WCPFC-CA South Pacific albacore catch summaries

Pacific Islands Fisheries Science Center

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This document provides a summary of South Pacific albacore (SPA) catch within the Western and Central Pacific Fisheries Commission (WCPFC) convention area. Catch summaries are provided for all participating Members, Participating Territories and Cooperating Non-Members (CCMs) with longline and troll catch of SPA per the most recent WCPFC Yearbook data. Catch summaries are placed in the context of a proposed Conservation and Management Measure (CMM) on a management procedure (MP) for SPA (public proposal).

1 CCM specific catch summaries

The proposed CMM for an MP for SPA would apply to all troll and longline fisheries operating south of the equator. Each run of the MP would set total catch values for fisheries under MP control relative to average recent catch values. Recent catch is defined as the period 2020-2022.

Average total catch of SPA over the recent period is 61,140 metric tons (mt), of which 60,800 mt[1] (or 99.44 % of recent average total catch) is subject to the proposed MP control.

Of the recent average catch that is subject to MP control 51,814 mt (92.48 %) is caught in longline fisheries and 4,213 mt (7.52 %) is caught in troll fisheries (Figure 1).

[1] Indonesia (ID) reported some recent period SPA catch using a combination of handline (65 mt), small-scale-hook-and-line (62 mt) and other (66 mt) gears. New Zealand (NZ) reported 6 mt of recent period pole-and-line SPA catch. French Polynesia (PF) reported 16 mt of recent period pole-and-line and 208 mt of other SPA catch. Papua New Guinea (PG) reported 6 mt of recent period purse seine SPA catch. Solomon Islands (SB) reported 1 mt of recent period purse seine SPA catch.

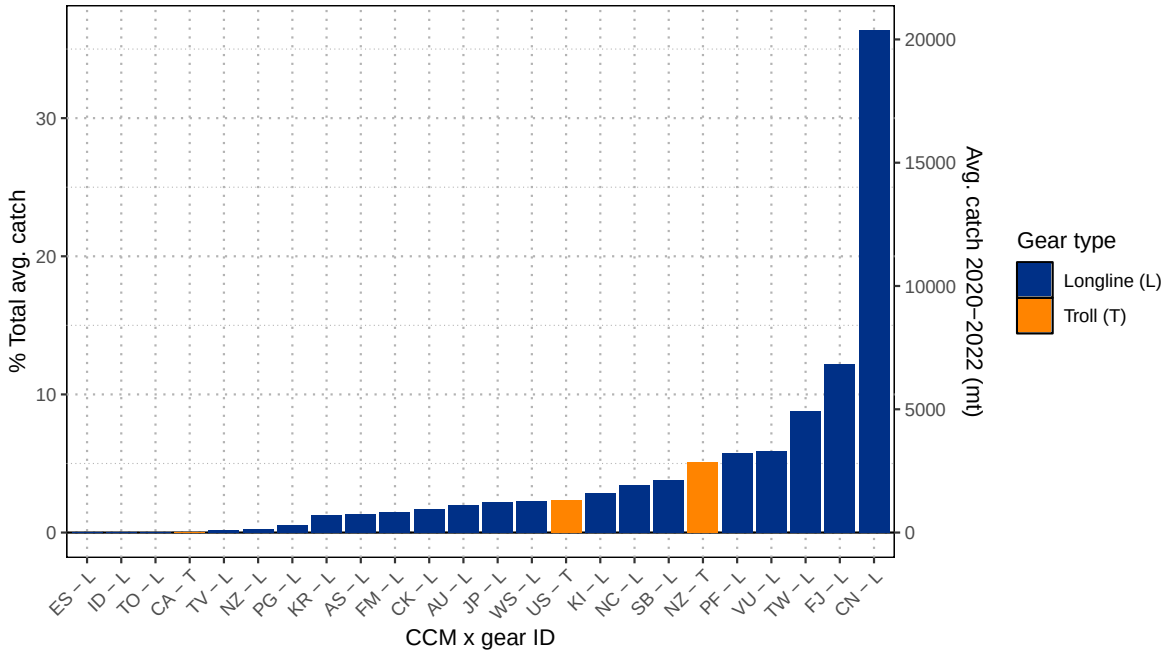

Figure 1: Total catch by fishery, sorted from smallest recent average catch (2020-2022) to largest, where fill color indicates gear. Left y-axis gives the % of recent total average catch. Right y-axis gives the recent average catch in metric tons.

Broken out by fishery[2], China is responsible for the largest share of recent average SPA with 20,364 mt of longline catch or 36.35 % of total average recent catch (Figure 2).

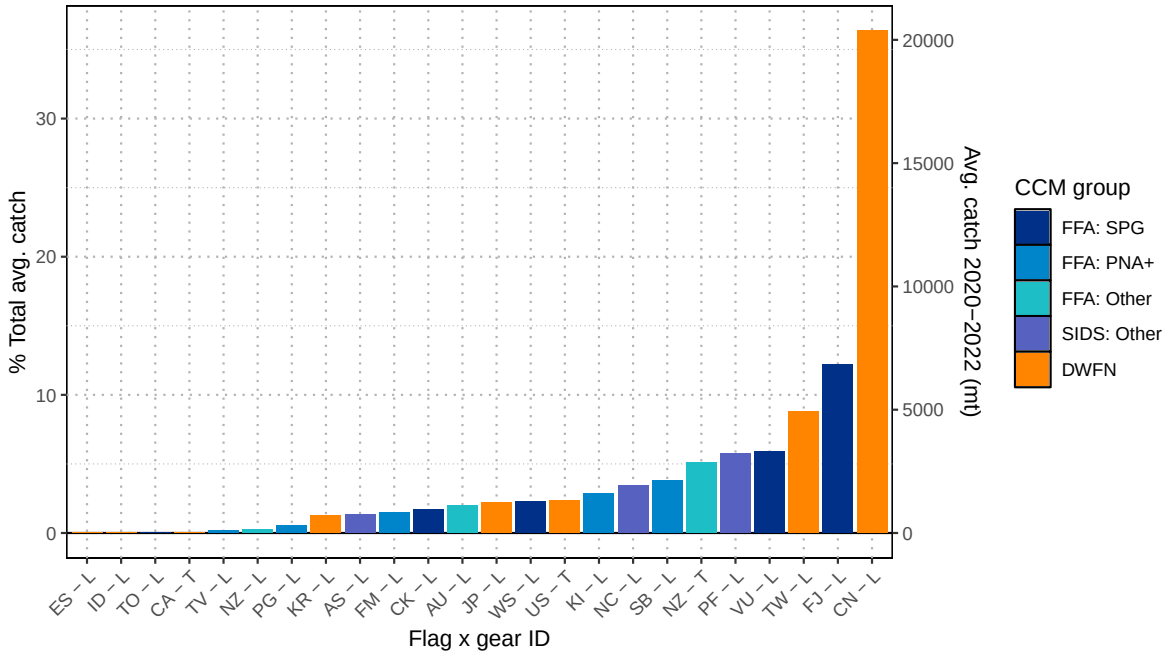

Figure 2: Total catch by fishery, sorted from smallest recent average catch (2020-2022) to largest, where fill color indicates CCM category. Left y-axis gives the % of recent total average catch. Right y-axis gives the recent average catch in metric tons.

Table 1 contains the same recent average catch shown in Figure 1 and Figure 2 for each fishery subject to MP control. It also contains maximum allowable cuts (5 %) and increases (10 %) each time the MP is applied based on the constraints in the proposed CMM[3]. Table 2 gives the recent average catch and compares it to average catch in two additional historical time periods (2007-2009 and 2011-2013).

Figure 3 shows the percentage of total recent average SPA catch (y-axis) that comes from fisheries that individually make-up less than a given percentage (x-axis) of total recent average SPA catch.

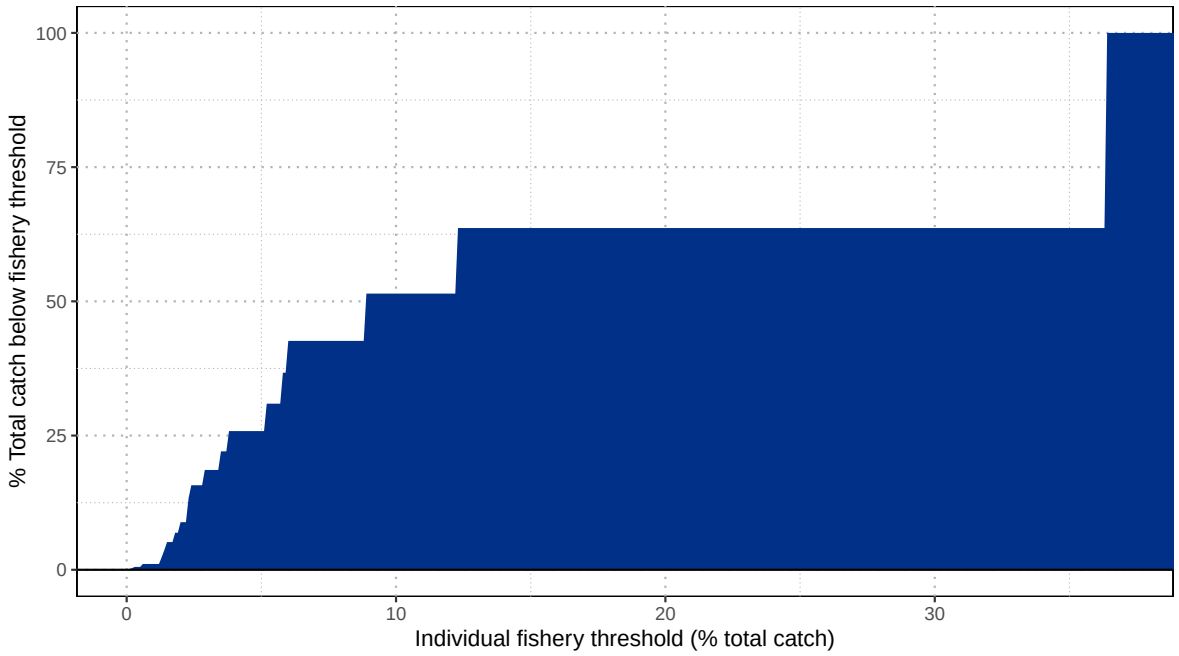

Figure 3: Aggregate total catch (y-axis) for all fisheries with individual total catch less than or equal to a threshold (x-axis).

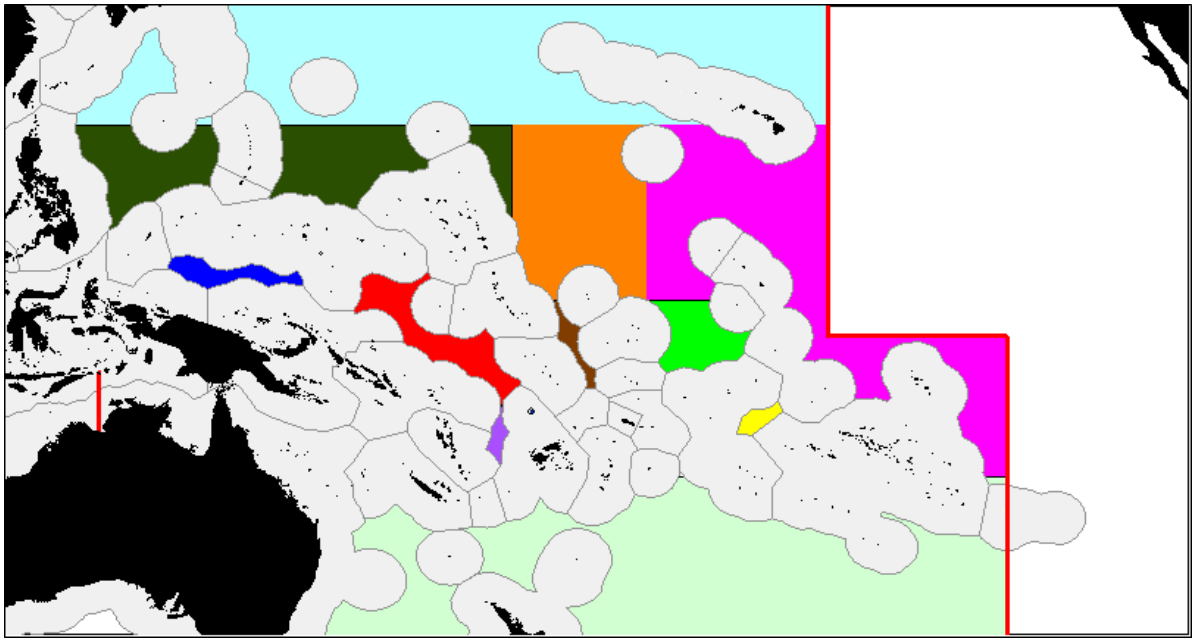

Figure 4: Exclusive economic zones (EEZs) and high-seas (HS) areas, shaded regions, within the WCPFC-CA. Source https://www.wcpfc.int/ace_by_eez.

2 CCM catch by fishing zone

CCM catch can also be broken out by fishing zone (Figure 4), where catch originates from either an exclusive economic zone (EEZ) or the high-seas (HS). Figure 5 shows the same data as in Section 1 (see also Table 1) with the proportion attributable to fishing zone highlighted. Fishing zone designation for longline fisheries come from Table 6 of SC20-SA-IP-07 produced by the WCPFC scientific services provider, the Pacific Community (SPC). That paper notes that in the case of some EEZ or high-seas areas with straddle the equator attribution of SPA catch to the southern WCPFC-CA is approximated. Catch designation was unavailable for the troll fisheries. It was assumed that the U.S. and Canadian troll fisheries operated exclusively in the high-seas while the New Zealand troll fishery operated in their domestic EEZ.

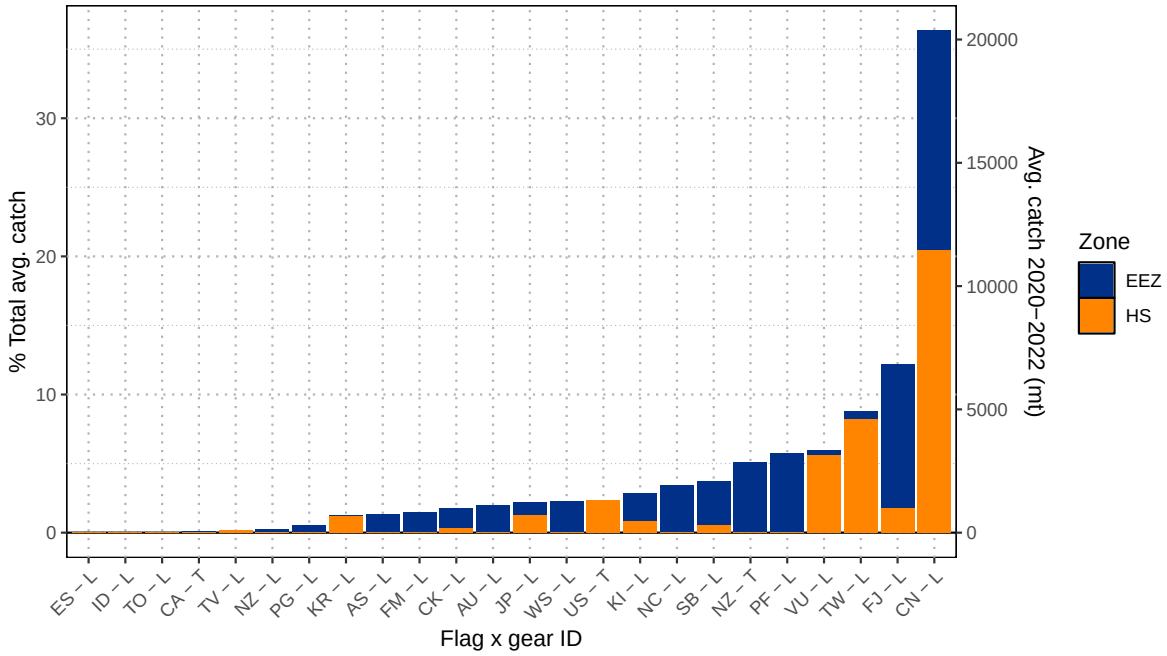

Figure 5: Total catch by fishery, sorted from smallest recent average catch (2020-2022) to largest, where fill color indicates proportion of catch attributable to fishing zone type (e.g., EEZ or High-seas; HS). Left y-axis gives the % of recent total average catch. Right y-axis gives the recent average catch in metric tons.

Taking a more granular look at the information available in SC20-SA-IP-07 (Table 6), catch flows for recent average longline SPA catch can be identified between CCMs and specific fishing

[2]Fishery is defined as a unique combination of CCM and gear type.

[3]Maximum cuts and increases assume that future allocation reflects recent average catch over the period 2020-2022.

zones[4] (Figure 6). For example, in addition to fishing in the high-seas, these data indicate China has reported catches of at least 500 mt in 4 EEZs with the most in-zone catches for China occuring in the Cook Islands (2,895 mt). This is more clearly shown by focusing on the reported fishing zone source of all recent average SPA catch by DWFNs (Figure 7). From Figure 6 some CCMs (Australia, New Zealand, American Samoa, French Polynesia, and New Caledonia.) appear to report recent average SPA catch exclusively within their own domestic EEZs. The recent average reported longline catch network of the remaining CCMs, belonging to either the PNA+ or South Pacific Group (SPG), is shown in Figure 8.

Note that recent average longline SPA catch totals in Figure 6, Figure 7 or Figure 8 may not exactly match the values listed in Table 1 due to approximations in attribution for fishing zones that straddle the equator.

Additionally, with regards to vessel chartering arrangements, the public WCPFC Yearbook data attributes catch to the chartered flag as opposed to the vessel-flag state.

3 Disclaimer

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[4]Note for the purposes of this summary, the disputed maritime region of Matthew & Hunter (jointly claimed by New Caledonia and Vanuatu) was omitted from the analysis. Negligible catches were observed in this region.

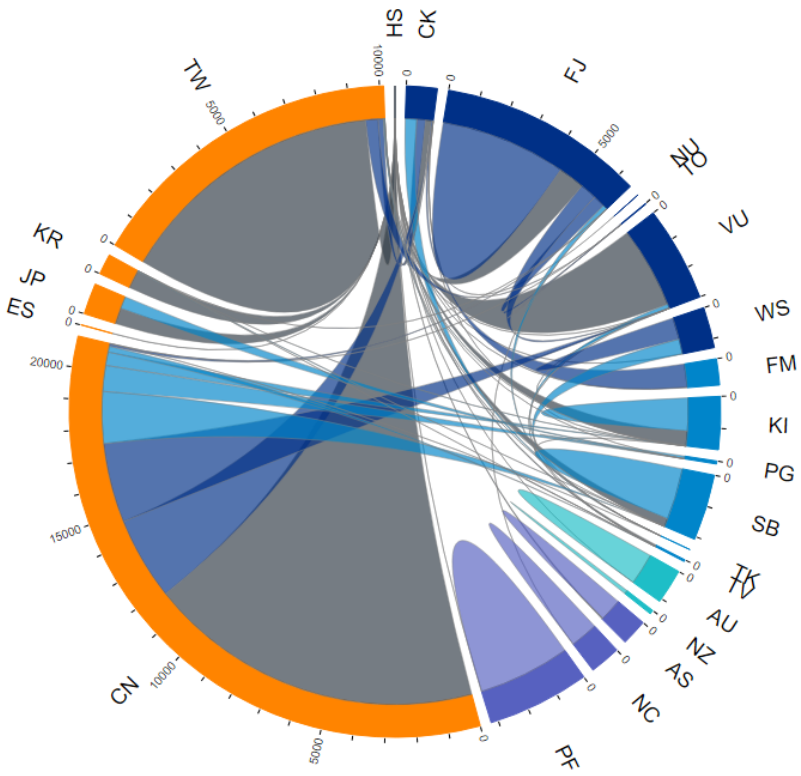

Figure 6: Chord diagram indicating the breakdown of reported longline SPA catch by fishing zone. Circular segments around the outer edge of the chart indicate the average recent total SPA catch (mt) for each CCM. Colored arcs indicate the source of the SPA catch. Segment and arc color correspond to CCM group.

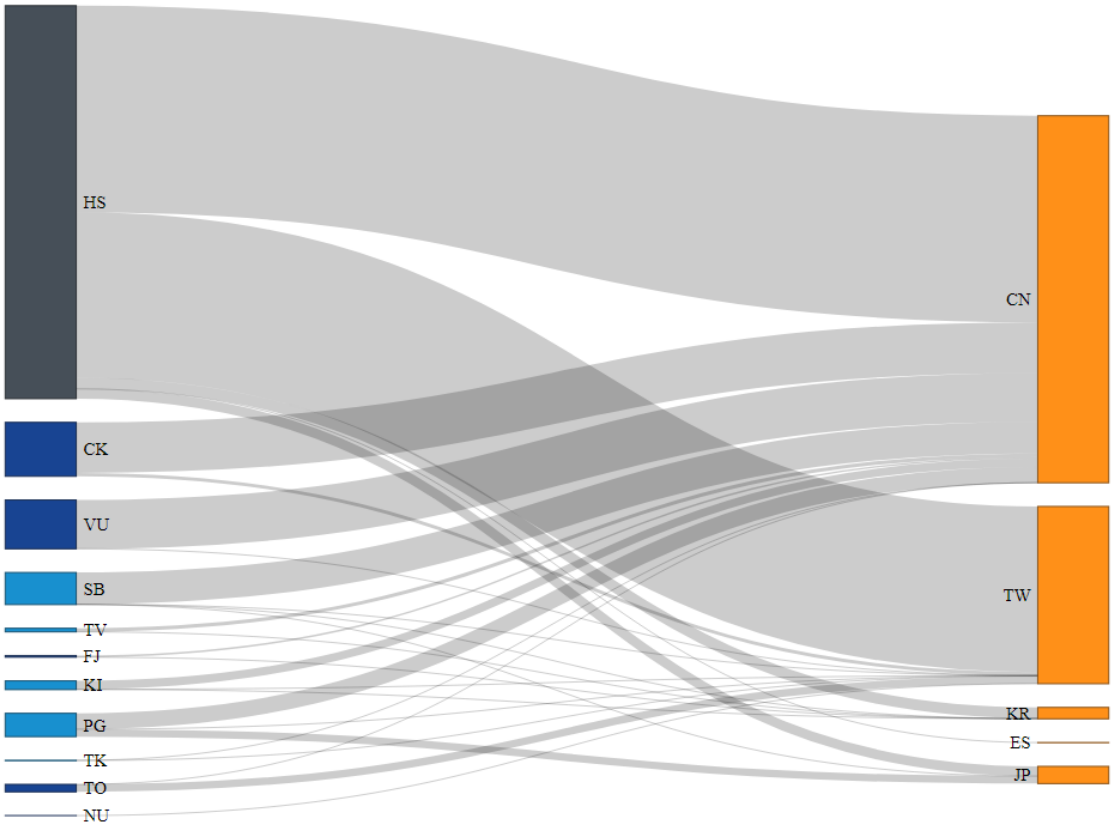

Figure 7: Sankey diagram indicating the breakdown of reported recent average longline SPA catch by fishing zone, only for DWFN fleets. Segments on the left indicate origin, flowing into segments on the right indicating DWFN fleet. Segment color corresponds to CCM group. This figure is a subset of Figure 6.

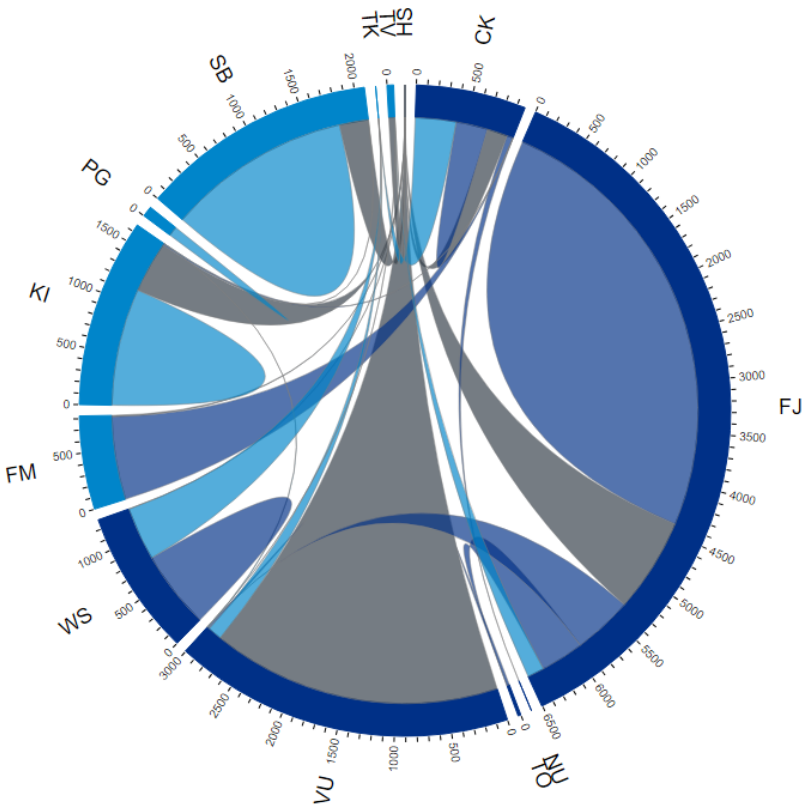

Figure 8: Chord diagram indicating the breakdown of reported longline SPA catch by fishing zone for CCMs belonging to either the PNA+ or SPG. Circular segments around the outer edge of the chart indicate the average recent total SPA catch (mt) for each CCM. Colored arcs indicate the source of the SPA catch. Segment and arc color correspond to CCM group. This figure is a subset of Figure 6.

4 Data

Table 1: Average recent (2020-2022) catch in metric tons by fishery (CCM x Gear). The "% Total" column gives the percentage of average recent total catch attributable to each fishery. The "% HS" column gives the percentage of fishery catch caught on the high seas. The maximum possible cut, Max (-), and increase, Max (+), using the MP constraints defined in the proposed CMM are also shown for reference.

ID	CCM cat.	CCM	Gear	SPA catch (mt)	% Total	Max (-)	Max (+)	% HS
CN - L	DWFN	CN	Longline (L)	20,364	36.35	1,018	2,036	56.27
FJ - L	FFA: SPG	FJ	Longline (L)	6,840	12.21	342	684	14.24
TW - L	DWFN	TW	Longline (L)	4,938	8.81	247	494	93.44
VU - L	FFA: SPG	VU	Longline (L)	3,322	5.93	166	332	94.58
PF - L	SIDS: Other	PF	Longline (L)	3,229	5.76	161	323	0.03
NZ - T	FFA: Other	NZ	Troll (T)	2,862	5.11	143	286	0.00
SB - L	FFA: PNA+	SB	Longline (L)	2,112	3.77	106	211	13.63
NC - L	SIDS: Other	NC	Longline (L)	1,943	3.47	97	194	0.00
KI - L	FFA: PNA+	KI	Longline (L)	1,595	2.85	80	160	30.04
US - T	DWFN	US	Troll (T)	1,320	2.36	66	132	100.00
WS - L	FFA: SPG	WS	Longline (L)	1,285	2.29	64	128	0.16
JP - L	DWFN	JP	Longline (L)	1,248	2.23	62	125	56.64
AU - L	FFA: Other	AU	Longline (L)	1,104	1.97	55	110	0.18
CK - L	FFA: SPG	CK	Longline (L)	971	1.73	49	97	20.57
FM - L	FFA: PNA+	FM	Longline (L)	821	1.46	41	82	1.54
AS - L	SIDS: Other	AS	Longline (L)	755	1.35	38	76	4.96

Table 1: Average recent (2020-2022) catch in metric tons by fishery (CCM x Gear). The "% Total" column gives the percentage of average recent total catch attributable to each fishery. The "% HS" column gives the percentage of fishery catch caught on the high seas. The maximum possible cut, Max (-), and increase, Max (+), using the MP constraints defined in the proposed CMM are also shown for reference.

ID	CCM cat.	CCM	Gear	SPA catch (mt)	% Total	Max (-)	Max (+)	% HS
KR - L	DWFN	KR	Longline (L)	712	1.27	36	71	95.66
PG - L	FFA: PNA+	PG	Longline (L)	307	0.55	15	31	0.00
NZ - L	FFA: Other	NZ	Longline (L)	129	0.23	6	13	0.00
TV - L	FFA: PNA+	TV	Longline (L)	87	0.16	4	9	97.13
CA - T	DWFN	CA	Troll (T)	31	0.06	2	3	100.00
TO - L	FFA: SPG	TO	Longline (L)	25	0.04	1	2	0.00
ID - L	DWFN	ID	Longline (L)	19	0.03	1	2	0.00
ES - L	DWFN	ES	Longline (L)	10	0.02	0	1	100.00

Table 2: South pacific albacore catch (mt) by fishery (CCM x Gear) and time period (2020-2022, 2000-2004, 2007-2009, and 2011-2013). The "% Total" column gives the percentage of total catch attributable to each fishery in the corresponding time period.

ID	SPA catch (2020-2022)	% Total (2020-2022)	SPA catch (2000-2004)	% Total (2000-2004)	SPA catch (2007-2009)	% Total (2007-2009)	SPA catch (2011-2013)	% Total (2011-2013)
AS - L	755	1.35	3,241	5.76	4,205	7.24	2,522	3.96
AU - L	1,104	1.97	536	0.95	1,575	2.71	712	1.12
CK - L	971	1.73	930	1.65	2,140	3.68	2,098	3.29
CN - L	20,364	36.35	2,840	5.05	13,371	23.01	18,559	29.15

Table 2: South pacific albacore catch (mt) by fishery (CCM x Gear) and time period (2020-2022, 2000-2004, 2007-2009, and 2011-2013). The "% Total" column gives the percentage of total catch attributable to each fishery in the corresponding time period.

ID	SPA catch (2020-2022)	% Total (2020-2022)	SPA catch (2000-2004)	% Total (2000-2004)	SPA catch (2007-2009)	% Total (2007-2009)	SPA catch (2011-2013)	% Total (2011-2013)
ES - L	10	0.02	5	0.01	68	0.12	4	0.01
FJ - L	6,840	12.21	8,047	14.30	9,758	16.79	10,100	15.86
JP - L	1,248	2.23	3,947	7.02	2,672	4.60	2,456	3.86
KR - L	712	1.27	2,195	3.90	1,244	2.14	874	1.37
NC - L	1,943	3.47	1,132	2.01	1,493	2.57	1,728	2.71
NZ - L	129	0.23	2,144	3.81	387	0.67	329	0.52
NZ - T	2,862	5.11	3,203	5.69	2,294	3.95	2,783	4.37
PF - L	3,229	5.76	3,671	6.53	3,528	6.07	3,444	5.41
PG - L	307	0.55	593	1.05	989	1.70	459	0.72
TO - L	25	0.04	822	1.46	245	0.42	22	0.04
TW - L	4,938	8.81	12,524	22.26	4,405	7.58	6,616	10.39
US - T	1,320	2.36	1,682	2.99	195	0.34	342	0.54
VU - L	3,322	5.93	3,267	5.81	6,432	11.07	6,999	10.99
WS - L	1,285	2.29	3,319	5.90	2,757	4.74	1,698	2.67

5 CCM Abbreviations

Table 3: Two-letter country codes for each CCM.

CCM cat.	CCM abbr.	CCM
SIDS: Other	AS	American Samoa
FFA: Other	AU	Australia
DWFN	CA	Canada
FFA: SPG	CK	Cook Islands
DWFN	CN	China
DWFN	ES	Spain
FFA: SPG	FJ	Fiji
FFA: PNA+	FM	Federated States of Micronesia
DWFN	ID	Indonesia
DWFN	JP	Japan
FFA: PNA+	KI	Kiribati
DWFN	KR	Korea
SIDS: Other	NC	New Caledonia
FFA: Other	NZ	New Zealand
SIDS: Other	PF	French Polynesia
FFA: PNA+	PG	Papua New Guinea
FFA: PNA+	SB	Solomon Islands
FFA: SPG	TO	Tonga
FFA: PNA+	TV	Tuvalu
DWFN	TW	Chinese Taipei
DWFN	US	United States
FFA: SPG	VU	Vanuatu
FFA: SPG	WS	Samoa