0.0240	2	0.00	0.000
356	0.0221	2	0.00	0.000	0.0233	2	0.00	0.000	0.0240	2	0.00	0.000	0.0240	2	0.00	0.000
357	0.0229	2	0.00	0.000	0.0233	2	0.00	0.000	0.0244	2	0.00	0.000	0.0360	3	0.00	0.000
358	0.0330	3	0.26	0.442	0.0349	3	0.00	0.000	0.0349	3	0.00	0.000	0.0368	3	0.00	0.000
359	0.0791	7	25.01	38.371	0.0814	7	99.52	142.727	0.0975	8	169.33	359.779	0.0855	7	102.63	116.690
360	0.2310	20	403.19	333.463	0.2325	20	342.14	223.566	0.2340	19	361.02	266.205	0.2378	20	349.70	307.902
374	0.0233	2	193.46	225.058	0.0229	2	300.46	128.092	0.0236	2	610.03	73.518	0.0240	2	1057.60	455.094
375	0.0338	3	543.04	155.015	0.0349	3	288.64	138.290	0.0364	3	287.65	109.715	0.0364	3	145.73	86.977
376	0.1166	10	481.06	140.810	0.1174	10	500.53	238.908	0.1219	10	489.81	231.495	0.1185	10	460.24	203.990
377	0.0218	2	0.00	0.000	0.0233	2	42.84	60.518	0.0236	2	6.09	8.605	0.0240	2	165.35	233.840
378	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000	0.0240	2	0.00	0.000	0.0233	2	0.00	0.000
379	0.0124	1	0.00	-	0.0236	2	0.00	0.000	0.0236	2	0.00	0.000	0.0240	2	0.00	0.000
380	0.0221	2	0.00	0.000	0.0229	2	0.00	0.000	0.0229	2	0.00	0.000	0.0240	2	0.00	0.000
381	0.0225	2	0.00	0.000	0.0233	2	0.00	0.000	0.0229	2	0.00	0.000	0.0240	2	0.00	0.000
382	0.0461	4	0.00	0.000	0.0458	4	0.00	0.000	0.0469	4	0.00	0.000	0.0484	4	0.00	0.000
721	0.0221	2	0.00	0.000	0.0229	2	0.00	0.000	0.0236	2	0.00	0.000	0.0116	1	0.00	-
722	0.0218	2	0.00	0.000	0.0233	2	0.00	0.000	0.0240	2	0.00	0.000	0.0225	2	0.00	0.000
723	0.0229	2	0.00	0.000	0.0233	2	0.00	0.000	0.0236	2	0.18	0.247	0.0240	2	0.00	0.000
724	0.0214	2	0.00	0.000	0.0225	2	0.00	0.000	0.0233	2	0.00	0.000	0.0233	2	0.00	0.000
725	0.0225	2	0.00	0.000	0.0236	2	0.00	0.000	0.0233	2	0.00	0.000	0.0225	2	0.00	0.000
726	0.0225	2	0.00	0.000	0.0113	1	0.00	-	0.0225	2	0.00	0.000	0.0229	2	0.00	0.000
727	0.0233	2	0.00	0.000	0.0229	2	0.00	0.000	0.0225	2	0.00	0.000	0.0240	2	0.00	0.000
728	0.0180	2	0.00	0.000	0.0109	1	0.00	-	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000
752	0.0214	2	0.00	0.000	0.0236	2	0.00	0.000	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000
753	0.0218	2	0.00	0.000	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000
754	0.0214	2	0.00	0.000	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000
755	0.0319	3	0.00	0.000	0.0450	4	0.00	0.000	0.0338	3	0.00	0.000	0.0338	3	0.00	0.000
756	0.0218	2	0.00	0.000	0.0233	2	0.00	0.000	0.0229	2	0.00	0.000	0.0225	2	0.00	0.000
757	0.0218	2	0.00	0.000	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000	0.0229	2	0.00	0.000
758	0.0214	2	0.00	0.000	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000
759	0.0214	2	0.00	0.000	0.0229	2	0.00	0.000	0.0225	2	0.00	0.000	n.s.	n.s.	n.s.	n.s.
760	0.0221	2	0.00	0.000	0.0229	2	0.35	0.488	0.0225	2	0.00	0.000	0.0233	2	0.00	0.000
761	0.0221	2	0.00	0.000	0.0221	2	0.00	0.000	0.0233	2	0.00	0.000	0.0225	2	0.00	0.000
762	0.0233	2	0.00	0.000	0.0225	2	0.00	0.000	0.0233	2	0.00	0.000	n.s.	n.s.	n.s.	n.s.
763	0.0326	3	0.00	0.000	0.0334	3	0.00	0.000	0.0225	2	0.00	0.000	n.s.	n.s.	n.s.	n.s.
764	0.0229	2	0.00	0.000	0.0233	2	0.00	0.000	0.0233	2	0.00	0.000	0.0225	2	0.00	0.000
765	0.0225	2	0.00	0.000	0.0229	2	0.00	0.000	0.0236	2	0.00	0.000	0.0225	2	0.00	0.000
766	0.0225	2	0.00	0.000	0.0229	2	0.00	0.000	0.0229	2	0.00	0.000	n.s.	n.s.	n.s.	n.s.
767	0.0218	2	0.00	0.000	0.0113	1	0.00	-	0.0233	2	0.00	0.000	n.s.	n.s.	n.s.	n.s.

TABLE 2 (cont.).- Swept area, number of hauls and Yellowtail flounder mean catch (kg) and SD by stratum. Spanish Spring Surveys on NAFO Div. 3NO: 1995-2010. Swept area in square miles. n.s. means stratum not surveyed. 1995-2000 data are transformed C/V *Playa de Menduíña* data, and 2002-2010 data are original from R/V *Vizconde de Eza*. In 2001, there are data from the two vessels.

	2008				2009				2010			
Stratum	Swept area	Tow number	Y. flounder Mean catch	Y. flounder SD	Swept area	Tow number	Y. flounder Mean catch	Y. flounder SD	Swept area	Tow number	Y. flounder Mean catch	Y. flounder SD
353	0.0341	3	18.63	30.202	0.0345	3	0.15	0.259	0.0225	2	0.71	1.004
354	0.0345	3	1.03	0.775	0.0338	3	0.00	0.000	0.0225	2	0.69	0.205
355	0.0221	2	0.00	0.000	0.0233	2	0.00	0.000	0.0229	2	0.00	0.000
356	0.0236	2	0.00	0.000	0.0229	2	0.00	0.000	0.0225	2	0.00	0.000
357	0.0233	2	0.00	0.000	0.0116	2	0.00	0.000	0.0225	2	0.00	0.000
358	0.0345	3	0.00	0.000	0.0341	3	0.00	0.000	0.0225	2	0.00	0.000
359	0.0799	7	26.40	38.865	0.0795	7	11.16	31.077	0.0705	6	12.37	23.155
360	0.2340	20	339.09	220.066	0.2273	20	358.38	377.704	0.1628	14	334.16	217.326
374	0.0233	2	696.25	157.331	0.0225	2	1392.90	938.048	0.0225	2	482.80	229.385
375	0.0334	3	574.00	461.113	0.0341	3	335.84	149.894	0.0364	3	330.53	153.295
376	0.1129	10	421.05	280.644	0.1133	10	514.96	250.661	0.0788	7	691.28	309.955
377	0.0233	2	173.40	8.202	0.0225	2	0.12	0.163	0.0233	2	122.58	75.066
378	0.0240	2	0.00	0.000	0.0229	2	0.00	0.000	0.0225	2	0.00	0.000
379	0.0229	2	0.05	0.067	0.0229	2	0.00	0.000	0.0229	2	0.00	0.000
380	0.0225	2	0.00	0.000	0.0229	2	0.00	0.000	0.0236	2	0.00	0.000
381	0.0229	2	0.00	0.000	0.0229	2	0.00	0.000	0.0244	2	0.00	0.000
382	0.0458	4	0.00	0.000	0.0450	4	0.00	0.000	0.0233	2	325.95	460.963
721	0.0225	2	0.00	0.000	0.0229	2	0.00	0.000	0.0225	2	0.00	0.000
722	0.0206	2	0.00	0.000	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000
723	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000
724	0.0221	2	0.00	0.000	0.0233	2	0.00	0.000	0.0229	2	0.00	0.000
725	0.0229	2	0.00	0.000	0.0229	2	0.00	0.000	0.0233	2	0.00	0.000
726	0.0225	2	0.00	0.000	0.0229	2	0.00	0.000	0.0233	2	0.00	0.000
727	0.0221	2	0.00	0.000	0.0113	1	0.00	-	0.0240	2	0.00	0.000
728	0.0221	2	0.00	0.000	0.0229	2	0.00	0.000	0.0240	2	0.00	0.000
752	0.0218	2	0.00	0.000	0.0229	2	0.00	0.000	0.0240	2	0.00	0.000
753	0.0221	2	0.00	0.000	0.0116	1	0.00	-	n.s.	n.s.	n.s.	n.s.
754	0.0218	2	0.00	0.000	0.0113	1	0.00	-	0.0225	2	0.00	0.000
755	0.0431	4	0.00	0.000	0.0116	1	0.00	-	0.0120	1	0.00	-
756	0.0218	2	0.00	0.000	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000
757	0.0221	2	0.00	0.000	0.0229	2	0.00	0.000	0.0221	2	0.00	0.000
758	0.0218	2	0.00	0.000	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000
759	0.0221	2	0.00	0.000	0.0113	1	0.00	-	0.0225	2	0.00	0.0000
760	0.0225	2	0.00	0.000	0.0229	2	0.00	0.000	0.0225	2	0.00	0.000
761	0.0214	2	0.00	0.000	0.0225	2	0.00	0.000	0.0229	2	0.00	0.000
762	0.0214	2	0.00	0.000	0.0225	2	0.00	0.0000	0.0229	2	0.00	0.0000
763	0.0311	3	0.00	0.000	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
764	0.0221	2	0.00	0.000	0.0116	1	0.00	-	n.s.	n.s.	n.s.	n.s.
765	0.0214	2	0.00	0.000	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000
766	0.0218	2	0.00	0.000	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000
767	0.0214	2	0.00	0.000	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.

TABLE 3.- Stratified mean catches (Kg) by stratum and year and SD by year of Yellowtail flounder (1995-2010). n.s. means stratum not surveyed. 1995-2000 data are transformed C/V *Playa de Menduíña* data. 2002-2010 data are original from R/V *Vizconde de Eza*. In 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
353	1565	20142	3377	3288	40399	18256	16521	20209	2998	2365	15825	19364	173	5011	40	191
354	439	0	346	299	21	440	84	41	0	151	52	53	40	253	0	169
355	n.s.	0	163	9	0	0	0	0	0	0	0	0	0	0	0	0
356	n.s.	0	15	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
358	0	30	4	0	0	0	0	0	0	57	0	0	0	0	0	0
359	568	386	34	73	143	995	598	45	0	10528	41896	71290	43209	11113	4700	5207
360	56885	395449	225203	1040562	1517233	1088648	1493909	946848	1003413	1122078	952164	1004708	973222	943689	997385	929976
374	0	0	0	10	15871	4380	51093	6857	3451	41400	64297	130545	226326	148998	298081	103320
375	402	11218	54	3353	94077	41561	27190	13173	7710	147165	78221	77953	39494	155554	91013	89575
376	46775	95247	216576	372549	735836	580654	591126	711849	522389	641737	667712	653413	613960	561677	686958	922171
377	0	0	0	0	0	5	0	0	70	0	4284	609	16535	17340	12	12258
378	0	8	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	5	0	0
380	n.s.	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
382	n.s.	0	0	0	0	0	5	0	0	0	0	0	0	0	0	111801
721	n.s.	2	49	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
723	n.s.	0	0	0	0	0	0	0	0	0	0	27	0	0	0	0
724	0	0	0	0	0	0	0	0	64	0	0	0	0	0	0	0
725	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
727	n.s.	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
752	n.s.	0	0	0	0	0	8	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.
754	n.s.	n.s.	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
756	n.s.	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
758	n.s.	n.s.	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
760	n.s.	0	0	0	0	0	0	0	0	0	53	0	0	0	0	0
761	n.s.	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
763	n.s.	n.s.	n.s.	0	0	0	0	0	0	0	0	0	n.s.	0	n.s.	n.s.
764	n.s.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	n.s.
765	n.s.	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
767	n.s.	n.s.	n.s.	0	0	0	0	0	0	0	0	0	n.s.	0	n.s.	n.s.
TOTAL	106633	522481	445822	1420143	2403580	1734937	2180533	1699022	1540096	1965481	1824505	1957961	1912960	1843639	2078188	2174666
$\overline{Y}$	16.22	59.54	47.74	137.32	232.41	167.76	210.84	164.28	148.92	190.05	176.42	189.32	202.64	178.27	209.43	224.54
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

TABLE 4.- Survey estimates (by the swept area method) of Yellowtail flounder biomass (t) and SD by stratum and year on NAFO Div. 3NO. n.s. means stratum not surveyed. 1995-2000 data are transformed C/V *Playa de Menduíña* data. 2002-2010 data are original from R/V *Vizconde de Eza*. In 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
353	133	1628	281	282	3367	1537	1452	1697	270	210	1347	1565	14	440	4	17
354	37	26	30	25	2	37	7	3	0	13	4	4	3	22	0	15
355	n.s.	2	14	0	0	0	0	0	0	0	0	0	0	0	0	0
356	n.s.	0	1	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
358	0	3	0	0	0	0	0	0	0	5	0	0	0	0	0	0
359	49	35	3	6	12	85	52	4	0	931	3604	5849	3538	974	473	443
360	4950	32593	19198	89742	123989	90863	123341	82622	89057	97150	81907	81579	81869	80657	87779	79998
374	0	0	0	0	1302	365	4258	596	307	3561	5622	11051	18861	12817	26496	9184
375	36	981	5	291	7964	3410	2417	1121	701	13081	6729	6429	3257	13982	8001	7388
376	4059	8082	19160	32255	60376	48388	51175	62443	46435	55026	56887	53613	51811	49761	60659	81971
377	0	0	0	0	0	0	0	0	6	0	368	52	1378	1492	1	1054
378	0	1	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
380	n.s.	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
382	n.s.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9617
721	n.s.	0	4	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
723	n.s.	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
724	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
726	0	0	n.s.	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
728	n.s.	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
753	n.s.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	n.s.
754	n.s.	n.s.	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
756	n.s.	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
758	n.s.	n.s.	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
760	n.s.	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0
761	n.s.	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
763	n.s.	n.s.	n.s.	0	0	0	0	0	0	0	0	0	n.s.	0	0	n.s.
764	n.s.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	n.s.
765	n.s.	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
767	n.s.	n.s.	n.s.	0	0	0	0	0	0	0	0	0	n.s.	0	0	n.s.
TOTAL	9264	43349	38697	122601	197012	144685	182704	148487	136775	169978	156472	160145	160731	160146	183412	189687
S.D.	2484	6032	8527	31359	22938	19097	25847	23368	19287	18869	15271	16458	18852	17297	25736	22611

TABLE 5.- Length weight relationships in the calculation of Yellowtail flounder biomass. The equation is $Weight = a(l + 0.5)^b$ Spanish Spring Surveys on NAFO Div. 3NO: 1995-2010. To calculate the parameters for the indeterminate individuals, we used the total data (males + females + indeterminate individuals). *E* means Error.

		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
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
		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
	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
		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
		$R^2 = 0.984$	$R^2 = 0.998$	$R^2 = 0.997$	$R^2 = 0.997$	$R^2 = 0.994$	$R^2 = 0.997$	$R^2 = 0.995$	$R^2 = 0.998$	$R^2 = 0.995$	$R^2 = 0.995$	$R^2 = 0.997$	$R^2 = 0.999$	$R^2 = 0.999$	$R^2 = 0.998$	$R^2 = 0.993$	$R^2 = 0.995$
		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
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
		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
	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
		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
		$R^2 = 0.995$	$R^2 = 0.999$	$R^2 = 0.999$	$R^2 = 0.994$	$R^2 = 0.989$	$R^2 = 0.998$	$R^2 = 0.997$	$R^2 = 0.997$	$R^2 = 0.996$	$R^2 = 0.999$	$R^2 = 0.998$	$R^2 = 0.997$	$R^2 = 0.987$	$R^2 = 0.999$	$R^2 = 0.991$	$R^2 = 0.998$
		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
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
		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
	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
		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
		$R^2 = 0.996$	$R^2 = 0.999$	$R^2 = 0.999$	$R^2 = 0.994$	$R^2 = 0.995$	$R^2 = 0.999$	$R^2 = 0.994$	$R^2 = 0.999$	$R^2 = 0.995$	$R^2 = 0.999$	$R^2 = 0.999$	$R^2 = 0.995$	$R^2 = 0.995$	$R^2 = 0.999$	$R^2 = 0.994$	$R^2 = 0.996$
		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

TABLE 6.- Yellowtail flounder length distribution. Estimated numbers per haul mean catches. Spanish Spring Survey on NAFO 3NO: 1995-2010. Indet. means indeterminate. 1995-2000 data are transformed C/V *Playa de Menduíña* data. 2002-2010 data are original R/V *Vizconde de Eza* data. In 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
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 6 (cont.).- Yellowtail flounder length distribution. Estimated numbers per haul mean catches. Spanish Spring Survey on NAFO 3NO: 1995-2010. Indet. means indeterminate. 1995-2000 data are transformed C/V *Playa de Menduíña* data. 2002-2010 data are original R/V *Vizconde de Eza* data. In 2001, there are data from the two vessels. (*) indicates untransformed data.

	2000				2001				2002				2003			
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	0.009	0.009
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
Nº samples (*):				42				43				43				37
Nº Ind. (*):	3323	4100	0	7423	3358	4684	80	8122	3419	4576	7	8002	2424	3254	12	5690
Sampled catch:				717				2298				2269				1864
Range (*):				11-54				6-53				6-52				5-52
Total catch:				12742				16141				14385				11280
Total hauls (*):				118				123				125				118

TABLE 6 (cont.).- Yellowtail flounder length distribution. Estimated numbers per haul mean catches. Spanish Spring Survey on NAFO 3NO: 1995-2010. Indet. means indeterminate. 1995-2000 data are transformed C/V *Playa de Menduíña* data. 2002-2010 data are original R/V *Vizconde de Eza* data. In 2001, there are data from the two vessels. (*) indicates untransformed data.

	2004				2005				2006				2007			
Length (cm.)	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total
4	0.000	0.000	0.116	0.116	0.000	0.000	0.000	0.000	0.060	0.000	0.000	0.060	0.000	0.000	0.000	0.000
6	0.000	0.000	0.337	0.337	0.000	0.013	0.192	0.205	0.000	0.000	0.079	0.079	0.000	0.000	0.103	0.103
8	0.109	0.049	0.741	0.899	0.269	0.018	0.054	0.341	0.187	0.162	0.245	0.594	0.000	0.000	0.000	0.000
10	0.528	0.637	0.000	1.165	1.725	0.467	0.051	2.243	0.686	0.384	0.276	1.346	0.041	0.059	0.000	0.101
12	2.005	1.577	0.000	3.582	2.353	1.877	0.000	4.229	2.026	1.734	0.000	3.760	0.536	0.449	0.000	0.985
14	3.503	2.632	0.000	6.135	4.728	3.053	0.000	7.780	3.645	3.862	0.000	7.507	1.148	0.578	0.000	1.725
16	4.580	3.608	0.000	8.188	4.674	3.630	0.000	8.304	5.776	6.009	0.000	11.785	2.222	2.551	0.000	4.773
18	4.649	3.543	0.000	8.192	3.334	3.348	0.000	6.682	5.989	5.547	0.000	11.536	5.728	4.614	0.000	10.342
20	5.414	6.205	0.000	11.619	4.905	4.847	0.000	9.752	9.721	8.196	0.000	17.917	9.024	7.293	0.000	16.317
22	5.563	5.757	0.000	11.321	8.934	6.836	0.000	15.770	10.735	10.545	0.000	21.280	13.286	14.190	0.000	27.476
24	8.232	7.732	0.000	15.964	8.930	7.162	0.000	16.092	11.073	12.977	0.000	24.050	17.380	19.046	0.000	36.426
26	25.572	16.572	0.000	42.145	15.997	8.451	0.000	24.447	13.117	13.439	0.000	26.556	20.689	18.113	0.000	38.802
28	57.974	27.637	0.000	85.611	34.840	17.504	0.000	52.344	26.251	15.412	0.000	41.663	35.157	19.170	0.000	54.327
30	87.376	52.285	0.000	139.661	75.001	34.103	0.000	109.105	64.180	25.059	0.000	89.238	75.144	25.235	0.000	100.379
32	74.712	58.683	0.000	133.396	70.556	58.866	0.000	129.423	74.126	52.415	0.000	126.541	76.329	50.253	0.000	126.582
34	30.847	58.596	0.000	89.443	28.072	62.961	0.000	91.032	38.379	67.737	0.000	106.116	42.232	68.548	0.000	110.780
36	7.531	46.290	0.000	53.820	8.105	48.672	0.000	56.777	11.021	63.706	0.000	74.727	12.733	61.691	0.000	74.424
38	2.056	26.594	0.000	28.650	1.965	26.547	0.000	28.512	3.046	39.877	0.000	42.923	3.973	41.839	0.000	45.812
40	1.716	10.932	0.000	12.648	0.908	11.697	0.000	12.606	0.981	17.493	0.000	18.474	1.430	20.920	0.000	22.350
42	0.514	3.725	0.000	4.240	0.172	4.746	0.000	4.918	0.081	5.709	0.000	5.789	0.213	6.891	0.000	7.104
44	0.028	2.033	0.000	2.061	0.050	2.020	0.000	2.070	0.072	2.190	0.000	2.262	0.000	2.454	0.000	2.454
46	0.000	0.575	0.000	0.575	0.000	1.128	0.000	1.128	0.000	1.341	0.000	1.341	0.071	1.043	0.000	1.114
48	0.000	0.303	0.000	0.303	0.000	0.200	0.000	0.200	0.000	0.560	0.000	0.560	0.000	0.367	0.000	0.367
50	0.000	0.009	0.000	0.009	0.000	0.030	0.000	0.030	0.000	0.231	0.000	0.231	0.000	0.107	0.000	0.107
52	0.000	0.055	0.000	0.055	0.000	0.000	0.000	0.000	0.000	0.012	0.000	0.012	0.000	0.120	0.000	0.120
54	0.000	0.000	0.000	0.000	0.000	0.079	0.000	0.079	0.000	0.091	0.000	0.091	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
Total	322.910	336.032	1.193	660.136	275.518	308.254	0.297	584.069	281.150	354.688	0.601	636.440	317.336	365.532	0.103	682.971
Nº samples (*):				45				48				45				47
Nº Ind. (*):	3703	4234	16	7953	4790	6556	6	11352	4404	6012	10	10426	5083	5533	1	10617
Sampled catch:				2587				3784				3407				2761
Range (*):				5-53				6-55				5-54				7-52
Total catch:				15117				14275				15424				15200
Total hauls (*):				120				119				120				110

TABLE 6 (cont.).- Yellowtail flounder length distribution. Estimated numbers per haul mean catches. Spanish Spring Survey on NAFO 3NO: 1995-2010. Indet. means indeterminate. 1995-2000 data are transformed C/V *Playa de Menduíña* data. 2002-2010 data are original R/V *Vizconde de Eza* data. In 2001, there are data from the two vessels. (*) indicates untransformed data.

	2008				2009				2010			
Length (cm.)	Males	Females	Indet.	Total	Males	Females	Indet.	Total	Males	Females	Indet.	Total
4	0.000	0.000	0.054	0.054	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	0.050	0.050	0.000	0.000	0.000	0.000
8	0.013	0.000	0.000	0.013	0.000	0.000	0.057	0.057	0.000	0.000	0.000	0.000
10	0.039	0.000	0.037	0.076	0.000	0.155	0.000	0.155	0.302	0.302	0.000	0.605
12	0.184	0.183	0.000	0.367	0.000	0.063	0.370	0.433	1.243	0.364	0.000	1.607
14	0.238	0.331	0.054	0.624	0.000	0.096	0.000	0.096	0.387	0.400	0.000	0.787
16	0.741	0.964	0.000	1.705	0.920	0.498	0.000	1.418	0.489	0.107	0.000	0.596
18	2.364	2.973	0.000	5.337	2.260	1.452	0.000	3.712	1.276	0.982	0.000	2.259
20	7.593	6.160	0.000	13.753	4.032	3.251	0.000	7.283	3.363	2.601	0.000	5.964
22	11.867	13.532	0.000	25.399	11.271	7.825	0.000	19.096	6.263	8.252	0.000	14.515
24	18.209	18.285	0.000	36.495	15.826	15.693	0.000	31.518	19.027	15.268	0.000	34.295
26	23.627	25.866	0.000	49.493	28.577	26.217	0.000	54.793	44.312	25.334	0.000	69.646
28	37.293	23.056	0.000	60.349	38.271	24.052	0.000	62.323	60.163	45.618	0.000	105.781
30	67.815	22.281	0.000	90.096	59.751	26.094	0.000	85.844	86.814	52.865	0.000	139.679
32	73.491	42.910	0.000	116.401	73.655	42.701	0.000	116.356	92.461	52.351	0.000	144.811
34	38.260	59.348	0.000	97.609	44.085	74.201	0.000	118.285	40.660	66.701	0.000	107.361
36	9.789	54.190	0.000	63.979	13.976	81.708	0.000	95.684	9.675	70.786	0.000	80.461
38	2.389	37.201	0.000	39.590	4.267	54.934	0.000	59.200	1.757	41.724	0.000	43.481
40	0.914	16.185	0.000	17.099	0.983	22.221	0.000	23.203	0.631	18.241	0.000	18.872
42	0.288	6.719	0.000	7.007	0.103	11.373	0.000	11.476	0.000	8.403	0.000	8.403
44	0.000	3.120	0.000	3.120	0.039	4.532	0.000	4.571	0.000	1.785	0.000	1.785
46	0.000	1.097	0.000	1.097	0.000	1.183	0.000	1.183	0.000	1.496	0.000	1.496
48	0.000	0.616	0.000	0.616	0.000	0.173	0.000	0.173	0.000	0.341	0.000	0.341
50	0.000	0.077	0.000	0.077	0.000	0.460	0.000	0.460	0.000	0.034	0.000	0.034
52	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.139	0.000	0.139
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
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
Total	295.113	335.096	0.145	630.355	298.014	398.879	0.477	697.369	368.825	414.092	0.000	782.917
Nº samples (*):				50				38				36
Nº Ind. (*):	4795	5147	3	9945	3969	4682	5	8656	3085	3615	0	6700
Sampled catch:				2759				2604				1805
Range (*):				5-51				7-50				10-52
Total catch:				14697				16201				12449
Total hauls (*):				122				109				95

TABLE 7.- Swept area, number of hauls and redfish mean catch (kg) and SD by stratum. Spanish Spring Surveys on NAFO Div. 3NO: 1997-2010. Swept area in square miles. n.s. means stratum not surveyed. 1997-2000 data are transformed C/V *Playa de Menduíña* data, and 2002-2010 data are original from R/V *Vizconde de Eza*. In 2001, there are data from the two vessels.

	1997				1998				1999				2000				2001			
Stratum	Swept area	Tow number	Redfish Mean	Redfish SD	Swept area	Tow number	Redfish Mean	Redfish SD	Swept area	Tow number	Redfish Mean	Redfish SD	Swept area	Tow number	Redfish Mean	Redfish SD	Swept area	Tow number	Redfish Mean	Redfish SD
353	0.0480	4	0.00	0.000	0.0465	4	0.00	0.000	0.0360	3	0.00	0.000	0.0356	3	0.00	0.000	0.0341	3	0.00	0.000
354	0.0233	2	0.14	0.202	0.0356	3	438.34	759.219	0.0218	2	5.34	6.425	0.0356	3	0.02	0.033	0.0338	3	60.03	101.794
355	0.0233	2	1.80	1.334	0.0221	2	480.45	351.492	0.0229	2	1082.06	1440.398	0.0233	2	886.53	626.406	0.0240	2	161.20	145.381
356	0.0225	2	7.60	1.212	0.0221	2	1139.44	1071.610	0.0229	2	2684.53	2762.311	0.0225	2	1274.17	484.645	0.0240	2	1069.10	766.645
357	0.0443	4	25.36	23.238	0.0240	2	23.72	24.085	0.0236	2	76.52	69.991	0.0124	1	802.95	-	0.0244	2	60.30	2.263
358	0.0563	5	1.73	2.382	0.0236	3	17.10	28.548	0.0349	3	59.42	88.506	0.0341	3	1358.82	2353.545	0.0345	3	3.96	2.070
359	0.0690	6	0.00	0.000	0.0698	6	0.00	0.000	0.0364	3	0.04	0.076	0.0469	4	0.10	0.194	0.0803	7	30.02	78.721
360	0.3754	32	0.00	0.000	0.2561	25	0.00	0.000	0.2325	19	0.00	0.017	0.2396	20	0.00	0.000	0.2423	20	0.25	1.118
374	0.0353	3	0.00	0.000	0.0353	3	0.00	0.000	0.0244	2	0.00	0.000	0.0240	2	0.00	0.000	0.0240	2	0.00	0.000
375	0.0116	1	0.00	-	0.0345	3	0.00	0.000	0.0236	2	0.00	0.000	0.0244	2	0.00	0.000	0.0338	3	0.00	0.000
376	0.1583	14	0.01	0.037	0.0930	10	0.00	0.000	0.1219	10	0.00	0.000	0.1200	10	0.00	0.000	0.1155	10	0.00	0.000
377	0.0116	1	0.00	-	0.0229	2	0.00	0.000	0.0240	2	0.56	0.788	0.0229	2	0.20	0.283	0.0229	2	0.00	0.000
378	0.0210	2	1.71	2.425	0.0120	2	0.43	0.606	0.0229	2	1.53	0.715	0.0233	2	2.29	0.808	0.0236	2	0.86	1.061
379	0.0206	2	20.31	10.054	0.0356	3	11.14	4.068	0.0236	2	31.66	26.024	0.0225	2	70.72	100.016	0.0229	2	30.15	36.699
380	0.0210	2	0.09	0.024	0.0113	2	1.37	0.323	0.0236	2	5.77	6.466	0.0236	2	0.00	0.000	0.0206	2	2.29	1.859
381	0.0221	2	0.09	0.121	0.0229	2	0.00	0.000	0.0229	2	0.03	0.044	0.0236	2	0.00	0.000	0.0236	2	0.11	0.000
382	0.0461	4	0.00	0.000	0.0229	3	0.00	0.000	0.0484	4	0.00	0.000	0.0499	4	0.10	0.200	0.0469	4	0.06	0.089
721	0.0221	2	169.96	217.567	0.0203	2	143.53	125.798	0.0244	2	2152.90	1622.771	0.0236	2	3120.12	1232.202	0.0248	2	466.20	229.103
722	0.0214	2	17.28	4.793	0.0101	2	18.77	12.568	0.0229	2	63.92	70.759	0.0218	2	271.74	384.305	0.0233	2	55.00	2.121
723	0.0210	2	37.49	22.226	0.0233	2	107.33	120.343	0.0229	2	418.90	326.761	0.0248	2	1655.39	2341.070	0.0240	2	202.75	207.112
724	0.0225	2	22.49	17.740	0.0206	2	64.64	72.173	0.0225	2	140.87	183.788	0.0233	2	628.93	889.439	0.0353	3	4295.90	6925.13
725	0.0206	2	46.54	14.362	0.0086	1	17.77	-	0.0229	2	2579.77	3537.230	0.0210	2	12.57	17.781	0.0116	2	37.34	14.09
726	n.s.	n.s.	n.s.	n.s.	0.0094	2	2298.69	3221.013	0.0225	2	194.45	27.600	0.0221	2	0.00	0.000	0.0116	2	107.85	57.07
727	0.0094	1	3.83	-	0.0233	2	11.77	6.870	0.0236	2	30.23	10.749	0.0210	2	5.56	5.072	0.0225	2	5.80	1.50
728	0.0214	2	35.84	2.982	0.0206	2	61.35	19.438	0.0233	2	108.18	35.723	0.0210	2	0.00	0.000	0.0229	2	61.09	47.52
752	0.0218	2	7.63	8.688	0.0229	2	168.19	171.260	0.0233	2	236.17	164.431	0.0206	2	0.00	0.000	0.0210	2	26.40	35.16
753	0.0214	2	0.17	0.242	0.0218	2	0.94	0.113	0.0229	2	7.26	10.264	0.0218	2	0.00	0.000	0.0214	2	1.66	2.02
754	0.0330	3	0.19	0.330	0.0210	2	0.00	0.000	0.0206	2	0.00	0.000	0.0195	2	0.00	0.000	0.0195	2	0.00	0.00
755	n.s.	n.s.	n.s.	n.s.	0.0206	2	0.00	0.000	0.0311	3	0.00	0.000	0.0431	4	0.00	0.000	0.0416	4	0.00	0.00
756	0.0109	1	4.29	-	0.0225	2	8.57	1.863	0.0225	2	439.22	575.003	0.0203	2	0.00	0.000	0.0113	2	39.40	51.76
757	0.0304	3	0.00	0.000	0.0206	2	1.39	1.964	0.0233	2	85.64	77.710	0.0214	2	0.00	0.000	0.0233	2	0.69	0.97
758	0.0214	2	0.00	0.000	0.0105	2	0.03	0.040	0.0214	2	0.35	0.065	0.0210	2	1.75	1.026	0.0218	2	0.00	0.00
759	n.s.	n.s.	n.s.	n.s.	0.0214	2	0.00	0.000	0.0218	2	2.83	4.001	0.0210	2	0.00	0.000	0.0221	2	0.00	0.00
760	0.0105	1	162.94	-	0.0214	2	43.80	34.147	0.0225	2	214.45	303.282	0.0210	2	11.09	15.679	0.0229	2	99.10	132.23
761	0.0315	3	0.29	0.286	0.0206	2	4.43	3.673	0.0210	2	0.00	0.000	0.0221	2	0.43	0.614	0.0225	2	4.75	6.72
762	0.0308	3	0.00	0.000	0.0094	2	0.00	0.000	0.0210	2	17.09	24.166	0.0203	2	0.00	0.000	0.0116	2	0.00	0.00
763	n.s.	n.s.	n.s.	n.s.	0.0218	2	0.00	0.000	0.0311	3	0.00	0.000	0.0416	4	115.73	231.455	0.0330	3	0.00	0.00
764	0.0206	2	1.34	1.899	0.0218	2	0.00	0.000	0.0225	2	0.05	0.069	0.0218	2	0.00	0.000	0.0240	2	14.86	20.28
765	0.0206	2	0.00	0.000	0.0098	2	13.83	19.559	0.0221	2	0.00	0.000	0.0203	2	5.14	7.274	0.0113	2	1.62	1.24
766	0.0308	3	0.00	0.000	0.0191	2	0.00	0.000	0.0218	2	0.00	0.000	0.0214	2	0.00	0.000	0.0203	2	0.80	1.131
767	n.s.	n.s.	n.s.	n.s.	0.0109	2	0.11	0.152	0.0214	2	0.00	0.000	0.0210	2	0.00	0.000	0.0218	2	0.00	0.000

TABLE 7 (cont.).- Swept area, number of hauls and redfish mean catch (kg) and SD by stratum. Spanish Spring Surveys on NAFO Div. 3NO: 1997-2010. Swept area in square miles. n.s. means stratum not surveyed. 1997-2000 data are transformed C/V *Playa de Menduíña* data, and 2002-2010 data are original from R/V *Vizconde de Eza*. In 2001, there are data from the two vessels.

	2002				2003				2004				2005				2006			
Stratum	Swept area	Tow number	Redfish Mean catch	Redfish SD	Swept area	Tow number	Redfish Mean catch	Redfish SD	Swept area	Tow number	Redfish Mean catch	Redfish SD	Swept area	Tow number	Redfish Mean catch	Redfish SD	Swept area	Tow number	Redfish Mean catch	Redfish SD
353	0.0476	4	0.00	0.000	0.0334	3	0.03	0.052	0.03375	3	0.00	0.000	0.0353	3	0.04	0.069	0.0371	3	1.25	2.034
354	0.0356	3	0.46	0.768	0.0338	3	0.00	0.000	0.03450	3	48.27	83.338	0.0353	3	21.34	36.380	0.0364	3	79.99	134.667
355	0.0236	2	246.50	46.103	0.0229	2	425.05	8.980	0.02287	2	336.45	14.779	0.0225	2	658.00	495.406	0.0248	2	1427.34	1241.63
356	0.0233	2	397.15	375.969	0.0225	2	252.98	85.532	0.02212	2	759.93	64.523	0.0233	2	1048.51	471.506	0.0240	2	1124.70	216.509
357	0.0240	2	49.65	26.941	0.0229	2	125.85	80.964	0.02287	2	511.45	555.291	0.0233	2	3120.47	2946.69	0.0244	2	1533.90	1417.89
358	0.0345	3	3.60	2.088	0.0338	3	181.05	226.985	0.03300	3	143.27	91.983	0.0349	3	520.71	755.878	0.0349	3	821.37	1252.77
359	0.0686	6	0.57	1.013	0.0791	7	0.07	0.154	0.07912	7	1.17	2.841	0.0814	7	1.00	2.044	0.0975	8	2.24	5.002
360	0.2865	25	0.06	0.213	0.2254	20	0.00	0.013	0.23100	20	0.36	1.588	0.2325	20	0.08	0.202	0.2340	19	0.00	0.000
374	0.0345	3	0.00	0.000	0.0225	2	0.00	0.000	0.02325	2	0.00	0.000	0.0229	2	0.00	0.000	0.0236	2	0.00	0.000
375	0.0353	3	0.00	0.000	0.0330	3	0.00	0.000	0.03375	3	0.00	0.000	0.0349	3	0.00	0.000	0.0364	3	0.73	1.270
376	0.1140	10	0.00	0.000	0.1125	10	0.00	0.000	0.11662	10	0.00	0.000	0.1174	10	0.59	1.780	0.1219	10	0.00	0.000
377	0.0229	2	1.60	2.263	0.0225	2	0.61	0.863	0.02175	2	0.00	0.000	0.0233	2	0.00	0.000	0.0236	2	0.49	0.693
378	0.0233	2	2.05	1.202	0.0225	2	3.41	3.946	0.02250	2	150.50	202.091	0.0225	2	3660.93	4755.32	0.0240	2	1392.20	1375.04
379	0.0229	2	18.35	12.233	0.0229	2	20.88	14.177	0.01237	1	135.50	-	0.0236	2	2547.70	158.250	0.0236	2	2008.20	692.682
380	0.0225	2	1.17	1.174	0.0229	2	1.61	0.841	0.02212	2	149.70	160.372	0.0229	2	390.27	417.709	0.0229	2	411.35	334.815
381	0.0229	2	0.15	0.212	0.0229	2	0.10	0.096	0.02250	2	0.85	0.919	0.0233	2	2.02	0.339	0.0229	2	6.91	1.916
382	0.0341	3	0.46	0.626	0.0454	4	0.00	0.000	0.04612	4	0.00	0.000	0.0458	4	0.41	0.825	0.0469	4	0.11	0.224
721	0.0233	2	43.75	20.860	0.0225	2	105.00	38.042	0.02212	2	274.85	201.738	0.0229	2	242.29	145.261	0.0236	2	108.10	86.833
722	0.0236	2	5.80	6.134	0.0221	2	28.11	38.311	0.02175	2	26.71	30.533	0.0233	2	52.17	68.893	0.0240	2	1.98	2.008
723	0.0233	2	131.50	61.518	0.0229	2	161.65	151.109	0.02287	2	610.30	381.131	0.0233	2	1141.00	1389.32	0.0236	2	595.46	249.694
724	0.0225	2	238.00	239.992	0.0225	2	94.50	85.418	0.02137	2	88.58	98.818	0.0225	2	83.20	11.738	0.0233	2	17.41	23.922
725	0.0225	2	51.80	9.758	0.0229	2	51.20	62.515	0.02250	2	163.50	27.294	0.0236	2	414.15	306.955	0.0233	2	500.75	663.195
726	0.0214	2	39.80	14.566	0.0225	2	0.05	0.064	0.02250	2	117.51	153.265	0.0113	1	72.20	-	0.0225	2	72.73	63.958
727	0.0233	2	3.61	5.077	0.0218	2	31.33	13.824	0.02325	2	63.65	7.990	0.0229	2	18.00	2.263	0.0225	2	11.70	8.910
728	0.0229	2	19.50	27.577	0.0225	2	82.75	13.506	0.01800	2	10.03	1.075	0.0109	1	73.50	-	0.0225	2	6.53	1.803
752	0.0116	1	9.15	12.940	0.0229	2	43.95	47.023	0.02137	2	2.55	0.308	0.0236	2	0.17	0.233	0.0225	2	0.63	0.884
753	0.0229	2	0.22	0.304	0.0229	2	0.00	0.000	0.02175	2	0.00	0.000	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000
754	0.0341	3	1.33	1.226	0.0218	2	0.00	0.000	0.02137	2	0.00	0.000	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000
755	0.0338	3	0.00	0.000	0.0221	2	0.00	0.000	0.03187	3	0.00	0.000	0.0450	4	0.00	0.000	0.0338	3	0.08	0.144
756	0.0229	2	20.23	26.828	0.0221	2	3.32	3.910	0.02175	2	1.50	2.114	0.0233	2	1.20	1.697	0.0229	2	0.28	0.396
757	0.0225	2	66.45	92.843	0.0221	2	8.30	11.738	0.02175	2	0.00	0.000	0.0225	2	0.72	1.011	0.0225	2	0.00	0.000
758	0.0225	2	9.05	10.819	0.0221	2	0.00	0.000	0.02137	2	0.00	0.000	0.0225	2	0.00	0.000	0.0225	2	1.13	1.591
759	0.0225	2	0.05	0.071	0.0113	1	0.00	-	0.02137	2	0.00	0.000	0.0229	2	0.18	0.247	0.0225	2	0.37	0.516
760	0.0229	2	3.85	5.445	0.0218	2	12.92	14.828	0.02212	2	3.38	1.945	0.0229	2	22.26	1.633	0.0225	2	24.90	21.927
761	0.0225	2	11.60	14.001	0.0225	2	0.00	0.000	0.02212	2	0.55	0.778	0.0221	2	0.37	0.516	0.0233	2	0.00	0.000
762	0.0225	2	4.91	6.350	0.0225	2	0.00	0.000	0.02325	2	0.00	0.000	0.0225	2	0.00	0.000	0.0233	2	0.25	0.346
763	0.0225	2	0.00	0.000	0.0311	3	0.00	0.000	0.03262	3	0.13	0.233	0.0334	3	0.43	0.751	0.0225	2	0.00	0.000
764	0.0236	2	1.05	1.485	0.0221	2	5.51	1.047	0.02287	2	0.00	0.000	0.0233	2	1.70	0.612	0.0233	2	0.00	0.000
765	0.0236	2	9.25	13.081	0.0113	1	0.00	-	0.02250	2	0.00	0.000	0.0229	2	0.00	0.000	0.0236	2	0.00	0.000
766	0.0233	2	0.00	0.000	0.0225	2	0.48	0.678	0.02250	2	0.00	0.000	0.0229	2	1.10	0.962	0.0229	2	0.00	0.000
767	0.0225	2	0.03	0.046	0.0229	2	0.00	0.000	0.02175	2	0.00	0.000	0.0113	1	0.00	-	0.0233	2	0.00	0.000

TABLE 7 (cont.).- Swept area, number of hauls and redfish mean catch (kg) and SD by stratum. Spanish Spring Surveys on NAFO Div. 3NO: 1997-2010. Swept area in square miles. n.s. means stratum not surveyed. 1997-2000 data are transformed C/V *Playa de Menduíña* data, and 2002-2010 data are original from R/V *Vizconde de Eza*. In 2001, there are data from the two vessels.

	2007				2008				2009				2010			
Stratum	Swept area	Tow number	Redfish Mean catch	Redfish SD	Swept area	Tow number	Redfish Mean catch	Redfish SD	Swept area	Tow number	Redfish Mean catch	Redfish SD	Swept area	Tow number	Redfish Mean catch	Redfish SD
353	0.0364	3	0.00	0.000	0.0341	3	0.00	0.000	0.0345	3	0.11	0.196	0.0225	2	0.00	0.000
354	0.0364	3	9.95	2.685	0.0345	3	0.73	1.270	0.0338	3	2.67	3.866	0.0225	2	29.30	41.436
355	0.0240	2	1023.66	498.312	0.0221	2	604.35	633.073	0.0233	2	851.40	56.003	0.0229	2	5282.60	4804.932
356	0.0240	2	951.50	924.189	0.0236	2	421.60	498.652	0.0229	2	1109.75	350.371	0.0225	2	8633.50	10276.383
357	0.0360	3	845.49	1296.007	0.0233	2	277.50	136.472	0.0116	2	12944.66	6837.525	0.0225	2	2457.65	1593.465
358	0.0368	3	1269.76	921.602	0.0345	3	1073.07	575.908	0.0341	3	4709.51	3691.878	0.0225	2	8024.32	2799.690
359	0.0855	7	0.54	1.417	0.0799	7	0.34	0.500	0.0795	7	0.42	1.083	0.0705	6	862.61	2111.160
360	0.2378	20	0.00	0.000	0.2340	20	0.20	0.678	0.2273	20	0.20	0.883	0.1628	14	0.05	0.179
374	0.0240	2	0.00	0.000	0.0233	2	0.00	0.000	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000
375	0.0364	3	0.00	0.000	0.0334	3	0.00	0.000	0.0341	3	0.00	0.000	0.0364	3	0.00	0.000
376	0.1185	10	0.00	0.000	0.1129	10	0.20	0.639	0.1133	10	0.00	0.000	0.0788	7	0.00	0.000
377	0.0240	2	0.00	0.000	0.0233	2	0.00	0.000	0.0225	2	0.00	0.000	0.0233	2	0.00	0.000
378	0.0233	2	31.44	40.814	0.0240	2	456.60	152.594	0.0229	2	1001.95	1399.435	0.0225	2	1299.45	1820.588
379	0.0240	2	4428.25	851.003	0.0229	2	2794.83	3845.706	0.0229	2	12745.33	5943.473	0.0229	2	7462.75	1908.835
380	0.0240	2	362.40	204.920	0.0225	2	392.21	190.623	0.0229	2	21.74	24.374	0.0236	2	2655.59	1400.928
381	0.0240	2	0.46	0.628	0.0229	2	1.61	1.894	0.0229	2	0.08	0.093	0.0244	2	0.22	0.170
382	0.0484	4	0.58	1.168	0.0458	4	0.76	1.525	0.0450	4	0.00	0.000	0.0233	2	0.00	0.000
721	0.0116	1	168.60	-	0.0225	2	52.45	26.375	0.0229	2	3197.60	4102.634	0.0225	2	146.95	34.719
722	0.0225	2	2.61	2.594	0.0206	2	8.88	8.881	0.0225	2	2.58	0.177	0.0225	2	3.17	3.719
723	0.0240	2	206.75	171.615	0.0225	2	215.73	57.947	0.0225	2	9914.19	12350.058	0.0225	2	747.32	309.317
724	0.0233	2	174.75	179.959	0.0221	2	164.85	27.082	0.0233	2	173.01	122.605	0.0229	2	125.43	48.684
725	0.0225	2	504.10	269.973	0.0229	2	285.92	98.458	0.0229	2	398.45	69.367	0.0233	2	1271.77	1290.710
726	0.0229	2	119.15	69.933	0.0225	2	100.00	98.995	0.0229	2	301.95	427.022	0.0233	2	261.10	349.169
727	0.0240	2	9.47	10.621	0.0221	2	14.42	1.011	0.0113	1	279.10	-	0.0240	2	63.30	25.597
728	0.0225	2	8.90	5.370	0.0221	2	7.44	0.233	0.0229	2	30.65	7.990	0.0240	2	26.80	16.405
752	0.0225	2	0.51	0.725	0.0218	2	2.06	1.771	0.0229	2	6.16	8.704	0.0240	2	1.94	0.728
753	0.0225	2	0.00	0.000	0.0221	2	0.00	0.000	0.0116	1	0.00	-	n.s.	n.s.	n.s.	n.s.
754	0.0225	2	0.00	0.000	0.0218	2	0.00	0.000	0.0113	1	0.00	-	0.0225	2	0.00	0.000
755	0.0338	3	0.00	0.000	0.0431	4	0.00	0.000	0.0116	1	0.00	-	0.0120	1	0.00	-
756	0.0225	2	9.65	13.647	0.0218	2	18.49	24.770	0.0225	2	4.05	5.728	0.0225	2	0.90	0.191
757	0.0229	2	0.00	0.000	0.0221	2	0.09	0.115	0.0229	2	0.20	0.283	0.0221	2	0.00	0.000
758	0.0225	2	0.00	0.000	0.0218	2	0.00	0.000	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000
759	n.s.	n.s.	n.s.	n.s.	0.0221	2	0.00	0.000	0.0113	1	0.00	-	0.0225	2	0.00	0.000
760	0.0233	2	5.53	5.996	0.0225	2	0.61	0.028	0.0229	2	7.96	0.007	0.0225	2	2.23	3.147
761	0.0225	2	0.00	0.000	0.0214	2	0.00	0.000	0.0225	2	0.00	0.000	0.0229	2	0.00	0.000
762	n.s.	n.s.	n.s.	n.s.	0.0214	2	0.00	0.000	0.0225	2	0.00	0.000	0.0229	2	0.00	0.000
763	n.s.	n.s.	n.s.	n.s.	0.0311	3	0.68	0.302	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
764	0.0225	2	0.00	0.000	0.0221	2	0.00	0.000	0.0116	1	0.61	-	n.s.	n.s.	n.s.	n.s.
765	0.0225	2	0.00	0.000	0.0214	2	0.00	0.000	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000
766	n.s.	n.s.	n.s.	n.s.	0.0218	2	0.11	0.151	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000
767	n.s.	n.s.	n.s.	n.s.	0.0214	2	0.00	0.000	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.

TABLE 8.- Stratified mean catches (Kg) by stratum and year and SD by year of redfish (1997-2010). n.s. means stratum not surveyed. 1997-2000 data are transformed C/V *Playa de Menduíña* data. 2002-2010 data are original from R/V *Vizconde de Eza*. In 2001, there are data from the two vessels.

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

TABLE 9.- Survey estimates (by the swept area method) of redfish biomass (t) and SD by stratum and year on NAFO Div. 3NO. n.s. means stratum not surveyed. 1997-2000 data are transformed C/V *Playa de Menduíña* data. 2002-2010 data are original from R/V *Vizconde de Eza*. In 2001, there are data from the two vessels.

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

TABLE 10.- Mean catch per tow (kg) and biomass by the swept area method (t) of redfish and SD by Division and year on NAFO Div. 3NO. 1997-2000 data are transformed C/V *Playa de Menduíña* data. 2002-2010 data are original from R/V *Vizconde de Eza*. In 2001, there are data from the two vessels. In the final row it is presented the percentage of the 3N Biomass over the Total Biomass.

		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
3N	Biomass	4753	22540	46459	68928	53855	7620	11031	27016	146918	87830	87602	68059	735743	359536
	SD	352.9	17632	25022	33109	41371	2106	3199	7174	52267	22675	15364	25890	143334	58306
	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
	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
	Nº Strata	27	31	31	31	31	31	31	31	31	31	28	31	30	29
3O	Biomass	1194	18369	30105	30298	9494	3552	4684	8259	10797	15199	11203	6113	28238	71760
	SD	922.3	10490	12129	6073	2702	1117	369.4	1326	2728	5279	3362	3258	16762	37821
	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
	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
	Nº Strata	9	10	10	10	10	10	10	10	10	10	8	10	9	8
3N/Total (%)	Biomass	80	55	61	69	85	68	70	77	93	85	89	92	96	83

TABLE 11.- Length weight relationships in the calculation of redfish biomass. The equation is $Weight = a(l + 0.5)^b$
Spanish Spring Surveys on NAFO Div. 3NO: 1997-2010. *E* means Error. *n.d.* means not data available.

		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
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
		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
	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
		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
		R2 = 0.991	n.d.	n.d.	R2 = 0.992	n.d.	R2 = 0.987	R2 = 0.996	R2 = 0.993	R2 = 0.996	R2 = 0.992	R2 = 0.993	R2 = 0.997	R2 = 0.996	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
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
		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
	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
		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
		R2 = 0.949	n.d.	n.d.	R2 = 0.993	n.d.	R2 = 0.996	R2 = 0.996	R2 = 0.996	R2 = 0.995	R2 = 0.981	R2 = 0.993	R2 = 0.993	R2 = 0.995	R2 = 0.998
		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
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
		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
	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
		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
		R2 = 0.979	n.d.	n.d.	R2 = 0.998	n.d.	R2 = 0.997	R2 = 0.995	R2 = 0.995	R2 = 0.995	R2 = 0.992	R2 = 0.992	R2 = 0.996	R2 = 0.992	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

TABLE 12.- Redfish length distribution per haul mean catches by sex and year. Number per stratified mean catches. Spanish Spring Survey on NAFO 3NO: 1997-2010. Indet. means indeterminate. 1997-2000 data are transformed C/V *Playa de Menduíña* data. 2002-2010 data are original R/V *Vizconde de Eza* data. (*) indicates untransformed data.

	1997				1998				1999				2000				2001			
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	0.093	0.000	0.635	0.729
8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.373	0.373	0.235	0.000	0.000	0.235	0.070	0.140	0.246	0.456
10	0.000	0.186	0.000	0.186	0.000	0.000	0.000	0.000	0.191	0.000	0.021	0.211	0.550	0.000	0.000	0.550	0.132	0.105	0.088	0.325
12	0.022	0.036	0.000	0.058	0.040	0.008	0.008	0.055	1.950	0.730	0.000	2.680	11.077	0.370	0.000	11.448	1.112	0.252	0.133	1.497
14	0.490	0.330	0.000	0.820	0.806	0.554	0.007	1.367	3.072	1.419	0.000	4.491	26.016	2.705	0.000	28.722	3.068	0.714	0.000	3.783
16	0.946	0.619	0.000	1.565	3.584	2.252	0.000	5.835	14.143	9.646	0.000	23.788	45.205	15.696	0.000	60.901	7.262	3.300	0.000	10.562
18	3.054	1.336	0.000	4.390	3.956	2.589	0.000	6.545	25.597	16.121	0.000	41.718	95.961	65.994	0.000	161.955	30.279	11.125	0.000	41.403
20	6.772	3.978	0.000	10.750	28.656	15.413	0.000	44.069	103.936	26.874	0.000	130.810	124.018	69.840	0.000	193.858	80.845	52.392	0.000	133.238
22	3.850	2.553	0.000	6.402	38.558	40.190	0.000	78.747	92.112	54.349	0.000	146.461	164.144	62.062	0.000	226.206	93.056	29.592	0.000	122.648
24	1.600	1.546	0.000	3.146	17.115	27.574	0.000	44.690	22.120	48.203	0.000	70.322	44.640	74.516	0.000	119.156	54.145	26.851	0.000	80.996
26	1.517	1.000	0.000	2.516	7.699	14.565	0.000	22.264	11.792	22.407	0.000	34.199	5.084	26.067	0.000	31.151	5.520	25.614	0.000	31.135
28	0.863	0.639	0.000	1.502	4.151	6.007	0.000	10.157	6.475	10.949	0.000	17.424	0.957	5.879	0.000	6.836	1.112	4.952	0.000	6.064
30	1.238	1.244	0.000	2.482	1.286	2.311	0.000	3.597	4.543	5.023	0.000	9.566	0.118	2.656	0.000	2.774	1.232	1.733	0.000	2.965
32	1.516	1.025	0.000	2.540	1.259	1.941	0.000	3.199	2.672	3.126	0.000	5.798	0.264	0.576	0.000	0.840	0.910	1.082	0.000	1.992
34	0.222	0.194	0.000	0.416	0.538	0.589	0.000	1.126	0.448	1.456	0.000	1.905	0.040	0.399	0.000	0.439	0.342	0.615	0.000	0.958
36	0.100	0.046	0.000	0.147	0.188	0.064	0.000	0.252	0.145	0.261	0.000	0.406	0.000	0.032	0.000	0.032	0.209	0.349	0.000	0.558
38	0.168	0.118	0.000	0.285	0.287	0.008	0.000	0.295	0.270	0.253	0.000	0.523	0.000	0.000	0.000	0.000	0.025	0.023	0.000	0.048
40	0.022	0.074	0.000	0.096	0.140	0.029	0.000	0.169	0.010	0.002	0.000	0.013	0.000	0.000	0.000	0.000	0.035	0.011	0.000	0.047
42	0.000	0.000	0.000	0.000	0.103	0.000	0.000	0.103	0.021	0.021	0.000	0.042	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.004
44	0.000	0.017	0.000	0.017	0.000	0.000	0.000	0.000	0.003	0.002	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
46	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
48	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
50	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
52	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	22.380	14.940	0.000	37.320	108.363	114.093	0.015	222.471	289.499	200.841	0.394	490.734	518.308	326.794	0.000	845.102	279.454	158.851	1.103	439.408
Nº samples (*):				19				23				48				21				36
Nº Ind. (*):	1165	696	0	1861	1591	1451	2	3044	3291	2607	17	5915	2169	1499	0	3668	2651	1831	104	4586
Sampled catch:				370				544				1403				578				798
Range (*):				11-45				12-42				8-45				9-37				6-42
Total catch:				1791				18553				37339				37160				17897
Total hauls (*):				128				124				114				118				123

TABLE 12 (cont.).- Redfish length distribution per haul mean catches by sex and year. Number per stratified mean catches. Spanish Spring Survey on NAFO 3NO: 1997-2010. Indet. means indeterminate. 1997-2000 data are transformed C/V *Playa de Menduíña* data. 2002-2010 data are original R/V *Vizconde de Eza* data. (*) indicates untransformed data.

	2002				2003				2004				2005				2006			
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	0.032	0.032	0.000	0.000	0.049	0.049	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	0.007	0.000	0.824	0.831	0.000	0.000	0.494	0.494	0.000	0.000	1.835	1.835	0.000	0.000	1.299	1.299	0.000	0.000	1.925	1.925
8	0.009	0.000	0.146	0.155	0.041	0.010	0.137	0.188	0.096	0.009	15.440	15.544	0.025	0.016	13.803	13.844	0.101	0.000	7.759	7.860
10	0.024	0.012	0.030	0.066	0.071	0.010	0.092	0.173	0.585	0.490	2.260	3.335	2.311	0.791	65.499	68.601	0.046	0.005	18.813	18.864
12	0.117	0.011	0.007	0.135	0.076	0.016	0.051	0.143	2.988	1.786	0.035	4.808	2.604	1.086	9.894	13.584	3.827	0.257	144.295	148.379
14	0.547	0.271	0.000	0.818	0.666	0.302	0.000	0.968	3.194	1.185	0.000	4.379	8.181	3.746	4.718	16.645	33.406	11.929	74.618	119.953
16	2.825	2.453	0.005	5.283	3.104	1.212	0.000	4.316	7.986	3.334	0.000	11.320	31.540	18.911	0.000	50.451	38.481	22.435	0.295	61.211
18	8.402	6.602	0.000	15.005	13.571	6.794	0.000	20.365	14.848	8.334	0.000	23.182	127.565	95.825	0.000	223.390	43.868	17.528	0.000	61.396
20	13.836	9.661	0.000	23.497	20.579	13.557	0.000	34.137	25.352	15.023	0.000	40.376	99.190	82.519	0.000	181.709	101.412	67.577	0.000	168.990
22	11.573	9.492	0.007	21.072	17.586	11.589	0.000	29.175	29.020	17.416	0.000	46.435	139.418	78.585	0.000	218.003	101.794	64.618	0.000	166.412
24	4.945	4.364	0.000	9.309	9.445	6.249	0.000	15.695	20.864	11.753	0.000	32.616	118.143	75.200	0.000	193.342	46.037	39.015	0.000	85.052
26	1.374	1.503	0.000	2.877	3.028	3.058	0.000	6.087	8.074	12.950	0.000	21.025	27.239	64.010	0.000	91.249	20.205	30.957	0.000	51.162
28	1.345	0.928	0.000	2.273	1.090	1.396	0.000	2.486	4.091	10.927	0.000	15.018	7.480	48.991	0.000	56.471	5.828	19.128	0.000	24.956
30	0.564	0.973	0.000	1.537	0.598	0.634	0.000	1.232	3.311	5.628	0.000	8.939	4.489	18.600	0.000	23.089	1.813	10.604	0.000	12.416
32	0.614	0.734	0.000	1.347	0.604	0.638	0.000	1.242	1.010	3.365	0.000	4.375	1.967	8.347	0.000	10.314	0.951	5.798	0.000	6.749
34	0.189	0.352	0.000	0.541	0.293	0.446	0.000	0.739	0.813	2.093	0.000	2.906	0.955	3.538	0.000	4.493	0.385	2.818	0.000	3.202
36	0.080	0.159	0.000	0.239	0.119	0.148	0.000	0.267	0.262	0.491	0.000	0.753	2.018	1.154	0.000	3.172	0.215	0.957	0.000	1.173
38	0.033	0.006	0.000	0.039	0.055	0.077	0.000	0.132	0.063	0.090	0.000	0.153	0.428	0.347	0.000	0.775	0.259	0.175	0.000	0.434
40	0.003	0.000	0.000	0.003	0.037	0.050	0.000	0.087	0.044	0.094	0.000	0.137	0.120	0.295	0.000	0.415	0.267	0.068	0.000	0.335
42	0.000	0.006	0.000	0.006	0.037	0.005	0.000	0.042	0.000	0.000	0.000	0.000	0.127	0.161	0.000	0.288	0.000	0.075	0.000	0.075
44	0.000	0.000	0.000	0.000	0.000	0.019	0.000	0.019	0.010	0.000	0.000	0.010	0.000	0.027	0.000	0.027	0.000	0.000	0.000	0.000
46	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
48	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
50	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
52	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	46.486	37.526	1.051	85.063	71.002	46.210	0.822	118.034	122.610	94.967	19.569	237.147	573.800	502.147	95.213	1171.160	398.896	293.944	247.705	940.545
Nº samples (*):				58				45				45				55				55
Nº Ind. (*):	2186	1744	157	4087	2854	1968	131	4953	3287	2771	688	6746	3892	3835	1387	9114	3677	3437	1408	8522
Sampled catch:				685				908				1326				1875				1785
Range (*):				5-43				5-44				6-44				6-45				6-43
Total catch:				2794				3463				7270				28602				21223
Total hauls (*):				125				118				120				119				120

TABLE 12 (cont.).- Redfish length distribution per haul mean catches by sex and year. Number per stratified mean catches. Spanish Spring Survey on NAFO 3NO: 1997-2010. Indet. means indeterminate. 1997-2000 data are transformed C/V *Playa de Menduíña* data. 2002-2010 data are original R/V *Vizconde de Eza* data. (*) indicates untransformed data.

	2007				2008				2009				2010			
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	0.054	0.054	0.000	0.000	0.029	0.029	0.000	0.000	0.130	0.130
6	1.538	0.992	1.932	4.463	0.000	0.000	0.609	0.609	0.012	0.006	0.157	0.175	0.007	0.000	0.101	0.109
8	1.962	1.041	0.765	3.768	0.000	0.000	0.235	0.235	0.561	0.214	0.383	1.158	0.015	0.019	0.000	0.033
10	0.271	0.346	0.038	0.655	0.176	0.000	0.312	0.488	17.045	1.568	0.282	18.894	0.015	0.000	0.000	0.015
12	6.388	5.708	0.000	12.096	0.913	0.706	0.084	1.703	22.492	11.619	0.194	34.304	0.015	0.007	0.000	0.022
14	39.163	21.848	0.253	61.264	13.336	6.951	0.015	20.302	69.841	31.618	0.173	101.633	0.184	0.000	0.000	0.184
16	53.019	34.924	0.022	87.965	97.925	72.091	0.521	170.537	651.956	387.072	0.000	1039.028	108.602	26.757	0.000	135.358
18	32.554	26.051	0.000	58.605	58.825	43.382	0.174	102.381	2024.106	1346.781	2.424	3373.311	823.922	542.608	0.000	1366.530
20	38.128	24.719	0.000	62.847	27.018	19.002	0.000	46.019	435.925	536.721	0.000	972.645	610.079	704.422	0.000	1314.501
22	70.528	41.682	0.000	112.210	54.626	21.270	0.000	75.896	268.644	161.718	0.000	430.363	219.541	214.975	0.000	434.516
24	70.387	42.600	0.000	112.986	52.035	37.069	0.000	89.105	188.590	165.000	0.000	353.591	178.206	127.535	0.000	305.742
26	28.763	35.643	0.000	64.406	16.620	33.127	0.000	49.747	47.409	126.397	0.000	173.806	51.762	94.471	0.000	146.233
28	5.758	26.387	0.000	32.144	2.858	15.003	0.000	17.861	16.106	49.709	0.000	65.815	9.461	49.090	0.000	58.551
30	3.989	21.517	0.000	25.506	0.993	5.352	0.000	6.345	4.672	20.094	0.000	24.765	2.305	26.479	0.000	28.783
32	6.761	14.422	0.000	21.183	2.179	2.796	0.000	4.975	1.869	4.131	0.000	6.000	1.388	12.161	0.000	13.549
34	5.081	7.270	0.000	12.351	1.536	1.828	0.000	3.364	1.645	2.313	0.000	3.958	2.257	5.426	0.000	7.684
36	2.247	7.218	0.000	9.465	0.414	0.752	0.000	1.166	3.251	1.316	0.000	4.567	1.104	1.764	0.000	2.869
38	1.745	0.991	0.000	2.736	0.225	0.268	0.000	0.493	0.165	0.180	0.000	0.345	0.671	0.775	0.000	1.447
40	0.328	0.057	0.000	0.385	0.058	0.144	0.000	0.202	0.078	0.013	0.000	0.092	0.375	0.589	0.000	0.963
42	0.066	0.040	0.000	0.106	0.024	0.050	0.000	0.074	0.090	0.022	0.000	0.112	0.000	0.236	0.000	0.236
44	0.000	0.013	0.000	0.013	0.018	0.000	0.000	0.018	0.028	0.006	0.000	0.034	0.000	0.201	0.000	0.201
46	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
48	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
50	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
52	0.000	0.000	0.000	0.000	0.000	0.013	0.000	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	368.676	313.470	3.009	685.155	329.779	259.804	2.004	591.587	3754.484	2846.498	3.642	6604.624	2009.908	1807.515	0.232	3817.654
Nº samples (*):				42				52				39				42
Nº Ind. (*):	3413	3162	341	6916	3445	3398	128	6971	3418	2763	68	6249	2796	2841	32	5669
Sampled catch:				1378				1453				1034				1265
Range (*):				6-44				5-52				5-44				5-45
Total catch:				22229				14874				99847				82169
Total hauls (*):				110				122				109				95

TABLE 13.- Swept area, number of hauls and Witch flounder mean catch (kg) and SD by stratum. Spanish Spring Surveys on NAFO Div. 3NO: 2002-2010. Swept area in square miles. n.s. means stratum not surveyed. Original data from R/V *Vizconde de Eza*.

	2002				2003				2004				2005				2006			
Stratum	Swept area	Tow number	W. flounder Mean catch	W. flounder SD	Swept area	Tow number	W. flounder Mean catch	W. flounder SD	Swept area	Tow number	W. flounder Mean catch	W. flounder SD	Swept area	Tow number	W. flounder Mean catch	W. flounder SD	Swept area	Tow number	W. flounder Mean catch	W. flounder SD
353	0.0476	4	3.92	2.388	0.0334	3	0.67	0.594	0.0338	3	14.77	10.078	0.0353	3	7.18	5.484	0.0371	3	18.12	6.882
354	0.0356	3	6.84	3.430	0.0338	3	30.64	45.156	0.0345	3	23.66	7.764	0.0353	3	39.60	33.678	0.0364	3	10.31	3.889
355	0.0236	2	68.20	70.145	0.0229	2	36.30	19.516	0.0229	2	7.39	3.203	0.0225	2	5.47	0.523	0.0248	2	2.80	0.990
356	0.0233	2	25.75	21.991	0.0225	2	78.36	70.916	0.0221	2	8.12	8.522	0.0233	2	6.95	6.258	0.0240	2	3.49	0.283
357	0.0240	2	0.00	0.000	0.0229	2	17.37	20.273	0.0229	2	9.67	9.493	0.0233	2	1.69	0.269	0.0244	2	2.29	2.529
358	0.0345	3	2.67	4.193	0.0338	3	5.48	7.206	0.0330	3	6.03	5.033	0.0349	3	9.34	9.033	0.0349	3	3.25	2.119
359	0.0686	6	0.72	0.937	0.0791	7	1.72	2.181	0.0791	7	10.75	21.045	0.0814	7	1.22	1.432	0.0975	8	6.05	8.945
360	0.2865	25	0.16	0.480	0.2254	20	0.31	0.673	0.2310	20	2.48	4.330	0.2325	20	1.91	3.772	0.2340	19	4.49	11.280
374	0.0345	3	0.00	0.000	0.0225	2	0.00	0.000	0.0233	2	0.00	0.000	0.0229	2	0.00	0.000	0.0236	2	0.00	0.000
375	0.0353	3	0.00	0.000	0.0330	3	0.00	0.000	0.0338	3	0.00	0.000	0.0349	3	0.00	0.000	0.0364	3	0.00	0.000
376	0.1140	10	0.03	0.106	0.1125	10	0.00	0.000	0.1166	10	0.27	0.608	0.1174	10	0.27	0.551	0.1219	10	0.37	0.934
377	0.0229	2	0.11	0.161	0.0225	2	0.00	0.000	0.0218	2	0.59	0.834	0.0233	2	0.00	0.003	0.0236	2	0.47	0.113
378	0.0233	2	0.00	0.001	0.0225	2	0.00	0.000	0.0225	2	0.65	0.924	0.0225	2	0.00	0.000	0.0240	2	0.22	0.308
379	0.0229	2	1.27	1.796	0.0229	2	0.00	0.000	0.0124	1	0.00	-	0.0236	2	0.34	0.474	0.0236	2	0.12	0.170
380	0.0225	2	0.21	0.293	0.0229	2	0.00	0.000	0.0221	2	0.35	0.496	0.0229	2	0.14	0.170	0.0229	2	0.16	0.217
381	0.0229	2	0.00	0.000	0.0229	2	0.00	0.000	0.0225	2	0.00	0.000	0.0233	2	0.38	0.530	0.0229	2	0.00	0.000
382	0.0341	3	0.00	0.005	0.0454	4	0.00	0.000	0.0461	4	0.00	0.000	0.0458	4	0.15	0.305	0.0469	4	0.00	0.000
721	0.0233	2	7.10	1.273	0.0225	2	15.05	7.778	0.0221	2	2.97	1.472	0.0229	2	1.90	1.277	0.0236	2	1.30	1.842
722	0.0236	2	3.75	4.173	0.0221	2	11.29	10.076	0.0218	2	2.82	1.643	0.0233	2	6.24	5.035	0.0240	2	0.46	0.320
723	0.0233	2	1.88	2.432	0.0229	2	7.80	11.031	0.0229	2	4.06	0.344	0.0233	2	1.80	2.547	0.0236	2	6.34	2.583
724	0.0225	2	5.10	1.697	0.0225	2	12.05	4.031	0.0214	2	19.21	18.661	0.0225	2	6.05	7.000	0.0233	2	3.71	0.021
725	0.0225	2	0.60	0.587	0.0229	2	0.20	0.277	0.0225	2	18.54	25.286	0.0236	2	7.50	6.576	0.0233	2	3.69	3.007
726	0.0214	2	2.75	3.889	0.0225	2	0.00	0.000	0.0225	2	10.03	9.285	0.0113	1	4.30	-	0.0225	2	3.41	2.534
727	0.0233	2	0.00	0.000	0.0218	2	0.01	0.010	0.0233	2	4.93	0.247	0.0229	2	3.51	0.069	0.0225	2	0.67	0.578
728	0.0229	2	1.14	1.612	0.0225	2	5.37	3.288	0.0180	2	2.13	3.012	0.0109	1	1.12	-	0.0225	2	1.18	1.029
752	0.0116	1	0.40	0.559	0.0229	2	5.16	3.479	0.0214	2	0.34	0.474	0.0236	2	0.01	0.007	0.0225	2	0.00	0.000
753	0.0229	2	0.73	1.025	0.0229	2	0.30	0.424	0.0218	2	0.00	0.000	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000
754	0.0341	3	0.18	0.255	0.0218	2	0.16	0.219	0.0214	2	0.00	0.000	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000
755	0.0338	3	0.00	0.000	0.0221	2	0.00	0.000	0.0319	3	0.00	0.000	0.0450	4	0.00	0.000	0.0338	3	0.00	0.000
756	0.0229	2	1.09	1.534	0.0221	2	4.40	4.462	0.0218	2	3.50	4.950	0.0233	2	2.85	4.036	0.0229	2	3.49	2.770
757	0.0225	2	5.50	1.131	0.0221	2	1.70	1.146	0.0218	2	0.00	0.003	0.0225	2	0.00	0.003	0.0225	2	0.00	0.000
758	0.0225	2	0.20	0.283	0.0221	2	0.00	0.000	0.0214	2	0.00	0.000	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000
759	0.0225	2	0.75	1.061	0.0113	1	0.00	-	0.0214	2	0.00	0.000	0.0229	2	0.00	0.000	0.0225	2	0.00	0.000
760	0.0229	2	9.93	9.157	0.0218	2	18.85	9.970	0.0221	2	9.13	1.598	0.0229	2	16.56	2.128	0.0225	2	7.62	0.403
761	0.0225	2	18.70	17.961	0.0225	2	5.98	8.089	0.0221	2	1.48	2.086	0.0221	2	5.25	7.425	0.0233	2	6.75	9.117
762	0.0225	2	0.00	0.000	0.0225	2	4.65	6.576	0.0233	2	7.75	10.960	0.0225	2	4.37	6.180	0.0233	2	0.75	1.054
763	0.0225	2	0.00	0.000	0.0311	3	0.00	0.000	0.0326	3	0.56	0.973	0.0334	3	0.01	0.009	0.0225	2	0.00	0.000
764	0.0236	2	1.90	0.849	0.0221	2	9.55	8.139	0.0229	2	5.96	3.359	0.0233	2	1.86	2.627	0.0233	2	2.03	0.778
765	0.0236	2	17.50	24.042	0.0113	1	26.22	-	0.0225	2	3.92	3.083	0.0229	2	4.82	2.425	0.0236	2	3.35	0.076
766	0.0233	2	0.30	0.424	0.0225	2	0.22	0.311	0.0225	2	3.87	1.881	0.0229	2	5.41	7.651	0.0229	2	5.41	5.435
767	0.0225	2	0.05	0.071	0.0229	2	0.26	0.362	0.0218	2	0.00	0.000	0.0113	1	0.00	-	0.0233	2	0.00	0.000

TABLE 13 (cont.).- Swept area, number of hauls and Witch flounder mean catch (kg) and SD by stratum. Spanish Spring Surveys on NAFO Div. 3NO: 2002-2010. Swept area in square miles. n.s. means stratum not surveyed. Original data from R/V *Vizconde de Eza*.

	2007				2008				2009				2010			
Stratum	Swept area	Tow number	W. flounder Mean catch	W. flounder SD	Swept area	Tow number	W. flounder Mean catch	W. flounder SD	Swept area	Tow number	W. flounder Mean catch	W. flounder SD	Swept area	Tow number	W. flounder Mean catch	W. flounder SD
353	0.0364	3	3.01	2.943	0.0341	3	8.17	4.454	0.0345	3	0.36	0.308	0.0225	2	39.92	28.256
354	0.0364	3	6.28	3.484	0.0345	3	7.52	2.293	0.0338	3	12.07	9.067	0.0225	2	4.96	2.360
355	0.0240	2	1.75	1.583	0.0221	2	2.07	1.436	0.0233	2	5.58	1.308	0.0229	2	2.20	1.672
356	0.0240	2	1.23	0.011	0.0236	2	0.73	1.030	0.0229	2	4.12	5.208	0.0225	2	0.74	0.081
357	0.0360	3	0.91	0.925	0.0233	2	3.23	0.908	0.0116	2	2.89	3.660	0.0225	2	1.33	1.882
358	0.0368	3	7.56	7.204	0.0345	3	11.24	6.353	0.0341	3	4.16	2.878	0.0225	2	9.24	4.757
359	0.0855	7	1.57	1.710	0.0799	7	11.77	30.662	0.0795	7	1.69	2.561	0.0705	6	2.18	3.385
360	0.2378	20	1.03	2.314	0.2340	20	1.08	2.843	0.2273	20	0.00	0.000	0.1628	14	3.11	8.671
374	0.0240	2	0.00	0.000	0.0233	2	0.00	0.000	0.0225	2	0.00	0.000	0.0225	2	0.00	0.000
375	0.0364	3	0.00	0.000	0.0334	3	0.00	0.000	0.0341	3	0.00	0.000	0.0364	3	0.00	0.000
376	0.1185	10	0.06	0.180	0.1129	10	0.00	0.000	0.1133	10	0.00	0.000	0.0788	7	0.00	0.000
377	0.0240	2	0.00	0.000	0.0233	2	0.21	0.297	0.0225	2	0.00	0.000	0.0233	2	0.00	0.000
378	0.0233	2	0.45	0.636	0.0240	2	0.77	0.127	0.0229	2	0.00	0.000	0.0225	2	0.00	0.000
379	0.0240	2	0.17	0.235	0.0229	2	0.45	0.636	0.0229	2	0.65	0.919	0.0229	2	0.73	0.636
380	0.0240	2	0.20	0.272	0.0225	2	0.00	0.000	0.0229	2	0.05	0.056	0.0236	2	0.92	1.294
381	0.0240	2	0.00	0.000	0.0229	2	0.00	0.001	0.0229	2	0.00	0.000	0.0244	2	0.00	0.000
382	0.0484	4	0.00	0.000	0.0458	4	0.00	0.000	0.0450	4	0.00	0.000	0.0233	2	0.00	0.000
721	0.0116	1	1.28	-	0.0225	2	0.38	0.534	0.0229	2	11.32	11.990	0.0225	2	3.19	2.857
722	0.0225	2	2.62	0.297	0.0206	2	2.40	0.135	0.0225	2	3.26	3.118	0.0225	2	1.98	1.183
723	0.0240	2	2.83	0.593	0.0225	2	3.34	4.405	0.0225	2	5.75	2.616	0.0225	2	11.45	1.937
724	0.0233	2	24.15	11.526	0.0221	2	19.99	1.110	0.0233	2	15.65	18.272	0.0229	2	10.10	6.086
725	0.0225	2	6.40	4.729	0.0229	2	1.75	2.468	0.0229	2	4.94	2.920	0.0233	2	3.18	3.239
726	0.0229	2	7.36	3.922	0.0225	2	5.59	3.386	0.0229	2	64.76	75.604	0.0233	2	5.78	1.003
727	0.0240	2	1.54	1.223	0.0221	2	6.11	3.175	0.0113	1	3.42	-	0.0240	2	11.71	9.080
728	0.0225	2	9.65	13.011	0.0221	2	1.55	0.310	0.0229	2	11.28	8.111	0.0240	2	21.82	16.518
752	0.0225	2	0.00	0.000	0.0218	2	0.00	0.000	0.0229	2	0.74	1.039	0.0240	2	0.22	0.317
753	0.0225	2	0.00	0.000	0.0221	2	0.00	0.000	0.0116	1	0.00	-	n.s.	n.s.	n.s.	n.s.
754	0.0225	2	0.00	0.000	0.0218	2	0.00	0.000	0.0113	1	0.00	-	0.0225	2	0.00	0.000
755	0.0338	3	0.00	0.000	0.0431	4	0.00	0.000	0.0116	1	0.00	-	0.0120	1	0.00	-
756	0.0225	2	4.52	6.385	0.0218	2	8.26	1.921	0.0225	2	17.15	21.072	0.0225	2	25.45	10.901
757	0.0229	2	0.00	0.000	0.0221	2	0.00	0.000	0.0229	2	2.52	3.564	0.0221	2	3.91	5.532
758	0.0225	2	0.00	0.000	0.0218	2	0.00	0.000	0.0225	2	0.00	0.000	0.0225	2	0.69	0.975
759	n.s.	n.s.	n.s.	n.s.	0.0221	2	0.00	0.000	0.0113	1	0.00	-	0.0225	2	0.00	0.000
760	0.0233	2	12.81	11.584	0.0225	2	16.61	7.396	0.0229	2	13.95	4.596	0.0225	2	3.50	0.367
761	0.0225	2	0.09	0.120	0.0214	2	0.00	0.000	0.0225	2	1.09	1.536	0.0229	2	9.75	13.782
762	n.s.	n.s.	n.s.	n.s.	0.0214	2	0.00	0.000	0.0225	2	0.00	0.000	0.0229	2	1.06	1.496
763	n.s.	n.s.	n.s.	n.s.	0.0311	3	0.07	0.128	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
764	0.0225	2	2.47	0.904	0.0221	2	1.47	0.332	0.0116	1	0.6440	-	n.s.	n.s.	n.s.	n.s.
765	0.0225	2	6.22	0.396	0.0214	2	3.52	3.615	0.0225	2	3.38	1.824	0.0225	2	1.81	0.479
766	n.s.	n.s.	n.s.	n.s.	0.0218	2	0.68	0.955	0.0225	2	0.71	1.010	0.0225	2	0.83	1.174
767	n.s.	n.s.	n.s.	n.s.	0.0214	2	0.00	0.000	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.

TABLE 14.- Stratified mean catches (Kg) by stratum and year and SD by year of Witch flounder (2002-2010). n.s. means stratum not surveyed. Original data from R/V *Vizconde de Eza*.

Stratum	2002	2003	2004	2005	2006	2007	2008	2009	2010
353	1053.14	180.23	3972.50	1930.52	4873.38	809.69	2198.27	95.58	10738.48
354	1681.82	7538.10	5819.70	9741.60	2536.92	1544.06	1850.99	2970.04	1220.41
355	5046.80	2686.20	546.49	404.78	207.20	129.43	153.22	412.55	162.95
356	1210.25	3682.69	381.83	326.42	164.03	57.72	34.22	193.52	34.57
357	0.00	2847.86	1586.29	277.16	375.48	149.73	530.38	474.29	218.20
358	600.00	1232.25	1356.00	2102.25	730.50	1700.25	2528.78	935.40	2078.10
359	302.00	724.30	4524.79	514.94	2545.47	659.35	4954.63	710.44	917.22
360	437.49	850.21	6905.46	5306.49	12483.95	2871.78	2999.24	0.00	8657.12
374	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
376	44.82	0.00	354.84	362.85	489.18	76.04	0.00	0.00	0.00
377	11.40	0.00	59.00	0.20	47.00	0.00	21.00	0.00	0.00
378	0.07	0.00	90.84	0.00	30.30	62.55	107.03	0.00	0.00
379	134.62	0.00	0.00	35.51	12.72	17.65	47.70	68.90	77.38
380	19.87	0.00	33.70	13.39	15.02	18.86	0.00	4.46	87.84
381	0.00	0.00	0.00	54.00	0.00	0.00	0.07	0.00	0.00
382	0.91	0.00	0.00	52.31	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
722	314.96	947.94	236.75	524.16	38.98	220.08	201.56	273.42	166.36
723	291.40	1209.00	629.77	279.16	983.24	438.81	516.93	891.25	1774.75
724	632.40	1494.20	2381.42	750.20	459.42	2994.60	2478.14	1940.60	1251.97
725	62.48	20.58	1946.70	787.50	386.93	672.42	183.23	518.18	333.74
726	198.00	0.00	722.48	309.60	245.41	530.14	402.19	4662.72	416.23
727	0.00	0.67	472.80	337.06	64.51	147.36	586.08	328.32	1124.11
728	88.92	418.47	166.14	87.36	92.24	752.70	120.94	879.45	1701.96
752	51.75	675.96	43.89	0.66	0.00	0.00	0.00	96.29	29.34
753	100.05	41.40	0.00	0.00	0.00	0.00	0.00	0.00	n.s.
754	32.40	27.90	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
756	109.59	443.90	353.50	288.25	352.59	456.02	834.41	1732.15	2570.30
757	561.00	173.40	0.20	0.20	0.00	0.00	0.00	257.04	399.02
758	19.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.26
759	95.25	0.00	0.00	0.00	0.00	n.s.	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
761	3197.70	1022.58	252.23	897.75	1154.85	14.54	0.00	185.71	1666.40
762	0.00	985.80	1643.00	926.44	157.94	n.s.	0.00	0.00	224.30
763	0.00	0.00	146.68	1.31	0.00	n.s.	19.23	n.s.	n.s.
764	190.00	954.50	595.50	186.25	203.00	246.90	147.45	64.40	n.s.
765	2170.00	3251.28	486.08	597.06	415.46	771.28	436.98	419.12	224.32
766	43.20	31.68	557.28	779.04	778.61	n.s.	97.20	102.82	119.52
767	7.90	40.45	0.00	0.00	0.00	n.s.	0.00	n.s	n.s.
TOTAL	20700	35363	37865	30547	31102	17398	24032	21101	37009
$\overline{Y}$	2.00	3.42	3.66	2.95	3.01	1.84	2.32	2.13	3.82
S.D.	0.49	0.75	0.56	0.56	0.73	0.28	0.52	0.48	0.91

TABLE 15.- Survey estimates (by the swept area method) of Which flounder biomass (t) and SD by stratum and year on NAFO Div. 3NO. n.s. means stratum not surveyed. Original data from R/V *Vizconde de Eza* 2002-2010.

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

TABLE 16.- Length weight relationships in the calculation of Witch flounder biomass. The equation is $Weight = a(l + 0.5)^b$ Spanish Spring Surveys on NAFO Div. 3NO: 2002-2010.

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

TABLE 17.- Witch flounder length distribution per haul mean catches by sex and year. Number per stratified mean catches. Spanish Spring Survey on NAFO 3NO: 2002-2010. Indet. means indeterminate. Original data from R/V *Vizconde de Eza*.

	2002				2003				2004				2005				2006			
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	0.002	0.000	0.002	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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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	2.602	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
Nº samples:				55				52				65				68				69
Nº Ind.:	469	604	69	1142	721	891	7	1619	631	925	45	1601	550	751	106	1407	420	634	9	1063
Sampled catch:				344				560				517				362				351
Range:				6-58				10-57				7-59				5-61				8-60
Total catch:				403				626				517				394				352
Total hauls:				125				118				120				119				120

TABLE 17 (cont.).- Witch flounder length distribution per haul mean catches by sex and year. Number per stratified mean catches. Spanish Spring Survey on NAFO 3NO: 2002-2010. Indet. means indeterminate. Original data from R/V *Vizconde de Eza*.

	2007				2008				2009				2010			
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	0.006	0.006	0.000	0.000	0.013	0.013	0.000	0.000	0.005	0.005	0.000	0.000	0.000	0.000
8	0.014	0.008	0.050	0.072	0.000	0.000	0.010	0.010	0.000	0.000	0.020	0.020	0.000	0.000	0.000	0.000
10	0.000	0.000	0.006	0.006	0.000	0.003	0.004	0.007	0.005	0.000	0.002	0.008	0.005	0.004	0.000	0.008
12	0.000	0.000	0.000	0.000	0.000	0.018	0.000	0.018	0.000	0.000	0.002	0.002	0.018	0.028	0.000	0.046
14	0.000	0.000	0.000	0.000	0.003	0.008	0.000	0.011	0.039	0.021	0.005	0.065	0.015	0.027	0.000	0.042
16	0.000	0.004	0.000	0.004	0.000	0.000	0.000	0.000	0.020	0.056	0.008	0.084	0.015	0.000	0.000	0.015
18	0.006	0.029	0.000	0.035	0.003	0.000	0.000	0.003	0.009	0.037	0.000	0.046	0.004	0.012	0.000	0.016
20	0.013	0.020	0.000	0.034	0.018	0.021	0.000	0.039	0.029	0.019	0.000	0.048	0.016	0.011	0.000	0.027
22	0.032	0.041	0.000	0.073	0.031	0.032	0.000	0.063	0.034	0.050	0.000	0.084	0.035	0.023	0.000	0.058
24	0.069	0.042	0.000	0.111	0.066	0.037	0.000	0.104	0.068	0.138	0.000	0.206	0.016	0.059	0.000	0.074
26	0.121	0.050	0.000	0.171	0.063	0.045	0.000	0.108	0.068	0.124	0.000	0.192	0.080	0.061	0.000	0.141
28	0.153	0.148	0.000	0.301	0.076	0.124	0.000	0.199	0.206	0.217	0.000	0.422	0.134	0.096	0.000	0.231
30	0.187	0.092	0.000	0.278	0.150	0.133	0.000	0.283	0.241	0.263	0.000	0.504	0.171	0.141	0.000	0.312
32	0.180	0.220	0.000	0.399	0.155	0.141	0.000	0.295	0.344	0.373	0.000	0.718	0.181	0.234	0.000	0.415
34	0.240	0.380	0.000	0.620	0.243	0.283	0.000	0.526	0.324	0.462	0.000	0.785	0.294	0.379	0.000	0.673
36	0.336	0.396	0.000	0.732	0.365	0.220	0.000	0.586	0.355	0.432	0.000	0.786	0.775	0.513	0.000	1.288
38	0.188	0.420	0.000	0.608	0.367	0.408	0.000	0.775	0.261	0.466	0.000	0.727	0.764	0.778	0.000	1.542
40	0.295	0.331	0.000	0.626	0.332	0.368	0.000	0.700	0.174	0.371	0.000	0.545	0.534	0.718	0.000	1.252
42	0.090	0.317	0.000	0.407	0.143	0.507	0.000	0.649	0.105	0.361	0.000	0.466	0.349	1.023	0.000	1.371
44	0.029	0.257	0.000	0.286	0.035	0.424	0.000	0.459	0.058	0.422	0.000	0.480	0.106	0.505	0.000	0.611
46	0.000	0.185	0.000	0.185	0.007	0.282	0.000	0.289	0.009	0.124	0.000	0.134	0.028	0.406	0.000	0.434
48	0.000	0.040	0.000	0.040	0.000	0.140	0.000	0.140	0.004	0.105	0.000	0.109	0.000	0.226	0.000	0.226
50	0.000	0.039	0.000	0.039	0.004	0.053	0.000	0.056	0.000	0.052	0.000	0.052	0.000	0.125	0.000	0.125
52	0.000	0.021	0.000	0.021	0.000	0.082	0.000	0.082	0.000	0.000	0.000	0.000	0.000	0.033	0.000	0.033
54	0.000	0.010	0.000	0.010	0.000	0.024	0.000	0.024	0.000	0.014	0.000	0.014	0.000	0.005	0.000	0.005
56	0.000	0.000	0.000	0.000	0.000	0.012	0.000	0.012	0.000	0.000	0.000	0.000	0.000	0.007	0.000	0.007
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
60	0.000	0.000	0.000	0.000	0.000	0.019	0.000	0.019	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
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
Total	1.952	3.050	0.061	5.063	2.061	3.384	0.027	5.472	2.352	4.107	0.043	6.502	3.538	5.411	0.000	8.949
Nº samples:				56				52				44				48
Nº Ind.:	275	450	11	736	315	496	5	816	418	625	12	1055	350	609	0	959
Sampled catch:				256				337				350				399
Range:				7-55				7-61				6-55				11-56
Total catch:				256				343				401				410
Total hauls:				110				122				109				95

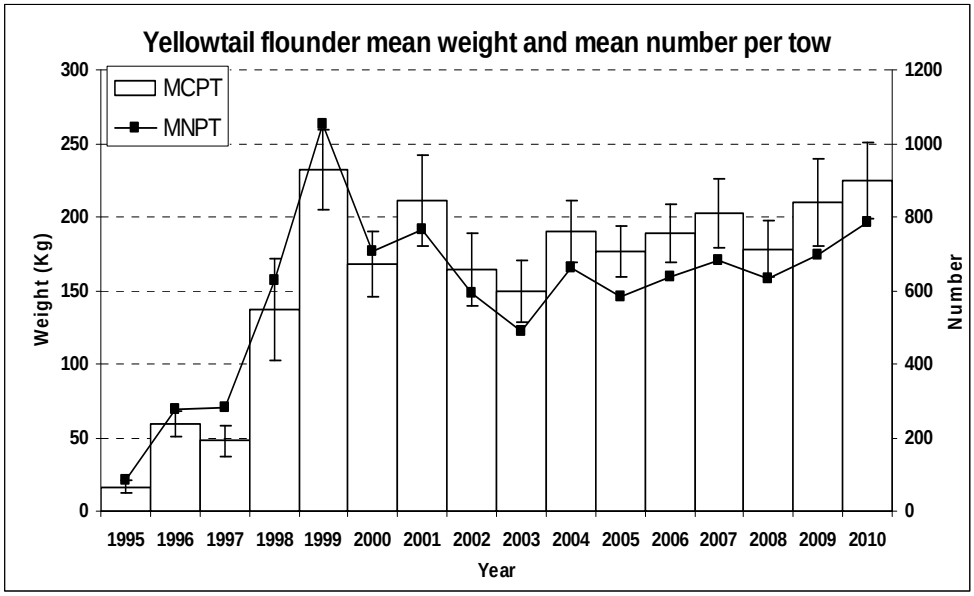

FIGURE 1.- Yellowtail flounder stratified mean catches in Kg and ±SD by year and mean number by year. Spanish Spring surveys on NAFO Div. 3NO: 1995-2010 (1995-2000 transformed data from C/V *Playa de Menduíña*; 2002-2010 original data from R/V *Vizconde de Eza*. In 2001, there are data from the two vessels).

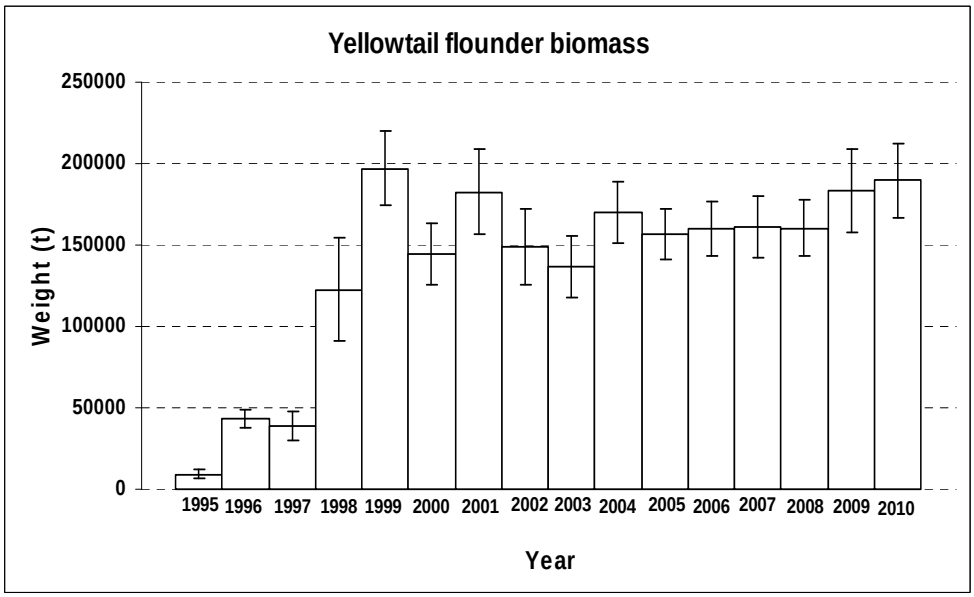

FIGURE 2.- Yellowtail flounder biomass calculated by the swept area method in tons and ±SD by year. Spanish Spring surveys on NAFO Div. 3NO: 1995-2010 (1995-2000 transformed data from C/V *Playa de Menduíña*; 2002-2010 original data from R/V *Vizconde de Eza*. In 2001, there are data from the two vessels).

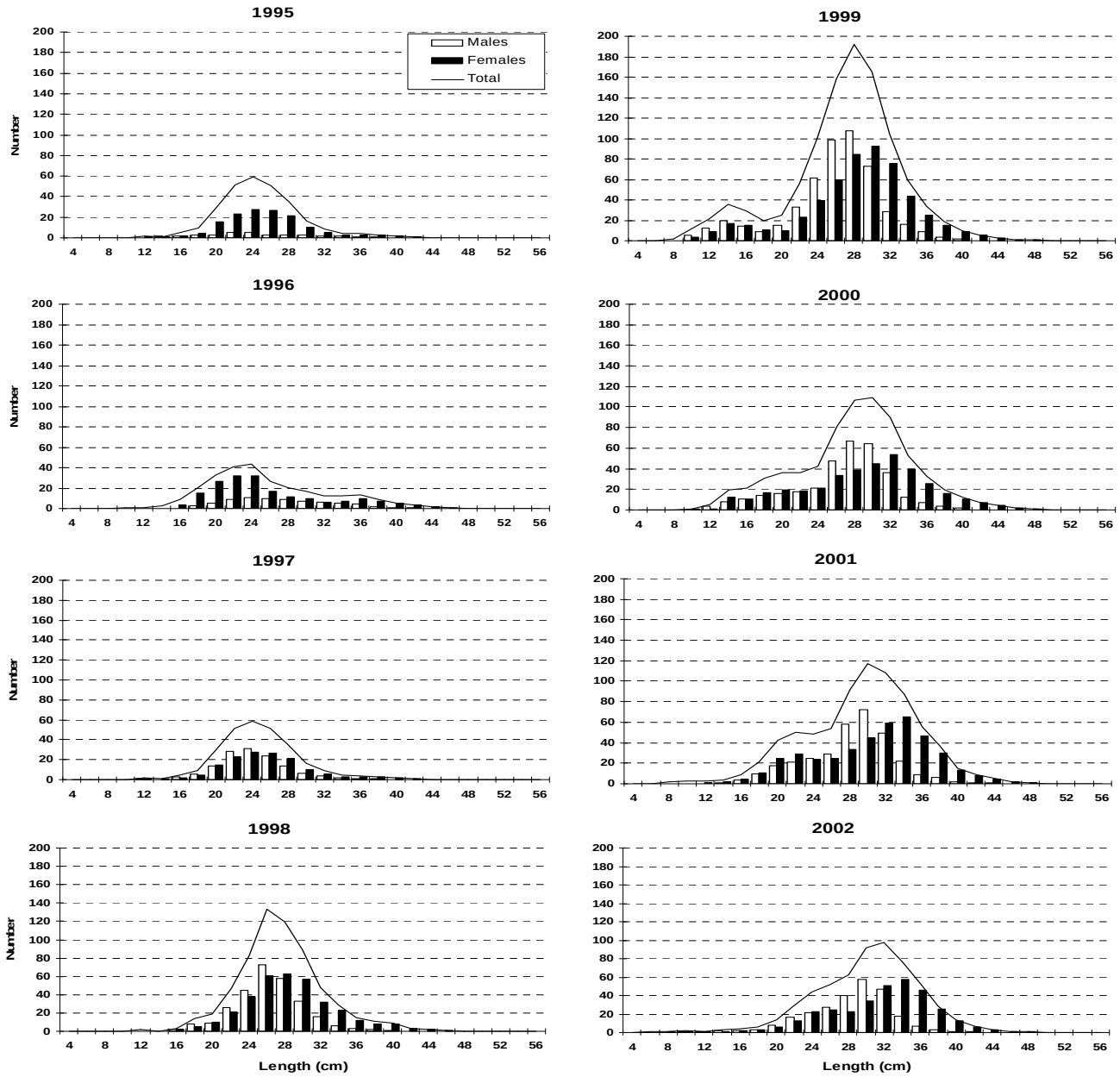

FIGURE 3.- Yellowtail flounder length distribution (cm) on NAFO 3NO: 1995-2010. Mean catches per tow numbers. 1995-2000 data are transformed data from C/V *Playa de Menduíña*, and 2002-2010 data are original from R/V *Vizconde de Eza*. In 2001, there are data from the two vessels

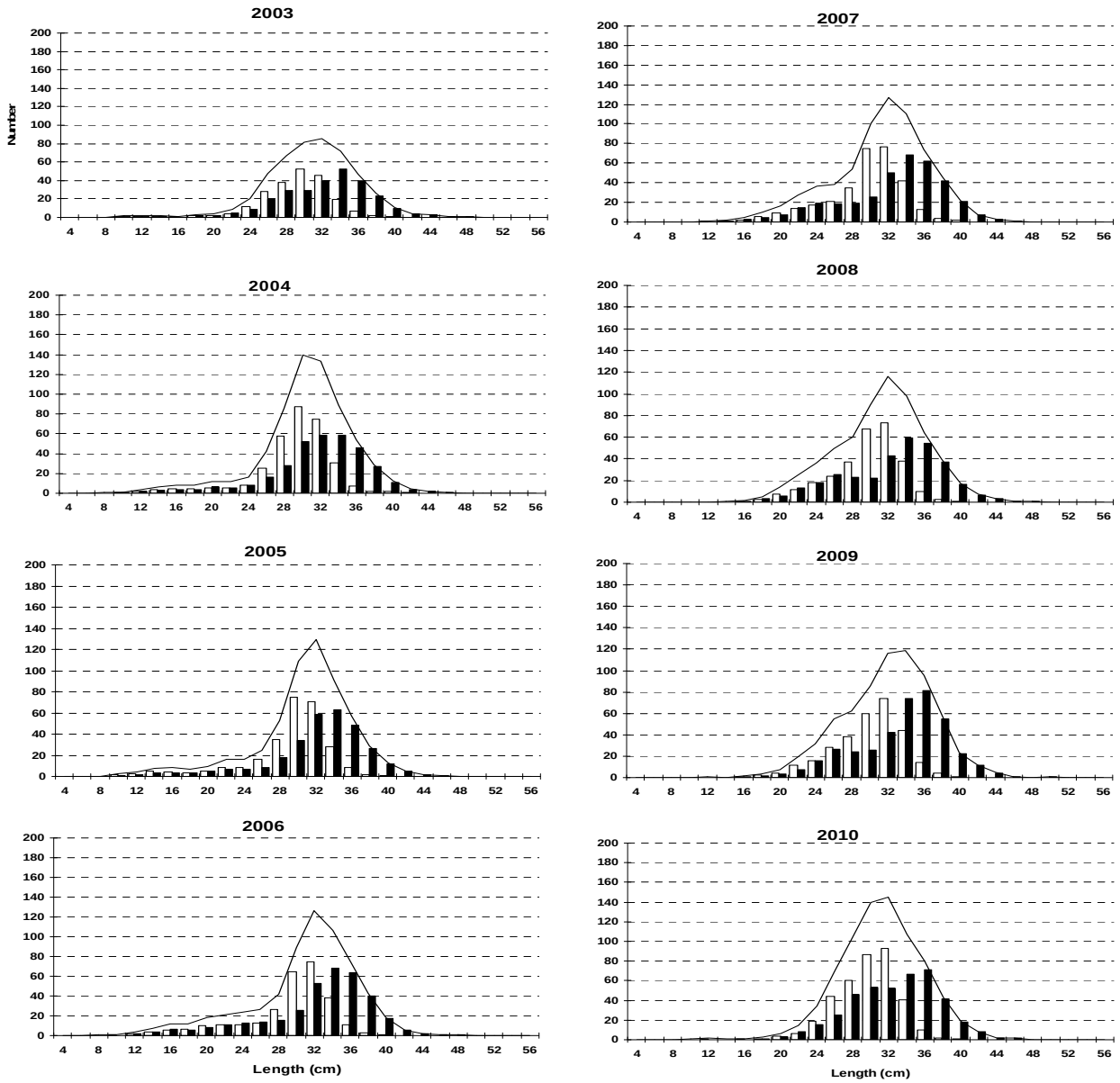

FIGURE 3 (Cont.).- Yellowtail flounder length distribution (cm) on NAFO 3NO: 1995-2010. Mean catches per tow numbers. 1995-2000 data are transformed data from C/V *Playa de Menduíña*, and 2002-2010 data are original from R/V *Vizconde de Eza*. In 2001, there are data from the two vessels

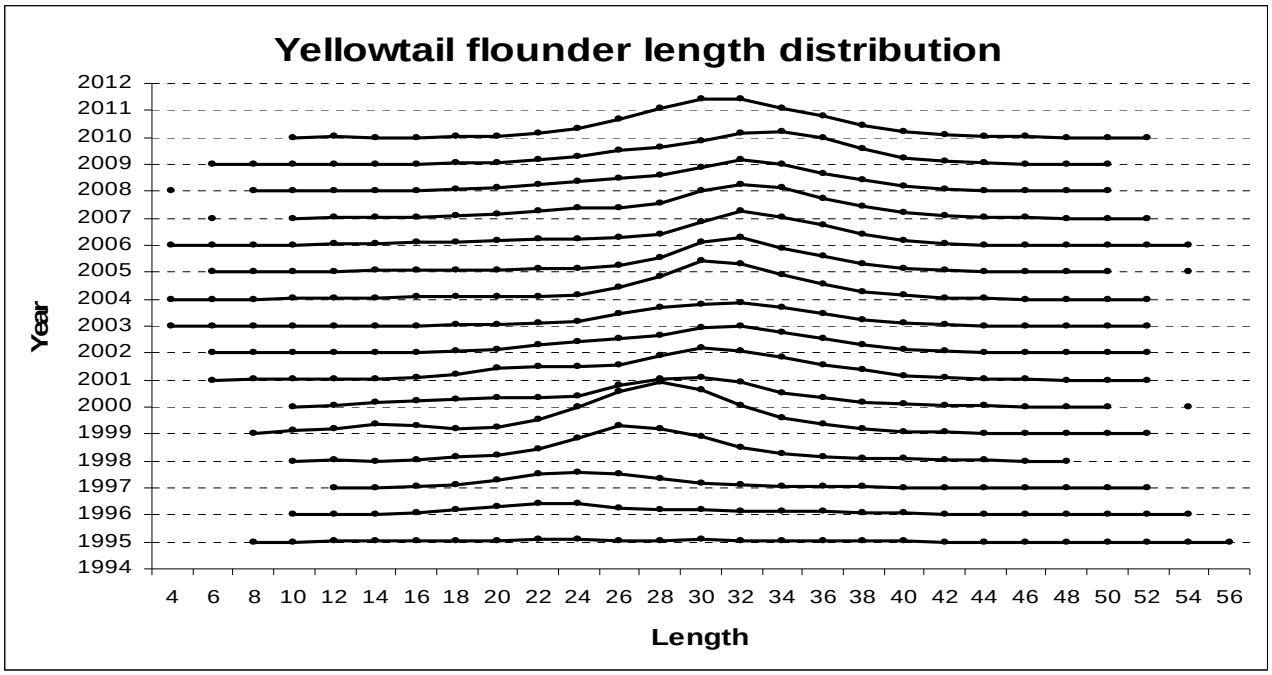

FIGURE 4.- Yellowtail flounder mean catches per tow length distribution (cm) on NAFO 3NO: 1995-2010.

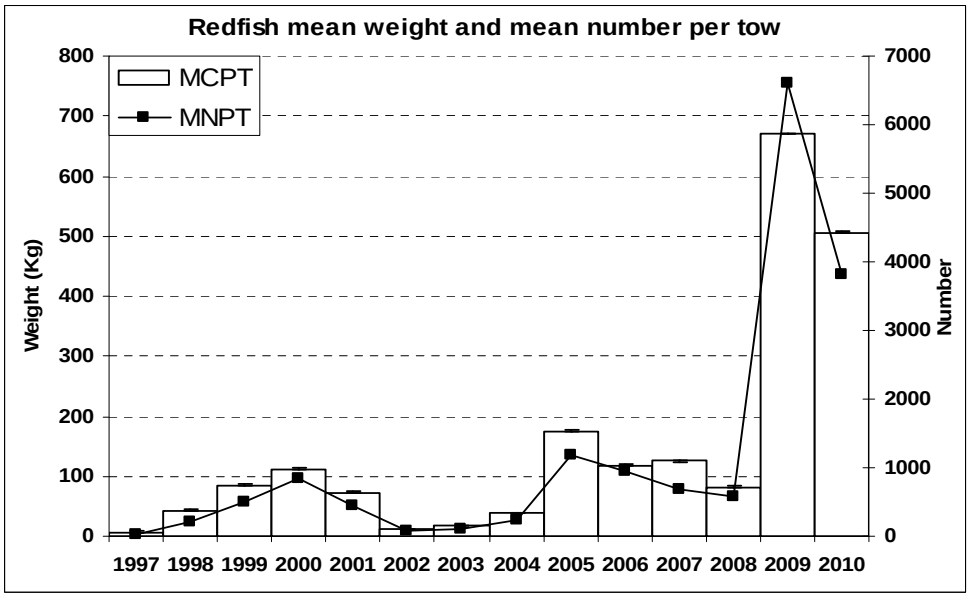

FIGURE 5.- Redfish stratified mean catches in Kg and ±SD by year and mean number by year. Spanish Spring surveys on NAFO Div. 3NO: 1997-2010 (1997-2000 transformed data from C/V *Playa de Menduíña*; 2002-2010 original data from R/V *Vizconde de Eza*. In 2001, there are data from the two vessels).

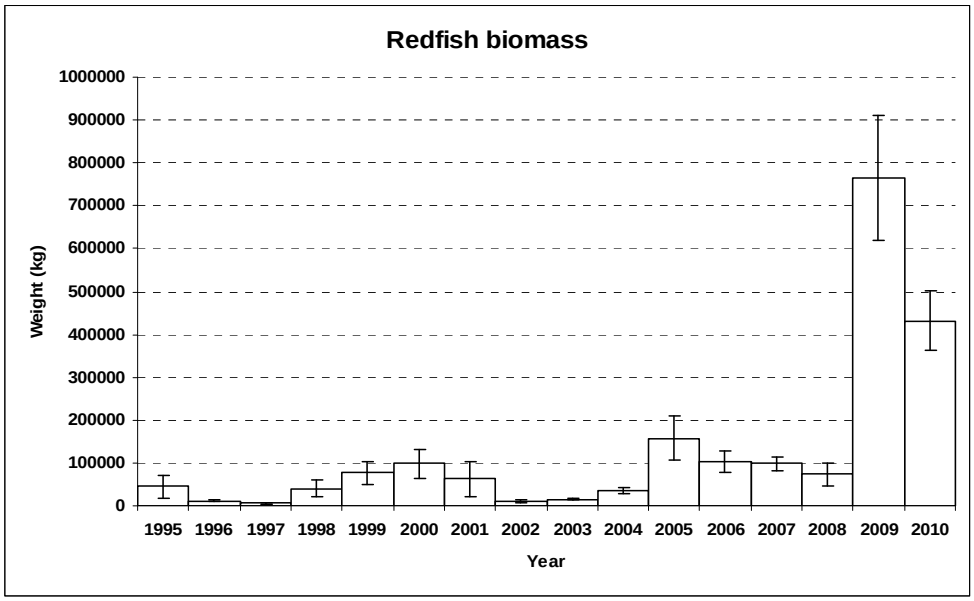

FIGURE 6.- Redfish biomass calculated by the swept area method in tons and ±SD by year. Spanish Spring surveys on NAFO Div. 3NO: 1997-2010 (1997-2000 transformed data from C/V *Playa de Menduíña*; 2002-2010 original data from R/V *Vizconde de Eza*. In 2001, there are data from the two vessels).

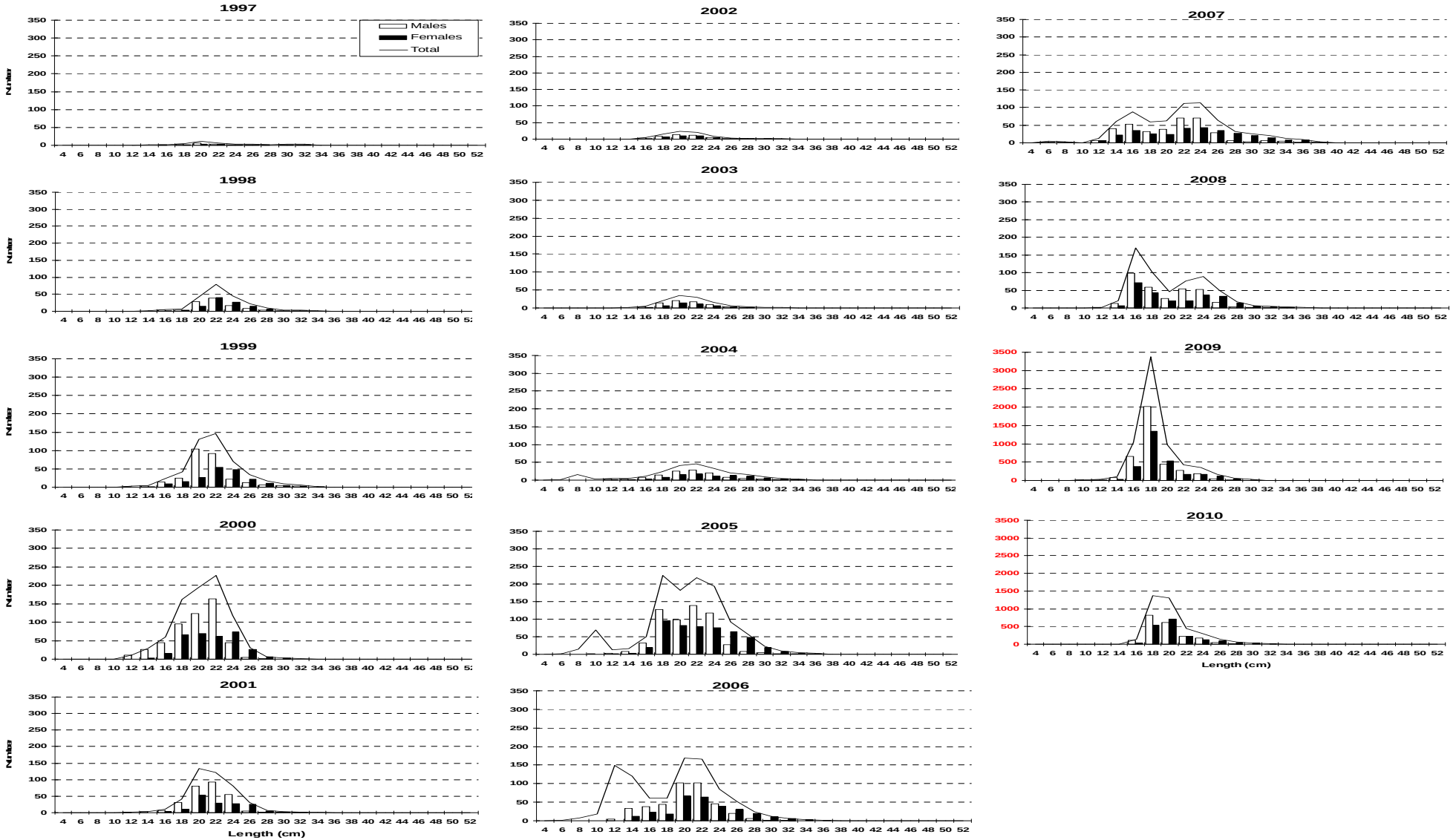

FIGURE 7.- Redfish length distribution (cm) on NAFO 3NO: 1997-2010. Mean catches per tow numbers. 1997-2000 data are transformed data from C/V *Playa de Menduíña*, and 2002-2010 data are original from R/V *Vizconde de Eza*. In 2001, there are data from the two vessels. The 2009 and 2010 graphs have a different y-axis upper limit.

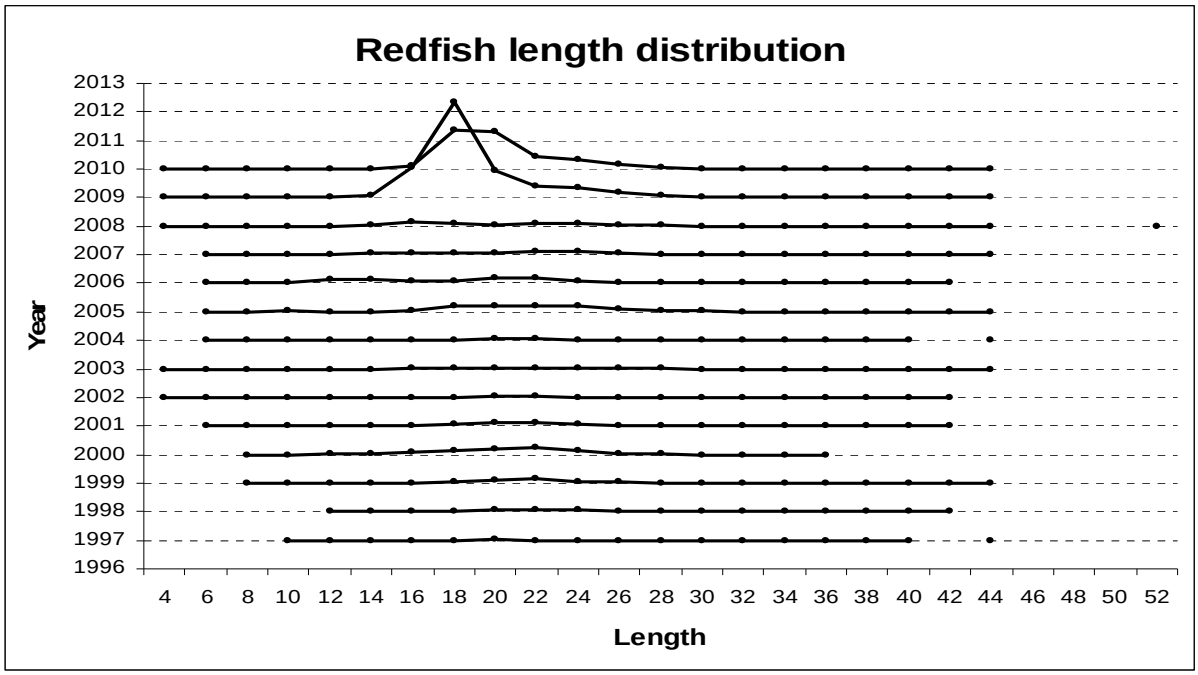

FIGURE 8.- Redfish mean catches per tow length distribution (cm) on NAFO 3NO: 1997-2010.

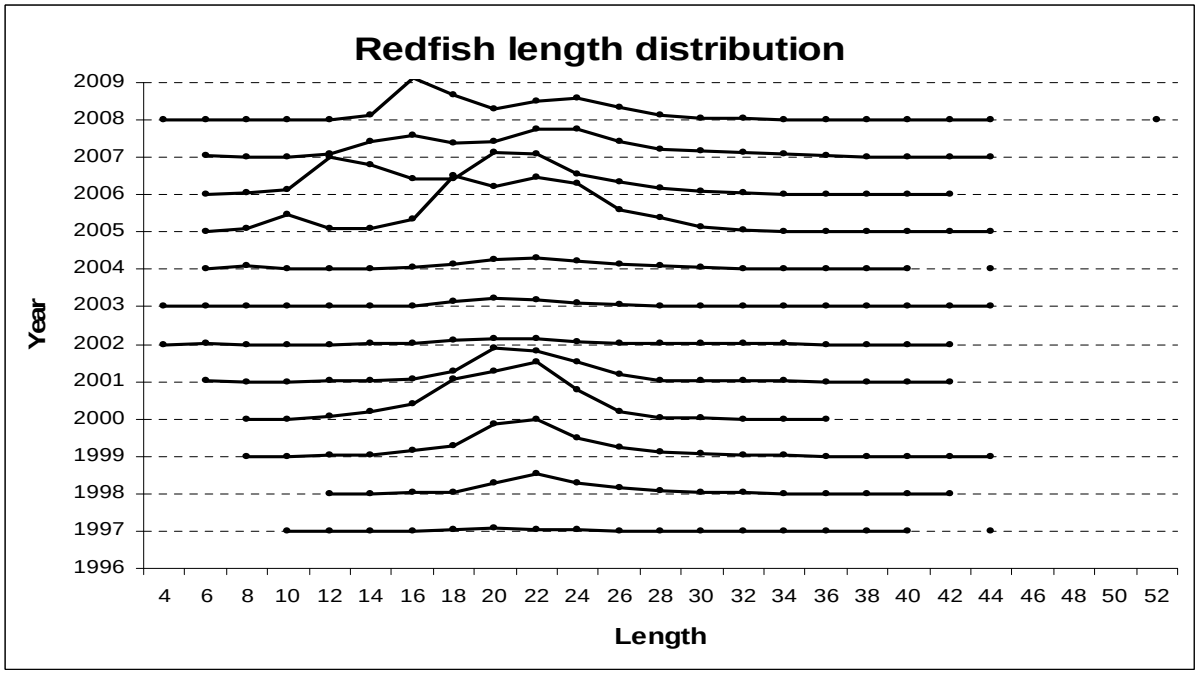

FIGURE 9.- Redfish mean catches per tow length distribution (cm) on NAFO 3NO: 1997-2008.

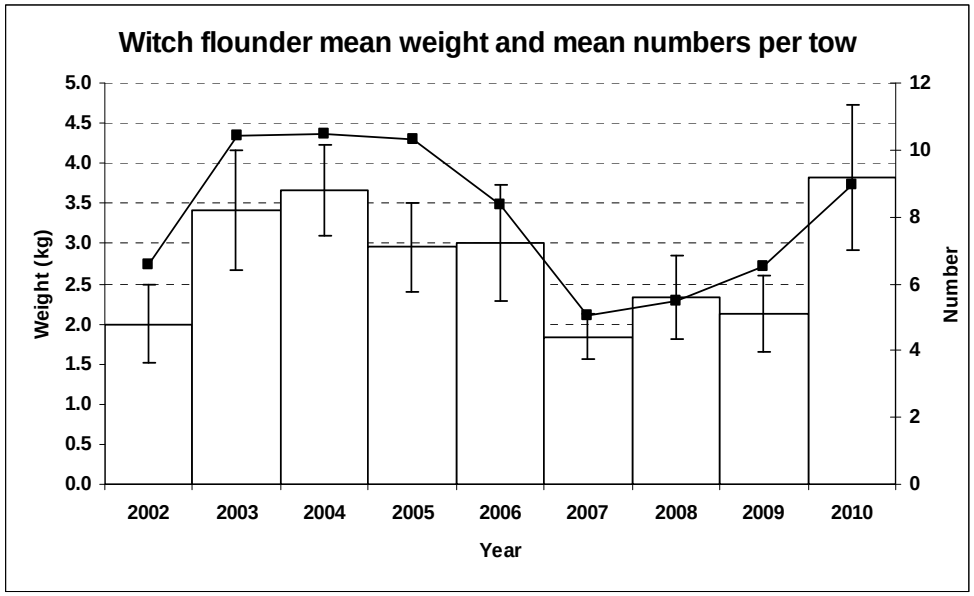

FIGURE 10.- Witch flounder stratified mean catches in Kg and ±SD by year and mean number by year. Spanish Spring surveys on NAFO Div. 3NO: 2002-2010. Original data from R/V *Vizconde de Eza*.

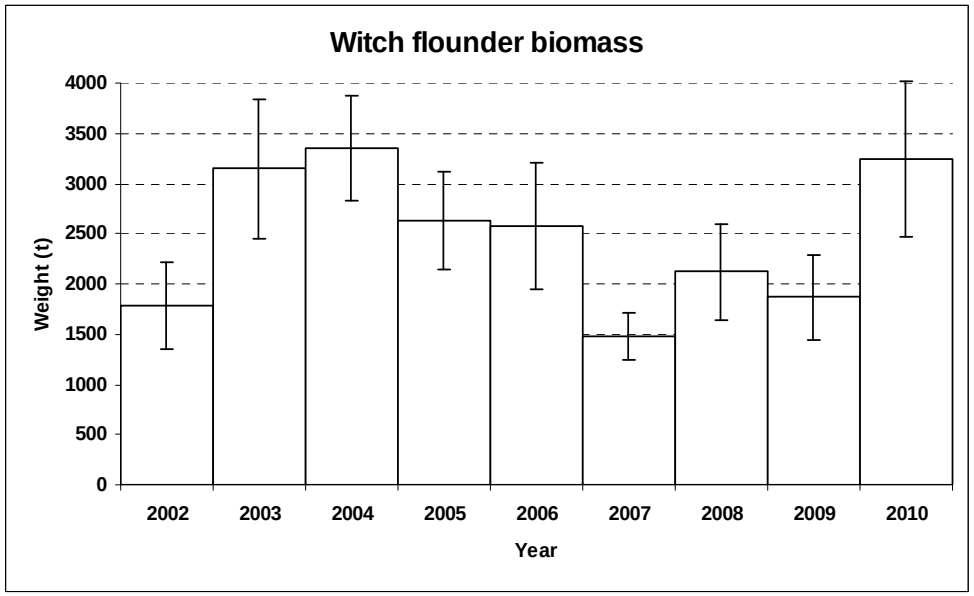

FIGURE 11.- Witch flounder biomass calculated by the swept area method in tons and ±SD by year. Spanish Spring surveys on NAFO Div. 3NO: 2002-2010. Original data from R/V *Vizconde de Eza*.

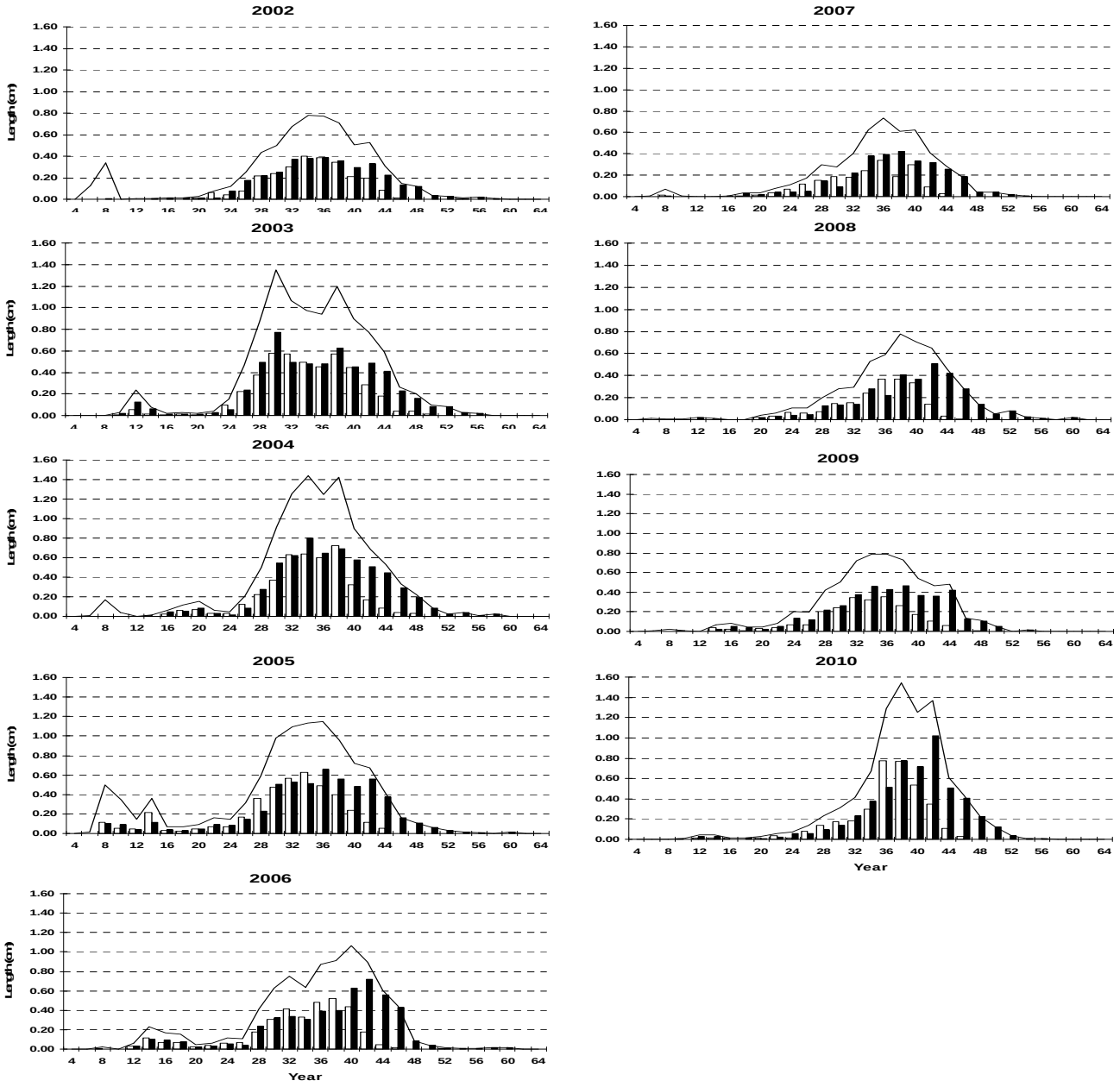

FIGURE 12.- Witch flounder length distribution (cm) on NAFO 3NO: 2002-2010. Mean catches per tow numbers. Original from R/V *Vizconde de Eza*.

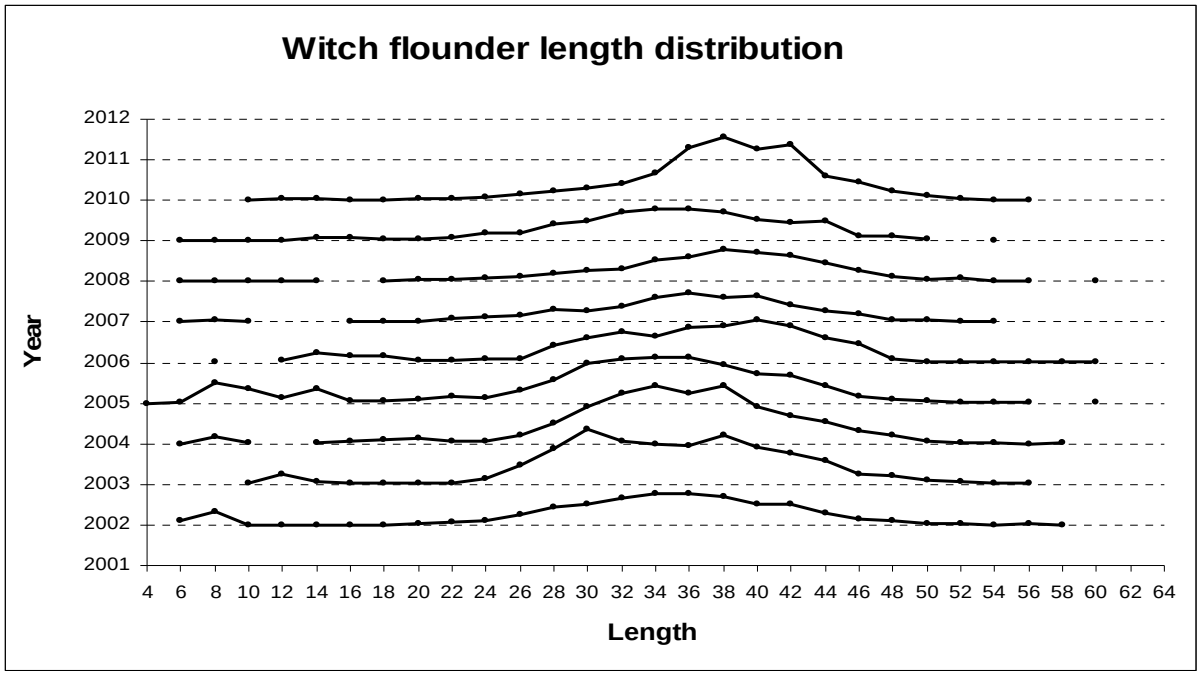

FIGURE 13.- Witch flounder mean catches per tow length distribution (cm) on NAFO 3NO: 2002-2010. Original numbers from R/V *Vizconde de Eza*.