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

by

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INTRODUCTION

The aim of this paper is to update the Spanish commercial and survey catches for the Greenland sharks (*Somniosus microcephalus*) presented González-Costas and Ramilo (2017).

An analysis of the 2018 catches estimated by the Scientific Observers and NAFO Observers is also presented.

DATA

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

National Scientific Observers Data (1999-2018)

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 these observers by year.

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 the catch information. In some cases the level of species is not reached in the data by grouping all shark catches.

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.

Survey data

The survey data presented in this study come from three surveys: the EU-Spanish bottom trawl Survey in 3NO (1995-2018), the EU-Spanish bottom trawl Survey in 3L (2003-2004 and 2006-2018) and the EU Flemish Cap bottom trawl survey in 3M (1988-2018). 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.

Table 3 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.

Commercial 2018 catch data

The 2018 catch data of this species collected by NAFO Observers and the Scientific Observers have been compared. To this end, it was selected all the trips with catch information of the Greenland sharks of the NAFO Observers. The catches (Kg) estimated by the Scientific Observers and NAFO Observers for the selected trips have been compared and presented in Table 4.

DISCUSSION

As can be seen in Table 4, there are large differences in the catches estimation made by Scientific Observers and NAFO Observers in the trips where both observers were on board. Normally, the catches estimated by the NAFO observers are considerably higher than those estimated by the Scientific Observers. This may be due to the difficulty of estimating the weights of the individuals observed. Although there are trips where the Scientific Observer did not observe any catches while the NAFO Observer estimated important catches of this species.

A possible measure that can be implemented to avoid these discrepancies is that both the NAFO Observers and the Scientific Observers take photographs of the specimens of this species caught by haul. This would allow knowing the number of caught specimens and have an idea of the weight and length of them.

REFERENCES

- González-Costas, F. and G. Ramilo. 2017. Greenland sharks (*Somniosus microcephalus*) Spanish data (Surveys and Fishery) in NAFO Regulatory Area. Serial No. N6675 NAFO SCR Doc. 17-023.
- 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	11.70%
2001	6181	494	8.00%
2002	5903	428	7.30%
2003	6873	248	3.60%
2004	5123	544	10.60%
2005	4015	615	15.30%
2006	2826	355	12.60%
2007	1677	281	16.80%
2008	1406	290	20.60%
2009	1470	241	16.40%
2010	1524	396	26.00%
2011	1667	336	20.20%
2012	1678	350	20.90%
2013	1143	322	28.20%
2014	1221	303	24.80%
2015	1317	320	24.30%
2016	1073	326	30.40%
2017	1025	329	32.10%
2018	1074	279	25.98%

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 1999-2018 period.

Catches GSK (ton)																					
Division	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
3L	0.0	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	0.0	9.4	9.4	7.3	0.5	251.6
3M	5.5	7.6	1.3	7.1	1.6	3.5	10.7	0.8	0.9	0.0	0.0	5.3	2.1	3.6	4.4	2.0	0.8	1.0	2.9	0.4	101.2
3N	0.6	9.5	10.5	7.7	0.0	2.5	3.5	0.0	0.0	0.0	0.0	1.5	0.0	0.5	0.7	2.9	0.0	0.0	1.7	0.0	105.4
3O	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	3.4
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	11.9	0.8	461.5

Table 3. 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	2017	2018
3L	2003-2017					1	1					1				
3M (FC)	1988-2017						1				1	1		1	1	
3NO	1995-2016	1														

Table 4. Greenland sharks 2018 catches estimated by Scientific Observers and NAFO Observers by trip. NA means that in this trip there was no Scientist Observer on board.

Trip	Scientific Observers	NAFO Observers
1	NA	3300
2	NA	8400
3	NA	13700
4	0	7150
5	0	650
6	NA	1000
7	NA	1600
8	0	10700
9	350	1800
10	NA	9000
11	NA	8000
12	NA	1800
13	0	800
14	NA	800
15	NA	1000
16	450	3700
Total	800	73400