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PFA self-sampling report for the SPRFMO Science Committee 2026

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PFA selfsampling report for the SPRFMO Science Committee 2026

Niels Hintzen, 07/07/2026

PFA report 2026_06 / SC14-JM20

Executive summary

A description is presented of the fisheries carried out by vessels belonging to members of the Pelagic Freezer-trawler Association (PFA) within the SPRFMO area from 2019 to 2026. The Pelagic Freezer-trawler Association (PFA) is an association that has nine member companies that together operate 17 (in 2025) freezer trawlers in six European countries (www.pelagicfish.eu). In 2015, the PFA has initiated a self-sampling program that expands the ongoing monitoring programs on board of pelagic freezer-trawlers aimed at assessing the quality of fish. The expansion in the self-sampling program consists of recording of haul information, recording the species compositions by haul and regularly taking length measurements from the catch. The self-sampling is carried out by the vessel quality managers on board of the vessels, who have a long experience in assessing the quality of fish, and by the skippers/officers with respect to the haul information. During the fisheries in the Pacific, the self-sampling program has been carried out during all trips and all hauls.

The self-sampling program delivers information on spatial and temporal evolution of the fishery, species and length compositions and ambient fishing conditions (temperature and depth). Catch distributions and length compositions by quarter and division are presented for jack mackerel (CJM), chub mackerel (MAS) and southern rays bream (BRU). No PFA fisheries was carried in the SPRFMO area in 2020, due to the global Corona crisis. As such, no results can be reported for 2020. In 2025, two PFA vessels have been active in the SPRFMO convention area. In the first half of 2026, three PFA vessels were present in the area.

The **Jack mackerel fishery** takes place from March through to November. Overall, the self-sampling activities for the jack mackerel fisheries during the years 2019 - 2026 (up to 09/12/2025) covered 62 fishing trips with 2675 hauls, a total catch of 175563 tonnes and 184645 individual length measurements.

The fishery in 2025 took place east of the Juan Fernandez islands which more in line to recent years. The median length at 17.8 cm was markedly smaller compared to the 22-30cm in the preceding years. The highest catch rates (catch/day) of Jack mackerel has been recorded in 2021 (222 ton/day) and is at 108 ton/day in 2025.

Bycatches of chub mackerel (MAS) and Blue fathead (UBA) are being taken in the fishery for Jack mackerel. During the years, reported here, 2327 hauls with Chub mackerel (MAS) and 549 hauls with Blue fathead (UBA) have been analysed as part of the program. Standardized CPUE estimates for chub mackerel show a steep decline from 2024 to 2025.

In this 2026 self-sampling report, a standardized CPUE calculation has been included. The standardized CPUE is based on a GLM model with a negative binomial distribution. The response

variable is the catch by week and vessel, with an offset of the log effort (number of fishing days per week) and explanatory variables year, GT category, month, division and depth category. An assumed technical efficiency increase of 2.5% per year has been included in the fitting of the model (Rousseau et al 2019)

1 Introduction

The Pelagic Freezer-trawler Association (PFA) is an association that has nine member companies that together operate 17 freezer trawlers (in 2025) in six European countries (www.pelagicfish.eu). In 2015, the PFA has initiated a self-sampling program that expands the ongoing monitoring programs on board of pelagic freezer-trawlers by the specialized crew of the vessels. The primary objective of that monitoring program is to assess the quality of fish. The expansion in the self-sampling program consists of recording of haul information, recording the species compositions per haul and regularly taking random length-samples from the catch. The self-sampling is carried out by the vessel quality managers on board of the vessels, who have a long experience in assessing the quality of fish, and by the skippers/officers with respect to the haul information. The scientific coordination of the self-sampling program is carried out by Niels Hintzen (PFA chief science officer) with support of Lina de Nijs and Floor Quirijns (contractor).

During the fisheries in the Pacific, the self-sampling program has carried out during all trips and all hauls.

The self-sampling program delivers information on spatial and temporal evolution of the fishery, species and length compositions and ambient fishing conditions (temperature and depth). Catch distributions and length compositions by quarter and division are presented for jack mackerel, chub mackerel and southern rays bream.

In the first half of 2026, three PFA vessels have been active in the SPRFMO convention area. In this report, data has been processed up to 09/12/2025 and only reflects activities from all PFA vessels that have fished in the area. No EU but non-PFA vessels were active in the area in 2024 fishing for jack mackerel.

2 Overview of self-sampling methodology

The self-sampling program in the SPRFMO area has been implemented on vessels from the Netherlands, Germany, Lithuania and Poland during the years 2019 - 2026. All trips by all PFA vessels fishing in the south Pacific are being monitored by self-sampling, also when there is a scientific observer on board for a certain trip.

The self-sampling program is designed in such a way that it follows as closely as possible the working practices on board of the different vessels and that it delivers the information needed for the SPRFMO Science Committee. The following elements can be distinguished in the self-sampling protocol:

- haul information (date, time, position, weather conditions, environmental conditions, gear attributed, estimated catch, optionally: species composition)
- batch information (total catch per batch=production unit, including variables like species, average size, average weight, fat content, gonads y/n and stomach fill)
- linking batch and haul information (essentially a key of how much of a batch is caught in which of the hauls)
- length information (length frequency measurements, either by batch or by haul)

The self-sampling information is collected using either standardized Excel worksheets or purpose developed software (M-Catch). Each participating vessel will send in the information collected during a trip by the end of the trip. The data will be checked and added to the database by Lina de Nijs, who will also generate standardized trip reports (using RMarkdown) which will be sent back to the vessel within one or two days. The compiled data for all vessels is being used for specific purposes, e.g. reporting to expert groups, addressing specific fishery or biological questions and supporting detailed biological studies. The PFA publishes an annual report on the self-sampling program.

3 Results

3.1 General

An overview of all the self-sampled trips for cjm, mas, bru, uba in 87.2.6, 87.3.3, 87.1.4. The percentage non-target species is defined as the catch of non-pelagic species relative to the catch of pelagic species.

It was noted that in 2024 incorrect length measurements had been taken for 1 out of the two vessels that take part in the self-sampling. Standard length rather than fork length measurements had been taken and are excluded from the results here and are not used to improve biological catch statistics for the EU fisheries in 2024. Skippers have been informed of the issue and alerted to improve on the length reading in 2025. In 2025 a small (~1cm) difference was noted when comparing observer with self-sampling data. No clear reason for this difference has been found.

year	nvessels	ntrips	ndays	nhauls	catch	catch/day	nontarget	nlength	nbio
2019	1	3	85	162	12,115	143	0.76%	6,615	410
2021	3	10	184	436	44,304	241	4.31%	19,192	536
2022	2	17	267	656	62,809	235	0.18%	32,943	96
2023	3	15	266	599	51,602	194	0.32%	23,784	0
2024	2	8	149	333	22,378	150	0.16%	6,254	0
2025	3	9	276	698	31,109	113	5.91%	117,132	0
(all)		62	1,227	2,884	224,318			205,920	1,042

*Table 3.1.1: PFA fisheries in the South Pacific Self-sampling Summary of number of vessels, trips, days, hauls, catch (tonnes), catch per day and number of fish measured. * denotes incomplete year*

Catch and number of self-sampled hauls by year and division

division	2019	2021	2022	2023	2024	2025	all	perc
87.2.6	3,377	44,260	25,990	49,002	22,378	30,645	175,652	78.3%
87.1.4	0	0	36,820	2,600	0	464	39,884	17.8%
87.3.3	8,738	45	0	0	0	0	8,782	3.9%
(all)	12,115	44,304	62,809	51,602	22,378	31,109	224,318	100.0%

division	2019	2021	2022	2023	2024	2025	all	perc
87.2.6	66	428	321	571	333	675	2,394	83.0%
87.1.4	0	0	335	28	0	23	386	13.4%
87.3.3	96	8	0	0	0	0	104	3.6%
(all)	162	436	656	599	333	698	2,884	100.0%

*Table 3.1.2: PFA fisheries in the South Pacific Self-sampling Summary of catch (top) and number of hauls (bottom) per year and division. * denotes incomplete year*

Catch and number of self-sampled hauls by year and month

month	2019	2021	2022	2023	2024	2025	all	perc
mrt	915	0	0	0	0	0	915	0.4%
apr	3,820	1,153	4,321	0	0	0	9,294	4.1%
mei	2,938	9,133	11,464	0	0	0	23,535	10.5%
jun	786	7,772	10,331	391	3,612	205	23,096	10.3%
jul	1,444	16,863	7,889	13,054	1,071	5,157	45,479	20.3%
aug	2,211	5,351	9,234	14,440	9,112	7,207	47,555	21.2%
sep	0	4,034	11,343	9,949	3,707	7,796	36,829	16.4%
okt	0	0	7,067	10,953	4,090	7,631	29,741	13.3%
nov	0	0	1,161	2,815	785	2,859	7,621	3.4%
dec	0	0	0	0	0	253	253	0.1%
(all)	12,115	44,304	62,809	51,602	22,378	31,109	224,318	100.0%

month	2019	2021	2022	2023	2024	2025	all	perc
mrt	7	0	0	0	0	0	7	0.2%
apr	34	21	69	0	0	0	124	4.3%
mei	30	93	139	0	0	0	262	9.1%
jun	21	106	108	5	45	10	295	10.2%
jul	34	137	74	138	9	135	527	18.3%
aug	36	47	81	137	107	158	566	19.6%
sep	0	32	111	132	71	178	524	18.2%
okt	0	0	63	139	69	164	435	15.1%
nov	0	0	11	48	32	44	135	4.7%
dec	0	0	0	0	0	9	9	0.3%
(all)	162	436	656	599	333	698	2,884	100.0%

Table 3.1.3: PFA fisheries in the South Pacific Self-sampling summary of catch (top) and number of hauls (bottom) per year and month.

Catch and number of self-sampled hauls by year and country (flag)

flag	2019	2021	2022	2023	2024	2025	all	perc
DEU	0	14,212	0	18,514	0	0	32,726	14.6%
LIT	0	4,415	32,944	0	13,342	14,015	64,717	28.9%
POL	12,115	25,677	29,865	33,089	9,036	17,094	126,876	56.6%
(all)	12,115	44,304	62,809	51,602	22,378	31,109	224,318	100.0%

flag	2019	2021	2022	2023	2024	2025	all	perc
DEU	0	177	0	170	0	0	347	12.0%
LIT	0	39	371	0	199	289	898	31.1%
POL	162	220	285	429	134	409	1,639	56.8%
(all)	162	436	656	599	333	698	2,884	100.0%

Table 3.1.4: PFA fisheries in the South Pacific Self-sampling summary of catch (top) and number of hauls (bottom) per year and month.

Catch by species and year

species		english_name		scientific_name	2019	2021	2022	2023
2024	2025	all	perc					
cjm		jack mackerel		Trachurus murphyi	11,788	36,446	43,385	39,406
16,571	27,968	175,564	78.3%					
mas		chub mackerel		Scomber japonicus	123	5,939	19,309	12,029
5,771	1,298	44,469	19.8%					
uba		blue fathead		Cubiceps caeruleus	39	49	47	35
33	1,686	1,889	0.8%					
bys		Splendid alfonsino		Beryx splendens	0	1,010	0	0
0	1,010	0.5%						
emm		Redbait		Emmelichthys nitidus	0	505	0	0
0	505	0.2%						
emt		Redbaits		Emmelichthyidae	0	307	0	0
0	307	0.1%						
gis		jumbo flying squid		Dosidicus gigas	0	3	0	67
147	217	0.1%						
bru		rays breem		Brama australis	112	10	0	0
4	126	0.1%						
bep		Eastern Pacific bonito		Sarda chiliensis	2	5	42	15
0	65	0.0%						
sqm		Broadtail shortfin squid		Illex coindetii	0	2	27	36
0	65	0.0%						
bpq		NA		Brama japonica	41	0	0	0
0	41	0.0%						
msd		Mackerel scad		Decapterus macarellus	0	22	0	0
0	22	0.0%						
bon		bonito		Sarda sarda	0	3	0	9
0	12	0.0%						
skj		skipjack tuna		Katsuwonus pelamis	6	1	0	1
0	9	0.0%						
vet		NA		Engraulis ringens	0	0	0	0
6	6	0.0%						
oth		NA		NA	3	2	0	5
1	12	0.0%						
(all)		(all)		(all)	12,115	44,304	62,809	51,602
22,378	31,109	224,318	100.0%					

Table 3.1.5: PFA fisheries in the South Pacific Self-sampling Summary of total catch (tonnes) by species. OTH refers to all other species that are not the main target species

Haul positions

An overview of all self-sampled hauls in the PFA fisheries in the South Pacific.



Figure 3.1.1: PFA fisheries in the South Pacific Self-sampling haul positions. N indicates the number of hauls.

Catches for the main target species

Summed catches (tonnes) of the main target species aggregated in rectangles.



Figure 3.1.2: PFA fisheries in the South Pacific Self-sampling catch per species and per rectangle. *N* indicates the number of hauls. Catch refers to the total catch per year.

Catch rates (catch/day) for the main target species



Figure 3.1.3: Average catch per day, per species and per rectangle. N indicates the number of hauls; avg refers to the average catch per day.

Average surface temperature by quarter and by rectangle.

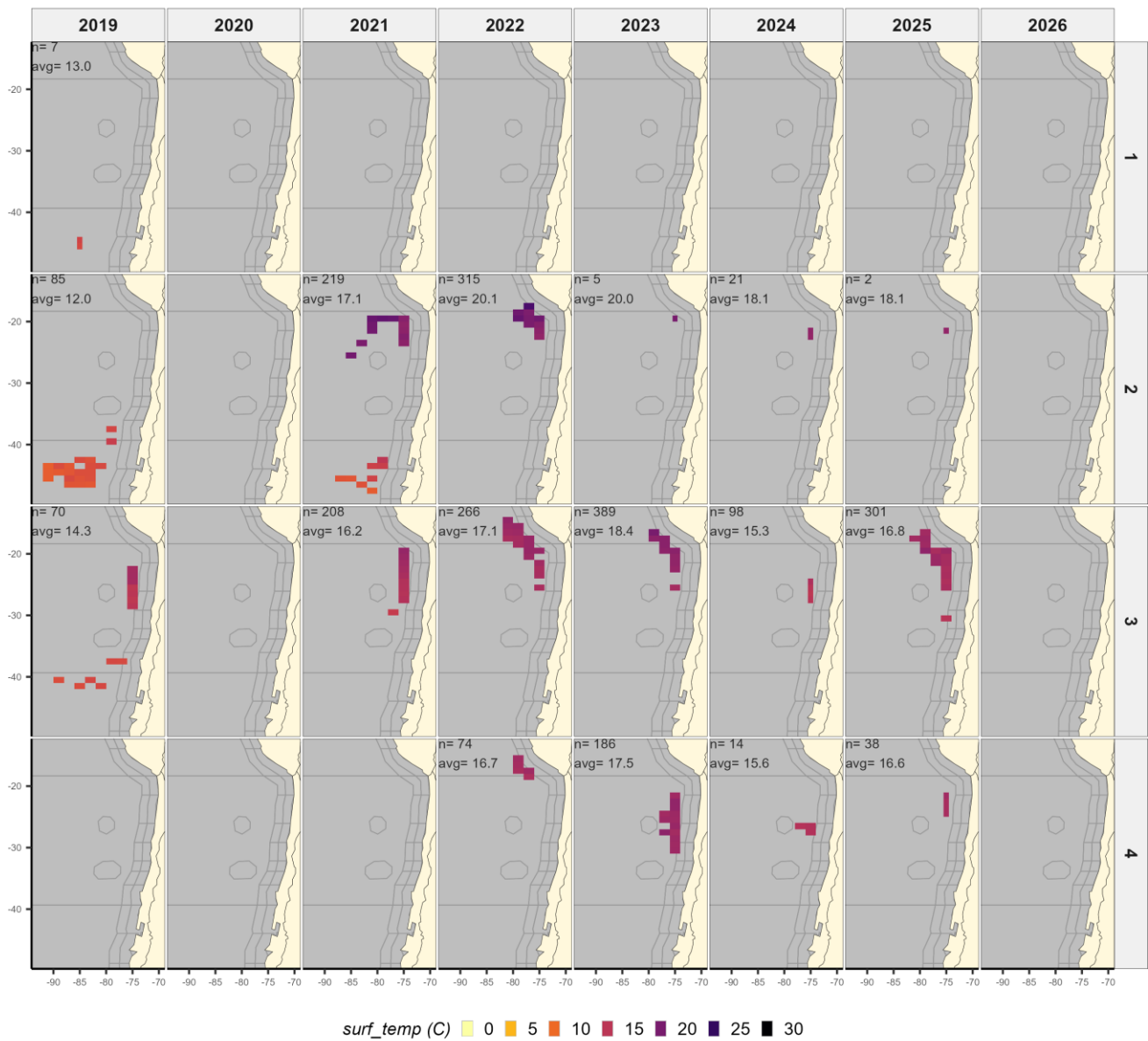


Figure 3.1.4: PFA fisheries in the South Pacific Average surface temperature (C) by year and quarter. N indicates the number of hauls. Avg refers to the average temperature.

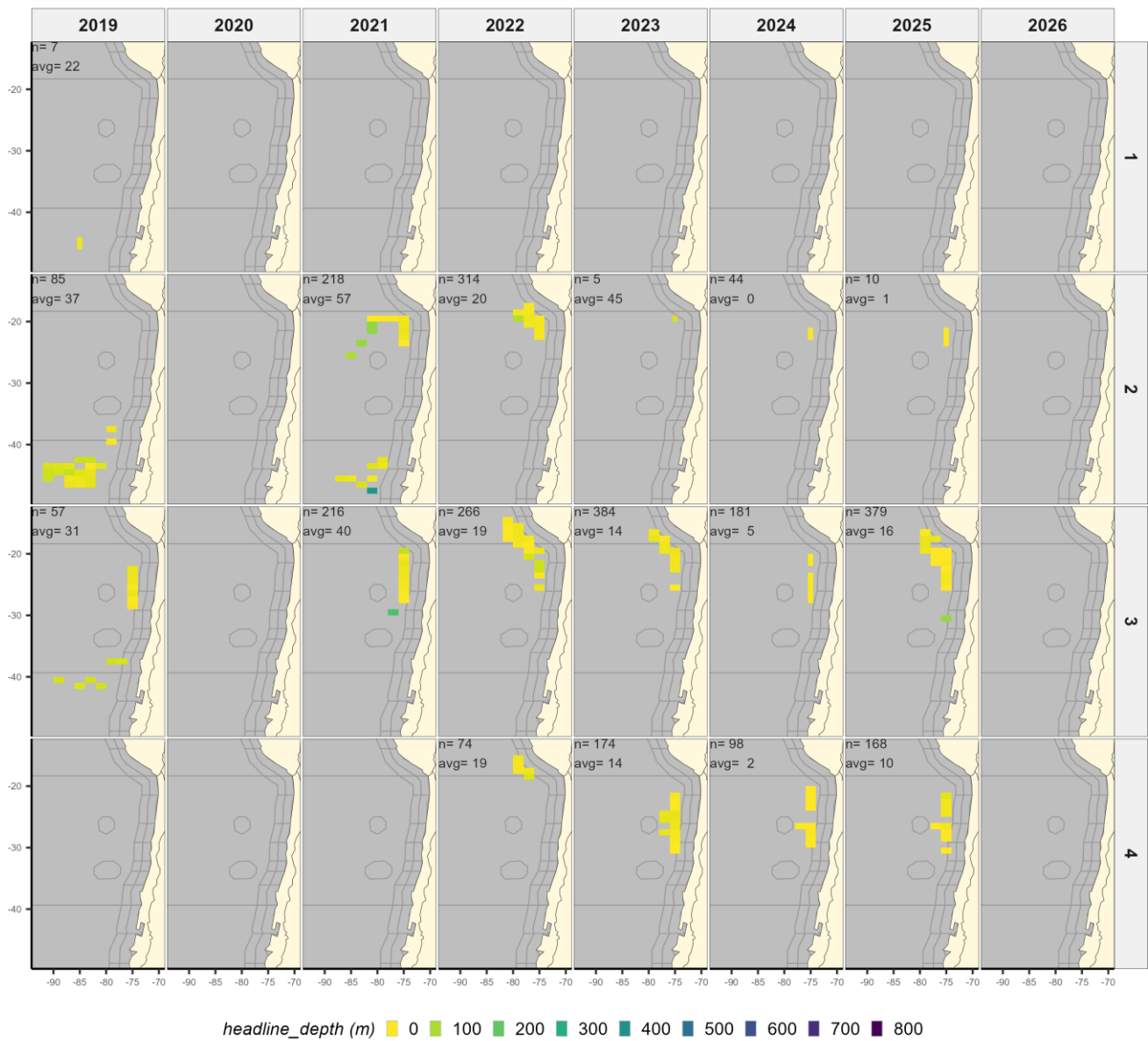
Average fishing depth.

Figure 3.1.5: PFA fisheries in the South Pacific Average fishing depth (m) by year and quarter. N indicates the number of hauls. Avg refers to the average fishing depth.

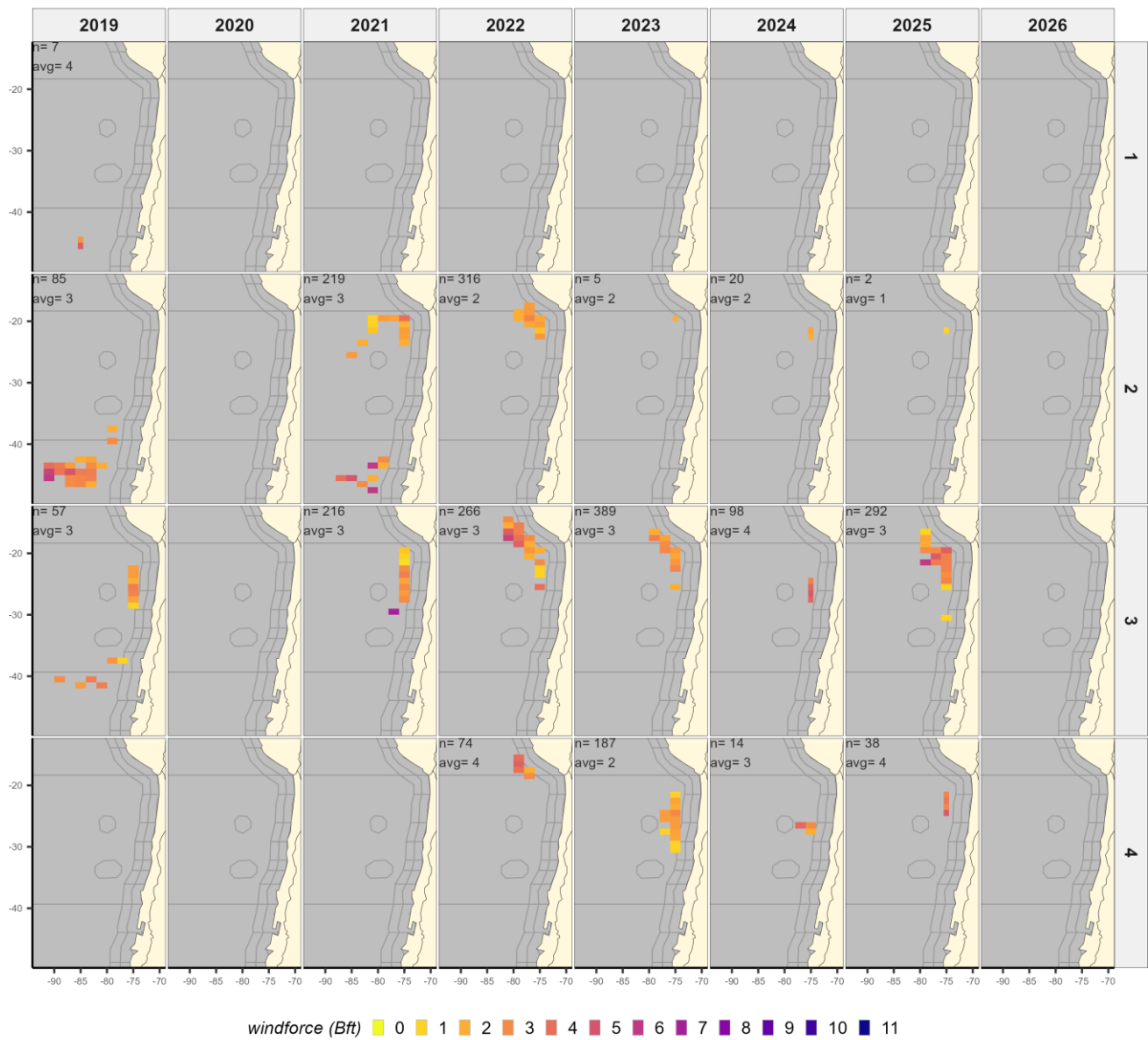
Average wind force.

Figure 3.1.6: PFA fisheries in the South Pacific Average windforce (Bft) by year and quarter. *N* indicates the number of hauls. Avg refers to the average windforce.

3.2 Jack mackerel (CJM, *Trachurus murphyi*)

Jack mackerel self-sampling summary.

species	year	nvessels	ntrips	ndays	nhauls	catch	catch/day	nlength	nbio
cjm	2019	1	3	83	152	11,788	142	6,032	410
cjm	2021	3	10	164	388	36,446	222	14,842	188
cjm	2022	2	17	263	624	43,385	165	25,727	84
cjm	2023	3	15	261	566	39,406	151	18,141	0
cjm	2024	2	8	139	307	16,571	119	5,246	0
cjm	2025	3	9	260	638	27,968	108	114,657	0
(all)	(all)		62	1,170	2,675	175,564		184,645	682

Table 3.2.1: Jack mackerel. Self-sampling summary with the number of days, hauls, trips, vessels, catch (tonnes), catch rate (ton/day), number of fish measured, number of biological observations.

Jack mackerel. Catch by division

species	division	2019	2021	2022	2023	2024	2025	all	perc
cjm	87.1.4	0	0	22,823	1,806	0	427	25,057	14.3%
cjm	87.2.6	3,158	36,443	20,562	37,599	16,571	27,541	141,874	80.8%
cjm	87.3.3	8,630	3	0	0	0	0	8,633	4.9%
(all)	(all)	11,788	36,446	43,385	39,406	16,571	27,968	175,564	100.0%

Table 3.2.2: Jack mackerel. Self-sampling summary with the catch (tonnes) by year and division

Jack mackerel. Catch by month

species	month	2019	2021	2022	2023	2024	2025	all	perc
cjm	mrt	902	0	0	0	0	0	902	0.5%
cjm	apr	3,786	11	3,222	0	0	0	7,019	4.0%
cjm	mei	2,904	7,251	9,337	0	0	0	19,493	11.1%
cjm	jun	756	6,312	8,154	285	2,062	197	17,767	10.1%
cjm	jul	1,347	14,538	6,078	10,114	938	4,648	37,663	21.5%
cjm	aug	2,093	4,613	5,724	11,029	7,803	6,680	37,943	21.6%
cjm	sep	0	3,721	6,808	6,267	3,092	6,807	26,694	15.2%
cjm	okt	0	0	3,434	9,192	2,054	6,720	21,401	12.2%
cjm	nov	0	0	628	2,518	622	2,716	6,484	3.7%
cjm	dec	0	0	0	0	0	199	199	0.1%
(all)	(all)	11,788	36,446	43,385	39,406	16,571	27,968	175,564	100.0%

Table 3.2.3: Jack mackerel. Self-sampling summary with the catch (tonnes) by year and month

Jack mackerel. Catch by rectangle



Figure 3.2.1: Jack mackerel. Catch per per rectangle. N indicates the number of hauls; Catch refers to the total catch per year.

Jack mackerel. Catchrate (ton/day) by rectangle



Figure 3.2.2: Jack mackerel. Catchrate (ton/day) per rectangle. N indicates the number of hauls; Avg refers to the average catchrate per rect.

Jack mackerel. Spatio-temporal evolution of catch by month and rectangle

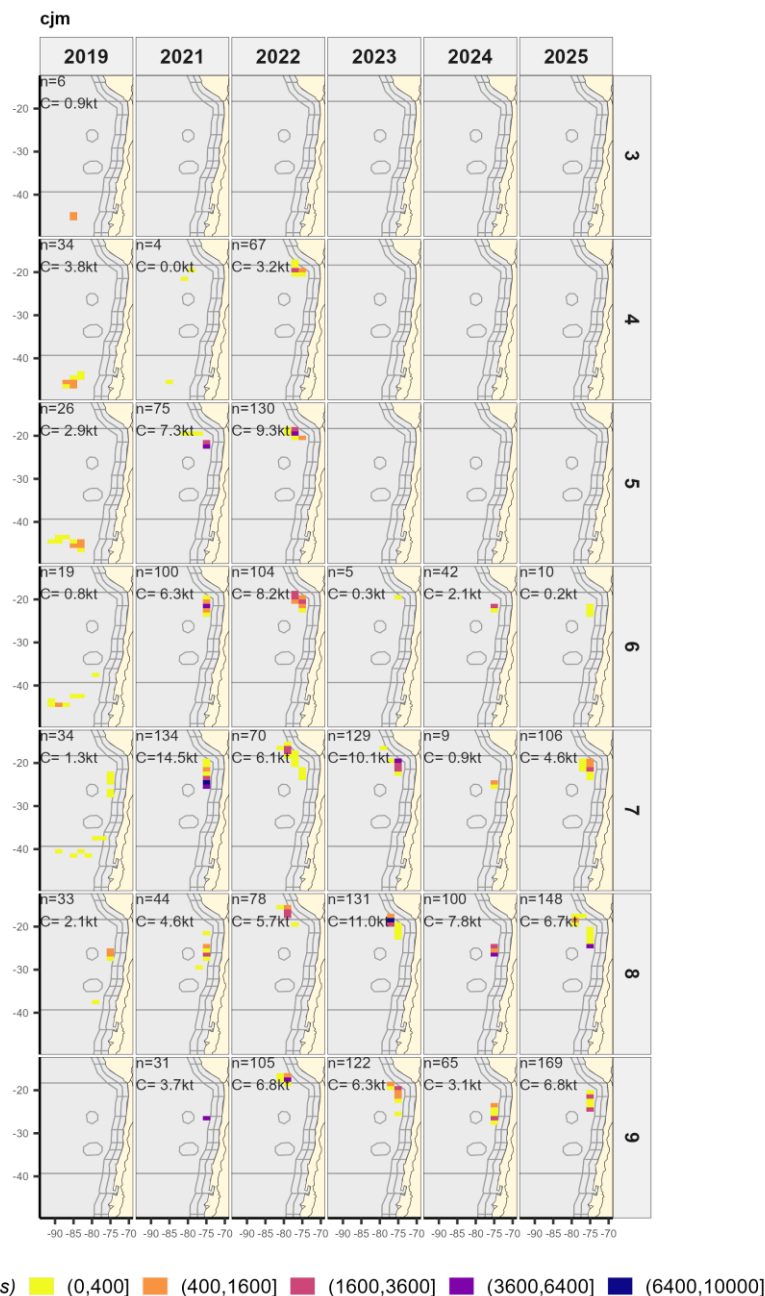


Figure 3.2.3: Jack mackerel. Spatio-temporal evolution of the catches per rectangle and month. *N* indicates the number of hauls; *C* refers to the total catch by year and month.

Jack mackerel. Catch proportion at depth

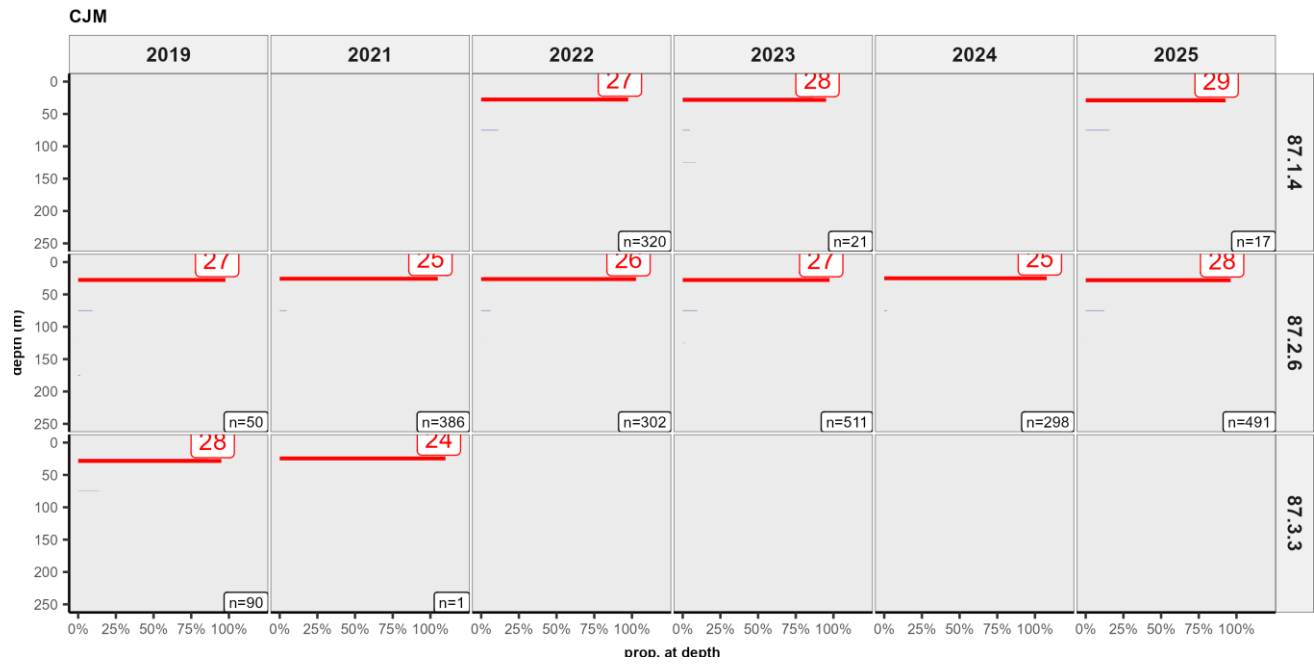


Figure 3.2.4: Jack mackerel. Catch proportion at depth. N indicates the number of hauls.

Jack mackerel. Length distributions of the catch

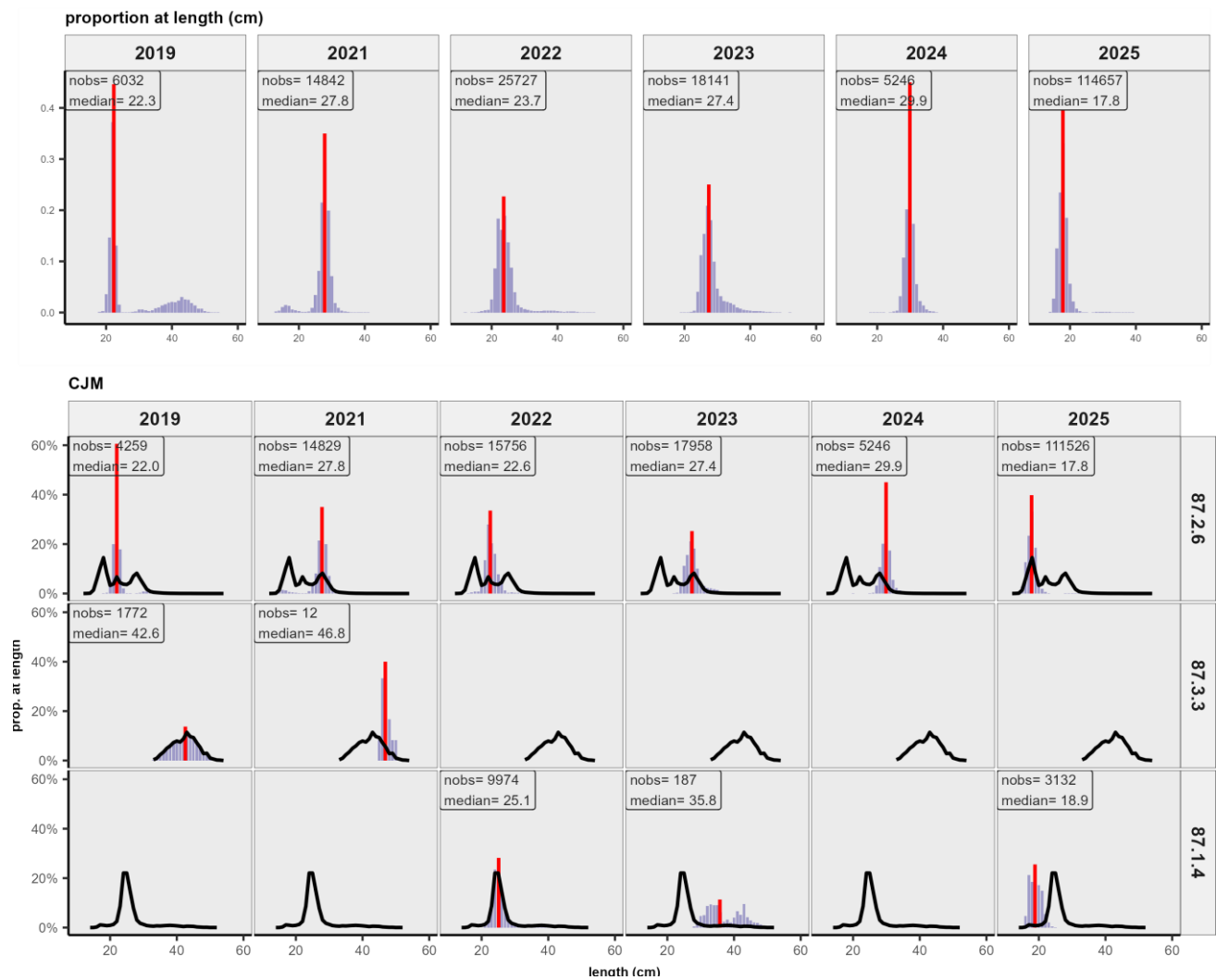


Figure 3.2.5: Jack mackerel. Length distributions by year (top) and by year and division (bottom). Nobs refers to the number of observations; median denotes the median length.

Jack mackerel. Length distributions as proportions by (large) rectangle

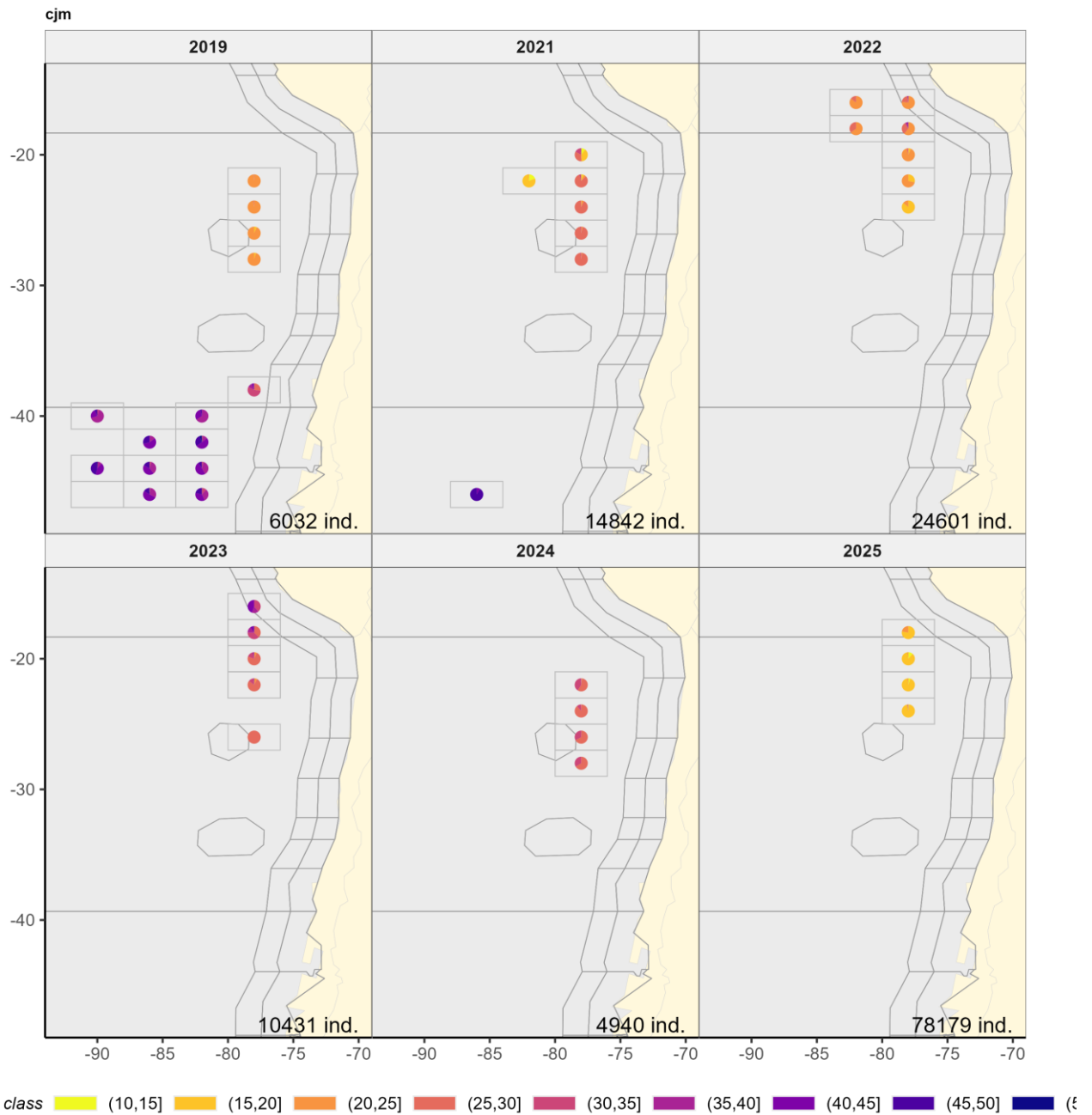


Figure 3.2.6: Jack mackerel. Length distributions as proportions by large rectangle. Ind. refers to the number of length measurements

Jack mackerel. Average length, weight and fat content by year and month

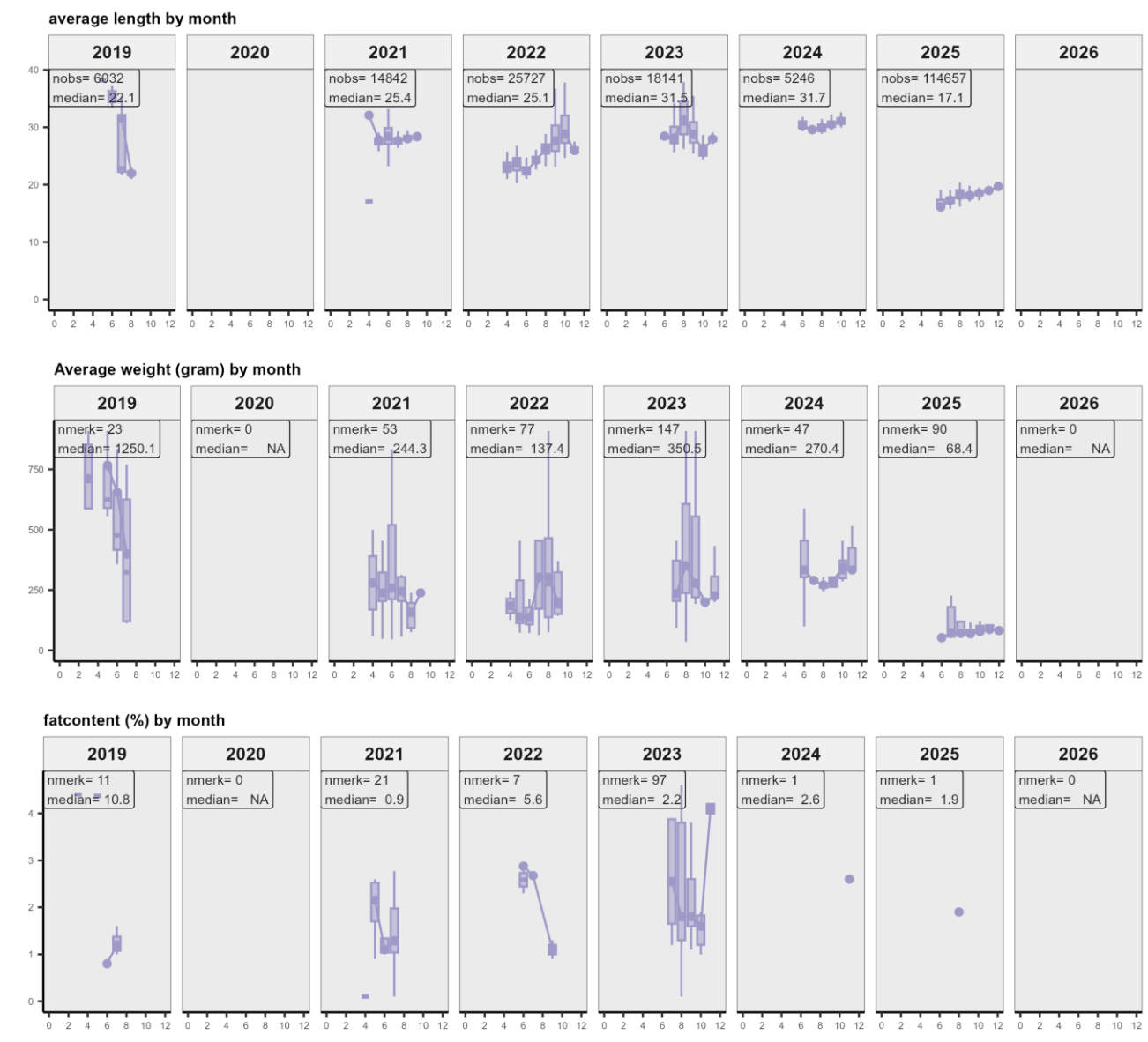


Figure 3.2.7: Jack mackerel. Average length, average weight, and average fat content. Nobs indicates the number of measurements, median indicates the median values

Jack mackerel (CJM). Standardized CPUE

Standardized CPUE (ton/day) from GLM model with factors year, month, GT, division and depth with $\log(\text{days})$ as offset. It is assumed that a 2.5% annual efficiency increase takes place (Rousseau et al 2019).

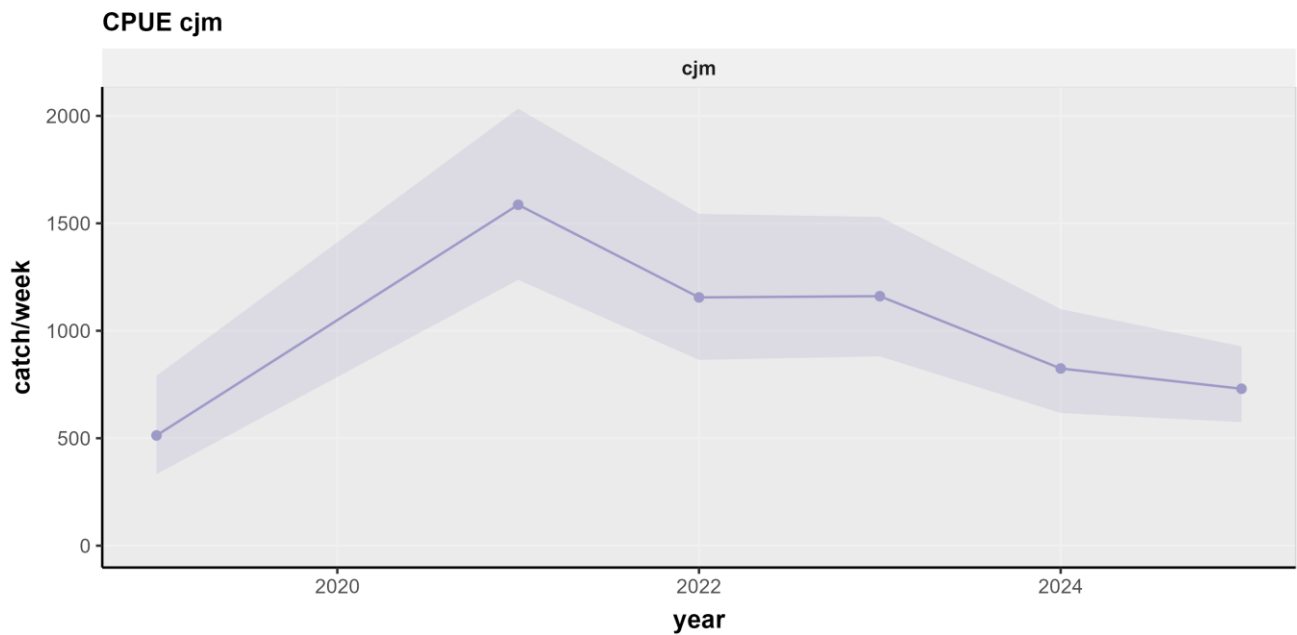


Figure 3.2.8: Jack mackerel. Standardized CPUE (ton/day) from GLM model with factors year, month, GT, division and depth with $\log(\text{days})$ as offset

3.3 Chub mackerel (MAS, *Scomber japonicus*)

Chub mackerel self-sampling summary.

species	year	nvessels	ntrips	ndays	nhauls	catch	catch/day	nlength	nbio
mas	2019	1	3	47	72	123	3	78	0
mas	2021	3	9	162	372	5,939	37	2,875	152
mas	2022	2	17	261	614	19,309	74	7,184	12
mas	2023	3	15	259	555	12,029	46	5,407	0
mas	2024	2	8	134	281	5,771	43	1,008	0
mas	2025	3	9	222	433	1,298	6	766	0
(all)	(all)		61	1,085	2,327	44,469		17,318	164

Table 3.3.1: Chub mackerel. Self-sampling summary with the number of days, hauls, trips, vessels, catch (tonnes), catch rate (ton/day), number of fish measured, number of biological observations.

Chub mackerel. Catch by division

species	division	2019	2021	2022	2023	2024	2025	all	perc
mas	87.1.4	0	0	13,953	792	0	10	14,755	33.2%
mas	87.2.6	120	5,939	5,355	11,237	5,771	1,288	29,710	66.8%
mas	87.3.3	3	0	0	0	0	0	3	0.0%
(all)	(all)	123	5,939	19,309	12,029	5,771	1,298	44,469	100.0%

Table 3.3.2: Chub mackerel. Self-sampling summary with the catch (tonnes) by year and division

Chub mackerel. Catch by month

species	month	2019	2021	2022	2023	2024	2025	all	perc
mas	mrt	2	0	0	0	0	0	2	0.0%
mas	apr	1	15	1,096	0	0	0	1,112	2.5%
mas	mei	1	1,107	2,097	0	0	0	3,204	7.2%
mas	jun	1	1,460	2,167	106	1,549	3	5,286	11.9%
mas	jul	45	2,315	1,766	2,873	132	211	7,342	16.5%
mas	aug	74	730	3,485	3,342	1,309	307	9,247	20.8%
mas	sep	0	313	4,531	3,676	614	559	9,694	21.8%
mas	okt	0	0	3,633	1,740	2,028	183	7,584	17.1%
mas	nov	0	0	534	292	138	33	996	2.2%
mas	dec	0	0	0	0	0	3	3	0.0%
(all)	(all)	123	5,939	19,309	12,029	5,771	1,298	44,469	100.0%

Table 3.3.3: Chub mackerel. Self-sampling summary with the catch (tonnes) by year and month

Chub mackerel. Catch by rectangle



Figure 3.3.1: Chub mackerel. Catch per per rectangle. N indicates the number of hauls; Catch refers to the total catch per year.

Chub mackerel. Catchrate (ton/day) by rectangle



Figure 3.3.2: Chub mackerel. Catchrate (ton/day) per rectangle. N indicates the number of hauls; Avg refers to the average catchrate per rect.

Chub mackerel. Spatio-temporal evolution of catch by month and rectangle

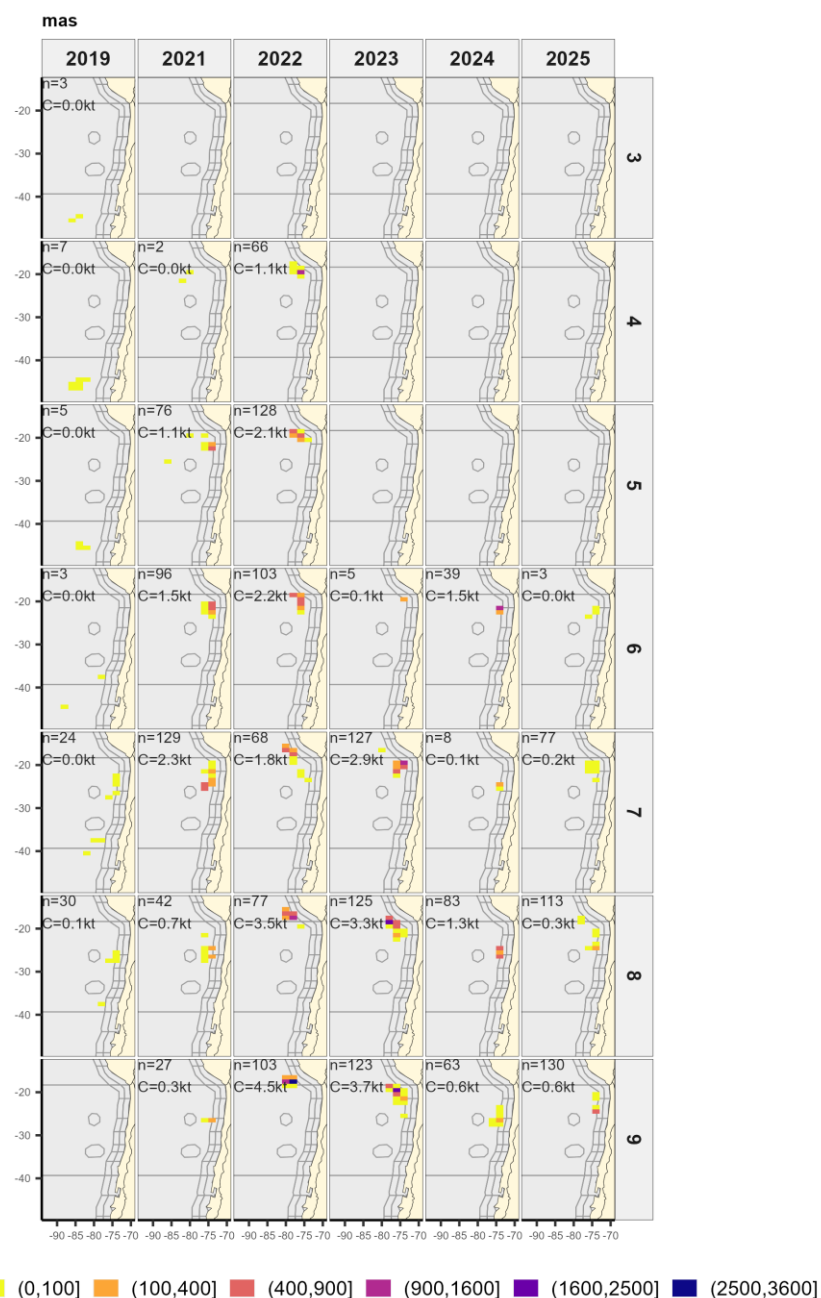


Figure 3.3.3: Chub mackerel. Spatio-temporal evolution of the catches per rectangle and month. *N* indicates the number of hauls; *C* refers to the total catch by year and month.

Chub mackerel. Catch proportion at depth

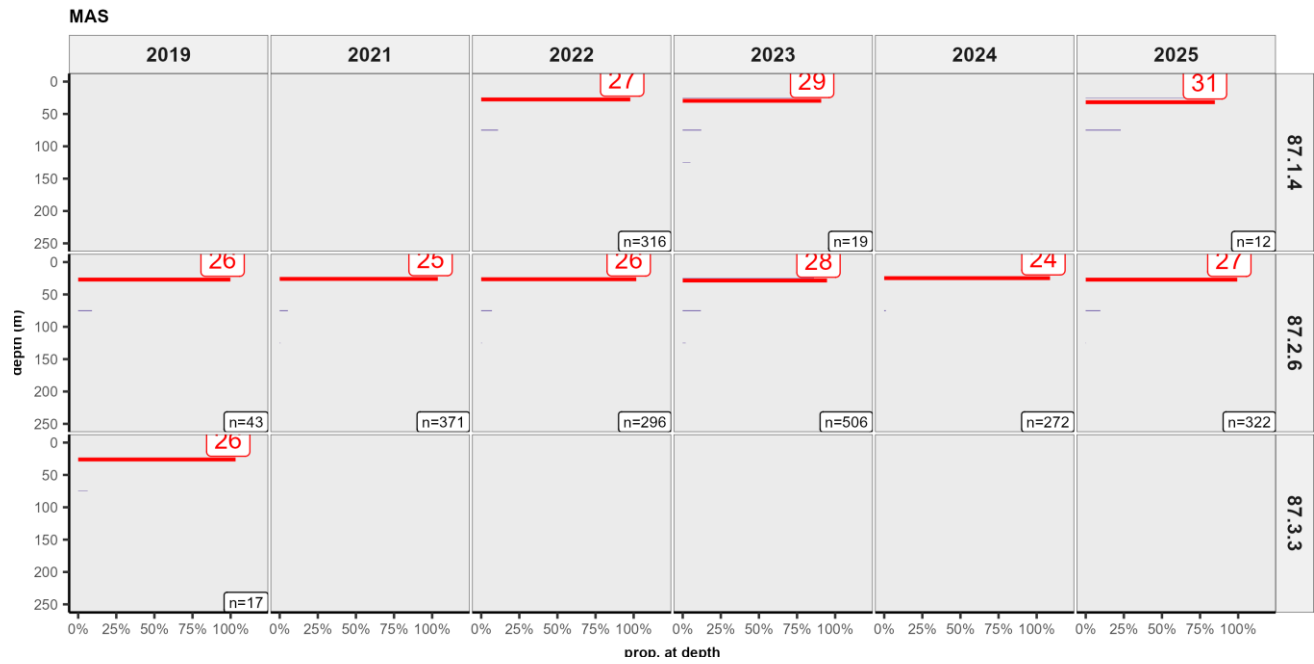


Figure 3.3.4: Chub mackerel. Catch proportion at depth. N indicates the number of hauls.

Chub mackerel. Length distributions of the catch

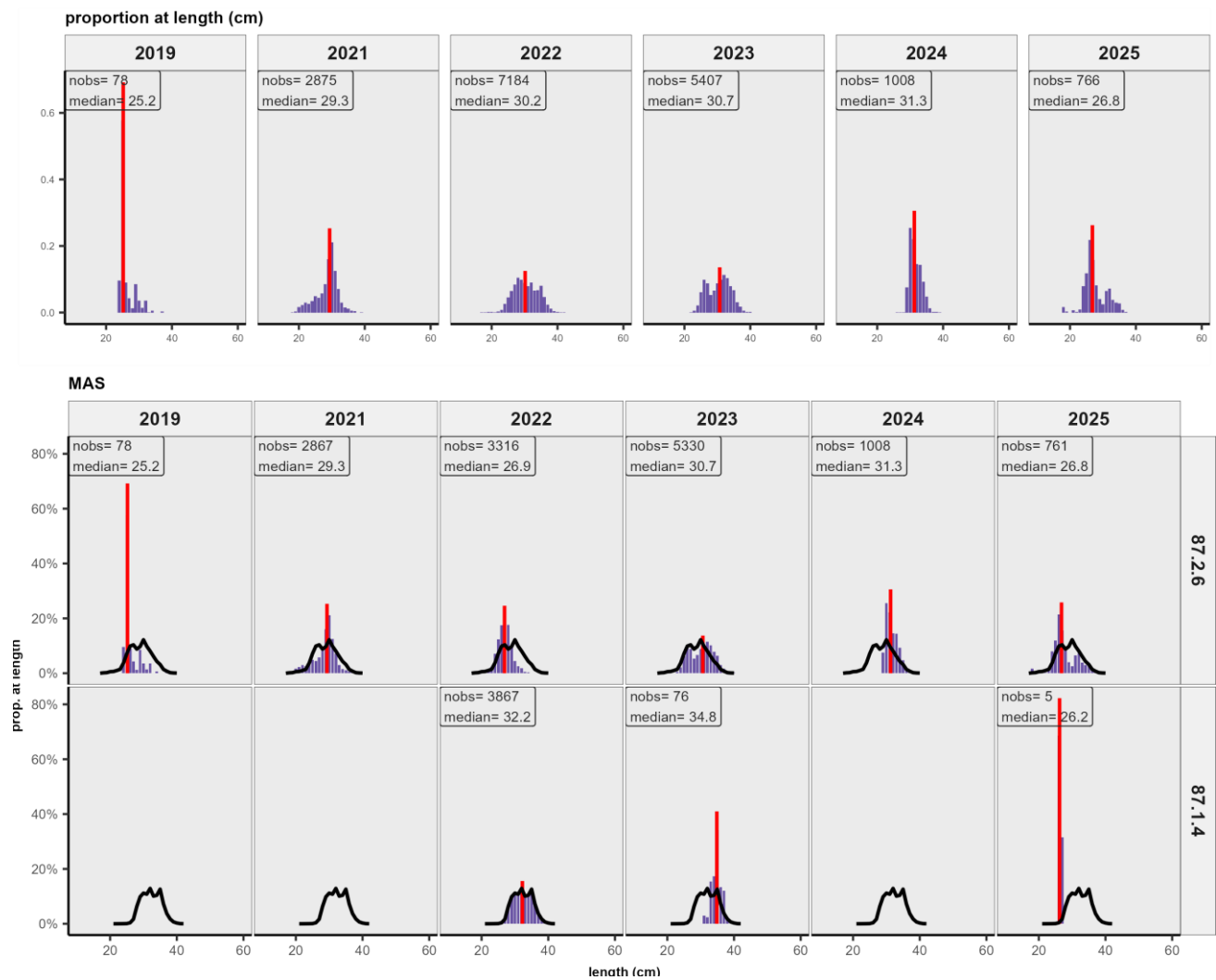


Figure 3.3.5: Chub mackerel. Length distributions by year (top) and by year and division (bottom). Nobs refers to the number of observations; median denotes the median length.

Chub mackerel. Length distributions as proportions by (large) rectangle

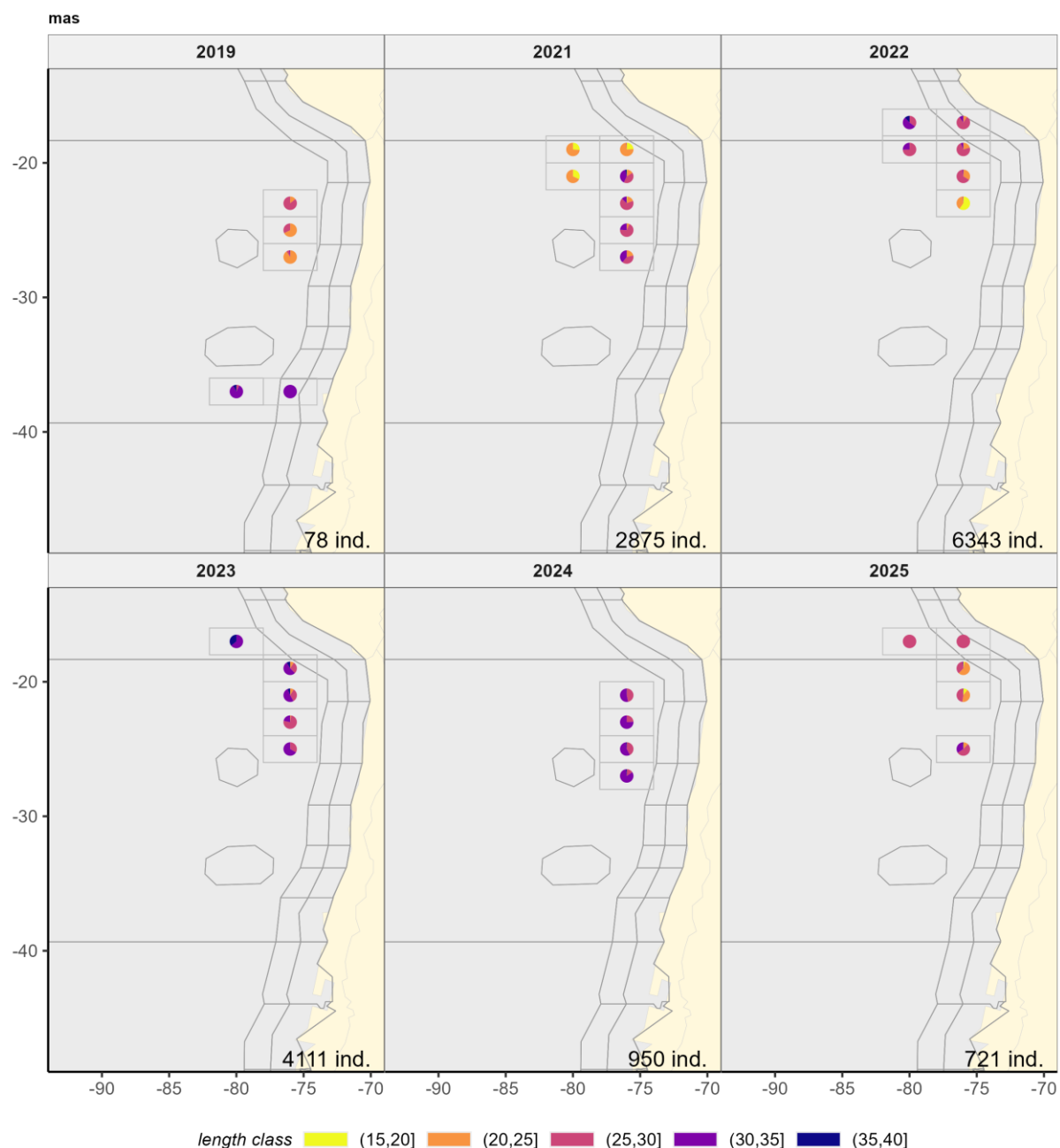


Figure 3.3.6: Chub mackerel. Length distributions as proportions by large rectangle. Ind. refers to the number of length measurements

Chub mackerel. Average length, weight and fat content by year and month

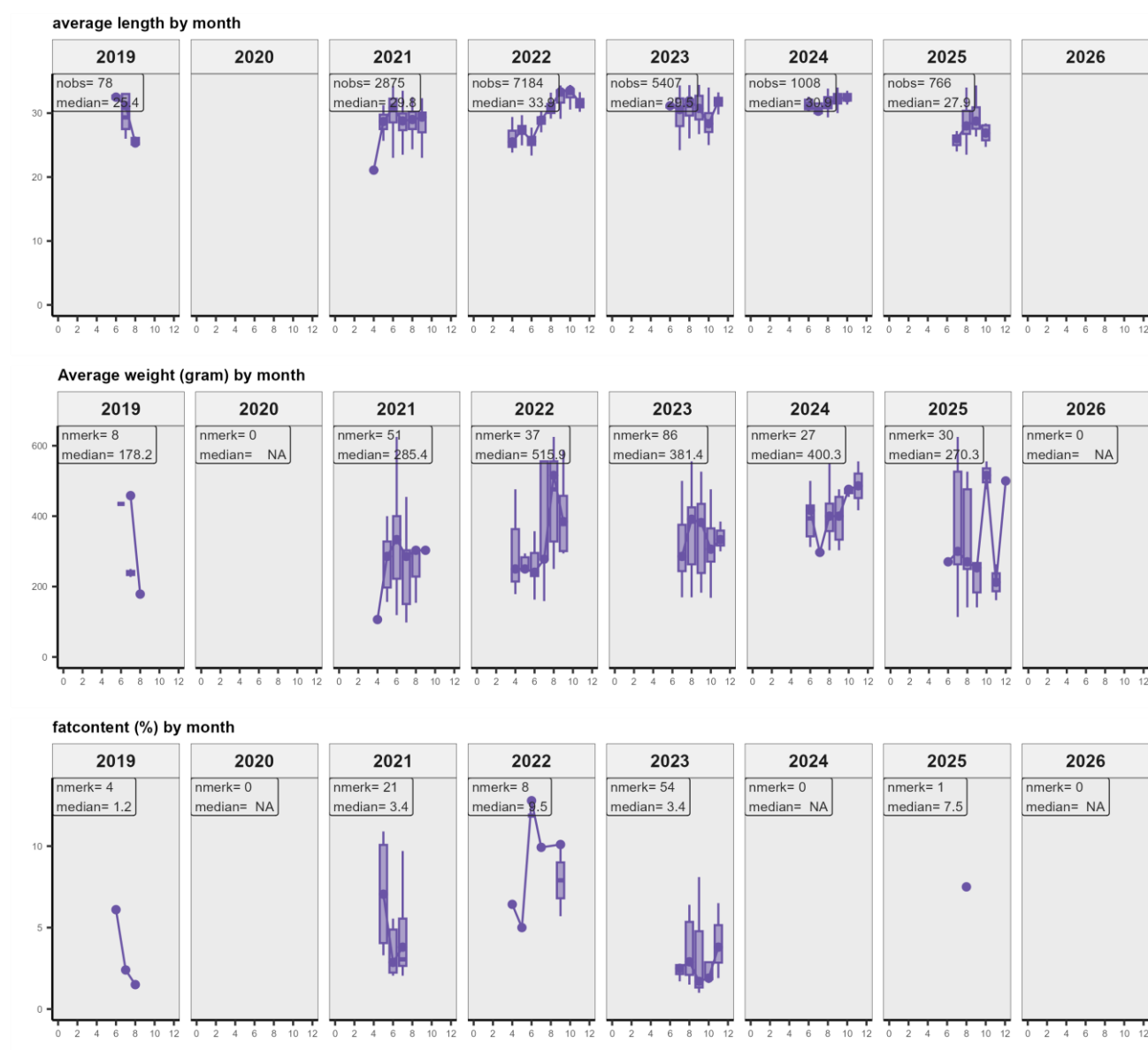


Figure 3.3.7: Chub mackerel. Average length, average weight, and average fat content. Nobs indicates the number of measurements, median indicates the median values

Chub mackerel (MAS). Standardized CPUE

Standardized CPUE (ton/day) from GLM model with factors year, month, GT, division and depth with log(days) as offset. It is assumed that a 2.5% annual efficiency increase takes place (Rousseau et al 2019).

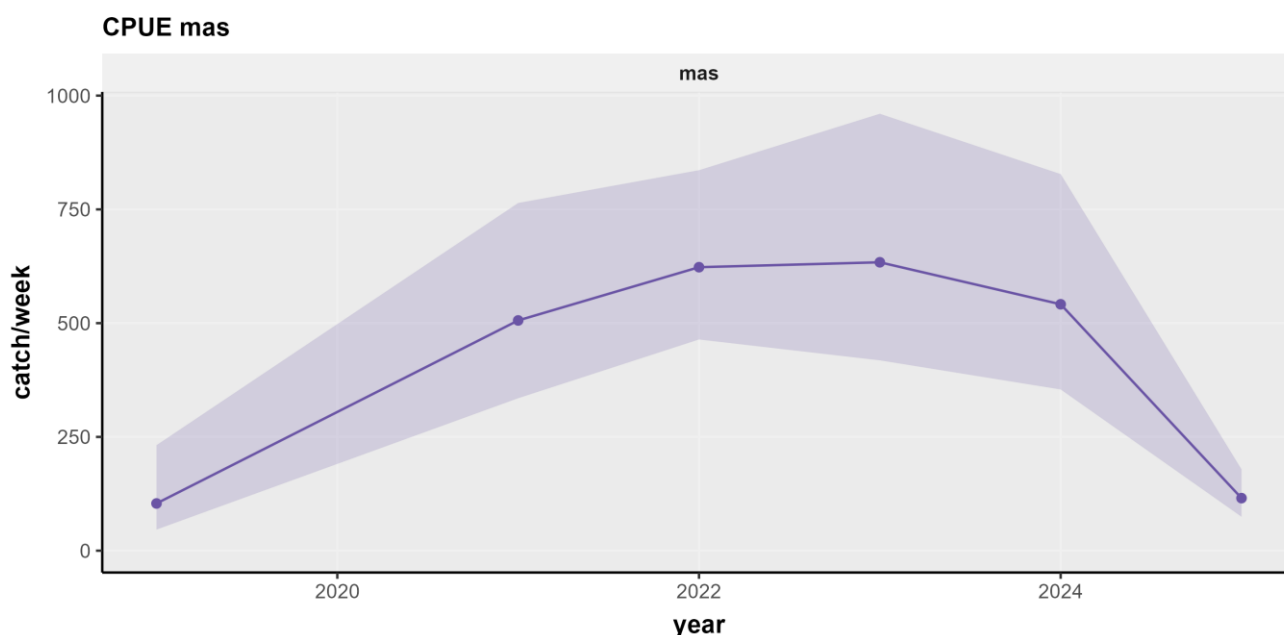


Figure 3.3.8: Chub mackerel. Standardized CPUE (ton/day) from GLM model with factors year, month, GT, division and depth with log(days) as offset

3.4 Southern rays bream (BRU, *Brama australis*)

Southern rays bream self-sampling summary.

species	year	nvessels	ntrips	ndays	nhauls	catch	catch/day	nlength
bru	2019	1	3	62	77	112	2	30
bru	2021	1	1	6	6	10	2	23
bru	2025	2	4	38	58	4	0	0
(all)	(all)		8	106	141	126		53

Table 3.4.1: Southern rays bream. Self-sampling summary with the number of days, hauls, trips, vessels, catch (tonnes), catch rate (ton/day), number of fish measured, number of biological observations.

Southern rays bream. Catch by division

species	division	2019	2021	2025	all	perc
bru	87.2.6	29	0	4	32	25.8%
bru	87.3.3	83	10	0	93	74.2%
(all)	(all)	112	10	4	126	100.0%

Table 3.4.2: Southern rays bream. Self-sampling summary with the catch (tonnes) by year and division

Southern rays bream. Catch by month

species	month	2019	2021	2025	all	perc
bru	mrt	10	0	0	10	7.8%
bru	apr	30	10	0	40	32.0%
bru	mei	24	0	0	24	19.4%
bru	jun	19	0	0	19	15.4%
bru	jul	18	0	0	18	14.2%
bru	aug	11	0	1	11	9.0%
bru	sep	0	0	2	2	1.9%
bru	okt	0	0	0	0	0.4%
(all)	(all)	112	10	4	126	100.0%

Table 3.4.3: Southern rays bream. Self-sampling summary with the catch (tonnes) by year and month

Southern rays bream. Catch by rectangle

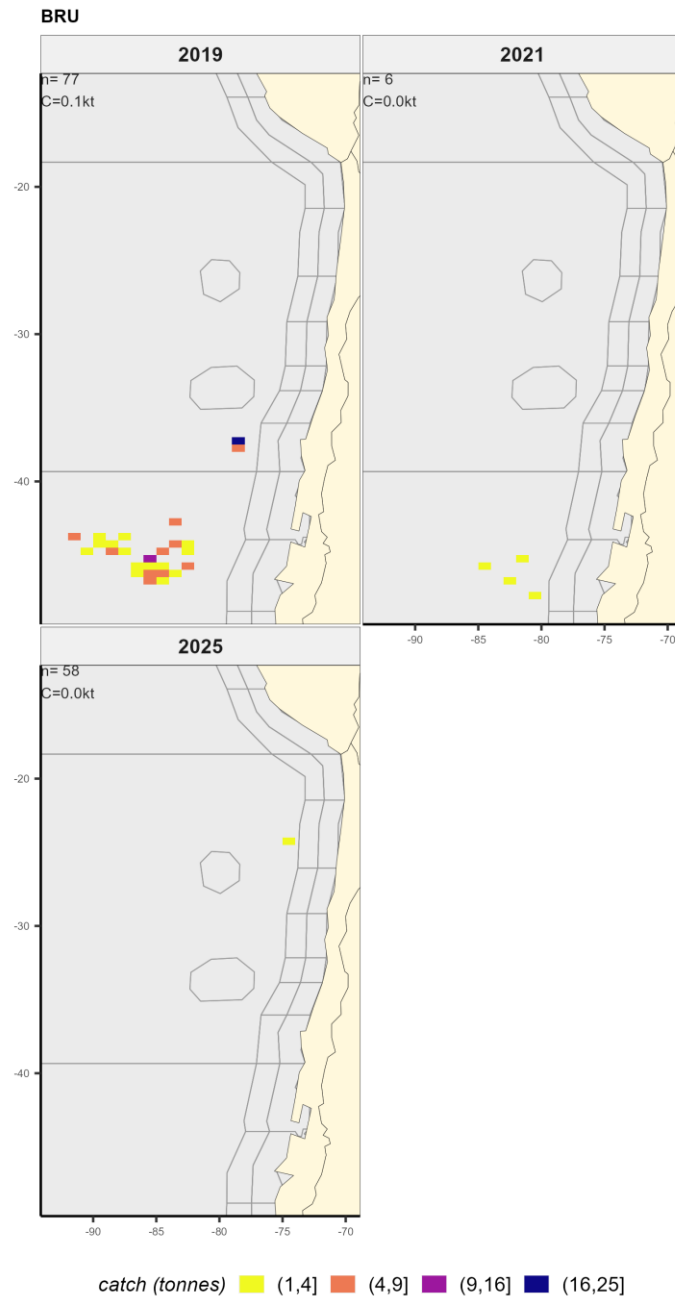


Figure 3.4.1: Southern rays bream. Catch per per rectangle. N indicates the number of hauls; Catch refers to the total catch per year.

Southern rays bream. Catchrate (ton/day) by rectangle

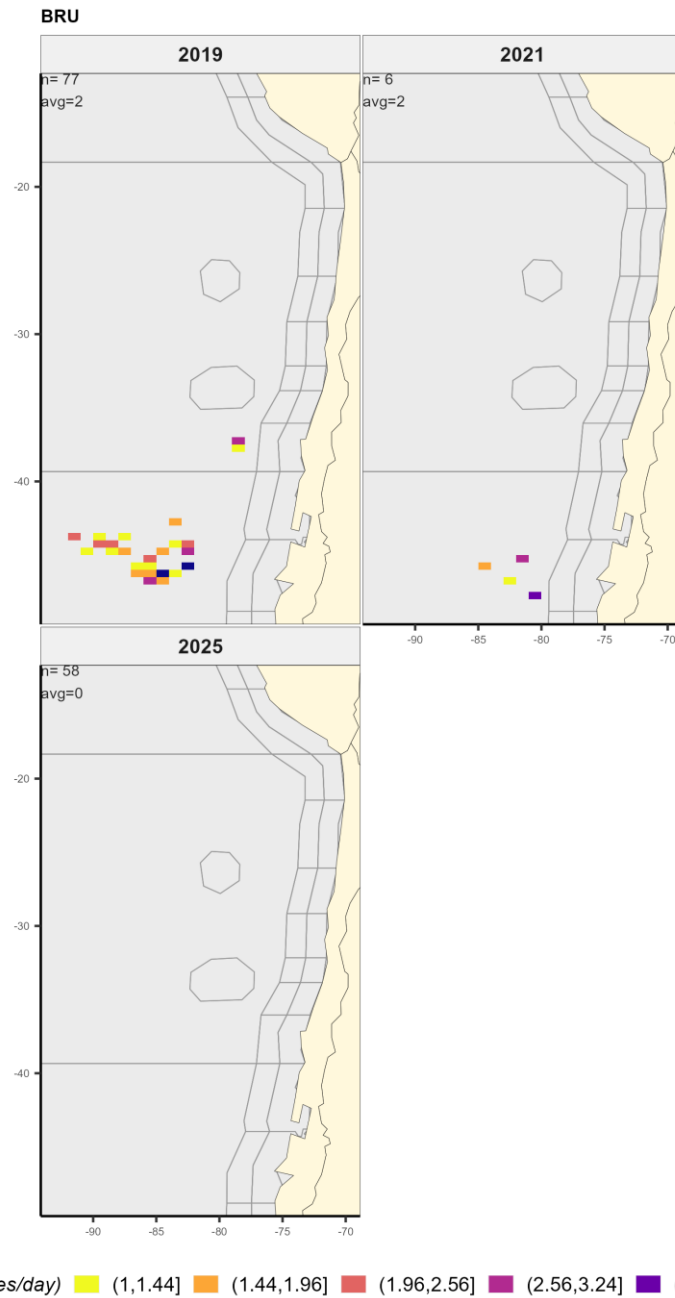


Figure 3.4.2: Southern rays bream. Catchrate (ton/day) per rectangle. N indicates the number of hauls; Avg refers to the average catchrate per rect.

Southern rays bream. Spatio-temporal evolution of catch by month and rectangle

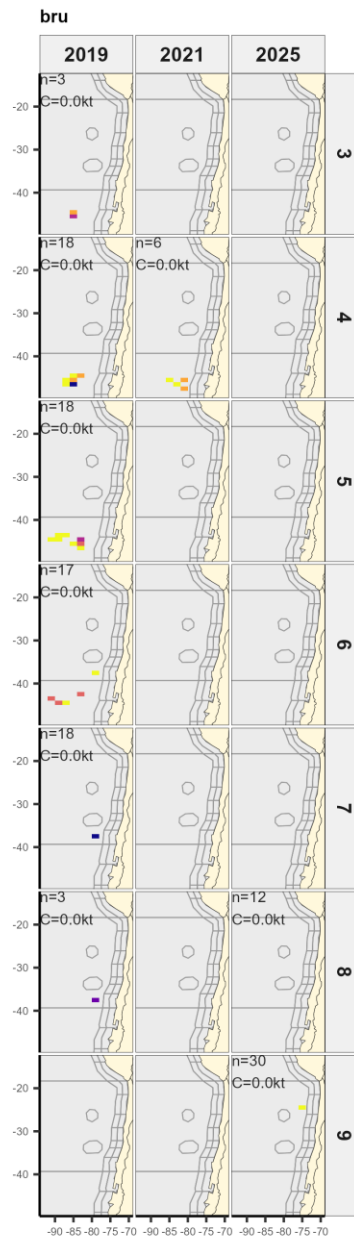


Figure 3.4.3: Southern rays bream. Spatio-temporal evolution of the catches per rectangle and month. N indicates the number of hauls; C refers to the total catch by year and month.

Southern rays bream. Length distributions of the catch

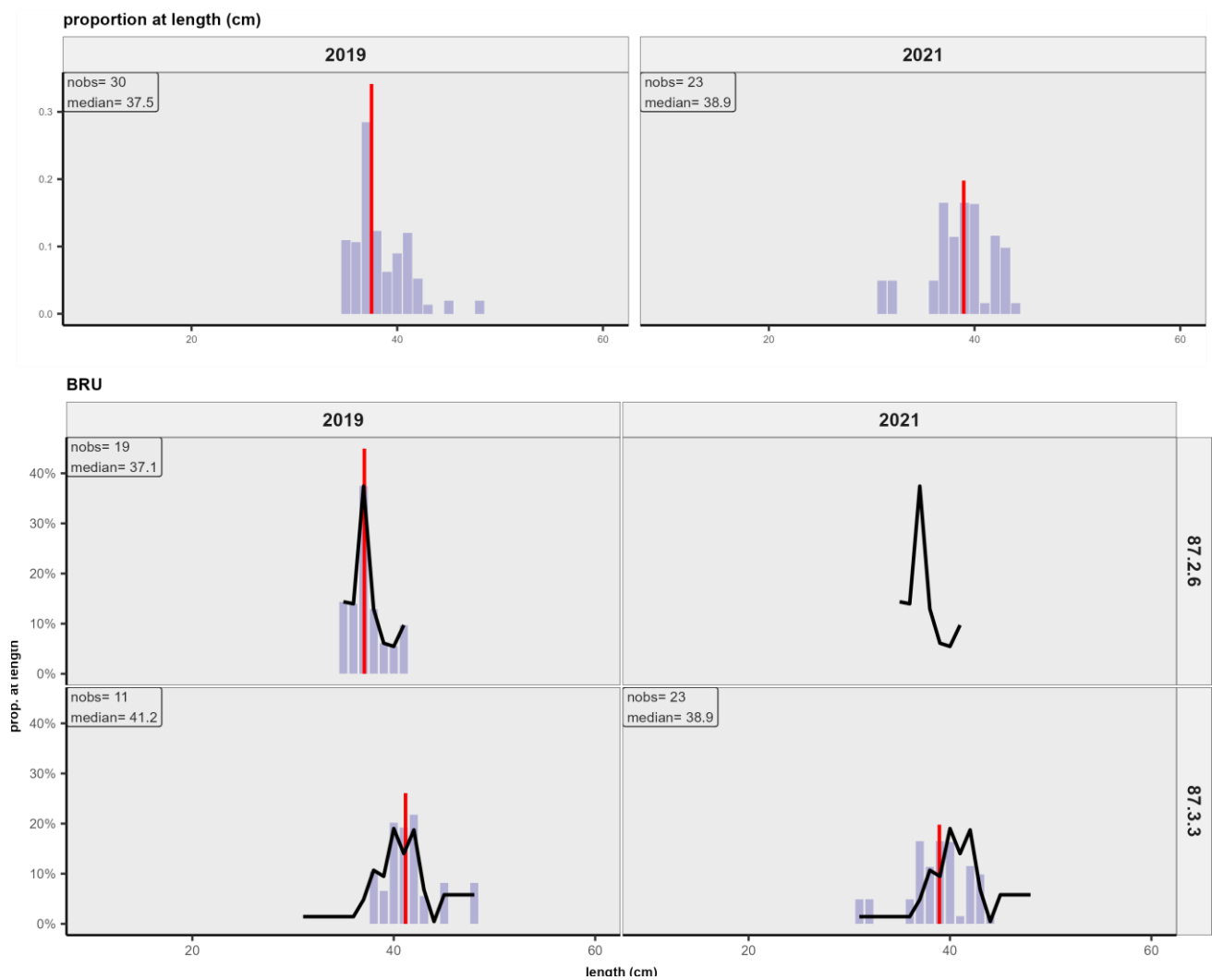


Figure 3.4.4: Southern rays bream. Length distributions by year (top) and by year and division (bottom). Nobs refers to the number of observations; median denotes the median length.

Southern rays bream. Average length, weight and fat content by year and month

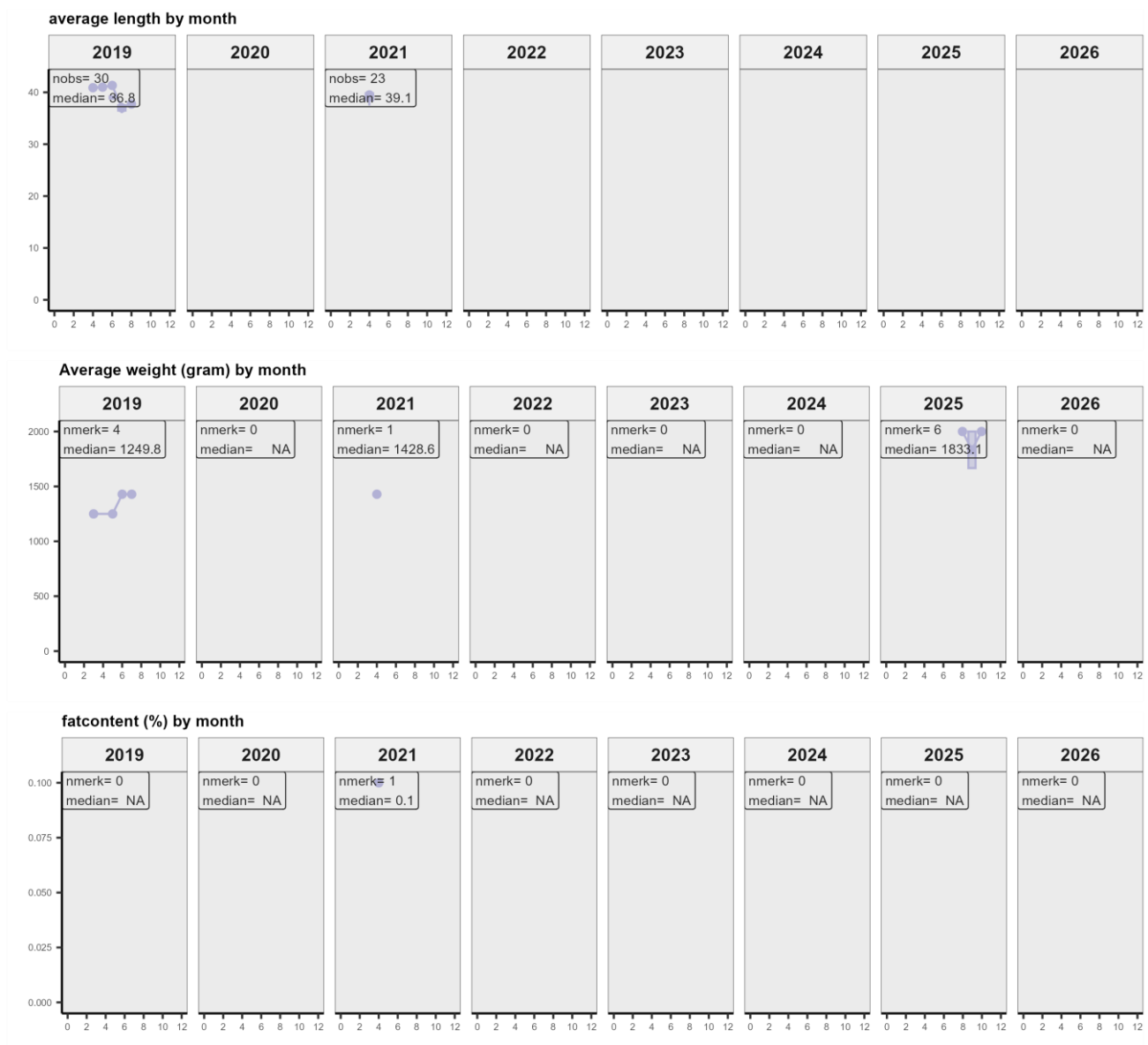


Figure 3.4.5: Southern rays bream. Average length, average weight, and average fat content. Nobs indicates the number of measurements, median indicates the median values

3.5 Blue fathead (UBA, *Cubiceps caeruleus*)

Blue fathead self-sampling summary.

species	year	nvessels	ntrips	ndays	nhauls	catch	catch/day	nlength
uba	2019	1	3	40	54	39	1	400
uba	2021	2	5	25	29	49	2	465
uba	2022	2	7	21	34	47	2	32
uba	2023	3	11	43	58	35	1	236
uba	2024	2	3	12	13	33	3	0
uba	2025	3	8	179	361	1,686	9	1,638
(all)	(all)		37	320	549	1,889		2,771

Table 3.5.1: Blue fathead. Self-sampling summary with the number of days, hauls, trips, vessels, catch (tonnes), catch rate (ton/day), number of fish measured, number of biological observations.

Blue fathead. Catch by division

species	division	2019	2021	2022	2023	2024	2025	all	perc
uba	87.1.4	0	0	2	0	0	18	20	1.1%
uba	87.2.6	36	19	45	35	33	1,668	1,836	97.2%
uba	87.3.3	3	30	0	0	0	0	33	1.7%
(all)	(all)	39	49	47	35	33	1,686	1,889	100.0%

Table 3.5.2: Blue fathead. Self-sampling summary with the catch (tonnes) by year and division

Blue fathead. Catch by month

species	month	2019	2021	2022	2023	2024	2025	all	perc
uba	mrt	1	0	0	0	0	0	1	0.1%
uba	apr	1	30	1	0	0	0	32	1.7%
uba	mei	0	9	12	0	0	0	21	1.1%
uba	jun	0	0	2	0	0	0	2	0.1%
uba	jul	9	4	31	14	0	180	238	12.6%
uba	aug	27	6	0	11	0	200	244	12.9%
uba	sep	0	0	1	3	1	424	430	22.8%
uba	okt	0	0	0	3	8	720	731	38.7%
uba	nov	0	0	0	3	24	110	137	7.3%
uba	dec	0	0	0	0	0	52	52	2.7%
(all)	(all)	39	49	47	35	33	1,686	1,889	100.0%

Table 3.5.3: Blue fathead. Self-sampling summary with the catch (tonnes) by year and month

Blue fathead. Catch by rectangle

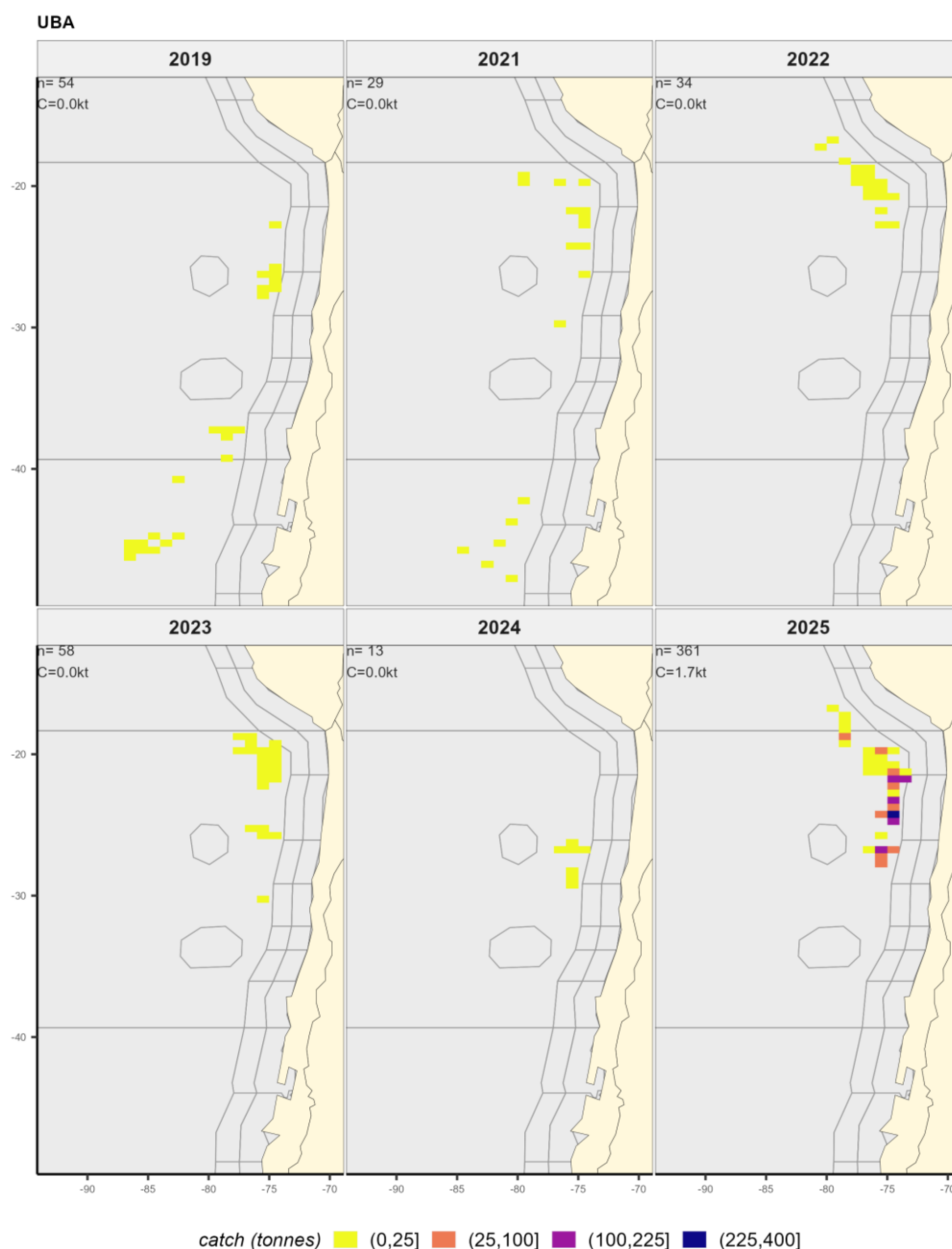


Figure 3.5.1: Blue fathead. Catch per per rectangle. N indicates the number of hauls; Catch refers to the total catch per year.

Blue fathead. Catchrate (ton/day) by rectangle

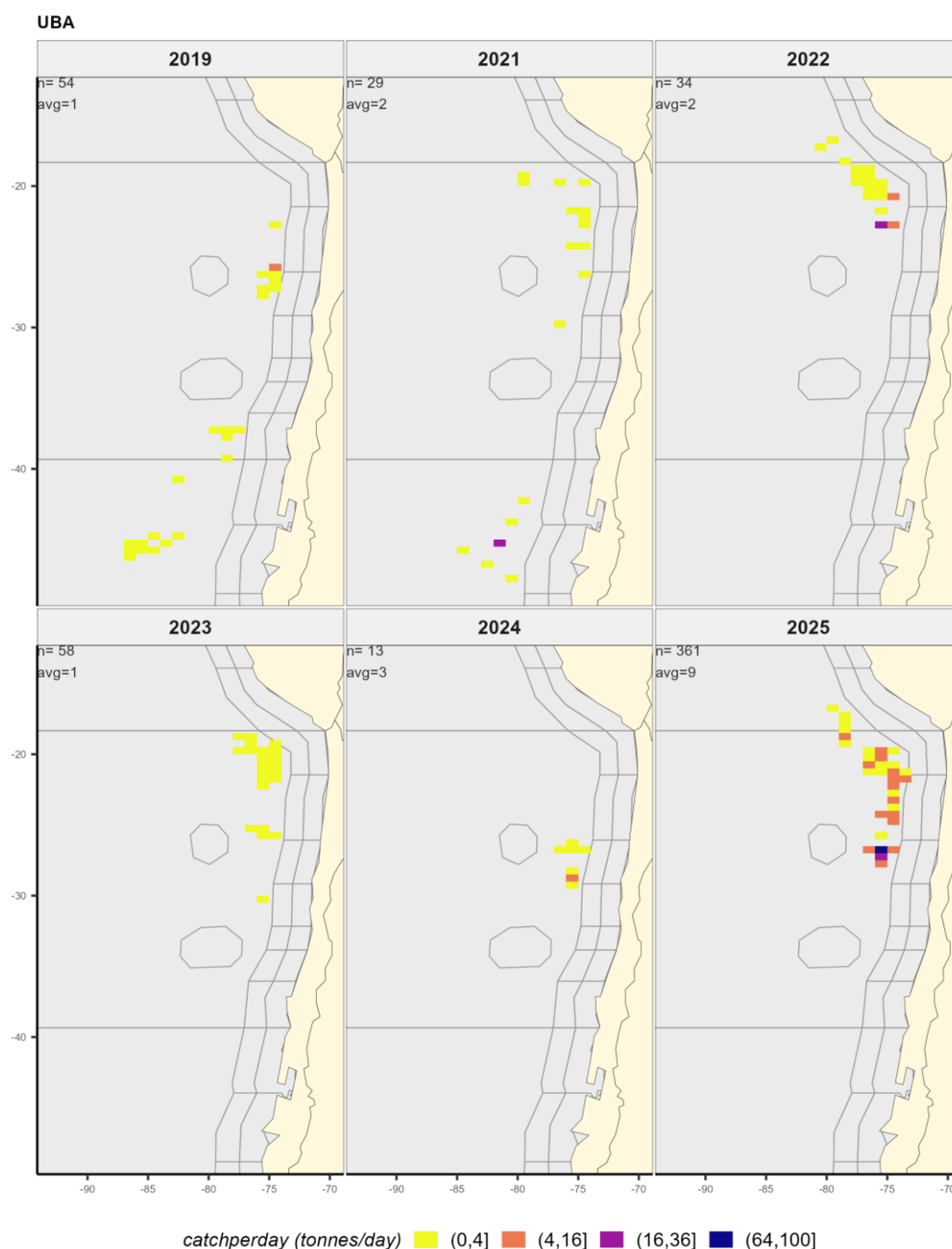


Figure 3.5.2: Blue fathead. Catchrate (ton/day) per rectangle. N indicates the number of hauls; Avg refers to the average catchrate per rect.

Blue fathead. Spatio-temporal evolution of catch by month and rectangle

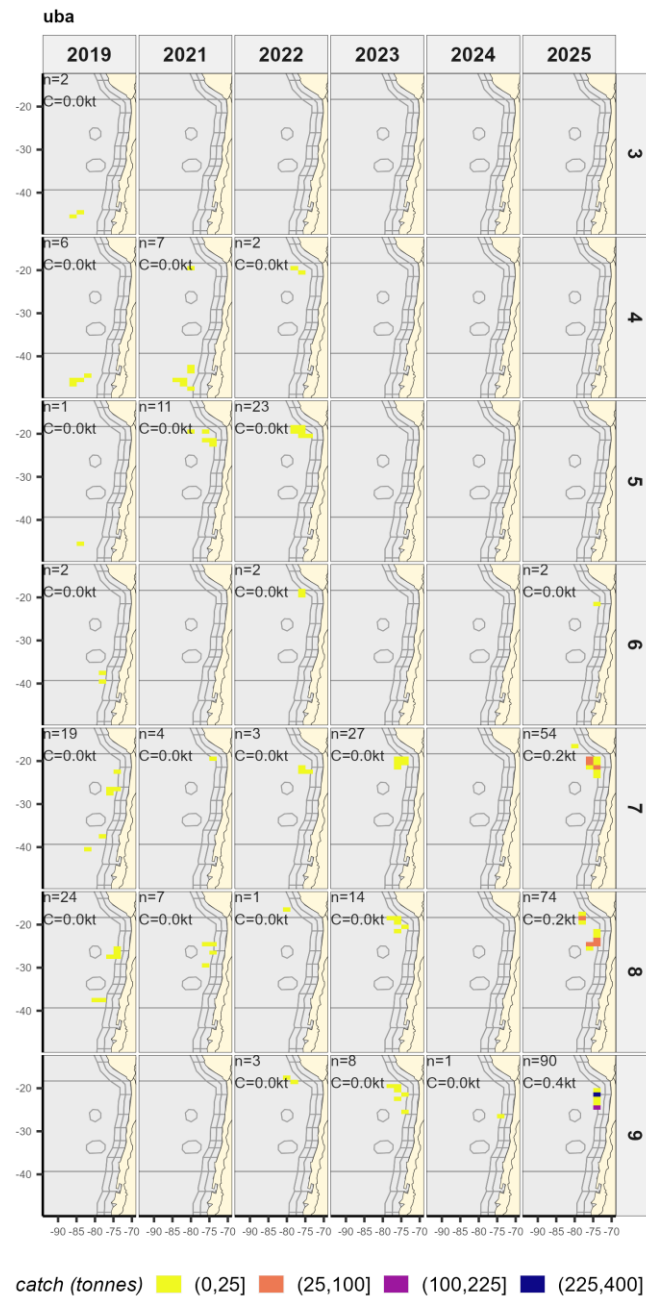


Figure 3.5.3: Blue fathead. Spatio-temporal evolution of the catches per rectangle and month. *N* indicates the number of hauls; *C* refers to the total catch by year and month.

Blue fathead. Length distributions of the catch

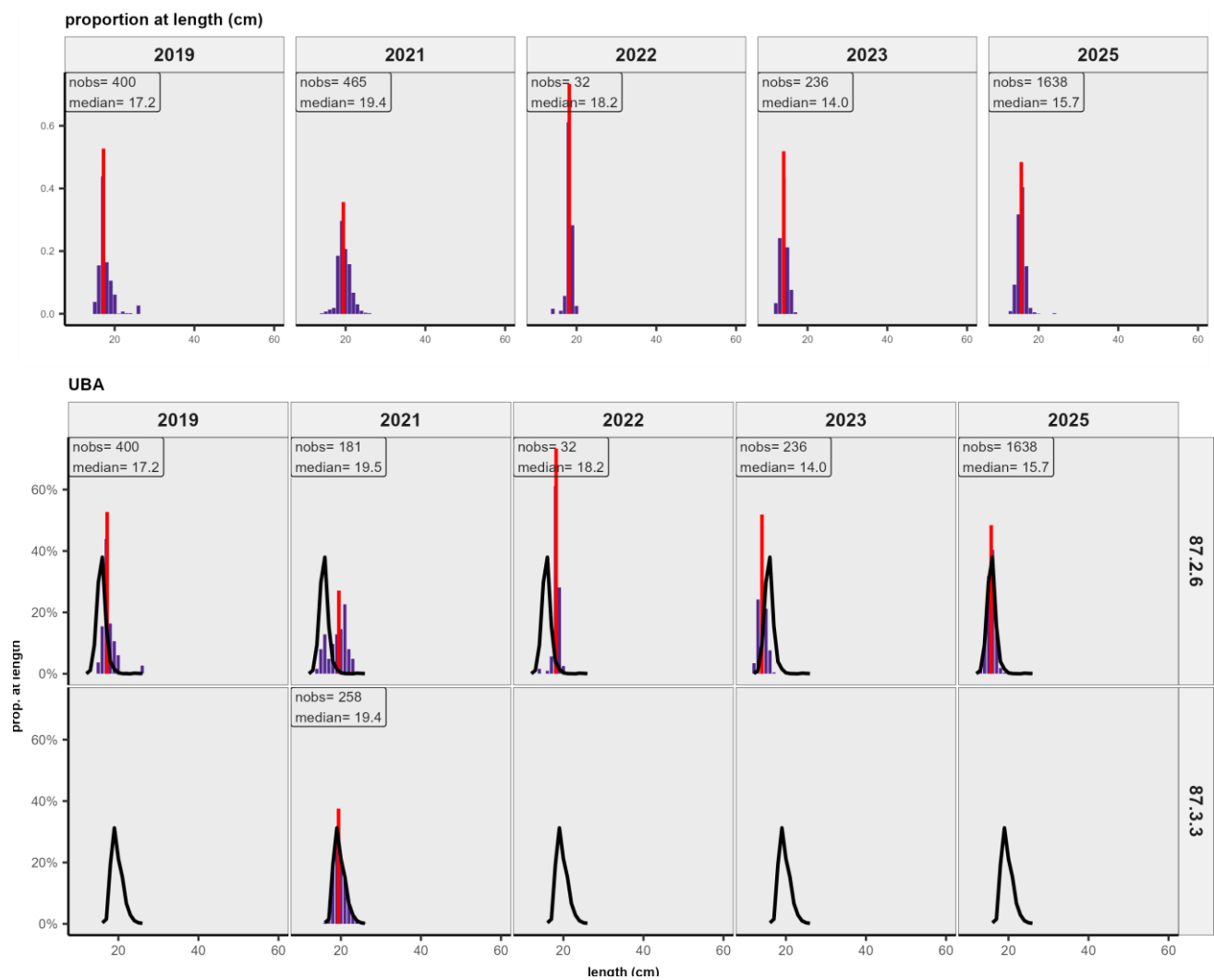


Figure 3.5.4: Blue fathead. Length distributions by year (top) and by year and division (bottom). Nobs refers to the number of observations; median denotes the median length.

Blue fathead. Average length, weight and fat content by year and month

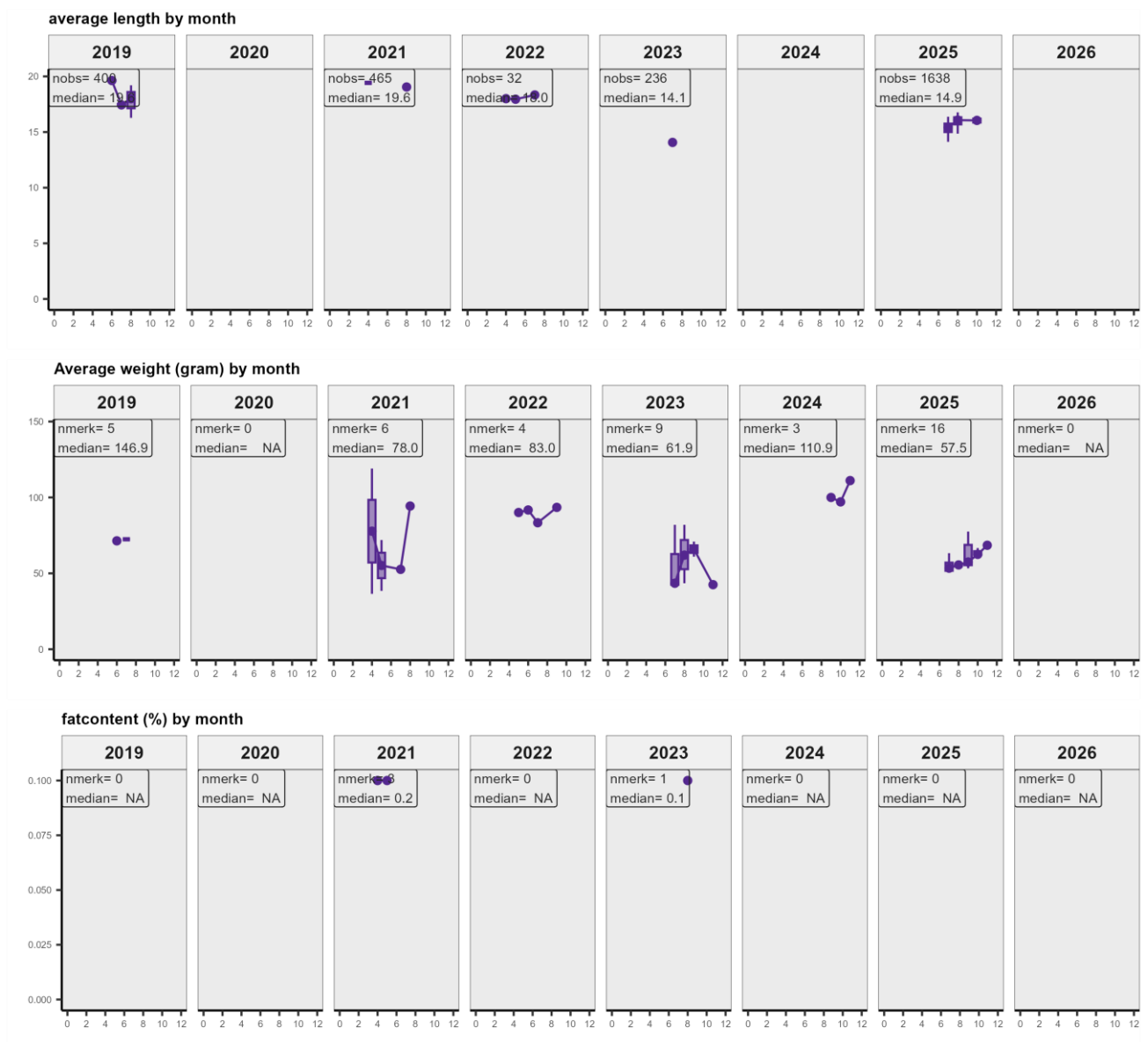


Figure 3.5.5: Blue fathead. Average length, average weight, and average fat content. Nobs indicates the number of measurements, median indicates the median values

4 Discussion and conclusions

A description is presented of the fisheries carried out by vessels belonging to members of the Pelagic Freezer-trawler Association (PFA) within the SPRFMO area from 2019 to 2026. The Pelagic Freezer-trawler Association (PFA) is an association that has nine member companies that together operate 17 (in 2025) freezer trawlers in six European countries (www.pelagicfish.eu). The self-sampling program delivers information on spatial and temporal evolution of the fishery, species and length compositions and ambient fishing conditions (temperature and depth). Catch distributions and length compositions by quarter and division are presented for jack mackerel (CJM), chub mackerel (MAS) and southern rays bream (BRU). No PFA fisheries was carried in the SPRFMO area in 2020, due to the global Corona crisis. As such, no results can be reported for 2020. In the first half of 2026, three PFA vessels have been active in the SPRFMO convention area.

The fishery in 2025 took place east of the Juan Fernandez islands which more in line to recent years. The median length at 17.8 cm was markedly smaller compared to the 22-30cm in the preceding years. The highest catch rates (catch/day) of Jack mackerel has been recorded in 2021 (222 ton/day) and is at 108 ton/day in 2025.

Bycatches of chub mackerel (MAS) and Blue fathead (UBA) are being taken in the fishery for Jack mackerel. During the years, reported here, 2327 hauls with Chub mackerel (MAS) and 549 hauls with Blue fathead (UBA) have been analysed as part of the program. Standardized CPUE estimates for chub mackerel show a steep decline from 2024 to 2025.

The bycatch of **Chub mackerel** declined substantially in 2025 compared to previous years, also in terms of percentage bycatch. Reasons for this are unknown.

In this 2026 self-sampling report, a standardized CPUE calculation has been included. The standardized CPUE is based on a GLM model with a negative binomial distribution. The response variable is the catch by week and vessel, with an offset of the log effort (number of fishing days per week) and explanatory variables year, GT category, month, division and depth category. An assumed technical efficiency increase of 2.5% per year has been included in the fitting of the model (Rousseau et al 2019)

5 Acknowledgements

The skippers, officers and the quality managers of many of the PFA vessels are putting in a lot of effort to make the PFA the self-sampling work. Without their efforts, there would be no self-sampling.

6 References and publications

Rousseau, Y., R. A. Watson, J. L. Blanchard and E. A. Fulton (2019). "Evolution of global marine fishing fleets and the response of fished resources." *Proceedings of the National Academy of Sciences* 116(25): 12238-12243.

7 More information

Please contact Niels Hintzen (nhintzen@pelagicfish.eu) if you would have any questions on the PFA self-sampling program or the specific results presented here.

8 Appendix 1: CJM self-sampling overview

species	year	quarter	catch	sampleweight	nsamples	count	catchnumber
cjm	2025	2	197	85	5	1799	1679
cjm	2025	3	18135	3787	388	76380	285250
cjm	2025	4	9635	2357	177	36478	126259

9 Appendix 2: CJM self-sampling length frequencies (counts and raised catch numbers at length)

species	area	year	quarter	length	count	catchnumber	prop
cjm	87	2025	2	12	0	0	0.0000
cjm	87	2025	2	13	0	0	0.0000
cjm	87	2025	2	14	75	70	0.0417
cjm	87	2025	2	15	518	548	0.3269
cjm	87	2025	2	16	407	402	0.2400
cjm	87	2025	2	17	484	477	0.2841
cjm	87	2025	2	18	209	155	0.0924
cjm	87	2025	2	19	54	12	0.0076
cjm	87	2025	2	20	38	8	0.0053
cjm	87	2025	2	21	12	2	0.0017
cjm	87	2025	2	22	1	0	0.0001
cjm	87	2025	2	23	0	0	0.0000
cjm	87	2025	2	24	1	0	0.0001
cjm	87	2025	2	25	0	0	0.0000
cjm	87	2025	2	26	0	0	0.0000
cjm	87	2025	2	27	0	0	0.0000
cjm	87	2025	2	28	0	0	0.0000
cjm	87	2025	2	29	0	0	0.0000
cjm	87	2025	2	30	0	0	0.0000
cjm	87	2025	2	31	0	0	0.0000
cjm	87	2025	2	32	0	0	0.0000
cjm	87	2025	2	33	0	0	0.0000
cjm	87	2025	2	34	0	0	0.0000
cjm	87	2025	2	35	0	0	0.0000
cjm	87	2025	2	36	0	0	0.0000
cjm	87	2025	2	37	0	0	0.0000
cjm	87	2025	2	38	0	0	0.0000
cjm	87	2025	2	39	0	0	0.0000
cjm	87	2025	2	40	0	0	0.0000
cjm	87	2025	2	41	0	0	0.0000
cjm	87	2025	2	42	0	0	0.0000
cjm	87	2025	2	43	0	0	0.0000
cjm	87	2025	2	44	0	0	0.0000
cjm	87	2025	2	45	0	0	0.0000
cjm	87	2025	2	46	0	0	0.0000
cjm	87	2025	2	47	0	0	0.0000
cjm	87	2025	2	48	0	0	0.0000
cjm	87	2025	2	49	0	0	0.0000
cjm	87	2025	2	50	0	0	0.0000
cjm	87	2025	2	51	0	0	0.0000
cjm	87	2025	2	52	0	0	0.0000
cjm	87	2025	2	53	0	0	0.0000
cjm	87	2025	2	54	0	0	0.0000
cjm	87	2025	3	12	0	0	0.0000
cjm	87	2025	3	13	0	0	0.0000
cjm	87	2025	3	14	93	395	0.0014
cjm	87	2025	3	15	2312	10625	0.0372
cjm	87	2025	3	16	11707	50852	0.1783
cjm	87	2025	3	17	20414	80009	0.2805
cjm	87	2025	3	18	21760	81030	0.2841
cjm	87	2025	3	19	11563	38630	0.1354

cjm	87	2025	3	20	4285 12333	0.0432
cjm	87	2025	3	21	2153 5384	0.0189
cjm	87	2025	3	22	904 1878	0.0066
cjm	87	2025	3	23	340 642	0.0023
cjm	87	2025	3	24	133 199	0.0007
cjm	87	2025	3	25	27 70	0.0002
cjm	87	2025	3	26	6 6	0.0000
cjm	87	2025	3	27	4 10	0.0000
cjm	87	2025	3	28	126 617	0.0022
cjm	87	2025	3	29	102 450	0.0016
cjm	87	2025	3	30	104 586	0.0021
cjm	87	2025	3	31	159 594	0.0021
cjm	87	2025	3	32	98 509	0.0018
cjm	87	2025	3	33	47 221	0.0008
cjm	87	2025	3	34	18 140	0.0005
cjm	87	2025	3	35	8 25	0.0001
cjm	87	2025	3	36	8 27	0.0001
cjm	87	2025	3	37	1 4	0.0000
cjm	87	2025	3	38	2 1	0.0000
cjm	87	2025	3	39	0 0	0.0000
cjm	87	2025	3	40	0 0	0.0000
cjm	87	2025	3	41	0 0	0.0000
cjm	87	2025	3	42	0 0	0.0000
cjm	87	2025	3	43	0 0	0.0000
cjm	87	2025	3	44	0 0	0.0000
cjm	87	2025	3	45	0 0	0.0000
cjm	87	2025	3	46	0 0	0.0000
cjm	87	2025	3	47	0 0	0.0000
cjm	87	2025	3	48	0 0	0.0000
cjm	87	2025	3	49	0 0	0.0000
cjm	87	2025	3	50	0 0	0.0000
cjm	87	2025	3	51	0 0	0.0000
cjm	87	2025	3	52	0 0	0.0000
cjm	87	2025	3	53	0 0	0.0000
cjm	87	2025	3	54	0 0	0.0000
cjm	87	2025	4	12	0 0	0.0000
cjm	87	2025	4	13	0 0	0.0000
cjm	87	2025	4	14	0 0	0.0000
cjm	87	2025	4	15	0 0	0.0000
cjm	87	2025	4	16	79 527	0.0042
cjm	87	2025	4	17	3243 16306	0.1292
cjm	87	2025	4	18	15152 54985	0.4355
cjm	87	2025	4	19	12259 37883	0.3000
cjm	87	2025	4	20	3657 11001	0.0871
cjm	87	2025	4	21	1219 3507	0.0278
cjm	87	2025	4	22	426 1205	0.0095
cjm	87	2025	4	23	108 359	0.0028
cjm	87	2025	4	24	69 62	0.0005
cjm	87	2025	4	25	37 36	0.0003
cjm	87	2025	4	26	5 4	0.0000
cjm	87	2025	4	27	7 10	0.0001
cjm	87	2025	4	28	1 0	0.0000
cjm	87	2025	4	29	5 10	0.0001
cjm	87	2025	4	30	1 0	0.0000
cjm	87	2025	4	31	4 6	0.0001
cjm	87	2025	4	32	15 26	0.0002
cjm	87	2025	4	33	30 55	0.0004
cjm	87	2025	4	34	25 62	0.0005
cjm	87	2025	4	35	34 44	0.0004
cjm	87	2025	4	36	24 25	0.0002

cjm	87	2025	4	37	19 31	0.0002
cjm	87	2025	4	38	19 27	0.0002
cjm	87	2025	4	39	14 41	0.0003
cjm	87	2025	4	40	4 5	0.0000
cjm	87	2025	4	41	4 4	0.0000
cjm	87	2025	4	42	2 6	0.0000
cjm	87	2025	4	43	0 0	0.0000
cjm	87	2025	4	44	2 1	0.0000
cjm	87	2025	4	45	2 3	0.0000
cjm	87	2025	4	46	1 1	0.0000
cjm	87	2025	4	47	3 5	0.0000
cjm	87	2025	4	48	1 3	0.0000
cjm	87	2025	4	49	2 2	0.0000
cjm	87	2025	4	50	1 1	0.0000
cjm	87	2025	4	51	0 0	0.0000
cjm	87	2025	4	52	0 0	0.0000
cjm	87	2025	4	53	0 0	0.0000
cjm	87	2025	4	54	0 0	0.0000