



Serial No. N6675

NAFO SCR Doc. 17-023

SCIENTIFIC COUNCIL MEETING - JUNE 2017

Greenland sharks (*Somniosus microcephalus*) Spanish data (Surveys and Fishery) in NAFO Regulatory Area.

by

F. González-Costas¹ and G. Ramilo

¹ Instituto Español de Oceanografía, Vigo, Spain

ABSTRACT

The analysis of EU NAFO Regulatory Area surveys and Spanish Scientific Observers fishery data from Divisions 3LMNO show that Greenland sharks is not abundant and that this species appears in these Divisions sporadically and in depths of more than 300 meters. The surveys depth information is slightly different from that collected by scientific observers where most of the catches are at depths greater than 700 meters.

Based on the Scientific Observers show that most of the catches of this species are mainly a by catch of the Greenland halibut fishery.

INTRODUCTION

The aim of this paper is to present the available Spanish information from surveys and commercial data for (*Somniosus microcephalus*) that were requested to the NAFO Scientific Council by the NAFO Fisheries Commission.

DATA

Two sources of information have been used in this paper, data recorded by the National Scientific Observers and research survey data.

National Scientific Observers Data (1999-2016)

Scientific observers on board collect fishing information (catches, positions, etc.) on a haul basis and carry out length and biological sampling of the main species in the catches. These observers do not cover all Spanish fleet effort, Table 1 shows the percentage of the total effort surveyed by the observers.

It was analysed the Greenland sharks data in three depth strata, to identify the fishery of which Greenland sharks is taken as bycatch. The quality of catch in weight is low due to the difficulties to measure the specimens weight. Normally the weight is measure by eye. There are also problems of proper identification of shark species. In many cases the level of species is not reached by grouping all shark catches.



Survey data

The survey data analysed in this study come from three surveys: the EU-Spanish bottom trawl Survey in 3NO (1995-2016), the EU-Spanish bottom trawl Survey in 3L (2003-2004 and 2006-2016) and the EU Flemish Cap bottom trawl survey in 3M (1988-2016). Characteristics of these surveys are described for EU-Spanish bottom trawl Survey in 3NO in González Troncoso et al. (2016), for EU-Spanish bottom trawl Survey in 3L in Roman et al. (2016) and for the EU Flemish Cap bottom trawl survey in 3M in Vazquez et al. (2013).

Data collected in the surveys for Greenland sharks was only the number of specimen due to the difficult to measure the real weight and length.

RESULTS

Commercial data (1999-2016).

The Greenland sharks rough catches (tons) by year and Division collected by the Spanish Scientific Observers is presented in Table 2. These catches are those corresponding to the effort observed by the Scientific Observers and are not weighted to the total effort of the Spanish fleet. The level of catches of this species has been quite low. In all years catches of this species have been observed, being more abundant in Divisions 3LM.

Table 3 presents for the period (1999-2016) the catches percentage Division and depth strata. The highest percentage of the catches has been made in the stratum of more than 700 meters. A small percentage has been made in the 200-700 strata and the catch in the stratum of less than 200 has been sporadic. By Divisions, the highest percentages have been captured in the 3LM Divisions, and to a lesser extent in the Division 3N. Catches in Division 3O have been very low.

Figure 1 shows the Greenland sharks catches footprint by year.

These data show that the catches of this species are mainly a by catch of the Spanish Greenland halibut fishery. This is mainly developed in Flemish Pass (Div. 3LM) at depths greater than 600-700 meters.

Survey data

Table 4 presents the number of specimens observed in the surveys catches. It can be observed that the catches of this specie is occasional and it has been more abundant in the Divisions 3LM than in the Divisions 3NO. The specimen captured in the 3NO survey was caught at of 300-400 meters depth. Those caught in the 3L between 300-600 meters and those of Flemish Cap between 500-800 meters. This information is slightly different from that collected by scientific observers where most of the catches are at depths greater than 700 meters.

REFERENCES

- González-Troncoso D., Ana Gago, Adriana Nogueira and Esther Román. 2016. Results for Greenland halibut, American plaice and Atlantic cod of the Spanish survey in NAFO Div. 3NO for the period 1997-2015. Serial No. N6546 NAFO SCR Doc. 16/10.
- Román E., Concepción González-Iglesias, Diana González-Troncoso and Marisol Álvarez. 2016. Results for the Spanish Survey in the NAFO Regulatory Area of Division 3L for the period 2003-2015. Serial No. N6556 NAFO SCR Doc. 16/15.
- Vázquez A., José Miguel Casas and Ricardo Alpoim. 2013. Protocols of the EU bottom trawl survey of Flemish Cap. Serial No. N6174 NAFO SCR Doc. 13/021.

Table 1. Total Spanish fleet effort (days), effort with scientific observers (days) and percentage of coverage in NAFO by year.

Year	Total Effort (Days)	Obs. Effort (Days)	% Covert
1999	3967	340	8.57%
2000	5389	628	11.7%
2001	6181	494	8.0%
2002	5903	428	7.3%
2003	6873	248	3.6%
2004	5123	544	10.6%
2005	4015	615	15.3%
2006	2826	355	12.6%
2007	1677	281	16.8%
2008	1406	290	20.6%
2009	1470	241	16.4%
2010	1524	396	26.0%
2011	1667	336	20.2%
2012	1678	350	20.9%
2013	1143	322	28.2%
2014	1221	303	24.8%
2015	1317	320	24.3%
2016	1073	326	30.4%

Table 2.- Greenland sharks (*Somniosus microcephalus*) rough catches (ton) by Division and year based on the data collected by the Spanish Scientific Observers in the 1999-2016 period.

<i>Somniosus microcephalus</i> (tons)	Year																	Total	
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015		2016
3L		8.5	19.5	3.0	3.2	9.1	2.5	3.3	4.4	1.8	9.0	4.6	1.0	1.0	4.5		9.4	9.4	94.1
3M	5.5	7.6	1.3	7.1	1.6	3.5	10.7	0.8	0.9			5.3	2.1	3.6	4.4	2.0	0.8	1.0	58.1
3N	0.6	9.5	10.5	7.7		2.5	3.5					1.5		0.5	0.7	2.9			39.9
3O							0.9							0.6					1.5
Total	6.1	25.6	31.3	17.8	4.8	15.1	17.6	4.1	5.3	1.8	9.0	11.4	3.1	5.7	9.6	4.9	10.2	10.4	193.5

Table 3. Percentage of Greenland sharks catches by Division and depth stratum based on the Spanish Scientific Observers data collected in the 1999-2016 period.

Somniosus microcephalus (Total Catch %)	Depth_Strata			Total
	<200	200-700	>700	
3L	0%	0%	48%	49%
3M	0%	5%	25%	30%
3N	0%	1%	19%	21%
3O	0%	1%	0%	1%
Total	0%	7%	92%	100%

Table 4. Number of the Greenland sharks specimens caught in the EU NAFO Regulatory Area Surveys.

Survey	Period	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
3L	2003-2016					1	1					1		
3M	1988-2016						1				1	1		1
3NO	1995-2016	1												

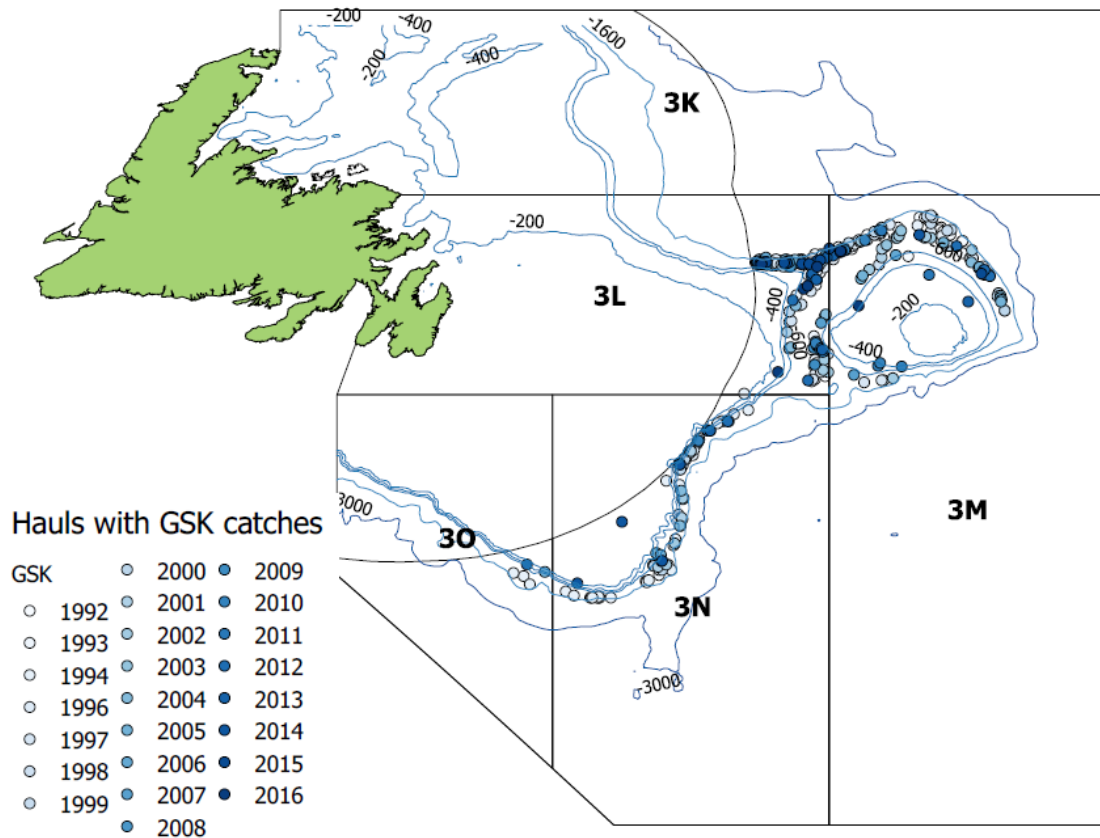


Fig.1. Greenland sharks footprint catches based on the Spanish Scientific Observers data collected in the 1999-2016 period.