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Summary

This report presents the European Union (EU) fishing activity in 2018 in the South Pacific Regional Fisheries Management Organization (SPRFMO) Convention area. The data on catches of *Trachurus murphyi* by one EU trawler in 2018 covers the period from January to July. A short section on the PFA self-sampling program has been included in the report. In addition, some general information on the EU fishing activity in 2019 in the SPRFMO Convention area is included.

1 Introduction

The present report refers to the activity of the pelagic trawler "Margiris" (EU, Lithuania) from 23 January 2018 to 23 July 2018 fishing for *Trachurus murphyi* in the SPRFMO Convention area.

The catch and effort data for 2018 refer to seven months of fishing activity (January - July). In 2018, the biological data were collected for two periods (22 March to 02 May and 02 May to 13 June), when the observers were on board of f/v "Margiris".

Data presented in this report cover catch and effort data reported directly by the vessels, the data collected by scientific observers on board of the vessels and the self-sampling data by the crew members.

2 Description of the EU Fisheries in the Pacific - overall summary

In the recent history, the first EU pelagic trawler arrived in the Pacific in 2005 and it conducted fishing operations for 3 months in the second half of the year. The next year, the same vessel returned and undertook fishing activities for the whole season (March – October). The number of EU vessels varied from 6 to 9 in the following four years (2007 – 2010). Starting from 2011, the number of EU vessels was reduced as a result of declining catches in the high seas (Table 1).

Table 1. EU pelagic trawlers in the Pacific in 2005-2019

Year	EU Member States and number of vessels
2005	Netherlands (1)
2006	Netherlands (1)
2007	Germany (3), Lithuania (1), Netherlands (2)
2008	Germany (3), Lithuania (1), Netherlands (2)
2009	Germany (3), Poland (3), Lithuania (1), Netherlands (2)
2010	Germany (3), Poland (3), Lithuania (1), Netherlands (1)
2011	Germany (1), Netherlands (1), Poland (1)
2012	no fishing
2013	Lithuania (1)
2014	Germany (1), Netherlands (1)
2015	Netherlands (1), Lithuania (1)
2016	Germany (1), Poland (1)
2017	Netherlands (1), Lithuania (1)
2018	Lithuania (1)
2019*	Poland (1)

* March-June 2019

3 Catch, Effort and CPUE Summaries

3.1 Catch composition

The fishery by EU vessels in the SPRFMO Convention area is targeting *Trachurus murphyi*. Other species make up only a small fraction of the total catch, as is shown in Table 2.

Table 2. Total catch (tons) and species composition (%) of the EU fleet in 2009 – 2019. Based on landing data provided by the vessels owners (except 2019).

Year	Total EU catch in tons	Species composition in percentages			
		<i>Trachurus murphyi</i>	<i>Scomber japonicus</i>	<i>Brama australis</i>	Other species
2009	91 336	95.3	4.3	0.4	0.0
2010	34 083	97.2	1.9	0.6	0.3
2011	1 810	98.3	0.2	1.3	0.2
2012	0				
2013	10 390	97.2	2.2	0.6	0.0
2014	21 431	95.7	3.5	0.3	0.5
2015	27 955	98.1	1.1	0.6	0.2
2016	12 828	91.9	6.3	0.3	1.5
2017	29 652	93.3	6.2	0.3	0.3
2018	10 235	94.0	1.2	2.8	2.0
2019*	8 463	98.8	0.0	0.9	0.3

* March-June 2019 – observers data

The catch in 2018 was three times lower than in 2017. This decrease was due to the 50% lower fishing effort and very low catch rates in January to March.

As in the previous years, the species composition of the catch in 2018 was dominated by *Trachurus murphyi* – the target species. This species made up 94,0% of the total catch. *Brama australis* came in as second with 2.8% and *Scomber japonicus* as third with the share of 1.2%. The share of other species was insignificant.

The monthly development of the catch in the year 2018 is presented in Figure 1, with the highest catch taken in the months of April and May and the peak catch took place in April.

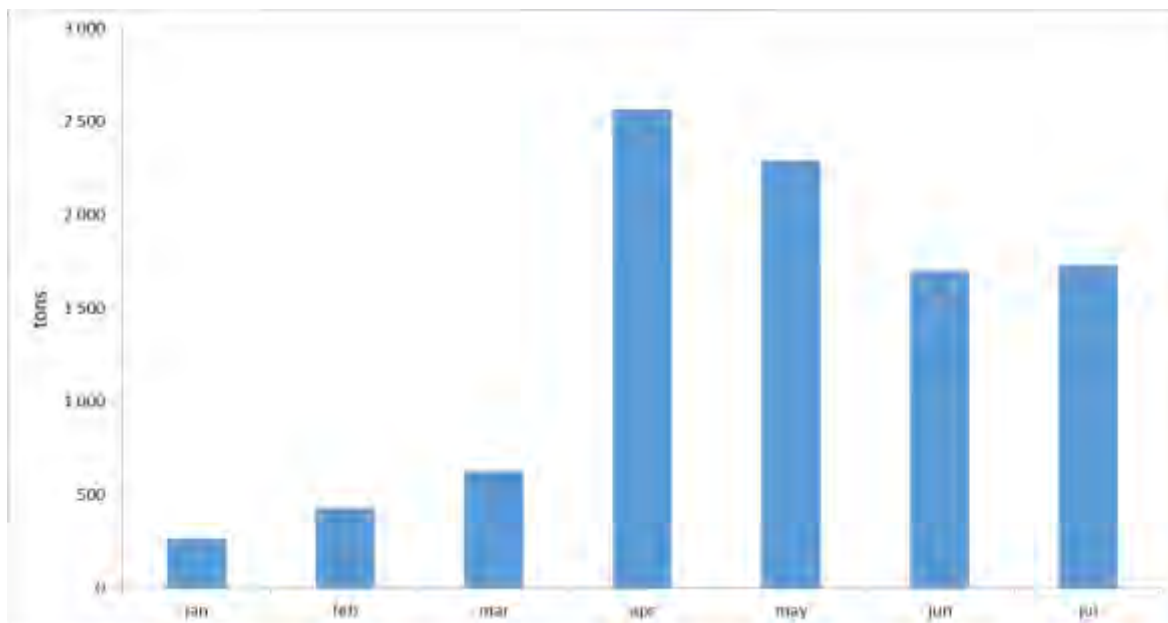


Figure 1. Monthly catch of *Trachurus murphyi* by EU vessels in 2018. Data based on catch reported by the vessel.

3.2 Effort and catch per unit of effort (CPUE)

The series of CPUE (in tons per day) for *Trachurus murphyi* presented in Table 3 is based on catch and effort of the EU fleet. The highest catch in 2018 was taken in April (over 2,5 th. tons) and was related to CPUE of 99 t/day (Figure 2). The highest CPUE in 2018 was recorded in May (121 t/day). The fishing took place in the southern fishing area, *i.e.* the waters south of the Juan Fernández Islands.

Data for 2018 indicate that the CPUE in that year was very low in January, February, March and lower in April than in 2017, but higher in May, June and July. In July CPUE was over 2 times higher than in July 2017 (Figure 2).

Table 3. Catch and effort of the EU fleet. Fishing days based on data provided by the vessels.

Year	Number of fishing days	Catch <i>Trachurus murphyi</i> (in tons)	CPUE (tons per day)
2005	44	6 187	141
2006	109	33 766	310
2007	401	123 523	308
2008	423	108 174	256
2009	436	87 043	200
2010	274	33 129	121
2011	32	1 779	56
2012	0	0	0
2013	140	10 010	72
2014	231	20 510	89
2015	149	25 504	157
2016	115	11 470	100
2017	273	27 652	101
2018	132	9 620	73

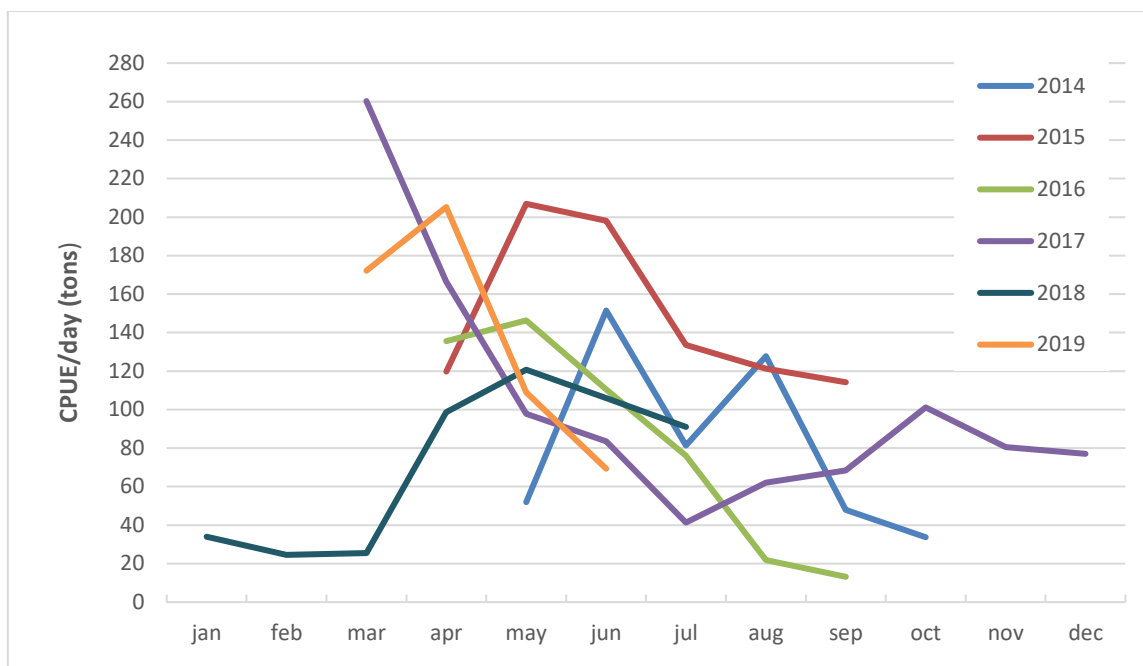


Figure 2. Monthly CPUE of *Trachurus murphyi* in the EU fleet for 2014 – 2019 (data for 2019 from observers).

4 Fisheries Data Collection and Research Activities

Tow-by-tow data on catch and effort were collected directly by the vessel. The observers collected detailed biological information on catch and discards. Some information on birds observed around the vessels were also collected.

Position, time and catch composition is provided for each haul. A simple spreadsheet was used to record the information at sea. The information requested in this spreadsheet corresponds to the data guidelines of the SPRFMO Data and Information Working Group (SPRFMO 2016).

The geographical distribution of the fishery in 2017 and 2018 are presented in Figure 3 and Figure 4.

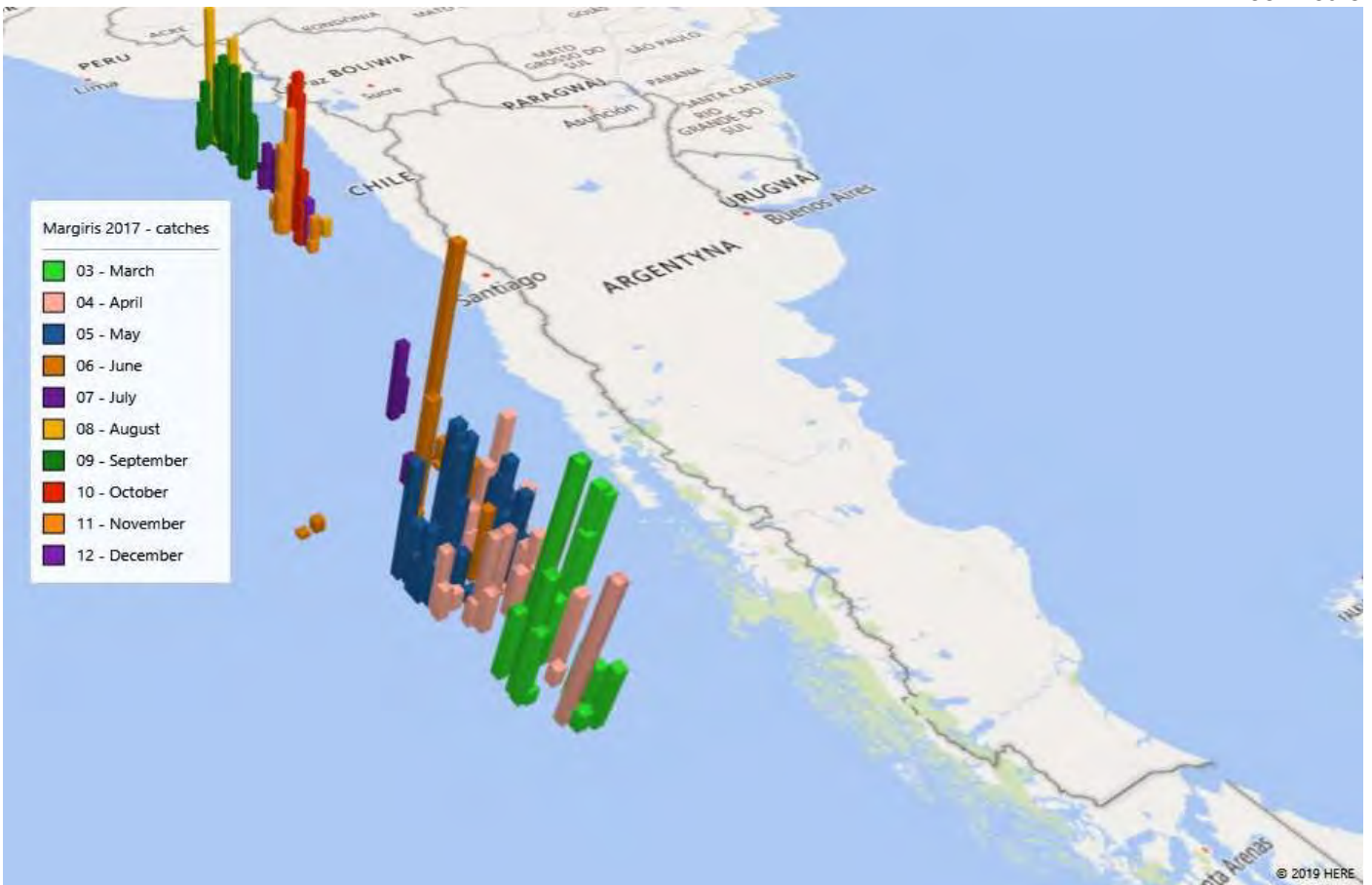


Figure 3. Catch distribution by month of the EU fleet in 2017 (March - December)

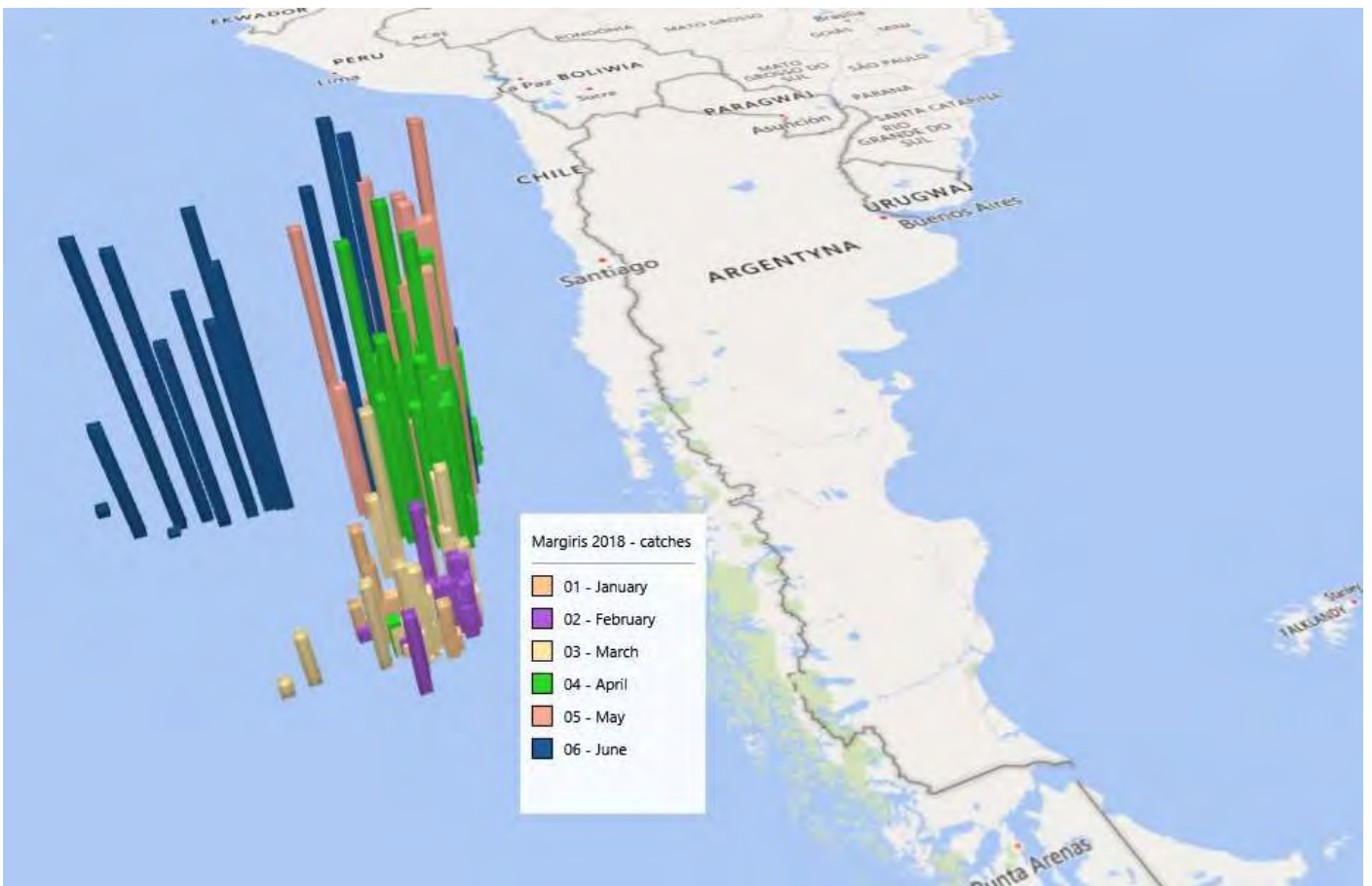


Figure 4. Catch distribution by month of the EU fleet in 2018 (January – June).

The fishing activities in 2018 were conducted close to the 200 Nm Chilean EEZ. During January-July fishing took place in southern part of the fishing area, *i.e.* in the similar positions as in the same period of 2017.

4.1 Observer data

In the period 2014-2018, the total number of fishing days with observers on board was 347 (Table 4), which means that 39% of fishing days was observed (see Table 4).

In 2018, two fishing trips were covered by observers. The observer programme started on 22 March and continued till 13 June.

Table 4. Observer missions in 2014 - 2019

Year	Period	Vessel	Observer	Days with observations
2014	20 April – 30 May	Maartje Theadora	Tomasz Raczynski	23
	31 May – 19 August	Maartje Theadora	Co de Klerk	80
2015	29 April - 13 July	Annelies Ilena	Co de Klerk	60
	13 June - 24 July	Margiris	Tomasz Raczynski	28
2016	15 May - 17 June	Janus	Tomasz Raczynski	14
	18 June – 17 August	Maartje Theadora	Tomasz Raczynski	23
2017	15 March – 17 May	Margiris	Tomasz Raczynski	34
	05 April – 17 May	Margiris	Łukasz Dziemian	
	09 August – 20 September	Margiris	Tomasz Raczynski	32
2018	22 March – 02 May	Margiris	Tomasz Raczynski	26
	02 May – 13 June	Margiris	Kamil Kisielewski	27
	02 May – 13 June	Margiris	Piotr Pankowski	
2019*	25 March – 13 May	Annelies Ilena	Łukasz Giedrojć	25
	13 May – 24 June	Annelies Ilena	Kamil Kisielewski	22

* March-June 2019

The observers collected data on species and length composition of the main species observed in the catch (*Trachurus murphyi*, *Brama australis*, *Cubiceps caeruleus* and *Scomber japonicus*). Biological characteristics such as sex and maturity stage, stomach fullness and food composition as well as otholiths for age reading were collected for *Trachurus murphyi*. In addition, discards and incidental by-catch of species of concern were monitored.

As in the previous years, the observers also monitored interactions of sea-birds with the vessel and fishing gear as well as the presence of birds around the vessels (see Section 6).

5 Biological Sampling and Length/Age Composition

In 2018 three observers in two fishing trips were placed on board of f/v “Margiris” and almost 7 500 individuals of *Trachurus murphyi* were measured (Table 5) and otoliths from 1000 fish were collected for age reading.

Samples for length measurements were collected from 77 hauls out of total of 117 hauls in observed trips. For biological data collection (including sampling for age) for *Trachurus murphyi*, sampling protocol provides that 25 fish should be collected for each fishing day during the observed trip with the aim to have even representation for all length classes recorded (5-10 fish per length class per trip). In the biological samples collected in 2018 the number of length classes was 30 and the age was read for 1000 fish.

Table 5. Number of *Trachurus murphyi* measured by scientific observers during 2008-2019.

Year	Number of <i>Trachurus murphyi</i> measured
2008	28 250
2009	15 744
2010	10 540
2011	2 194
2013	2 727
2014	15 148
2015	17 563
2016	25 341
2017	13 843
2018	7 465
2019*	5 152

* March-June 2019

The length of *Trachurus murphyi* fished in 2018 was in the range of 27 to 55 cm, with the peak at the length classes 34-37 cm. The length measurements in 2018 are compared with those in previous years in Figure 5.

Age for *Trachurus murphyi* sampled in 2018 is presented in Figure 6.

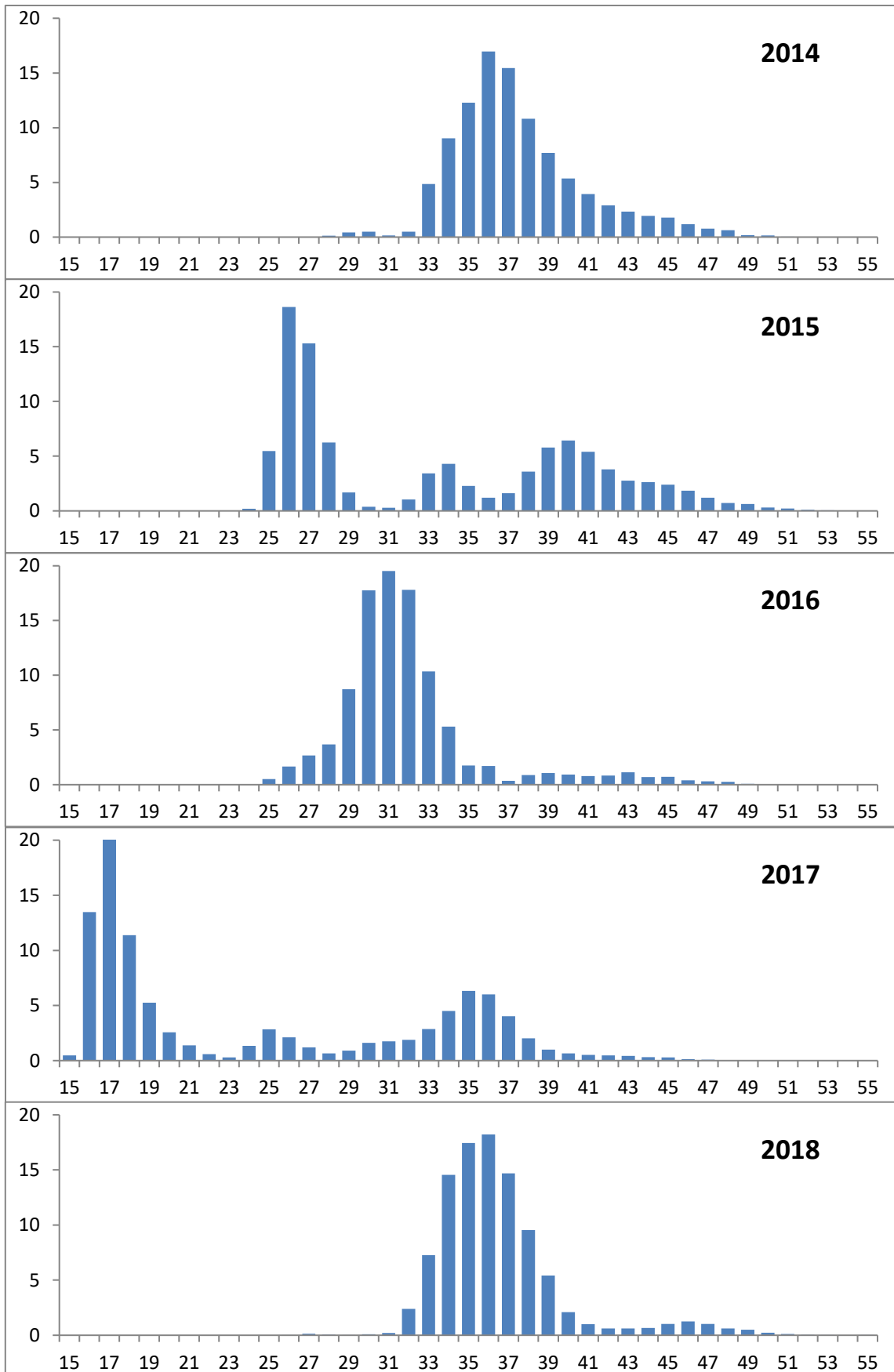


Figure 5. Percentage length composition of *Trachurus murphyi* in EU catch in 2014 – 2018.

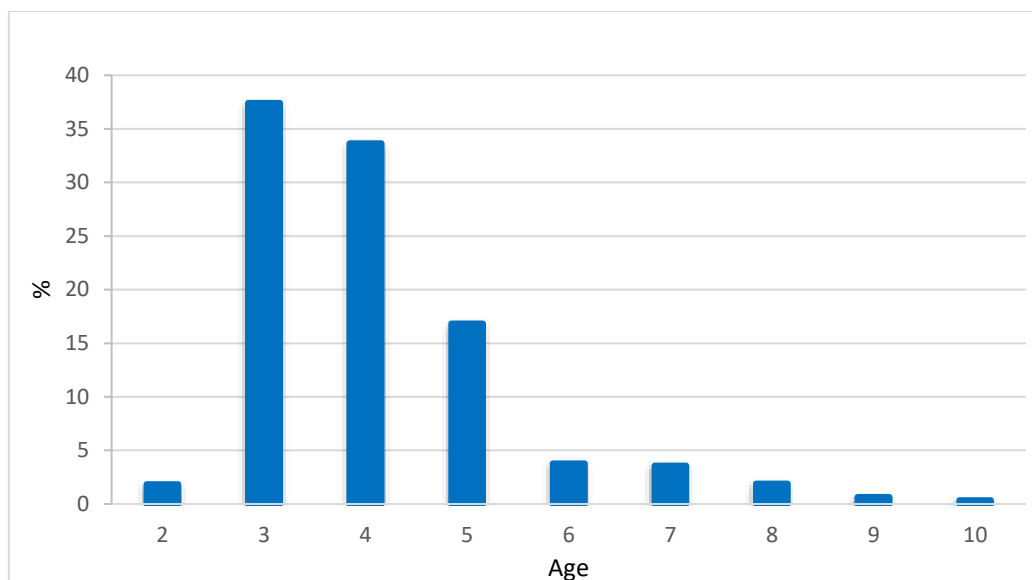


Figure 6. Age-frequency distribution of *Trachurus murphyi* in EU catch in 2018.

6 Ecosystem approach considerations

The observations of seabirds in the net and around the vessel, initiated in 2014 at the request of SPRFMO, continued in 2015 - 2018. No by-catch of birds in the catch were observed.

More detailed results of the seabird observations in 2016 were presented in a separate document to the SC meeting in 2016 (Raczynski, 2016). The main conclusion was that pelagic trawlers, in contrast to long liners, do not inflict a significant observed mortality on seabirds.

7 PFA self-sampling data

Since 2015 a full self-sampling program has been initiated on all EU fishing vessels belonging to members of the Pelagic Freezer-trawler association (PFA) and fishing in the SPRFMO Convention area, which is being reported directly to the SPRFMO Science Committee (Pastoors 2019). The self-sampling program covers all trips and all hauls of the vessels that are active in the area and thereby delivers information on spatial and temporal evolution of the fishery, species and length compositions and ambient fishing conditions (temperature and depth). As such, it can be viewed as quantitative and qualitative information that could be used subsequently by the Scientific Committee in their assessments in addition of the observer data presented above.

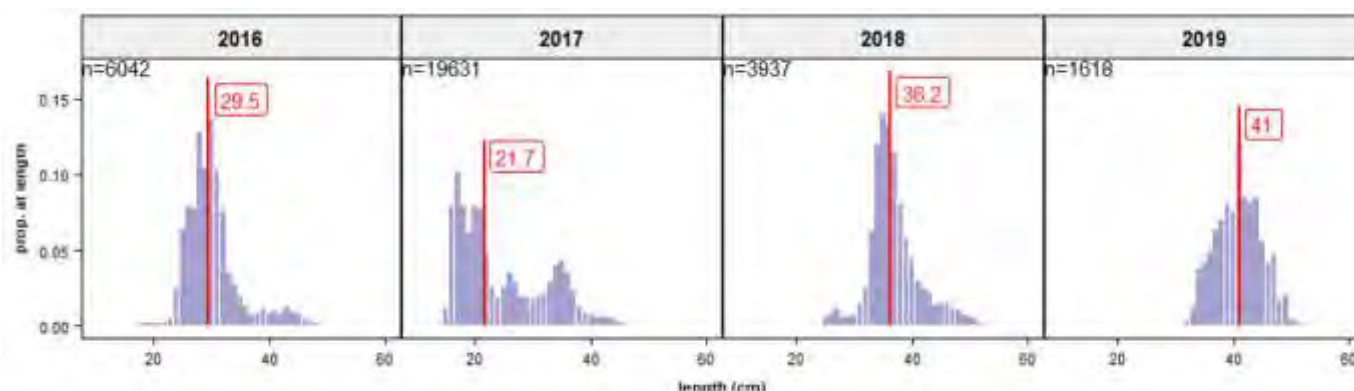


Figure 7. Relative length distributions of *Trachurus murphyi* in the PFA self-sampling program 2016-2019. N indicates the number of length measurements. Note that 2019 only covers data up to 26 June 2019.

8 General information on European Union (EU) observer activity in 2019

The fishing in 2019 was conducted by f/v “Annelies Ilena” (EU, Poland), (type of vessel: TTF) close to the 200 Nm Chilean EEZ. During the observers’ presence on board (March-June) fishing took place in the southern part of the fishing area, *i.e.* in the similar positions as in the same period of 2018.

Basic information on fishing and observers activity in 2019 (March – June) are provided in Table 6 and Table 7.

Table 6. Basic information the first observer mission in 2019.

Name of Observer	Lukasz Giedrojcz	
Vessel	f/v “Annelies Ilena”, GDY-151	
Start mission on board of vessel	Date: 2019-MAR-25	Time: UTC – 15:00 Local time – 11:00
End mission on board of vessel	Date: 2019-MAY-13	Time: UTC – 21:00 Local time – 17:00
No. of days on vessel	50	
No. of fishing days	26	
No. of days with observations	25	
Total no. of hauls	53	
No. of hauls observed	39	
Total catch (tons)	6620	
Total catch of <i>Trachurus murphyi</i> (tons)	6570	
No. of hauls sampled (length frequency)	34	
No. of <i>Trachurus murphyi</i> measured	3216	
No. of <i>Trachurus murphyi</i> biological samples	160	
No. of otoliths	160	
No. of other species measured	42	

Table 7. Basic information the second observer mission in 2019.

Name of Observer	Kamil Kisielewski	
Vessel	f/v “Annelies Ilena”, GDY-151	
Start mission on board of vessel	Date: 2019-MAY-13	Time: UTC – 20:00 Local time – 17:00
End mission on board of vessel	Date: 2019-JUN-24	Time: UTC – 21:00 Local time – 17:00
No. of days on vessel	43	
No. of fishing days	23	
No. of days with observations	22	
Total no. of hauls	37	
No. of hauls observed	28	
Total catch (tons)	1842	
Total catch of <i>Trachurus murphyi</i> (tons)	1796	
No. of hauls sampled (length frequency)	20	
No. of <i>Trachurus murphyi</i> measured	1936	
No. of <i>Trachurus murphyi</i> biological samples	91	
No. of otoliths	182	
No. of other species measured	241	

Geographical distribution of the fishery during missions of the observers on board of vessel “Annelies Ilena” from 29 March 2019 till 21 June 2019 is presented in Figure 8. Length distribution of *Trachurus murphyi* in 2019 catch is presented in

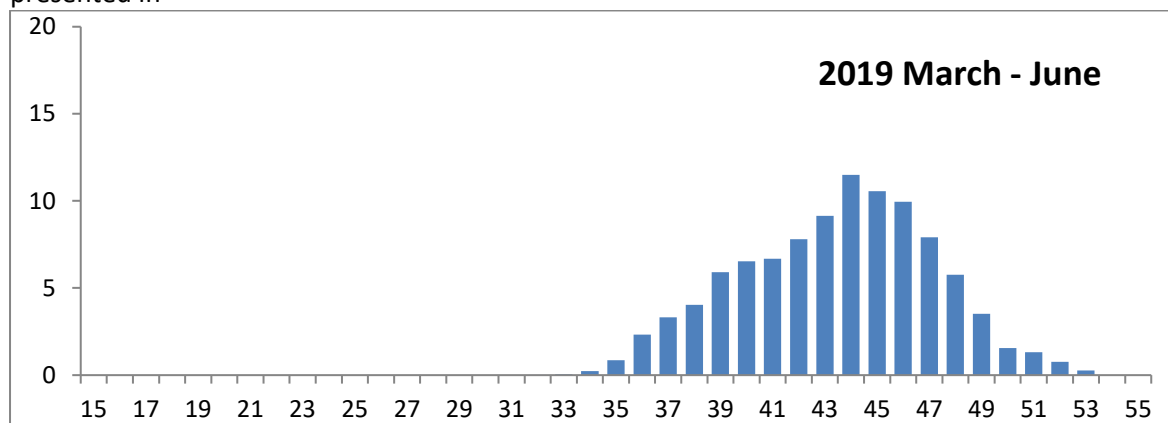


Figure 9.

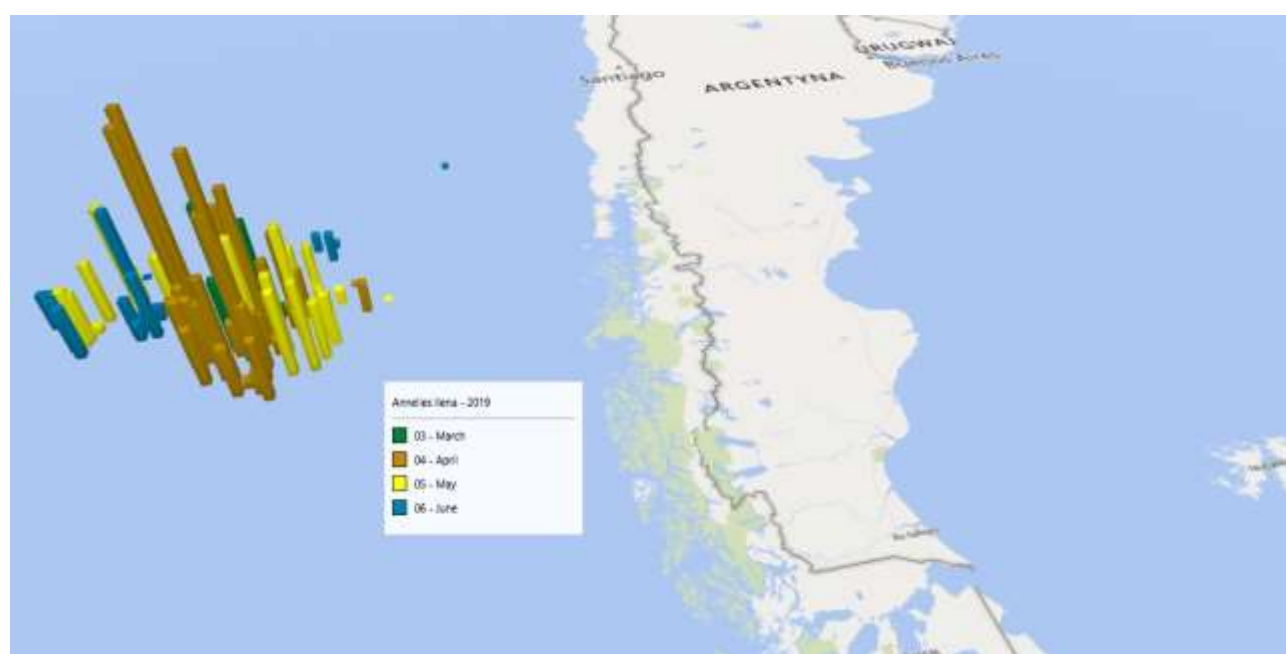


Figure 8. Distribution of catch f/v “Annelies Ilena”, (GDY-151) during the Observers missions in March – June 2019

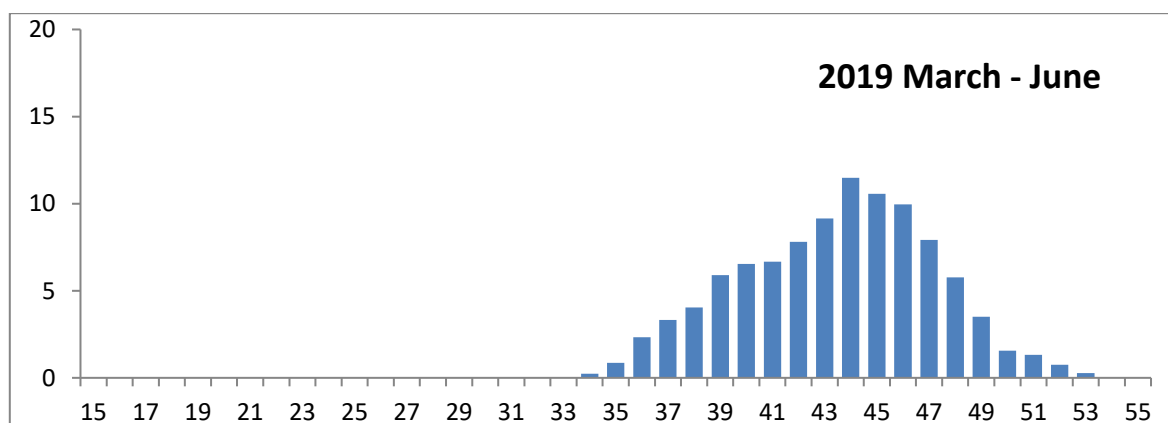


Figure 9. Percentage length composition of *Trachurus murphyi* in EU catch during March – June 2019

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