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Summary

There were no EU fishing activity in 2020.

This report presents an overview of the European Union (EU) fishing activity for the period 2005-2019 in the South Pacific Regional Fisheries Management Organization (SPRFMO) Convention area and the observer program implementation.

A short section on the PFA self-sampling program has been included in the report, demonstrating the main results of the self-sampling activities that cover all trips by EU vessels in the area from 2015 to 2021.

1 Introduction

There were no EU fishing activity in the SPRFMO Convention area in 2020. Hence no biological data were collected in 2020.

The present report refers only to the activity of the EU pelagic fishing for *Trachurus murphyi* in the SPRFMO Convention area in previous years.

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

The first EU pelagic trawler arrived in the Pacific in 2005 and it conducted fishing operations for three months in the second half of the year. The following year, the same vessel returned and undertook fishing activities for the whole season from March to October. The number of EU vessels varied from 6 to 9 in the following four years (2007 – 2010). Since 2011, the number of EU vessels decreased 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)
2020	No fishing

3 Catch, Effort and CPUE Summaries

3.1 Catch composition

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

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	12 114	97,3	1.0	1,1	0.6

The total catch in 2019 was slightly higher than in 2018, despite the fact that the number of fishing days in 2019 was 33% lower than in 2018.

The species composition of the catch was dominated by *Trachurus murphyi* – the target species. This species made up from 91,9% to 98,3% of the total catch over the years 2009-2019.

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 in the period 2005-2019. Monthly CPUE for *Trachurus murphyi* for the EU fleet for 2014 – 2019 is presented in Figure 1.

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	27652	101
2018	132	9 620	73
2019	88	11 789	134

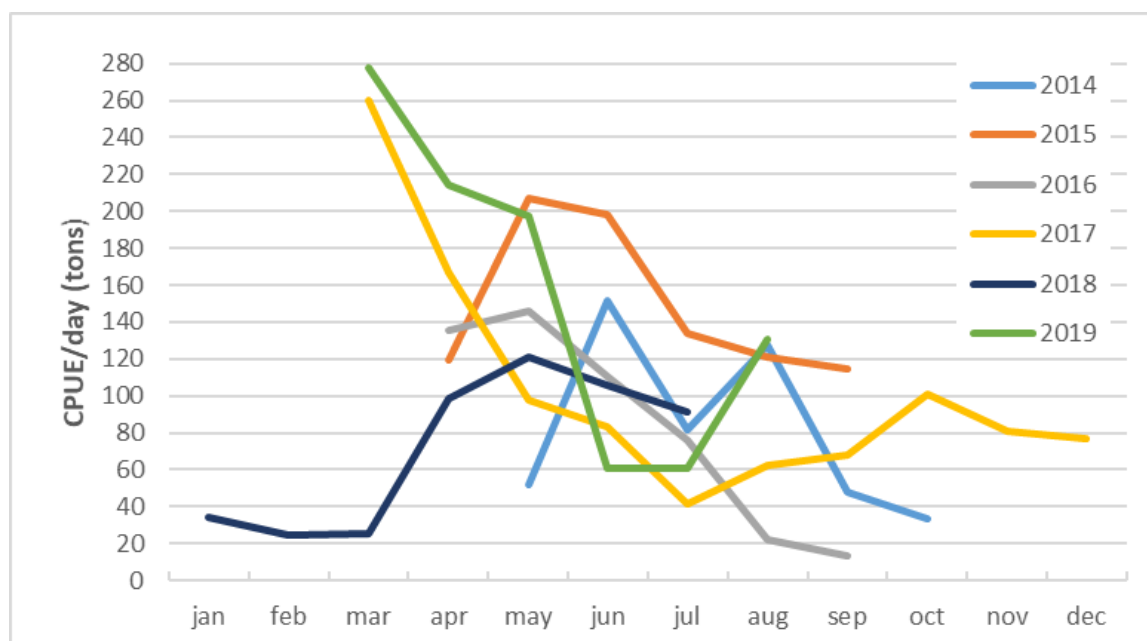


Figure 1. Monthly CPUE for *Trachurus murphyi* in the EU fleet for 2014 – 2019.

4 Fisheries Data Collection and Research Activities

As the EU fleet was not active in the SPRFMO Convention area, no data collection was performed in 2020.

5 Biological Sampling and Length/Age Composition

No biological sampling performed in 2020 as there were no EU fishery in the SPRFMO Convention area in 2020.

Number of *Trachurus murphyi* measured by scientific observers during 2008-2019 are presented in Table 5 and the length composition of *Trachurus murphyi* in EU catch in 2015 – 2019 is presented in Figure 2.

Table 4. 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	25341
2017	13843
2018	7465
2019	5152

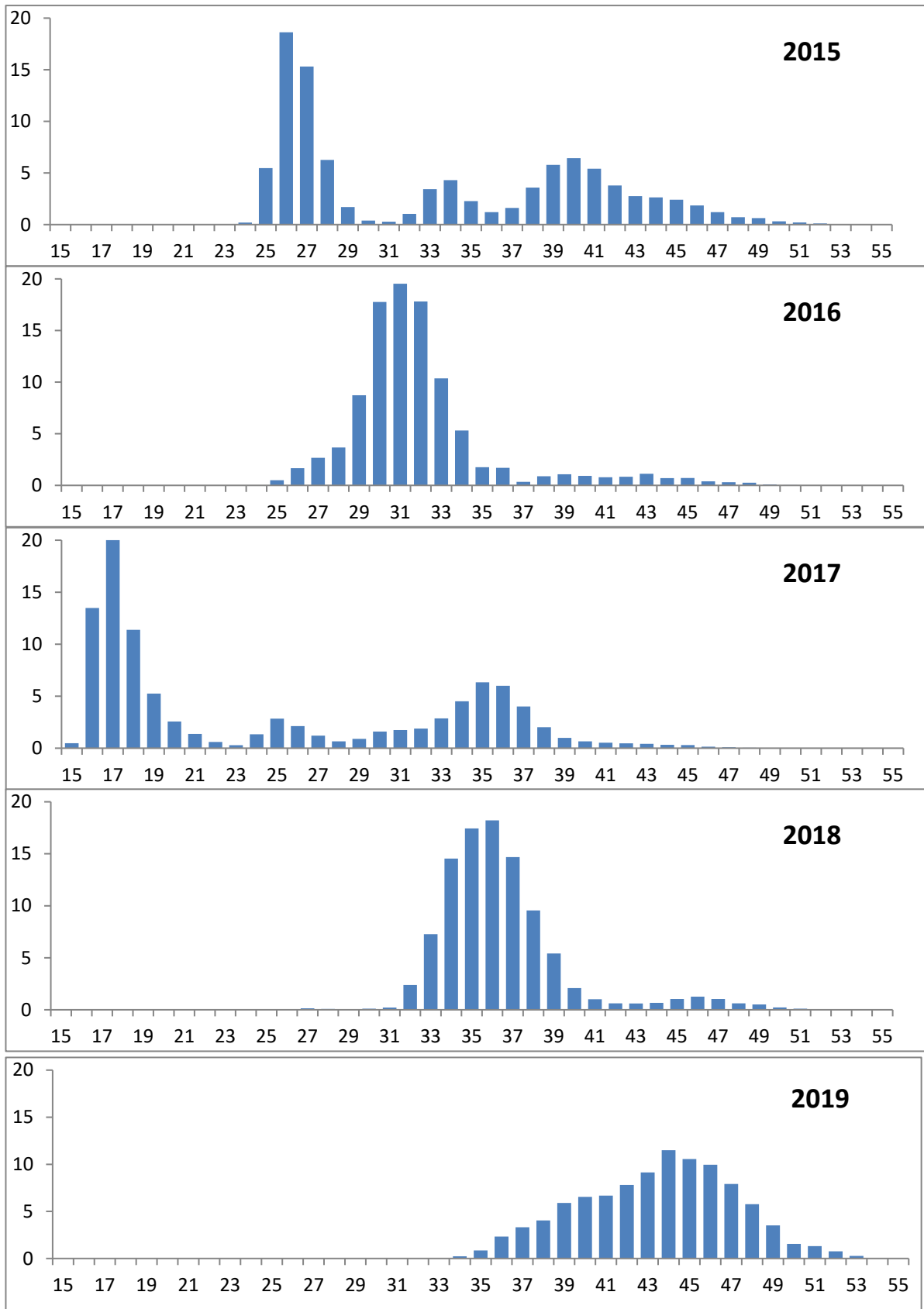


Figure 2. Percentage length composition of *Trachurus murphyi* in EU catch in 2015 – 2019.

6 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 2021). 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).

The relative length compositions by year were estimated from raised catch numbers at length (raised by haul, figure 3). The relative length compositions show some deviations from the length compositions derived from the observer trips (figure 2) due to more areas and seasons being covered in the self-sampling activities. A separate analysis comparing the observer trips and the self-sampling trips has been presented to the SPRFMO SC8 (SC8-JM03). At the SPRFMO Jack Mackerel Data Workshop (SCW11), held between 9 and 11 August 2021, it was concluded the self-sampling data is of appropriate quality and could be used as future input to the assessment. Therefore, a protocol will be prepared prior to the Jack Mackerel benchmark workshop of 2022 to utilize the length compositions of the self-sampling program in combination with the age-length-keys from the EU observer program and potentially from the Chilean sampling program. The observer program will also be used as a verification and quality control mechanisms of the self-sampling program.

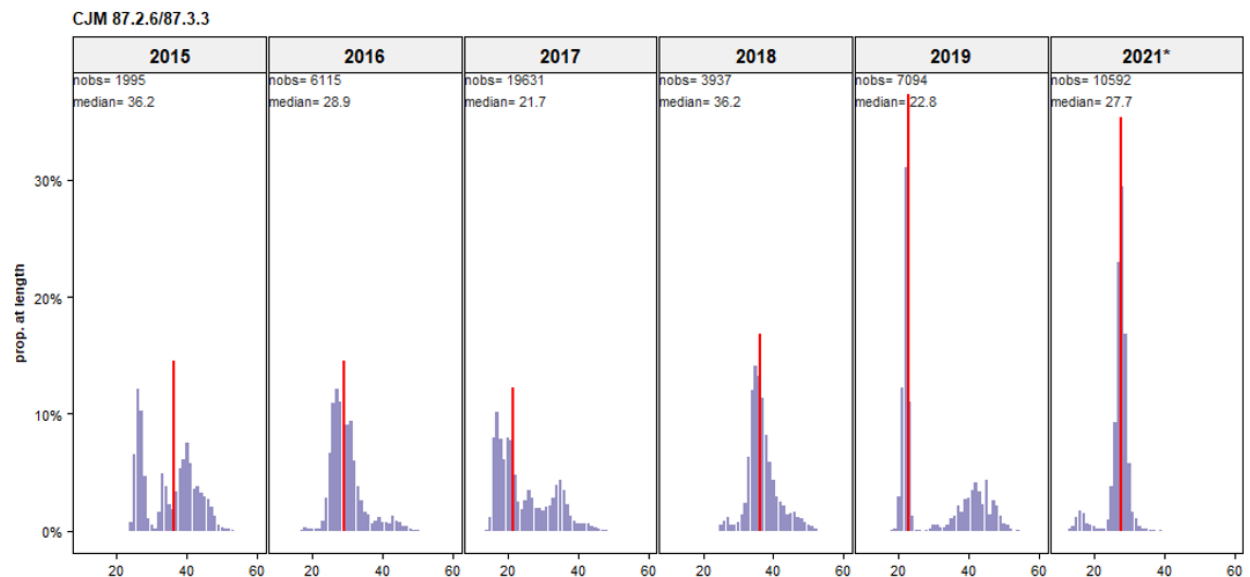


Figure 3. Relative length distributions of *Trachurus murphyi* in the PFA self-sampling program 2015-2019. Nobs indicates the number of length measurements while median indicates the median length (cm)

7 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 - 2019. No by-catch or encounters with seabirds were observed.

8 Observer Implementation Report

8.1 Observer data

Until 2016 the observer program was organized by the Dutch consultant agency Corten Marine Research (CMR). This agency had been responsible for observer missions on board EU (Dutch, German, Lithuanian

and Polish) trawlers in the SPRFMO Convention area since 2007. The coordination of the observer program to collect data from the EU fishing fleet in the SPRFMO Convention area from 2017 was taken over by the National Marine Fisheries Research Institute, Poland (NMFRI).

As from 2015, the program is financed through the EU Data Collection Framework (DCF) and is based on the Multi-lateral agreement for biological data collection of pelagic fisheries in SPRFMO Convention area between the responsible institutions of the EU Member States concerned.

In the period 2014-2019, the total number of fishing days with observers on board was 394 (Table 4), representing 40% of total fishing days.

Table 5. 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 Giedrojc	25
	13 May – 24 June	Annelies Ilena	Kamil Kisielewski	22

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*. For biological data collection (including sampling for age) for *Trachurus murphyi* the aim is to have even representation for all length classes recorded (minimum 5 fish per length class per trip). In addition, discards and incidental by-catch of species of concern were monitored.

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 7).

8.2 Observer training

The observers employed by NMFRI in the program in 2019 had a wide experience in observer missions at sea:

Łukasz Giedrojc and Kamil Kisielewski are ichthyologists with a University degree who have worked as observers on board Polish vessels (pelagic and demersal trawlers, long-liners, gill-netters) in the Baltic Sea since 2011. They also worked as observers on board pelagic trawlers in the North and South-East Atlantic. No special training activities were organized for the NMFRI observers in 2019 as no training needs were identified.

The NMFRI observers are very experienced - biological and fisheries data collection is their daily routine under the EU DCF and other fisheries monitoring projects executed by the Institute and they are regularly briefed. Before each deployment of the observer on the vessel operating in the SPRFMO Convention area, observers are briefed on the updated Conservation and Management Measures applicable to the *Trachurus murphyi* fisheries in the SPRFMO area and as regards observer's obligations with respect to the methods and scope of the data to be collected.

At NMFRI an internal policy is in force regarding qualifications and safety requirements of the scientific observers. According to this policy, a two-stage observer training is applied:

- First - general maritime training confirming the ability to work at sea on board fishing vessels, resulting in obtaining relevant certificates in accordance with national rules and the requirements of the STCW Convention - Seaman's Book, Deck Hand Certificate, Basic Safety Training Certificate (incl. Personal Survival Techniques, Fire Prevention and Fire Fighting, Elementary First Aid, Personal Safety). This training lasts one week. Each observer working at sea must at all time be in possession of all valid basic maritime certificates (which must be renewed each 5 years), including specific Marine Health Certificate.
- Second - practical training on observer's work, both in the lab and in the field and at sea (including species identification, otoliths/scales collection and reading, maturity determination, data recording etc.). Each newly employed observer is working under the supervision of Institute's Data Collection Coordinator and, when working in lab or at sea, is trained under direct supervision of an experienced observer. This training last minimum 3 weeks.

8.3 Program design and coverage

The observer program was designed to meet the requirements of the SPRFMO CMM 01¹, *i.e.* to ensure a minimum of 10% scientific observer coverage of trips for trawlers flying the EU flag and to ensure that such observers collect and report data as described in the SPRFMO CMM 02² (Data Standards) respectively. Observers' coverage rates for the period 2017-2019 is presented in Table 5 below.

Table 6. Observer coverage in 2017 - 2019

Year	Fishing		Observed		Coverage	
	Trips	Days	Trips	Days	Trips	Days
2017	10	273	3	66	30%	24%
2018	6	132	2	53	33%	40%
2019	3	88	2	47	66%	53%

9 Information on European Union (EU) observer activity in 2021

In 2021, by the time of preparing this report, three EU fishing vessels (pelagic trawlers) were engaged in fishing activity targeting the *Trachurus murphyi* in the SPRFMO Convention area. The first EU flagged fishing vessel entered the fishing ground in the SPRFMO Convention area in March 2021, the second vessel "Annelies Ilena" (POL) moved to the SPRFMO area in April and the third vessel "Margiris" (LTU) in July.

From March 26th till April 24th first scientific observer worked on the vessel "Maartje Theadora". The second scientific observer was placed on board "Annelies Ilena" on July 2nd and continues his work on this vessel at the time of writing this report. There are plans to place an observer also on the "Margiris" to reach the goals of collecting data from all three EU vessels engaged in fishery in this area.

In June 2021 the observer monitored the at sea transshipment regarding unloading of "Annelies Ilena" and "Maartje Theadora", in accordance to the SPRFMO COM 12³.

¹ Conservation and Management Measure for *Trachurus murphyi*

² Conservation and Management Measure on Standards for the Collection, Reporting, Verification and Exchange of Data

³ Conservation and Management Measure for the regulation of Transshipment and Other Transfer Activities

10 References

Pastors, M. A. (2021). PFA selfsampling report for the SPRFMO Science Committee 2021, PFA. PFA 2021_07 / SPRFMO SC9-JMxx.

Pastors, M. A. and I. Wojcik (2020). Comparison of PFA self-sampling with EU observer data, SPRFMO. SC8-JM03.