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CONSERVATION MANAGEMENT MEASURE (CMM 2018-03) IMPLEMENTATION WITH REGARD TO SEABIRDS IN THE WCPFC: 2018 AND 2019

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Conservation management measure (CMM 2018-03) implementation with regard to seabirds in the WCPFC: 2018 and 2019

The incidental mortality of seabirds in pelagic longline fisheries continues to be a serious global concern, especially for albatrosses and petrels. Fifteen out of the 22 albatross species are at risk of extinction. There is concern that longline fisheries in the WCPO Convention area north of 20°N account for approximately two-thirds of the estimated total mortality of seabirds. While pelagic longline fisheries south of 30° S account for approximately one-quarter of the estimated mortalities (TCC Summary Report 2019, pp 61). The Western and Central Pacific Fisheries Commission (WCPFC) was established under the Convention for the Conservation and Management of Highly Migratory Fish Stocks (WCOF Convention 2004). Under Article 24 of the Convention, Members of the Commission are obliged "*to take the necessary measures to ensure that fishing vessels flying their flag comply with the provisions of the Convention and the conservation and management measures adopted pursuant thereto…*". In addition, Article 5 of the WCOF Convention is especially relevant to the issue of seabird bycatch, which includes the principles;

- Use the best scientific evidence,
- Taking a precautionary approach,
- Assess the impacts of fishing on non-target species,
- Adopt measures to minimize waste, discards, catch by lost or abandoned gear…catch of non-target species, both fish and non-fish species and impacts on associated or dependent species, in particular endangered species and promote the development and use of selective, environmentally safe and cost-effective fishing gear and techniques,
- Protect biodiversity in the marine environment,
- Collect…data on…non-target species, and
- Implement and enforce Conservation and Management Measures (CMMs) through effective monitoring, control and surveillance.

This latter principle is reiterated in Article 10 (c), which states that members shall adopt CMMs to maintain and restore (species) above levels at which their reproduction may become seriously threatened.

A range of operational and technical mitigation measures have been developed to reduce seabird bycatch. These include the use of bird scaring lines (tori lines), line-weighting, fishing at night (night setting) and hook shielding devices. The WCPFC has recognised the need to implement measures to reduce levels of seabird bycatch in its fisheries and Resolution CMM 2018-03 (superseding CMM 2017-06) mandates that all pelagic longline vessels fishing in the Convention Area adopt mitigation measures in areas overlapping with seabirds, depending on the area being fished. In areas south of 30°S two measures must be chosen from tori lines, weighted branch lines and night setting OR hook shielding devices. North of 23°N, two measures are required with at least one from column A of Table 1. A new measure included in CMM 2018-03 that came into force in January 2020 includes for areas between 25°S and 30°S one measure must be chosen from tori lines, weighted branch lines and hook shielding devices. In other areas, between 25˚S and 23˚N, longline vessels are encouraged to employ one or more seabird mitigation measures.

Table 1: Mitigation measures

Column A	*Column B*
Side setting with a bird curtain and weighted branch lines[1]	*Tori line*[2]
Night setting with minimum deck lighting	*Blue-dyed bait*
Tori line	*Deep setting line shooter*
Weighted branch lines	*Management of offal discharge*
Hook-shielding devices[3]	

Progress has been made to improve bycatch mitigation and reporting compliance in the WCPFC with the recent adoption of new reporting template guidelines (as per Annex 2 of CMM 2017-06/2018-03). These have been developed to improve and harmonise data collection on seabird bycatch and mitigation compliance across all contracting parties. Contracting parties must submit annual reports to the WCPFC Secretariat which include observed interactions vessels have had with seabirds, including species specific information and seabird bycatch mitigation measures being used, by area fished.

This report aims to provide a summary of seabird bycatch data as reported to WCPFC during the 2018 and 2019 seasons and demonstrate compliance with CMMs and reporting requirements. Data is reported for fleets fishing predominantly in areas north of 23 °N, (23)-25˚S – 30˚S, and south of 30 °S; including flagged vessels of Australia, China, Chinese Taipei, Japan, New Zealand and the USA. Fiji, French Polynesia, and Vanuatu are discussed but data are not included in the tables.

Conservation Management Measure (CMM) compliance by fishing entity:

Below are summaries of compliance reporting by fishing entity, data are reported in Table 2.

Australia: Electronic monitoring is compulsory on all pelagic longline (PLL) vessels, with human observers placed on vessels as needed. A minimum of 10% of footage is reviewed annually and compared to verify logbook entries, which are required to be completed for 100% of sets. Additional review of footage is carried out when inconsistencies are found, such as in 2019 when coverage increased to 11.7%. Vessels must also be fitted with an Integrated Computed Vessel Monitoring System, which had a 95.7% compliance rate (fully operational and functioning) in 2019.

China: There were 364 Chinese PLL vessels operating in the WCPFC, with 39 observers deployed in 2019, an increase of 77.3% coverage from 2018 (22 observers deployed). No mitigation methods were reported for any areas, failing to comply with CMM 2017-06/2018-03 (Table 2). Further, observer coverage of PLL vessels per hook was lower than the required 5% south of 30˚S (Tables 3).

Chinese Taipei: Chinese Taipei vessels are required to submit data daily through an e-logbook, and are also required to carry de-hookers and line cutters to release bycaught seabirds. Chinese Taipei report the mitigation measure combination (2/3 under CMM 2017-06/2018-03) of tori line + tori line as a "other combination of measures", which is non-compliant with CMM 2018-03. In some cases, the totals for CMMs did not add to 100% in both 2018 and 2019, for example in 2019 in areas north of 23˚N added to 121.2% observed coverage of CMMs (highlighted in bold Table 2). We have been advised that these figures will be updated in the 2020 report. Observer coverage was below 5% coverage south of 30˚S in 2018, but an improvement in 2019. However, there was a decline in observer coverage reported for areas north of 23˚N between 2018 and 2019. Chinese Taipei did include spatial coverage of fishery effort in their report.

Japan: In 2019, observer coverage was in the high teens for vessels south of 25˚S, but low (<5%) for all other areas. In areas south of 30˚S, mitigation measures that include 2/3 as required under CMM 2017-06 were not met by 64.3% of vessels. The proportion of observed effort by mitigation type was not reported in the 2018 compliance report, but was included in the 2019 version, predominantly using offal discharge management in combination or alone, which is not an approved seabird bycatch mitigation measure south of 30˚S under CMM 2017-06/2018-03. Mitigation use observed by area were not reported in 2018, apparently due to time constraints in getting the revised reporting format to the observers before the reports were due. Japan did include spatial coverage of fishery effort in

their reports for both 2018 and 2019, although observer coverage was variable suggesting that the data are not representative of the actual fished area.

New Zealand – All PLL vessels in New Zealand fishery waters have a requirement to use at least tori lines and night setting (unless using approved line weighting). In 2018, a total of 13.1% of hooks observed. In 2019, 8% of the hook effort was observed. Observers reported 95% compliance with mitigation measures by area in 2018, and 100% in 2019 (Table 1). The NZ observer programme was last audited in 2018.

USA: Fisheries observers are required on all Hawai`i based PLL vessels, with coverage of 100% on shallow set and 20% on deep set. For American Samoa flagged vessels, 20% coverage is required on deep set PLL vessels targeting tuna. These requirements are legislated in the Fishery Ecosystem Plan for Pacific Pelagic Fisheries of the Western Pacific Region under the Magnuson-Stevens Fishery Conservation and Management Act. In both 2018 and 2019, the reporting of seabird bycatch mitigation measures by area was non-compliant, due to reporting being combined for fished areas (north of 23˚N and 25˚S-30˚S), and for Hawai`i based vessels only. The reporting of the mitigation compliance was combined for every year 2012-2018/2019 and reported as 100% for shallow set and deep set, the latter for areas north of 23˚N only. The USA included spatial coverage of fishery effort in their report.

Table 2: Bycatch mitigation compliance in 2018 and 2019.

Fishing entity	**Year**	**Observed effort (% of total hooks)**	**Has mitigation use been reported according to area fished?**	**South of 30˚S** (% observed effort using at least 2/3 mitigation measures)	**25˚N – 30˚S** (% observed effort using at least 1/3 mitigation measures)	**North of 23˚N** (% observed effort using at least 2/3 mitigation measures)
Australia	2018	11.4 (south of 30° S) / 10.7 (23˚N- 30˚S)	No	100		N/A
	2019	12.1 (south of 30° S) / 11.5 (23˚N- 30˚S)	No	100		N/A
China	2018	3.48 (south of 30° S) / 4.59 (23˚S-30˚S) / 15.15 (north of 23° N)	Mitigation not reported	Unknown	Unknown	Unknown
	2019	0 (south of 30° S) / 6.3 (23˚S-30˚S) / 15.15 (north of 23° N)	Mitigation not reported	Unknown	Unknown	Unknown
Chinese Taipei	2018	3.3 (south of 30° S) / 4.72 (23˚S-30˚S) / 5.5 (north of 23° N)	Yes	93.6	**100**	87.6
	2019	5.6 (south of 30° S) / 7 (23˚S-30˚S / 2.2 (north of 23° N)	Yes	70	**91.1**†	**87.5**
Japan	2018	2.4 (south of 30° S) / 2.8 (3.1) (23˚S-30˚S) / 2.6 (north of 23° N)	No	Unknown	Unknown	Unknown
	2019	17.5 (south of 30° S) / 3.6 (23˚S-30˚S) / 3.08 (north of 23° N)	Yes	35.7	Unknown§	74.6
New Zealand	2018	13.1 (south of 30° S)	Yes	95	N/A	N/A
	2019	8.4 (south of 30° S)	Yes	100	N/A	N/A
USA	2018	20.4 (across all fished areas)	Combined	N/A	100	
	2019* Hawai'i only	21.03 (across all fished areas)	Combined	N/A	100	

* reports effort north of 23° N and 23° N – 30° S areas combined, only reported for Hawai'i fleet. Bolded entries did not add to 100% in the report.
† Total reporting only equalled 91.1% of observed effort
§ Japan report no mitigation use in the 25˚N – 30˚S area because bycatch mitigation requirements for this area came into force in January 2020 under CMM 2018-03.

Seabird bycatch reported to WCPFC

Australia reported a total of 14 seabirds bycaught in 2018, and 11 in 2019. There was no identification to the species level in 2018: unidentified albatross (9), and unidentified birds (1). In 2019–two albatrosses were caught south of 30˚S, two between 25˚S and 30˚S (Table 3), and there was no fishing effort north of 23˚N. In 2019, again there was no identification to the species level except for one wandering albatross south of 30˚S.

Chinese Taipei reported a total of 14 seabird bycaught in 2018, and 21 in 2019. In both years, species and the area caught were reported (Table 3, 4, & 5). The species reported across all areas in 2018 include Laysan albatross (6), and Salvin's albatross (5). The updated numbers and species of bycaught seabirds reported in the 2019 report for 2018 (table 21 on page 30), included Laysan (6), Salvin's (5), and black-footed (3). In 2019, a total of 21 species were caught, including: wandering albatross (4), Buller's albatross (3), Antipodean albatross (2), black-browed albatross (2), Campbell albatross (2), black-footed albatross (1), grey-headed albatross (1), Laysan albatross (1), shy albatross (1), Westland petrel (1), wedge-tailed shearwater (1), white-chinned petrel (1), and parasitic jaeger (1).

New Zealand vessels reported a total of 98 seabirds bycaught south of 30˚S in 2018, with no fishing effort north of 30˚S or between 23˚N – 30˚S. Species reported in 2018 included white-capped albatross (51), Buller's albatross (17), Antipodean and Gibson's albatross (7), Westland petrel (7), black petrel (6), flesh-footed shearwater (3), southern royal albatross (2), royal albatrosses (2), white-chinned petrel (2), and grey-headed albatross (1). In 2019, seabird bycatch for the same region totalled 56. The species reported in bycatch for New Zealand in 2019 below 30˚S include: white-capped albatross (21), Buller's albatross (15), Westland petrel (8), white-chinned petrel (6), flesh-footed shearwater (2), Buller's albatross and Pacific albatross (2), black petrel (1), and unidentified great albatrosses (1).

The United States reported a total of 249 seabirds in 2018, and 226 in 2019. Observer coverage and seabird bycatch data were combined for both areas fished north of 23˚N and 25˚S-30˚S (table 5). In 2018, observer coverage of Hawai`i based vessels was 20.4% and the American Samoa fleet reported observer coverage of 15.7% for both areas combined. In 2019, rates of observer coverage were reported for the Hawai'i based fishery only at 21.03% (Table 5). Both years reporting was non-compliant by only including fleets out of Hawai`i for hook observation and seabird bycatch data, and combining reports for areas fished. In 2018, black-footed albatross (192), Laysan albatross (35), red-footed booby (1), and 10 unidentified shearwaters were reported north of 23˚N. Between 23˚N-30˚S, black footed albatross (10), and brown booby (1) were reported. The species reported north of 23˚N and 23˚N – 30˚S in 2019 included black-footed albatross (165), Laysan albatross (60), and brown booby (1) (Table 5).

Japan reported bycatch and observer coverage separately for vessels larger than 20GRT (>=24m) and less than 20GRT (<24m), which have been combined in the tables here (3-5). Total seabird bycatch in 2018 was 160 (combined vessels size) across all regions, with species included; Laysan albatross (43), black-footed albatross (18), Buller's albatross group (14), shy-type albatross (5), black-browed albatross (4), Campbell albatross (4), Gibson's albatross (1), wandering albatross + group (2), northern giant petrel (1), sooty shearwater (1), white-chinned petrel (4). In 2019, observer coverage increased significantly from 2.4% to 17.5% south of 30˚S. This is reflected in the reported total seabird bycatch increase of 941% to 1,665 from 2018. The species reported as bycatch included: Buller's albatross group (339), shy-type albatross (328), unidentified albatross (229), Laysan albatross (373), black-footed albatross (95), black-browed albatross (4), brown booby (2), Campbell albatross (51), white-chinned petrel (102), Gibson's albatross (7), light-mantled albatross (2), wandering albatross – all groups (37), northern giant petrel (4), streaked shearwater (3), Parkinson's (Black) petrel (2), red-footed booby (1), Southern fulmar (1), southern giant petrel (1), unidentified birds (8), unidentified giant petrel (1), unidentified petrels (36). Species specific information was identified by area fished.

China reported a total of 7 seabirds in 2018, and 6 in 2019, but did not include any species-specific information. Total effort in the similar regions for China was comparable to Japan who reported

27,650% higher rate of seabird bycatch, highlighting the importance of reports on CMMs in these regions to be included and verified.

Table 3. Effort observed and reported seabird captures in 2018 and 2019 [South of 30˚S]

Fishing Entity	*Fishing effort*				*Observed seabirds bycaught*	
	Year	Number of vessels	Number of hooks ('000s)	% hooks observed	Capture number	Capture rate (birds/1000 hooks)
Australia	2018	37	3,084	11.4	8	0.023
	2019	33	2,537	12.1	8	0.026
China	2018	19	5,025	3.48	0	0
	2019	22	2,312	0	0	0
Chinese Taipei	2018	44	6,508	3.3	0	0
	2019	41†	9,577†	5.6†	7†	0.013†
Japan§	2018	27	7,003	2.4*	37	0.217
	2019	27	5,500	17.5	1140	1.185
New Zealand	2018	33	2,233	13.1	98	0.34
	2019	28	1,978	8.4	56	0.34

*observer coverage is low due to data removal.
† preliminary data
§ combined data for vessels larger than 20GRT (>=24m) and less than 20GRT (<24m)

Table 4. Effort observed and reported seabird captures in 2018 and 2019 [between 23˚N - 30˚S]

Fishing Entity	*Fishing effort*				*Observed seabirds bycaught*	
	Year	Number of vessels	Number of hooks ('000s)	% hooks observed	Capture number	Capture rate (birds/1000 hooks)
Australia*	2018	49	4,814	10.7	6	0.011
	2019	44	6,393	11.45	3	0.004
China	2018	335	140,011	4.59	1	0.00015
	2019	339	159,311	6.3	6	0.0006
Chinese Taipei*	2018	582 (870 in 2019 report)	38,156 (148,857 in 2019 report)	4.72	8	0.008
	2019	45†	6,637†	7.0†	11†	0.024†
Japan§	2018	228	42,889	3.58	7	0.251
	2019	214	43,548	4.03	5	0.200

* Combined data for 23˚N – 25˚S and 25˚S – 30˚S
† preliminary data
§ combined data for vessels larger than 20GRT (>=24m) and less than 20GRT (<24m)

Table 5. Effort observed and reported seabird captures in 2018 and 2019 [North of 23˚N]

Fishing Entity	*Fishing effort*				*Observed seabirds bycaught*	
	Year	Number of vessels	Number of hooks ('000s)	% of hooks observed	Capture number	Capture rate (birds/1000 hooks)
China	2018	10	779	15.15	6	0.05
	2019	9	144	8.33	0	0
Chinese Taipei	2018	521	26,173	5.5	3	0.002
	2019	603†	31,762†	2.2†	2†	0.003†
Japan§	2018	241	61,994	2.25	116	0.125
	2019	233	63,373	3.08	520	0.249
USA* (Hawai'i only)	2018	142	54,482	20.40	249	0.02
	2019	146	63,350	21.03	226	0.02

* reports effort north of 23° N and 23° N – 30° S areas combined.
† preliminary data
§ combined data for vessels larger than 20GRT (>=24m) and less than 20GRT (<24m)

Discussion

Reporting requirements for compliance of seabird mitigation measures in WCPFC Convention areas fall under CMM 2018-03, effective as of January 2020, which supersedes CMM 2017-06. Under both of these CMM regulations, annual reports must be provided to the Scientific Committee on all interactions with seabirds reported by observers, with two specific reporting requirements. The first states that CCMs shall report '*the proportion of observed effort with specific mitigation measures*'. Half of CCMs included here are reporting mitigation measures by area (Table 2). However, there are some errors in calculations of total proportions of observed mitigation measures (Table 2). Australia have not reported CMMs by area, as the 2018-2019 are combined. Others reported non-compliant mitigation measures or combinations (e.g., offal management + compliant mitigation measure south of 30˚S; as per CMM-2018-03). It appears that combinations of mitigation measures required (e.g., 2/3 in areas south of 30˚S) sometimes aren't being deployed correctly in WCPFC Convention areas as per CMM 2017-06/2018-03. Further, inconsistencies in reported bycatch among CCMs in the same areas demonstrates the importance of ensuring harmonised and robust data collection protocols are in place, as well as sufficient levels of observer coverage to ensure compliance with CMM regulations. The improvement in working towards harmonised reporting seen in reports for 2019 is a positive step towards this.

Observer coverage has improved under regulatory oversight. In Australia, e-monitoring has resulted in an increase in reporting of bycatch since 2016. Similarly, improvements to the observer programme since 2016 have resulted in Japan's observer coverage and reporting of seabird bycatch increased 629% and 941%, respectively between 2018 to 2019. It is important to note that issues with observer data that revealed inconsistencies in species identifications was raised by Japan at SC15 (Paragraph 104, WCPFC SC15 Summary Report). In response to these issues, Japan has improved observer data and compliance reporting. Of concern, observer coverage was less than the 5% required in WCPO Convention areas for many CCMs reported here. In addition, there were incomplete reporting of observer coverage for some fisheries (e.g., USA reported only on the Hawai`i based vessels not the California or American Samoa fleets; Table 5). Further, observer coverage appear to not be representative of fisheries effort for several CCMs. The drastic increase in seabird bycatch reported by Japan emphasizes that there is both ongoing conservation concern for threatened seabird species in WCPO Convention areas, and the urgent need to improve observer data collection and reporting to WCPFC.

Under regulation CMM 2017-06/2018-03, the second reporting requirement states that CCMs shall include 'observed and reported species specific seabird bycatch rates and numbers or statistically rigorous estimates of species-specific seabird interaction rates (for longline, interactions per 1,000 hooks) and total numbers'. Most CCMs reported species specific bycatch and numbers, except China. However, there were high numbers of 'unidentified species' in some reports, highlighting the importance of rigorous observer training in seabird species identification. In addition to the CCMs reported in the tables here, other CCM flagged vessels fishing in the high seas south of 25˚S also have issues of non- or mis-identification of seabird bycatch. Fiji reported two unidentified seabirds were bycaught, but no information on the location was included in the report. Vanuatu flagged vessels reported a Laysan albatross bycaught below 30˚S (Page 23), which is unlikely and therefore probably a mis-identification. Likewise, French Polynesian flagged vessels reported black-footed albatross (3) between 25˚S - 30˚S, which are rarely observed in these latitudes. Further, Vanuatu flagged vessels reported operating in waters east of New Zealand and catching unidentified albatross. This area is a high risk area for Antipodean albatross (CR), particularly females and juveniles (Birdlife DataZone 2019). To improve species ID reporting, additional observer training using the ACAP ID guide (a new version is expected to be released soon), and for observers to take photographs of bycaught seabirds for later verification of identification is recommended. Finally, there are some inconsistencies in the numbers of birds caught and observed CMM compliance between years, likely due to updated data. Therefore, it would be useful for updated numbers of bycatch in subsequent reports to be clearly identified.

Current research being undertaken by CCMs includes trials of line weighting, Hookpods, tori lines and Electronic Monitoring. In addition, there is ongoing research on distribution and trophic interactions of seabirds to evaluate the impact on population viability, risk assessments for bycaught species, and bycatch estimation studies. The results of this research will be important information to guide the implementation of compliant seabird mitigation measures for WCPO Convention area fisheries.

Recommendations

There are unprecedented global challenges presented by the COVID-19 pandemic. The need to ensure the health and safety of those working onboard fishing and carrier vessels is paramount. Given widespread travel restrictions in many regions and the legitimate concern for the virus to be transmitted from vessels to port and vice versa, there are difficulties with meeting human observer coverage requirements at this time. However, compliance reporting, along with data collection in the WCPFC Convention areas remains a key priority to reassure the market of verifiability and traceability of the seafood supply chain, and for ensuring conservation measures are being employed for highly threatened seabirds and other non-target taxa. These data are already severely affected for 2020, thus it is critical to resolve observer coverage for 2021 to ensure compliance reporting meets the WCPFC Convention regulations and reassure the global seafood markets.

In light of the review of the 2018-2019 CMM 2017-06/2018-03 reports presented here, and the unprecedented situation that COVID-19 presents, the following recommendations are suggested:

- Prioritize the deployment of electronic reporting and Electronic Monitoring (EM) technologies, standards, and programs on fishing and carrier vessels, which would allow EM to complement human observers or if necessary replace them. The EM program in Australia demonstrates a working system on which EM deployed across CCM vessels could be based;
- Increase port inspections, along with physically distanced port-based outreach to improve understanding of CMMs that are required to be deployed when fishing in the high risk areas;
- Use the opportunity of observers not being on vessels because of COVID restrictions to train observers on the reporting requirements and improved seabird identification skills, including taking descriptive photographs for later identification and verification. Revised seabird identification resources will be available from ACAP soon;
- Ensure CCMs meet their obligations to employ at least the minimum observer coverage requirements and submit observer data using the standardized minimum data report table templates as per CMM 2018-03.
- Ensure that observer coverage is representative of a fleets spatial effort.