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2000–2023 South Pacific Albacore Catch and Effort Analysis: EEZ and High Seas Breakdown, Latitudinal Catch Distribution, and Additional MP Performance Indicator

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Background

This information paper is presented to provide the data summaries requested at the recent SPAM02 virtual meeting, specifically the provision of South Pacific albacore (SPA) catch and effort disaggregated by EEZs and high seas areas in the Southern WCPFC Convention Area (WFPFC-CA). Several of these summaries are also regularly presented in information papers presented to the scientific committee (SC). This paper provides a concise, but more complete set of summaries of the requested information for WCPFC22 and should be considered in conjunction with WCPFC22-2025-IP15 (SPC-OFP 2025). Note that an Excel file containing all summaries is provided for CCMs to use for their own purposes.

Emphasis is placed on the proportion of catch and effort occurring in EEZs compared to on the high seas. Initially, this relates to the southern WCPFC-CA from the equator south. However, the discussions of the area of implementation of the SPA management procedure (MP) have necessitated additional calculations to provide all statistics for the WCPFC-CA south of 10°S. This is challenging, particularly for earlier years, and these methods are discussed in the sections below.

Zone-based catch estimates

Catch estimates for individual zones (EEZs and high seas zones) can be difficult to estimate, particularly for years before high coverage rates of operational (logsheet) data were achieved. Methods for calculating Annual Catch Estimates (ACEs) by EEZ have developed over time as more fine-scale information has become available, including increases in both logsheet provision and the introduction and expansion of VMS monitoring of the longline fleet operating in the southern WCPFC-CA.

ACE by EEZ for SPA is routinely provided in the albacore trends paper at the SC (and often represented at the regular session of the WCPFC: McKechnie *et. al.* 2025; SPC-OFP 2025), specifically Table 1. It should be noted that these estimates will differ slightly from the overall SPA catches for the WCPFC using either annual catch estimates by ocean area (e.g. Vidal *et al.* 2025), or the aggregate 5x5° data used in the stock assessments and harvest strategy work, due to a number of difficulties in partitioning catches to individual zones including: low historical coverage of operational data; challenges in the provision of ACE by ocean areas that require assumptions about the disaggregation of the north and south Pacific catches, and between the WCPO, overlap area and the EPO; difficulties in resolving differences between operational data and aggregate 5x5° data provisions from distant water fishing nations where the methods for generating the latter are often unavailable. The 5x5° aggregate data is

considered the best catch and effort data available, and for this reason, it is used in the stock assessments, and most aspects of the harvest strategy work. The difficulty for longline fisheries is that it is futile to allocate data at this coarse scale into individual EEZs and high seas zones, and they are therefore not suitable for calculating statistics such as the proportion of catch or effort fished in EEZs versus the high seas.

Table 1 presents the zone-based annual catch estimates for the WCPFC-CA south of the equator and is equivalent to Table 1 of SPC-OFP (2025). It should be noted, however, that in this paper catches within archipelagic waters (typically <1,000mt) are included to provide the best estimate of the ratio of EEZ catches to high seas catches. The lower sections of Table 1 also provide the annual catch estimates for the troll fishery, to allow the addition of that gear in EEZ/high seas proportions, if required.

Table 2 provides the same information, except that the zone-based catches are for the WCPFC-CA below 10°S only. The annual catch estimates by EEZ are for the full individual EEZs or individual high seas zones, and so it is difficult to disaggregate the estimates to above and below 10°S for those zones that straddle this latitude (PNG, Solomon Islands, Tuvalu, Tokelau, Cook Islands, Line Islands, and high seas zones I2 and I5; Figure 1). To approximate the catches below 10°S in each of these zones, we sum the proportion of albacore catch above and below that latitude from all available logsheets, in each year and zone, and multiply the resulting proportion below 10°S by the overall ACE for that zone.

Zone-based effort estimates

While catches in EEZs and high seas zones are routinely presented to the commission, zone-based effort estimates are more uncertain, and rarely are these disaggregated by individual zones (but see zone-based VMS fishing days estimates in Tables 8 and 9 of McKechnie *et al.* 2025 and SPC-OFP 2025). Herein, we provide two alternative effort metrics for the longline fleet operating in the southern convention area – VMS fishing days, and estimates of hooks fished after raising the observed hooks provided on logsheets. Effort metrics are provided for longline only, due to the incompatibility of longline and troll effort metrics.

Raised hooks from operational data

Tables 3 and 4 provide the raised estimates of the number of hooks fished over 2000-2024 in each zone for the southern WCPFC-CA, from the equator south, and south of 10°S, respectively. The estimation method utilises operational logsheet data for each individual zone (including keeping the three Kiribati EEZs, and individual high seas areas, separate; Figure 1), and initially calculates the total observed hooks fished in each zone. As coverage rates of logsheets can be well below 100%, particularly in earlier years, these hook estimates must be raised. This procedure proceeds by multiplying these hooks by the ratio of total catch of key target tunas (albacore, bigeye, and yellowfin) from the ACE by EEZ data to the total catch of these species over all the logsheets used to calculate hooks fished[1], to give a total, raised estimate of hooks fished in that EEZ, in that year (shown in Table 3).

To calculate the equivalent estimate of hooks for just the WCPFC-CA south or 10°S requires a slight modification to this method, to account for those zones that straddle 10°S. In these zones the total

[1] By way of example, if an EEZ had an observed total number of hooks fished of 20million and the total catch of albacore, bigeye and yellowfin together over the same logsheets was 5,000mt, then this catch must be compared to the full estimate of catch for these species for all fishing activity in the EEZ. This is represented by the ACE by EEZ estimates which will typically be higher than the logsheet catches by a margin directly related to the coverage of logsheet provisions. Using and example of total tuna catch ACE for our hypothetical EEZ of 6,000mt, then the raised hooks estimate will be calculated simply as 6,000/5,000 x 20million = 24 million hooks.

number of hooks was calculated over all logsheets fished below 10°S. These values were then raised using the total ACE by EEZ for total tuna estimates for each zone below 10°S, which were first estimated by separating the full ACE by EEZ (whole zone) into the above and below 10°S components, based on the ratio of total tuna catch above and below that latitude from the observed logsheet catches[2]. The resulting estimates using these methods are provided in Table 4.

VMS fishing days

Tables 5 and 6 present estimates of days fishing in individual zones, for the WCPFC-CA south of the equator, and south of 10°S, respectively. In contrast to previous summaries, effort histories for this metric are provided from 2010 onwards. This relates to the implementation of management measures requiring the use of VMS units and regulations on the polling frequency. VMS coverage of total fishing activity will be incomplete in the early years of this time series, but has steadily increased and will be close to full coverage in recent years, with the exception of New Caledonia and French Polynesia. For those EEZs, logsheet fishing days were used as a measure of effort instead.

Summary

Tables 1-6 show zone-based estimates of catch and effort in EEZs compared to the high seas for the two spatial areas – south of the equator and south of 10°S. The proportion of SPA longline catch in EEZs in recent years is variable but typically varies between about 0.48 and 0.69 (mean of 0.56 over 2014-2023 – the reference period used for MP calculations, e.g., the catches between 0° and 10°S). When troll catch is also included, the mean over 2014-2023 is very similar, at 0.57. When the area of implementation of south of 10°S is considered, the proportion of longline catch in the EEZs increases slightly to a mean of 0.58 over 2014-2023, and 0.59 when troll is included.

The remaining tables present effort metrics (hooks and VMS fishing days) disaggregated by individual EEZs and on the high seas, for both spatial extents. These show that a significant amount of effort is fished in the equator to 10°S latitudinal band, and the spatial extent has a moderate effect on the proportion of effort fished within EEZs compared to on the high seas. From the equator south, the mean proportion of effort fished in EEZs over the period 2014-2023 was 0.59 as measured by hooks (Table 3), and 0.63 using VMS fishing days (Table 5). In contrast, the mean proportion of effort over the same period fished in EEZs was 0.67 (hooks; Table 4), and 0.73 (VMS fishing days; Table 6), for the WCPFC-CA south of 10°S.

The results for the hook and VMS fishing days are relatively consistent, but the VMS estimates tend to indicate slightly higher proportions of fishing effort in the high seas, compared to EEZs. It is suggested that VMS estimates likely provide a better measure of the actual fishing effort, given their fine spatial resolution, which can easily be attributed to individual zones, and the absence of the need to raise the estimates using relatively crude techniques. Some of the problems with the raising are evident in Figure 2, which compares the total hooks estimate for the WCPFC-CA south of 10°S from the raising of logsheet hooks (Table 4) and the sum of hooks over the same spatial extent for longline 5x5 aggregate data (the "BEST" dataset, which cannot be disaggregated into individual EEZs accurately). In some years, there are significant differences between the estimates, which likely relate to differences in the

[2] Using a hypothetical example – if we have an EEZ that straddles 10°S, we sum the total hooks fished over all logsheets fished below that latitude in that specific year, which gives say 10million hooks. We then sum the total catch of tunas (albacore + bigeye + yellowfin) for logsheets above and below that latitude, which gives say 60% of catch below 10°S, and a total catch of 5,000mt over logsheets below. If the ACE by EEZ catch total over the three tunas for the full EEZ is 10,000mt then the ACE below 10°S is assumed to be 0.6 x 10,000mt = 6,000mt. The raised hooks below 10oS can then be calculated by multiplying by the ratio of ACE catch to observed logsheet catch e.g. 6,000mt / 5,000mt x 10million = 12million hooks.

raising process, which is done at the flag and fleet level for the aggregate data, and presumably at a finer spatial scale by distant water fishing nations before provision of their data to the scientific services provider. The argument against using VMS estimates is that they are not available in the early 2000's and the effort metric is in days, rather than hooks, and the latter are sometimes used for some applications, such as the effort metric in CPUE analyses. Future analyses of raising zone-specific hook estimates could consider fleet-specific raising and identification of improved raising techniques, but this was precluded by the time constraints.

References:

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Vidal, T. and Ruaia 2025. Overview of tuna fisheries in the Western and Central Pacific Ocean, including economic conditions. SC21-GN-WP-01. Twenty-first Session of the WCPFC Scientific Committee. Nukualofa, Tonga, 13-21 August 2025.

Table 1. Zone-based catch estimates for SPA in the southern WCPFC-CA (including overlap area) for longline and troll vessels from the annual catch estimate by EEZ data. Catches are for the full southern convention area from the equator south. Note that the longline estimates include catches in archipelagic waters, in contrast to Table 1 of the albacore trends paper.

Zone	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
American Samoa	626	3,217	5,351	3,225	2,043	2,881	4,078	4,677	2,878	3,190	2,838	1,784	2,416	1,769	1,377	1,760	1,511	1,511	1,553	1,062	701	816	1,200	939	1,050
Australia	376	582	540	473	652	726	2,569	1,915	1,272	1,517	745	652	702	757	728	945	910	830	751	796	1,267	1,085	1,126	834	591
Cook Is.	0	9	1,118	1,805	2,153	2,290	1,993	2,990	2,465	4,633	4,910	5,559	10,627	5,985	4,560	4,556	4,757	3,324	4,716	7,302	4,024	2,352	6,262	5,899	5,532
Fiji	5,351	8,013	7,029	4,639	6,501	6,016	5,745	4,159	4,898	6,009	6,395	4,757	4,776	4,162	4,185	6,323	5,328	6,632	6,173	5,872	4,419	4,552	5,668	4,159	7,110
Howland Baker	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
High Seas	13,735	22,906	28,918	26,097	24,637	23,568	18,962	16,937	23,570	30,672	41,016	23,447	30,484	31,126	21,046	24,182	18,234	39,665	30,641	28,022	32,621	23,995	28,353	36,391	32,355
Jarvis	0	0	0	52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Kirbati	269	729	761	709	476	238	302	679	362	1,122	1,290	549	1,219	819	1,219	2,514	4,292	392	72	1,263	3,052	495	701	2,157	4,757
Mathew Hunter	4	4	1	18	8	10	4	6	2	20	15	6	9	0	0	2	1	2	1	2	4	34	24	4	4
New Caledonia	892	1,016	1,164	1,106	1,447	1,586	1,356	1,319	1,496	1,640	1,932	1,734	1,711	1,713	1,628	1,578	1,745	1,719	1,742	2,009	1,896	1,745	2,150	1,854	2,025
Niue	0	0	34	0	0	55	259	216	337	241	196	0	0	362	200	190	86	14	364	386	383	14	0	0	0
New Zealand	1,334	2,593	2,522	2,936	1,246	602	496	276	382	422	460	418	266	302	311	223	233	181	239	117	241	185	78	77	59
Polynesie Francaise	3,461	4,261	4,556	3,807	2,211	2,241	2,848	3,924	3,060	3,558	3,482	3,224	3,591	3,495	3,744	3,418	3,276	2,148	3,058	3,439	2,867	2,795	4,189	5,273	5,094
PNG	159	124	142	857	1,681	2,256	1,888	1,965	534	969	887	355	923	264	329	469	1,192	1,610	1,574	1,367	953	600	3,401	1,250	3,200
Solomon Is.	284	182	1,103	989	2,428	2,748	6,530	4,898	6,678	10,161	6,037	6,428	8,167	9,081	13,637	6,865	3,773	5,869	7,154	5,682	2,704	3,175	6,629	4,917	5,211
Tokelau	0	0	0	0	0	0	0	0	97	0	0	92	250	0	7	1,871	2,466	1,697	632	1,976	910	474	1,176	830	2
Tonga	859	1,078	856	328	206	258	411	355	220	124	57	36	760	1,471	264	710	1,111	800	842	1,352	930	810	879	1,578	1,103
Tuvalu	243	108	191	54	243	301	8	461	163	355	674	467	930	1,491	465	404	1,489	1,427	944	1,581	552	193	408	93	782
Vanuatu	3,105	1,690	2,673	2,933	4,080	6,688	8,293	5,047	5,399	5,484	4,803	6,080	4,286	6,818	6,294	5,459	7,332	7,896	5,703	6,181	3,854	1,856	4,981	3,187	5,730
Wallis Futuna	0	0	0	0	0	41	0	0	0	0	0	3	0	0	0	0	0	0	0	0	1	3	0	24	0
Samoa	4,067	4,820	4,205	2,253	1,233	1,263	2,113	3,113	2,342	2,816	2,529	1,415	2,038	1,642	800	840	823	1,638	1,364	1,442	906	908	1,023	1,116	333
Total	34,765	51,332	61,164	52,281	51,245	53,768	57,855	52,937	56,155	72,933	78,266	57,006	73,155	71,257	60,794	62,309	58,559	77,355	67,523	69,851	62,285	46,087	68,248	70,582	74,948
P(EEZ)	0.60	0.55	0.53	0.50	0.52	0.56	0.67	0.68	0.58	0.58	0.48	0.59	0.58	0.56	0.65	0.61	0.69	0.49	0.55	0.60	0.48	0.48	0.58	0.48	0.57
P(High seas)	0.40	0.45	0.47	0.50	0.48	0.44	0.33	0.32	0.42	0.42	0.52	0.41	0.42	0.44	0.35	0.39	0.31	0.51	0.45	0.40	0.52	0.52	0.42	0.52	0.43

Zone	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Australia	0	2	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
High Seas	3,119	2,515	1,647	2,262	1,399	648	841	278	150	237	307	402	235	390	466	177	189	465	430	872	3,852	1,339	2,800	656	164
New Zealand	3,336	2,736	3,012	3,721	3,212	2,855	2,043	1,736	3,352	1,794	1,832	2,787	2,727	2,836	1,937	2,425	1,969	1,953	2,255	2,635	4,751	4,037	3,777	1,192	1,321
Total	6,455	5,253	4,661	5,984	4,614	3,503	2,884	2,014	3,502	2,031	2,139	3,189	2,962	3,226	2,403	2,602	2,158	2,418	2,685	3,507	8,603	5,376	6,577	1,848	1,485
P(EEZ)	0.52	0.52	0.65	0.62	0.70	0.82	0.71	0.86	0.96	0.88	0.86	0.87	0.92	0.88	0.81	0.93	0.91	0.81	0.84	0.75	0.55	0.75	0.57	0.65	0.89
P(High seas)	0.48	0.48	0.35	0.38	0.30	0.18	0.29	0.14	0.04	0.12	0.14	0.13	0.08	0.12	0.19	0.07	0.09	0.19	0.16	0.25	0.45	0.25	0.43	0.35	0.11

Longline and Troll Combined	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
EEZs	24,366	31,164	35,260	29,906	29,823	33,055	40,936	37,736	35,937	44,055	39,082	36,346	45,398	42,967	41,685	40,552	42,294	39,643	39,137	44,464	34,415	26,129	43,672	35,383	43,914
High Seas	16,854	25,421	30,565	28,359	26,036	24,216	19,803	17,215	23,720	30,909	41,323	23,849	30,719	31,516	21,512	24,359	18,423	40,130	31,071	28,894	36,473	25,334	31,153	37,047	32,519
P(EEZ)	0.59	0.55	0.54	0.51	0.53	0.58	0.67	0.69	0.60	0.59	0.49	0.60	0.60	0.58	0.66	0.62	0.70	0.50	0.56	0.61	0.49	0.51	0.58	0.49	0.57
P(High seas)	0.41	0.45	0.46	0.49	0.47	0.42	0.33	0.31	0.40	0.41	0.51	0.40	0.40	0.42	0.34	0.38	0.30	0.50	0.44	0.39	0.51	0.49	0.42	0.51	0.43

Table 2. Zone-based catch estimates for SPA in the southern WCPFC-CA (including overlap area) for longline and troll vessels from the annual catch estimate by EEZ data. Catches are for the southern convention area, but are for the area south of 10°S only. Note that the longline estimates include catches in archipelagic waters, in contrast to Table 1 of the albacore trends paper.

Zone	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
American Samoa	626	3,217	5,351	3,225	2,043	2,881	4,078	4,677	2,878	3,190	2,838	1,784	2,416	1,769	1,377	1,760	1,511	1,511	1,553	1,062	701	816	1,200	939	1,050
Australia	376	582	540	473	652	726	2,569	1,915	1,272	1,517	745	652	702	757	728	945	910	830	751	796	1,267	1,085	1,126	834	591
Cook Is.	0	9	1,094	1,396	1,661	1,924	1,745	2,671	1,961	4,269	3,715	4,825	8,627	5,078	3,490	2,919	2,935	3,104	3,662	3,892	2,726	1,483	3,580	4,362	3,528
Fiji	5,351	8,013	7,029	4,639	6,501	6,016	5,745	4,159	4,898	6,009	6,395	4,757	4,776	4,162	4,185	6,323	5,328	6,632	6,173	5,872	4,419	4,552	5,668	4,159	7,110
Howland Baker	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
High Seas	12,868	21,016	27,289	24,235	23,114	21,554	17,153	14,137	21,503	28,023	31,911	17,433	24,667	23,672	15,635	17,690	11,733	36,990	27,921	22,482	30,665	22,915	22,478	33,405	25,075
Jarvis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kirbati	103	316	430	500	182	163	173	509	296	764	926	287	843	585	871	1,458	3,297	285	72	906	2,465	254	319	1,645	2,822
Mathew Hunter	4	4	1	18	8	10	4	6	2	20	15	6	9	0	0	2	1	2	1	2	4	34	24	4	4
New Caledonia	892	1,016	1,164	1,106	1,447	1,586	1,356	1,319	1,496	1,640	1,932	1,734	1,711	1,713	1,628	1,578	1,745	1,719	1,742	2,009	1,896	1,745	2,150	1,854	2,025
Niue	0	0	34	0	0	55	259	216	337	241	196	0	0	362	200	190	86	14	364	386	383	14	0	0	0
New Zealand	1,334	2,593	2,522	2,936	1,246	602	496	276	382	422	460	418	266	302	311	223	233	181	239	117	241	185	78	77	59
Polynesie Francaise	3,433	4,253	4,553	3,799	2,179	2,122	2,833	3,913	3,060	3,557	3,481	3,223	3,590	3,493	3,744	3,417	3,261	2,113	3,040	3,436	2,860	2,790	4,161	5,266	5,003
PNG	87	84	98	797	1,580	2,171	1,823	1,202	335	849	838	240	794	257	323	424	1,136	1,497	1,476	1,222	927	573	3,121	1,177	3,015
Solomon Is.	204	124	918	759	2,281	2,533	5,932	4,223	5,923	8,195	5,541	5,634	6,724	8,084	11,877	6,256	3,477	5,178	6,515	5,119	2,622	2,926	6,096	4,228	4,856
Tokelau	0	0	0	0	0	0	0	0	56	0	0	0	0	0	2	594	1,151	475	169	613	533	205	537	0	0
Tonga	859	1,078	856	328	206	258	411	355	220	124	57	36	760	1,471	264	710	1,111	800	842	1,352	930	810	879	1,578	1,103
Tuvalu	15	17	11	16	127	78	0	208	25	102	158	153	201	55	88	130	388	414	88	163	139	63	114	1	13
Vanuatu	3,105	1,690	2,673	2,933	4,080	6,688	8,293	5,047	5,399	5,484	4,803	6,080	4,286	6,818	6,294	5,459	7,332	7,896	5,703	6,181	3,854	1,856	4,981	3,187	5,730
Wallis Futuna	0	0	0	0	0	41	0	0	0	0	0	3	0	0	0	0	0	0	0	0	1	3	0	24	0
Samoa	4,067	4,820	4,205	2,253	1,233	1,263	2,113	3,113	2,342	2,816	2,529	1,415	2,038	1,642	800	840	823	1,638	1,364	1,442	906	908	1,023	1,116	333
Total	33,324	48,832	58,769	49,412	48,539	50,672	54,982	47,946	52,384	67,222	66,540	48,680	62,411	60,219	51,817	50,919	46,459	71,278	61,676	57,052	57,538	43,216	57,535	63,856	62,317
P(EEZ)	0.61	0.57	0.54	0.51	0.52	0.57	0.69	0.71	0.59	0.58	0.52	0.64	0.60	0.61	0.70	0.65	0.75	0.48	0.55	0.61	0.47	0.47	0.61	0.48	0.60
P(High seas)	0.39	0.43	0.46	0.49	0.48	0.43	0.31	0.29	0.41	0.42	0.48	0.36	0.40	0.39	0.30	0.35	0.25	0.52	0.45	0.39	0.53	0.53	0.39	0.52	0.40

Zone	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
AU	0	2	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HS	3,119	2,515	1,647	2,262	1,399	648	841	278	150	237	307	402	235	390	466	177	189	465	430	872	3,852	1,339	2,800	656	164
NZ	3,336	2,736	3,012	3,721	3,212	2,855	2,043	1,736	3,352	1,794	1,832	2,787	2,727	2,836	1,937	2,425	1,969	1,953	2,255	2,635	4,751	4,037	3,777	1,192	1,321
Total	6,455	5,253	4,661	5,984	4,614	3,503	2,884	2,014	3,502	2,031	2,139	3,189	2,962	3,226	2,403	2,602	2,158	2,418	2,685	3,507	8,603	5,376	6,577	1,848	1,485
P(EEZ)	0.52	0.52	0.65	0.62	0.70	0.82	0.71	0.86	0.96	0.88	0.86	0.87	0.92	0.88	0.81	0.93	0.91	0.81	0.84	0.75	0.55	0.75	0.57	0.65	0.89
P(High seas)	0.48	0.48	0.35	0.38	0.30	0.18	0.29	0.14	0.04	0.12	0.14	0.13	0.08	0.12	0.19	0.07	0.09	0.19	0.16	0.25	0.45	0.25	0.43	0.35	0.11

Longline and Troll Combined	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
EEZs	23,792	30,554	34,494	28,899	28,641	31,973	39,872	35,545	34,233	40,993	36,461	34,034	40,471	39,383	38,120	35,654	36,694	36,242	36,010	37,205	31,624	24,338	38,833	31,643	38,563
High Seas	15,987	23,531	28,936	26,497	24,513	22,202	17,994	14,415	21,653	28,260	32,218	17,835	24,902	24,062	16,101	17,867	11,922	37,455	28,351	23,354	34,517	24,254	25,278	34,061	25,239
P(EEZ)	0.60	0.56	0.54	0.52	0.54	0.59	0.69	0.71	0.61	0.59	0.53	0.66	0.62	0.62	0.70	0.67	0.75	0.49	0.56	0.61	0.48	0.50	0.61	0.48	0.60
P(High seas)	0.40	0.44	0.46	0.48	0.46	0.41	0.31	0.29	0.39	0.41	0.47	0.34	0.38	0.38	0.30	0.33	0.25	0.51	0.44	0.39	0.52	0.50	0.39	0.52	0.40

Table 3. Zone-based effort estimates for longline fishing in the southern WCPFC-CA (including overlap area) as measured in millions of hooks from raised operational data.

Zone	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
American Samoa	1,329	5,979	12,793	12,073	9,887	20,381	10,874	15,367	12,172	13,358	11,037	11,158	12,678	8,988	8,159	5,031	5,047	5,825	5,863	5,025	3,682	4,993	4,277	4,010	4,284
Australia	4,518	6,813	7,684	8,336	7,980	6,564	7,266	7,772	7,611	9,098	5,961	4,916	5,943	6,114	6,254	7,521	7,184	7,408	6,569	7,379	7,551	6,674	6,452	6,318	6,388
Cook Is.	0	33	2,237	6,777	8,735	6,959	5,659	6,994	6,587	12,995	15,071	25,673	45,453	25,499	19,289	20,312	22,762	16,614	17,662	26,058	28,406	20,115	25,847	24,739	25,246
Fiji	19,086	28,024	28,948	28,793	30,712	22,878	21,980	18,030	20,583	24,501	31,277	29,393	29,163	23,791	24,655	33,663	31,138	31,331	33,274	36,340	30,817	26,059	22,642	29,561	28,462
Howland Baker	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	15	0	1,989
High Seas	60,783	86,100	184,426	193,234	202,284	158,035	131,958	122,751	138,666	132,480	154,393	152,752	147,213	164,507	80,858	102,858	100,754	176,616	166,572	160,535	178,867	143,808	155,499	173,366	154,332
Jarvis	0	0	0	242	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	20	29	62	391
Kirbati	10,002	16,459	15,280	13,260	16,290	7,670	11,513	14,924	0	0	21,516	18,972	32,278	19,970	29,560	39,928	37,402	4,897	838	9,403	21,843	7,985	14,613	14,926	22,981
Mathew Hunter	39	19	4	49	43	38	20	27	11	41	39	19	47	0	0	19	4	21	4	9	29	94	83	35	14
New Caledonia	5,654	4,614	4,545	6,009	5,732	4,853	3,553	4,183	4,916	4,819	4,866	4,810	4,886	4,572	4,161	4,348	4,890	4,984	5,129	5,550	6,125	5,845	5,741	5,675	4,938
Niue	0	0	118	0	0	251	863	784	1,129	969	929	0	0	1,364	782	806	307	105	1,395	2,032	2,651	101	0	0	0
New Zealand	7,773	12,010	12,162	12,407	8,082	4,185	3,682	3,494	3,117	2,982	3,001	3,562	2,992	2,839	3,282	3,250	1,826	1,676	2,075	1,296	1,606	1,123	999	1,159	0
Polynesie Francaise	12,281	13,292	14,043	17,917	21,903	19,215	18,504	18,300	18,557	17,129	17,179	18,254	16,475	17,032	16,879	17,506	17,216	14,901	16,165	17,061	18,550	19,204	20,473	20,466	19,348
PNG	1,038	1,411	1,073	3,693	6,132	6,994	6,367	6,754	3,301	4,472	3,763	3,653	6,900	2,432	2,599	2,584	8,412	9,313	10,444	11,447	6,438	3,184	15,733	10,351	17,656
Solomon Is.	1,388	1,360	8,199	11,107	13,077	13,698	27,522	29,301	33,838	42,861	38,016	52,651	47,490	56,922	87,858	57,830	28,740	25,147	48,996	41,965	22,710	20,430	32,890	41,528	26,457
Tokelau	0	0	0	0	0	0	0	0	337	0	0	1,114	1,895	2	388	12,034	14,380	8,921	3,634	8,346	7,213	4,318	5,719	3,530	15
Tonga	4,022	3,934	4,632	3,007	2,020	3,541	3,700	3,377	2,183	1,002	496	721	4,426	9,800	2,450	4,069	4,882	4,707	3,535	6,881	6,362	6,262	3,739	6,253	4,413
Tuvalu	2,277	1,065	2,360	773	2,310	3,170	278	3,912	1,750	2,828	7,839	5,667	7,035	8,251	4,218	4,253	14,945	10,562	8,377	14,139	6,925	3,333	3,205	1,253	4,773
Vanuatu	7,416	5,873	11,227	17,565	17,336	25,327	28,121	21,538	23,724	22,444	21,012	39,006	25,712	35,166	29,505	25,822	29,486	31,208	27,601	30,773	26,508	10,042	19,765	16,769	25,224
Wallis Futuna	0	0	0	0	0	172	0	0	0	0	0	43	0	0	0	0	0	0	0	0	8	11	0	72	0
Samoa	13,523	5,144	6,837	7,891	5,454	3,813	5,009	7,374	6,942	7,437	8,034	6,151	6,983	5,728	3,026	4,076	4,114	7,798	7,507	7,077	7,370	6,042	4,670	5,814	1,599
Total	151,127	192,129	316,568	343,135	357,979	307,744	286,870	284,883	285,425	299,418	344,428	378,515	397,569	392,974	323,923	345,911	333,492	362,036	365,639	391,315	383,669	289,667	342,389	365,885	348,512
P(EEZ)	0.60	0.55	0.42	0.44	0.43	0.49	0.54	0.57	0.51	0.56	0.55	0.60	0.63	0.58	0.75	0.70	0.70	0.51	0.54	0.59	0.53	0.50	0.55	0.53	0.56
P(High seas)	0.40	0.45	0.58	0.56	0.57	0.51	0.46	0.43	0.49	0.44	0.45	0.40	0.37	0.42	0.25	0.30	0.30	0.49	0.46	0.41	0.47	0.50	0.45	0.47	0.44

Table 4. Zone-based effort estimates for longline fishing in the southern WCPFC-CA (including overlap area) as measured in millions of hooks from raised operational data.

Zone	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
American Samoa	1,329	5,979	12,793	12,073	9,887	20,381	10,874	15,367	12,172	13,358	11,037	11,158	12,678	8,988	8,159	5,031	5,047	5,825	5,863	5,025	3,682	4,993	4,277	4,010	4,284
Australia	4,518	6,813	7,684	8,336	7,980	6,564	7,266	7,772	7,611	9,098	5,961	4,916	5,943	6,114	6,254	7,521	7,184	7,408	6,568	7,379	7,551	6,674	6,452	6,318	6,388
Cook Is.	0	29	2,175	5,574	6,905	6,011	4,916	6,062	5,487	11,904	12,076	19,602	34,582	21,577	14,410	11,551	14,790	14,659	13,748	13,887	16,944	10,945	14,175	17,565	16,063
Fiji	19,086	28,028	28,987	28,807	30,718	22,880	21,980	18,035	20,581	24,501	31,285	29,388	29,161	23,803	24,654	33,668	31,137	31,331	33,299	36,349	30,812	26,057	22,642	29,559	28,460
Howland Baker	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
High Seas	33,389	58,664	101,452	124,388	111,405	88,295	65,700	53,109	73,706	84,667	91,561	70,207	84,557	102,793	48,887	58,532	41,371	122,385	101,203	88,561	123,522	95,069	74,464	107,252	69,590
Jarvis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kirbati	7,799	10,057	11,021	10,132	16,786	10,704	10,840	18,362	17,073	19,439	14,778	13,485	20,512	9,582	35,230	40,940	32,692	6,943	6,031	7,459	16,392	3,882	5,911	14,916	18,981
Mathew Hunter	39	19	4	49	43	38	20	27	11	41	39	19	47	0	0	19	4	21	4	9	29	94	83	35	14
New Caledonia	5,654	4,614	4,545	6,009	5,732	4,853	3,553	4,183	4,916	4,819	4,866	4,810	4,886	4,572	4,161	4,348	4,890	4,984	5,129	5,550	6,125	5,845	5,741	5,675	4,938
Niue	0	0	118	0	0	251	863	784	1,129	969	929	0	0	1,364	782	806	307	105	1,395	2,032	2,651	101	0	0	0
New Zealand	7,773	12,010	12,162	12,407	8,082	4,185	3,682	3,494	3,117	2,982	3,001	3,562	2,992	2,839	3,282	3,250	1,826	1,676	2,075	1,296	1,606	1,123	999	1,159	0
Polynesie Francaise	11,865	13,257	14,030	17,856	21,655	18,085	18,222	18,248	18,554	17,102	17,167	18,243	16,463	17,027	16,868	17,489	17,080	14,114	15,754	16,949	18,289	18,896	19,994	20,342	18,521
PNG	560	916	637	3,033	4,481	6,218	5,696	4,879	1,919	3,880	3,272	2,204	5,352	2,271	2,425	2,139	6,463	7,742	8,903	8,694	5,883	2,604	12,570	8,640	14,193
Solomon Is.	763	690	5,594	6,337	11,077	10,748	21,135	20,442	24,481	29,496	31,219	37,750	32,291	44,794	66,588	45,150	23,206	18,925	37,224	33,424	20,830	16,897	25,433	29,650	22,117
Tokelau	0	0	0	0	0	0	0	0	122	0	0	68	0	0	59	3,616	4,550	3,908	1,038	2,205	2,312	2,221	2,359	1,532	0
Tonga	4,022	3,934	4,632	3,007	2,020	3,541	3,700	3,377	2,183	1,002	496	721	4,426	9,800	2,450	4,069	4,882	4,707	3,535	6,881	6,362	6,262	3,739	6,253	4,413
Tuvalu	76	59	76	123	742	371	0	804	174	429	1,395	1,784	1,231	411	441	832	3,200	2,712	651	955	1,459	825	651	28	76
Vanuatu	7,416	5,873	11,227	17,565	17,336	25,327	28,121	21,538	23,724	22,444	21,012	39,006	25,712	35,166	29,505	25,822	29,486	31,208	27,601	30,773	26,508	10,042	19,765	16,769	25,224
Wallis Futuna	0	0	0	0	0	186	0	0	0	0	0	43	0	0	0	0	0	0	0	0	8	11	0	272	0
Samoa	13,523	5,144	6,837	7,891	5,454	3,813	5,009	7,374	6,942	7,437	8,034	6,151	6,983	5,728	3,026	4,076	4,114	7,798	7,507	7,077	7,370	6,042	4,670	5,814	1,599
Total	117,813	156,087	223,974	263,589	260,303	232,451	211,577	203,857	223,903	253,570	258,124	263,116	287,816	296,828	267,179	268,859	232,231	286,451	277,527	274,503	298,336	218,582	223,923	275,786	234,861
P(EEZ)	0.72	0.62	0.55	0.53	0.57	0.62	0.69	0.74	0.67	0.67	0.65	0.73	0.71	0.65	0.82	0.78	0.82	0.57	0.64	0.68	0.59	0.57	0.67	0.61	0.70
P(High seas)	0.28	0.38	0.45	0.47	0.43	0.38	0.31	0.26	0.33	0.33	0.35	0.27	0.29	0.35	0.18	0.22	0.18	0.43	0.36	0.32	0.41	0.43	0.33	0.39	0.30

Table 5. Zone-based effort estimates for longline fishing in the southern WCPFC-CA (including overlap area) as fishing days from VMS records. The fishing days are for the full area from the equator south. Only incomplete VMS data is available for New Caledonia and French Polynesia, and so the estimates for those EEZs are based on the fishing days from operational logsheet data.

EEZ	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
American Samoa	1,122	716	853	906	599	408	799	1,914	2,654	1,994	1,743	1,321	1,140	1,210	1,213
Australia	410	864	694	613	796	2,075	2,147	2,752	2,294	2,642	2,388	2,780	2,303	2,906	2,109
Cook Is.	4,999	6,657	11,362	7,260	5,526	5,201	6,600	5,567	4,798	7,825	8,717	7,553	8,844	9,436	7,799
Fiji	9,704	11,408	12,607	9,610	8,950	9,995	9,349	10,005	10,975	11,679	10,346	9,283	7,905	8,064	9,872
Howland Baker	20	10	14	6	16	7	17	12	16	26	12	11	17	8	22
High Seas	32,928	42,480	45,007	48,826	49,156	47,545	42,978	47,699	56,568	56,486	54,094	43,784	49,359	46,454	41,729
Jarvis	7	12	9	13	31	82	79	21	5	4	5	5	15	9	0
Kirbati	20,590	21,688	21,067	21,205	24,632	19,919	16,625	3,235	530	4,079	6,425	4,264	4,978	8,169	9,208
Mathew Hunter	25	31	19	16	26	31	16	14	18	7	23	38	15	23	11
New Caledonia	2,477	2,635	2,677	2,407	2,306	2,250	2,417	2,387	2,473	2,498	2,792	2,717	2,583	2,631	2,228
Niue	179	5	9	365	303	280	535	358	750	847	900	35	21	2	27
New Zealand	191	328	389	145	170	222	133	90	202	522	543	407	365	309	329
Polynesie Francaise	5,527	5,835	6,354	7,520	7,844	9,009	9,107	8,905	9,517	9,858	9,885	10,979	11,369	11,068	10,464
PNG	2,351	2,349	1,602	717	399	1,176	4,016	4,269	6,080	8,140	3,914	4,934	10,136	14,252	12,215
Solomon Is.	27,630	25,858	22,344	26,894	26,041	21,889	15,060	12,620	22,907	18,998	14,029	13,186	15,625	20,833	11,583
Tokelau	200	606	538	80	376	3,627	4,479	2,391	1,193	2,377	2,150	1,280	1,714	1,091	128
Tonga	23	94	1,503	4,269	864	1,440	1,996	1,695	792	2,653	2,077	2,015	1,414	2,397	1,890
Tuvalu	4,972	3,676	4,465	3,221	1,876	1,471	4,968	4,234	3,445	5,797	2,733	1,671	1,646	621	1,858
Vanuatu	12,902	15,753	12,883	10,639	10,052	9,258	11,527	15,047	10,666	11,449	12,244	5,198	7,392	5,641	7,782
Wallis Futuna	9	26	36	50	43	64	58	36	27	35	38	22	32	37	73
Samoa	3	6	113	357	65	1,185	2,478	2,934	3,771	2,555	2,582	1,819	1,770	2,029	861
Total	126,270	141,036	144,547	145,117	140,071	137,135	135,385	126,185	139,680	150,471	137,641	113,301	128,642	137,189	121,400
P(EEZ)	0.74	0.70	0.69	0.66	0.65	0.65	0.68	0.62	0.60	0.62	0.61	0.61	0.62	0.66	0.66
P(High seas)	0.26	0.30	0.31	0.34	0.35	0.35	0.32	0.38	0.40	0.38	0.39	0.39	0.38	0.34	0.34

Table 6. Zone-based effort estimates for longline fishing in the southern WCPFC-CA (including overlap area) as fishing days from VMS records. The fishing days are for the full area from the equator south. Only incomplete VMS data is available for New Caledonia and French Polynesia, and so the estimates for those EEZs are based on the fishing days from operational logsheet data.

EEZ	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
American Samoa	1,122	716	853	906	599	408	799	1,914	2,654	1,994	1,743	1,321	1,140	1,210	1,213
Australia	410	864	694	613	796	2,075	2,147	2,752	2,294	2,642	2,388	2,780	2,303	2,906	2,109
Cook Is.	4,009	4,910	8,063	6,091	4,140	3,146	4,333	4,811	3,704	4,230	5,092	3,969	4,537	6,130	4,905
Fiji	9,688	11,405	12,600	9,608	8,946	9,990	9,346	10,003	10,966	11,648	10,335	9,277	7,898	8,060	9,870
Howland Baker	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
High Seas	19,118	20,934	21,322	28,174	24,413	21,053	18,253	22,562	24,304	26,706	29,443	22,847	17,612	20,967	17,841
Jarvis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kirbati	2,185	1,736	2,032	3,343	1,145	1,544	3,855	423	3	927	3,058	863	768	2,271	1,783
Mathew Hunter	25	31	19	16	26	31	16	14	18	7	23	38	15	23	11
New Caledonia	2,477	2,635	2,677	2,407	2,306	2,250	2,417	2,387	2,473	2,498	2,792	2,717	2,583	2,631	2,228
Niue	179	5	9	365	303	280	535	358	750	847	900	35	21	2	27
New Zealand	191	328	389	145	170	222	133	90	202	522	543	407	365	309	329
Polynesie Francaise	5,524	5,827	6,349	7,506	7,829	8,991	9,039	8,206	9,254	9,653	9,768	10,160	10,689	10,777	9,782
PNG	1,474	687	412	154	32	214	2,032	2,300	2,889	3,672	3,192	2,998	5,439	7,194	5,786
Solomon Is.	19,325	16,203	13,886	17,477	16,208	13,522	9,665	8,040	13,400	11,901	10,241	8,730	10,042	12,072	7,654
Tokelau	15	40	14	32	64	1,089	1,433	1,028	433	818	719	591	689	432	7
Tonga	23	94	1,503	4,269	864	1,440	1,996	1,695	792	2,653	2,077	2,015	1,414	2,397	1,890
Tuvalu	705	905	515	159	216	222	925	1,123	240	443	614	331	275	29	38
Vanuatu	12,902	15,753	12,883	10,639	10,052	9,258	11,527	15,047	10,666	11,449	12,244	5,198	7,392	5,641	7,782
Wallis Futuna	9	26	35	49	42	64	58	35	26	35	37	21	31	36	70
Samoa	3	6	113	357	65	1,185	2,478	2,934	3,771	2,555	2,582	1,819	1,770	2,029	861
Total	79,386	83,103	84,370	92,309	78,216	76,984	80,988	85,723	88,840	95,200	97,792	76,116	74,983	85,115	74,184
P(EEZ)	0.76	0.75	0.75	0.69	0.69	0.73	0.77	0.74	0.73	0.72	0.70	0.70	0.77	0.75	0.76
P(High seas)	0.24	0.25	0.25	0.31	0.31	0.27	0.23	0.26	0.27	0.28	0.30	0.30	0.23	0.25	0.24

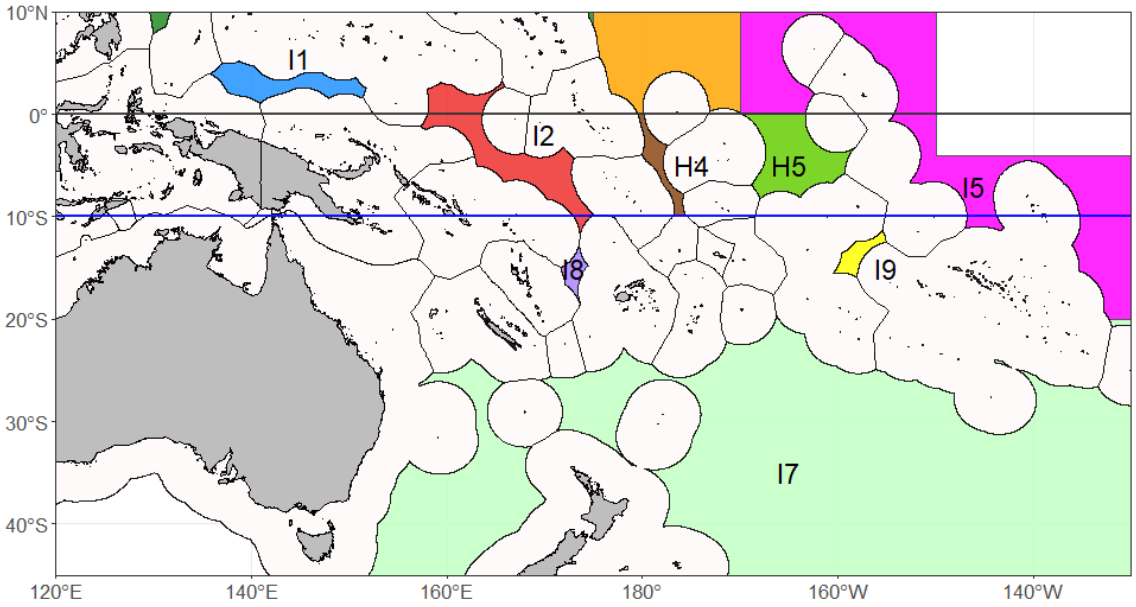

Figure 1. Map of the southern WCPFC-CA showing the equator, the 10°S latitudinal boundary, and the EEZs and high seas zones within each region.

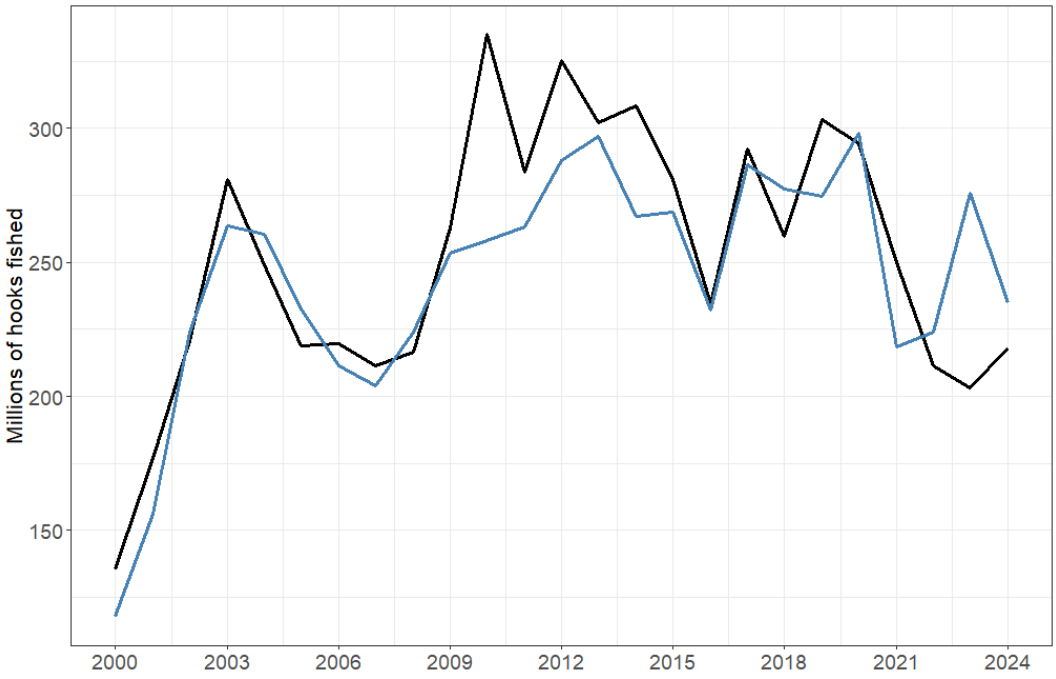

Figure 2. Estimates of the number of hooks (millions of hooks) fished in the southern WCPFC-CA (including overlap area) by longline vessels over the period 2000-2024, for the areas south of 10°S. The two lines represent the raised hooks estimate calculated as the sum over individual zones, presented in Table 4 (blue line), and the estimated total hooks fished in the same area from the aggregate 5x5° dataset[3].

[3] Note that this estimate (black line) corresponds to the estimate of hooks fished in the convention area south of 10°S in Figure 3 of the albacore trends paper (SPC-OFP & WCPFC Secretariat 2025).