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**Interactions with marine mammals, seabirds, reptiles, and other
species of concern**

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Interactions with marine mammals, seabirds, reptiles, and other species of concern in bottom fisheries 2020 - 2021

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1. Purpose

This paper summarises information available on interactions with marine mammals, seabirds, reptiles, and other species of concern in bottom fisheries for 2020-2021 to meet the requirements of [CMM-03-2022](#).

2. Background

During the development of the cumulative bottom fishery impact assessment, Australia and New Zealand jointly requested information held by the Secretariat on reported interactions with marine mammals, seabirds, reptiles, and other species of concern. The extract was provided on 8 July 2020 and included observer data from 2007 to 2018 (except 2011 to 2015) for Australia and from 2013 to 2018 for New Zealand, and fishing activity data from 2007 to 2019. These interactions were presented to the Scientific Committee ([SC8-DW14](#)) and based on this report the Scientific Committee:

- Agrees that captures of marine mammals, seabirds, reptiles and other species of concern are rare in midwater trawl for benthic-pelagic species and bottom trawl fisheries and appears to be rare in bottom line fisheries, but requests bottom fishing Members to collaborate to develop a framework for providing precautionary advice on such captures;
- Agrees that monitoring of the implementation and effectiveness of mitigation approaches should continue, including periodic review of mitigation measures applied by other RFMOs and CCAMLR or as advised by ACAP, to ensure best practice and consistent or complementary arrangements;
- Agrees that periodic exchanges of information held in SPRFMO databases with Members who submitted the data would assist in the maintenance of an accurate record of captures of marine mammals, seabirds, reptiles or other species of concern in fisheries in the SPRFMO Convention Area;
- Agrees that information collection and checking should continue with a view to including information from SPRFMO bottom fisheries in the Southern Hemisphere Seabird Risk Assessment.

3. Requirements of CMM-03-2022 and CMM-02-2022

CMM-03-2022 has two paragraphs related to interactions with marine mammals, seabirds, reptiles, and other species of concern:

19. *Members and CNCPs shall require vessels flying their flag and undertaking bottom fishing to implement seabird mitigation measures in accordance with CMM 09-2017 (Seabirds), and shall report annually to the Commission on bycatch rates and total bycatch estimates in accordance with CMM 02-2022 (Data Standards) and the Guidelines for Annual National Reports to the SPRFMO Scientific Committee.*

20. *The Scientific Committee shall provide advice biennially to the Commission on:*

- a) *direct and indirect interactions between bottom fishing and marine mammals, seabirds, reptiles and other species of concern;*
- b) *any recommended spatial or temporal closures or spatially/temporally limited gear prohibitions for any identified hotspots of these species; and*
- c) *any recommended bycatch limits and/or measures for an encounter protocol for any of these species.*

The categories marine mammal, seabird and reptile are straightforward and [CMM02-2022](#) (at Annex 14) specifies other species of concern for the purpose of data collection (Table 1).

Table 1: Taxa specified as “other species of concern” for the purpose of data collection (as of January 2017) by Annex 14 of CMM02-2022.

| Scientific name | English name | 3-alpha (FAO) code |
|--------------------------------|------------------------|--------------------|
| <i>Carcharhinus longimanus</i> | Oceanic whitetip shark | OCS |
| <i>Carcharodon carcharias</i> | Great white shark | WSH |
| <i>Cetorhinus maximus</i> | Basking shark | BSK |
| <i>Lamna nasus</i> | Porbeagle shark | POR |
| <i>Manta</i> spp. | Manta rays | MNT |
| <i>Mobula</i> spp. | Mobula nei | RMV |
| <i>Rhincodon typus</i> | Whale shark | RHN |

4. Reported interactions

New Zealand, in collaboration with Australia, requested information held by the Secretariat on reported interactions with marine mammals, seabirds, reptiles, and other species of concern between 2020-2021.

Interactions with marine mammals, seabirds, reptiles and other species of concern are reported to the SPRFMO Secretariate by Members and CNCPs by fishers and observers on fishing vessels. For the reporting period that data was requested (2020-2021) there were two sources of information for captures. The first, included fisher reported captures from 2020-2021; the second are from observer data reported interactions from 2020 (noting 2021 observer data is not due for submission until 30 September 2022).

All interactions received from the SPRFMO secretariat were marked as fisher reported (i.e., from fishing activity data): one fisher reported interaction occurred in 2020, all other fisher reported interactions occurred in 2021 (Table 2). An observer was not onboard during the interaction in 2020, however an observer was onboard during the 2021 Fairy prion capture (Section 4.2, Table 2). Even though an observer was onboard for this interaction, this is currently being provided by the SPRFMO secretariat as fisher reported due to observer data not being due for submission until 30 September 2022. However, the observer collected data for this interaction was utilised in this paper to assess the interaction.

Table 2: Summary of seabirds, marine mammals, reptiles, and other species of concern reported captured in bottom fisheries in the SPRFMO Area together with the total weight captured and IUCN threat classification categories.

| Year | Species code | Scientific name | English name | IUCN category | Flagged vessel - Method | No. captures | Weight (kg) |
|------|--------------|--------------------------------|-----------------------------|-----------------------|-------------------------|--------------|-------------|
| 2020 | PRX | <i>Procellariidae</i> | Petrels and shearwaters nei | N/A | NZ - BLL | 1 | 1 |
| 2021 | OCS | <i>Carcharhinus longimanus</i> | Oceanic whitetip shark | Critically endangered | AUS - BLL | 3 | 214 |
| 2021 | PWV | <i>Pachyptila turtur</i> | Fairy prion | Least concern | NZ - Trawl | 1 | 1 |
| 2021 | RSK | <i>Carcharhinidae</i> | Requiem sharks nei | N/A | AUS - BLL | 3 | 24 |
| 2021 | SRX | Rajiformes | Rays, stingrays, mantas nei | N/A | AUS - BLL | 9 | 96 |

4.1 Marine mammals

No interactions with marine mammals were reported between 2020-2021.

4.2 Seabirds

The measures in place to mitigate bycatch of seabirds in SPRFMO bottom fisheries are close to world best practice (as defined by Agreement on the Conservation of Albatrosses and Petrels (ACAP)).

These are specified in [CMM09-2017](#) (seabirds). Two seabird interactions were reported between 2020-2021.

Fairy prion

Following a trawl tow targeting orange roughy in the Westpac Bank area by a New Zealand flagged vessel in August 2021 an internal net capture of a Fairy prion was discovered. The life status of the animal was dead. Due to the 100% observer requirement for trawl vessels in the SPRFMO convention area an observer was on board and so the whole body of the animal was retained. It should be noted that this capture was originally identified as a white-chinned petrel by the observer on board, but this was changed after review by experts from the Department of Conservation.

Australian and New Zealand vessels fishing in the SPRFMO Area are required to deploy seabird mitigation commensurate with [CMM 09-2017](#). For trawl vessels, this includes the deployment of streamer (tori) lines, or where it is not operationally feasible to deploy streamer lines, a bird baffle, and management of the discharge of biological material. Trawl vessels must, where possible, prohibit the discharge of biological material during shooting and hauling; convert offal into fish meal; retain all waste material related to fish processing; and restrict discharge to liquid discharge/sump water. Where this is not feasible, vessels should batch waste for two hours or longer.

In addition, all New Zealand trawl vessels greater than 28 metres in length also have a vessel specific 'Vessel Management Plan' (VMP), which sets out the practices and processes that the vessel will follow to minimise the risk of seabird interactions. VMPs include a commitment to manage the discharge of biological material, to clean nets after every shot to remove 'stickers', and to minimise the time the net is on the water during hauling. VMPs also identify contingency plans in the case of

gear or equipment malfunction which may otherwise result in increased risk of seabird interactions (e.g., meal plant breakdown or winch malfunction). Adherence to the VMPs is monitored by Fisheries New Zealand observers and reported on each year by the Ministry for Primary Industries.

The observer reported that the vessel adhered to their VMP for mitigating the capture of seabirds. An effective bird baffle was deployed for every fishing event and the vessel followed offal management and discard procedures aimed at minimising the risk of seabird captures. All offal and whole fish discards were held on board during shooting and hauling. Offal and whole fish discards were minced in a hashing machine before being discarded during towing.

Fairy prions are designated as 'Least Concern' by the IUCN Red List of Threatened Species and were last assessed in August 2018. The Fairy Prion is found throughout oceans and coastal areas in the Southern Hemisphere, including, amongst other places, on the Chatham Islands, Snares Islands and Antipodes Islands of New Zealand, the Bass Strait Islands of Australia, the Crozet Islands in the south Indian Ocean and the Falkland Islands and South Georgia in the south Atlantic.

Petrels and shearwaters nei

During the targeting of hapuku and bass using bottom longline gear on the West Norfolk Ridge by a New Zealand flagged vessel in December 2020 an unidentified petrel or shearwater was reported as released alive and uninjured. An observer was not on board this vessel, so it is not possible to identify this bird to a higher taxonomic level. From the description provided with the report of the interaction, the bird became caught by the wing on an un-baited hook and the bird was released by the crew. The bird was assessed to be uninjured by this interaction.

Seabird mitigation measures for bottom line vessels, include the combined use of a line weighting system, streamer (tori) lines, setting at night (between nautical dark and nautical dawn), and controlling/avoiding the discharge of any biological material during shooting or hauling where possible. This is in addition to the specific VMPs for vessels greater than 28 metres in length outlined above.

4.3 Reptiles

No interactions with reptiles were reported between 2020-2021.

4.4 Other species of concern

Fifteen interactions with other species of concern were reported by fishers in 2021.

Oceanic whitetip shark

Three oceanic whitetip sharks were recorded by an Australian demersal longline vessel on three separate shots during 2021. None of these shots occurred on trips with an observer on board. It is possible that they were whitetip reef sharks; however, as they were identified to the species level in the logbooks by the boat, it is assumed that they are oceanic whitetips sharks.

Oceanic whitetip sharks are listed as critically endangered by the IUCN and are listed as a migratory species under Australia's *Environment Protection and Biodiversity Conservation Act 1999*. As a listed migratory species oceanic whitetip sharks are protected under this Act.

Requiem sharks nei

Australia recorded three mixed black-tip sharks in logbooks on trips where no observers were on board. It is likely that these sharks were black-tip reef sharks, which are classified as near threatened on the IUCN redlist. Given they were reported as mixed blacktip sharks and their small size, it is highly unlikely that these three sharks were species listed in in Annex 14 of [CMM02-2022](#).

Australia has no specific management arrangements for blacktip sharks.

Rays, stingrays, mantas nei

Australia also reported nine mixed rays. This category is a high taxonomic level and includes the devil rays and manta rays which are species listed in in Annex 14 of [CMM02-2022](#). After further communication with the boat that reported these mixed rays, it is thought they were unidentified demersal rays and not the large pelagic manta and devil rays. The relatively small average weight of the rays supports this assumption.

The boat that reported these rays has e-monitoring and no manta or devil rays have been identified as caught by demersal longline in SPRFMO waters through e-monitoring.

5. Discussion

The potential capture of three oceanic whitetip sharks by a demersal longline vessel is concerning. Oceanic whitetip sharks are primarily a pelagic species and are not thought to be highly susceptible to the demersal automatic longline gear used by Australian boats. It is unlikely that the relatively large sharks are being caught directly by the small baits used on these lines and it is more likely that these sharks are attracted to larger fish already caught on the lines.

Australia already prohibits the retention of these sharks under the *Environment Protection and Biodiversity Conservation Act 1999* and significant penalties apply. Australian automatic longline boats do not use wire trace to connect the hooks to the mainline. Wire trace typically retains more sharks than the monofilament line used by Australian automatic longline boats. Australia are unaware of any further gear modifications that could be used to reduce the likelihood of retaining sharks.

The 12 shark and rays reported in mixed categories were considered unlikely to be species of concern as listed in Annex 14 of [CMM02-2022](#). The three requiem sharks were likely black-tip reef sharks and the nine rays were likely demersal species of ray.

Australian boats that demersal longline in SPRFMO are currently equipped with e-monitoring but under Australian protocols not all video footage is reviewed for catch composition. It is recommended that review protocols be amended to ensure where a vessel reports a bird, mammal reptile or species of concern in the SPRFMO area, that e-monitoring video footage be reviewed from that shot to, if possible, confirm species identification and ensure all relevant fisheries management regulations were complied with.

Given that Australian boats do not use wire trace, a preliminary Australian review of these captures could not identify any further mitigation that would be appropriate. Australia would welcome suggestions from other delegations with experience in mitigating these types of interactions either in other RFMOs or their domestic fisheries.

In addition to the species of concern listed in Annex 14 of CMM02-2022, there are several other species of shark listed within the IUCN red list that could reasonably be expected to be caught in midwater trawl, bottom trawl and bottom line fisheries within the SPRFMO Convention Area. Should the Scientific Committee agree, it may be appropriate to update Annex 14 when CMM02-2022 is next reviewed at the regular meeting of the Commission in 2025.

As per the requirements of [CMM-03-2022](#) bottom fishing vessels are required to carry observers, with coverage specified as 100% for trawling and at least 10% for bottom line methods for each year. Consequently, where accurate reporting relies on the collection of data by an observer, there is the potential for fisher reported interactions with marine mammals, seabirds, reptiles, and other species of concern for bottom line fisheries to underrepresent these interactions.

Noting the level of observer coverage in the bottom longline fishery, the available data suggests interactions with marine mammals, seabirds and reptiles are likely to be rare in bottom fisheries in the SPRFMO area.

6. Recommendations

It is recommended that the Scientific Committee:

- **Notes** the summary of seabirds, marine mammals, reptiles, and other species of concern reported captured in bottom fisheries in the SPRFMO Area from 2020-2021 together with the total weight captured and IUCN threat classification categories is contained in Table 2, and that this will be reviewed again in 2024.
- **Notes** that captures of marine mammals, seabirds and reptiles are rare in bottom fisheries
- **Recommends**
 - further mitigation options should be sought and implemented to reduce the incidental capture of oceanic whitetip sharks
 - That Australia amend its e-monitoring protocols to include video review of all fishing shots where the vessel reports an interaction with a species of concern under [CMM02-2022](#).
- **Agrees** that no spatial/temporal closures, spatially/temporally limited gear prohibitions, bycatch limits or measures for an encounter protocol for any of these species are required at this time

7. Acknowledgements

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8. References