

13th MEETING OF THE SCIENTIFIC COMMITTEE

8 to 13 September 2025, Wellington, New Zealand

SC13 - DW08

**Proposals to align CMM 09 (Seabirds) and CMM 02 (Data Standards) with
ACAP Best Practice Advice**

New Zealand, Peru, Chile, ACAP

South Pacific Regional Fisheries Management Organisation

13th Meeting of the Scientific Committee

Wellington, New Zealand, 8 - 13 September 2025

Proposals to align conservation measures for minimising seabird bycatch and data standards with ACAP Best Practice Advice

New Zealand, Peru, Chile, ACAP

9 August 2025

Contents

1. Purpose	2
2. Background	2
3. Review of SPRFMO CMM 09-2017 (Minimising Bycatch of Seabirds)	3
3.1. General provisions	3
3.2. Demersal longline	4
3.3. Trawl	7
3.4. Other fishing methods	9
4. Review of CMM 02-2025 (Data Standards)	10
5. Recommendations	13
6. Acknowledgments.....	16

1. Purpose

The purpose of this paper is to review the SPRFMO conservation measures for seabird bycatch mitigation ([CMM09-2017](#)) and data standards ([CMM02-2025](#)) against best practice advice developed by the Agreement on the Conservation of Albatrosses and Petrels ([ACAP](#)). The paper proposes specific changes to CMM09-2017 and CMM02-2025 to strengthen alignment with ACAP advice. These proposed changes to conservation measures primarily affect SPRFMO's demersal longline and trawl fisheries, but the paper also suggests further work and research to support the development of seabird mitigation measures in other SPRFMO fisheries including purse seine and jig fisheries.

2. Background

At the Eleventh Annual Meeting of the SPRFMO Commission (COMM11), the Executive Secretary of the Agreement on the Conservation of Albatrosses and Petrels ([ACAP](#)) presented [COMM11-Obs04](#) noting that the ACAP Secretariat has a MOU with SPRFMO which aims to facilitate cooperation and information-sharing, especially in relation to seabird bycatch mitigation, and that ACAP is committed to keeping SPRFMO up to date with ACAP Best Practice Advice. COMM11-Obs04 described the most recent updates of ACAP advice relevant to pelagic and demersal longline and trawl fisheries. It also outlined newly endorsed guidelines on data collection for observers and on electronic monitoring systems. ACAP further noted that it could be timely for SPRFMO to consider revisions to SPRFMO [CMM 09-2017](#) (minimising seabird bycatch) and [CMM 02-2025](#) (data standards) against ACAP Best Practice Advice. New Zealand supported the suggestion to review the SPRFMO CMMs and welcomed the participation of ACAP. Subsequently, a review of seabird bycatch mitigation measures in CMM 09-2017 and the seabird related data collection requirements in CMM 02-2025 was included in the Scientific Committee's 2023 workplan as adopted by the Commission ([COMM11-WP17 rev1](#)). Accordingly, ACAP presented a review of relevant SPRFMO CMMs against ACAP Best Practice Advice to SPRFMO SC11 ([SC11-Obs04](#)), and a workshop to prioritise and draft amendments to CMMs 02 and 09 presented in SC11-Obs04 was included in the Scientific Committee 2024 Workplan as adopted by the Commission ([CMM12-Doc6 rev1](#)).

In July 2024 New Zealand and Peru colleagues met informally to scope an approach to undertake the amendments. At the 12th Annual Commission Meeting (COMM12), New Zealand advised that it work with Peru and ACAP to run an informal intersessional process and discussion at the Scientific Committee with the aim to update the CMMs and have this adopted by the Commission. This work was originally scheduled for 2024 and postponed to 2025. After scoping the process, New Zealand and Peru invited input from all other interested Members, CNCPS and Observers in June 2025.

This paper reports the intersessional tasks undertaken and consists of three sections:

- An updated review of SPRFMO CMMs against ACAP bycatch mitigation advice, as endorsed by the 14th Meeting of ACAP's Advisory Committee held in Lima, Peru during August 2024 (Section 2).
- A review of the need for, and potential to provide, bycatch mitigation requirements and specification for other fishing methods in SPRFMO CMMs (Section 3).
- A review of SPRFMO CMMs against ACAP advice on data collection requirements related seabird bycatch mitigation (Section 4).

In this paper we propose several changes to relevant CMMs (Proposed CMM change) as well as some broader suggestions (Other suggestions) for SPRFMO Members and CNCPS.

3. Review of SPRFMO CMM 09-2017 (Minimising Bycatch of Seabirds)

We first assess the specifications of seabird bycatch mitigation outlined in CMM 09-2017 against current ACAP Best Practice Advice for reducing the impact of demersal longline and trawl fisheries on seabirds and propose changes to CMM 09-2017 to strengthen alignment with ACAP advice.

The key ACAP advice documents used in this review can be downloaded from the ACAP website through the following links:

- [ACAP 2024 DEMERSAL Longlines mitigation review & best practice advice](#)
- [ACAP 2024 TRAWL mitigation review and best practice advice](#)

These ACAP advice documents are targeted at commercial/industrial operations, as typical of vessels operating in the high seas of the South Pacific. ACAP is undertaking further work to develop advice specifically relevant to small vessel artisanal operations, which occur mainly in domestic waters, and thus outside of the SPRFMO Convention Area.

3.1. General provisions

Paragraphs 1 – 3 of CMM 09-2017 provide general provisions, with specific mitigation measures to be implemented for demersal longline and trawl fishing gears detailed in Annexes 1 and 2, respectively. We note that there are other types of fishing methods managed by SPRFMO, notably purse seine, jigging, potting and hand/drop/dahn lining fishing, which are not clearly stated to be covered by the general provisions. Given the potential for overlap and interaction between seabirds and these fisheries in the SPRFMO Convention Area (e.g. as reported for squid jigging in [SC6-Doc31](#)), these fisheries may also pose a risk to seabirds. While we continue to collect information on the potential risk to seabirds posed by these fisheries, it could be considered appropriate to clearly stipulate that all fishing methods are included under the general provisions, and that further consideration be given in due course to developing specific seabird mitigation measures for all fishing methods managed by SPRFMO for inclusion in CMM 09-2017.

- **Proposed CMM change 1.1:** Include a paragraph under General Provisions that clearly states General Provisions 4-13 apply to all fishing methods managed by SPRFMO.
- **Other suggestion a):** The Scientific Committee to include a task within its work plan to ensure seabird interactions across all SPRFMO fisheries are adequately understood and specifications for mitigating seabird bycatch for all SPRFMO fisheries are developed – based on available best practice advice – and considered for inclusion in CMM09-2017 where needed.

Paragraph 6 of CMM 09-2017 refers to the safe handling and release of live-caught seabirds. A range of handling guidelines have been developed to maximise the survival of captured birds, including ACAP-developed bird handling advice targeted for longline ([Hook Removal from Seabirds](#)) and trawl ([Trawl Fisheries: Net entanglement](#)) fishing methods. ACAP is also developing advice regarding purse seine nets. These guidelines provide practical and detailed advice to maximise survival of live caught seabirds.

Furthermore, it is acknowledged that HPAI viruses, like H5N1, are found globally and can infect birds and mammals. Although there has been no known sustained person-to-person transmission of the HPAI, procedures to minimise risk of infection are encouraged. ACAP has a resource ([Avian Flu alert for fisheries crews onboard vessels](#)) that can be used to manage risk of transmission when handling and release of bycaught birds is required.

- **Proposed CMM change 1.2:** Amend paragraph 6 of CMM 09-2017 to require vessel crew follow the latest ACAP seabird handling advice as relevant to the fishing method used.

Lights on vessels are known to attract seabirds, which can result in them striking the deck or super-structure, resulting in injury or death. The General Provisions do not currently contain any advice on light minimisation which may help reduce bird-strike. ACAP bycatch mitigation advice is focussed on bycatch in fishing gear, and ACAP does not currently provide its own advice on mitigating the risks associated with vessel lighting. However, at the Twelfth ACAP Advisory Committee meeting (AC12), the [National Light Pollution Guidelines for Wildlife, including Marine Turtles, Seabirds and Migratory Shorebirds](#) developed by Australia were endorsed. The guidelines provide comprehensive information about how to manage the effects of artificial light while ensuring human activities may be carried out safely at night. The guidelines provide a seabird mitigation toolbox that offers light management options for seabirds, both for land-based facilities and at-sea operations. The full guidelines provide comprehensive advice on light minimisation by SPRFMO fishing vessels to minimise impacts on seabirds and other fauna.

- **Proposed CMM change 1.3:** Add a paragraph to the General Provisions of CMM 09-2017 to require all fishing vessels operating in the Convention Area to follow the sections relevant to seabirds and fishing vessels of the National Light Pollution Guidelines for Wildlife, including Marine Turtles, Seabirds and Migratory Shorebirds developed by Australia.

3.2. Demersal longline

ACAP Best Practice Advice to reduce incidental bycatch of seabirds in demersal longline fisheries is the combination of:

- Use of an appropriate line weighting regime to sink baited hooks quickly and as close to the vessel as possible to reduce their availability to seabirds;
- Actively deterring seabirds from baited hooks by means of seabird scaring lines; and
- Setting longlines at night.

All three recommended measures are demonstrated to be effective; however, each has limitations when used alone. There is a period of time when hooks are accessible to seabirds even when branch lines are weighted. Night setting used alone is less effective at reducing seabird bycatch for nocturnally active seabirds and/or during bright moon light conditions. Bird scaring lines used alone can rarely protect baited hooks beyond the aerial extent of the line. Consequently, the simultaneous use of the three ACAP recommended seabird bycatch mitigation measures compensates for these limitations.

ACAP Best Practice Advice also notes that:

- Temporary closure of important foraging areas (e.g. areas adjacent to important seabird colonies during the breeding season when large numbers of aggressively feeding seabirds are present) has been a very effective mechanism to reduce incidental mortality of seabirds by interaction with fisheries in those areas.
- Seabirds are highly attracted to offal discharged from vessels. To prevent large numbers of seabirds attending line setting operations, offal and discards should be retained onboard prior to and during line setting.
- The use of Bird Exclusion Devices (e.g. bird deterrent curtains) and offal and discard management are best practice measures during hauling.

Annex 1, Paragraphs 1(a) and 1(b)(i) of CMM 09-2017 provides several requirements regarding seabird bycatch mitigation for demersal longline vessels. These do align closely to ACAP Best Practice Advice, however, could be strengthened by:

- Annex 1 Paragraph 1(a): noting that all hooks should be removed from biological waste and retained onboard before it is discharged. Hooks discharged with biological waste can be consumed by seabirds (and other taxa), causing serious or lethal external or internal injuries.
 - Annex 1 Paragraph 1(a): providing additional advice on which side biological waste should be discharged in those circumstances when this is necessary during fishing operations. To minimise seabirds being attracted to the vessel, biological waste should be discharged on the opposite side of the hauling bay.
 - Annex 1 Paragraph 1(b)(i): emphasising that, given there is no single solution to reduce or avoid incidental mortality of seabirds in demersal longline fisheries, the most effective approach is to use the measures listed in Paragraph 1(b)(i) in combination.
- **Proposed CMM change 2.1:** Amend Annex 1 Paragraph 1(a) to include requirement to remove all hooks from any biological waste before it is discharged.
 - **Proposed CMM change 2.2:** Amend the text of Footnote 1 of Annex 1 Paragraph 1(a) to include advice on which side biological waste should be discharged if this is necessary during fishing operations and include the text in the body of the text.
 - **Proposed CMM change 2.3:** Amend Annex 1 Paragraph 1(b)(i) of CMM 09-2017 to very clearly state that all three of the listed measures (line weighting, bird scaring lines, setting at night) should be used in combination to have the greatest chance of effectively mitigating seabird bycatch.

Annex 1 Paragraph 1(b)(ii) details circumstances where flagged vessels can relax the number of mitigation measures listed in Annex 1 Paragraph 1(b)¹ which it applies, from three to one; and Annex 1 Paragraph 2 outlines that when flagged vessels which are applying Paragraph 1(b)² and have exceeded a specified seabird mortality rate, they must apply at least one additional measure detailed in Paragraph 1³. This does not align with the precautionary approach of ACAP Best Practice Advice for reducing incidental mortality of seabirds in demersal longline fisheries. ACAP continues to recommend that the most effective way to reduce seabird bycatch in demersal longline fisheries is to use the three best practice measures listed in Annex 1 Paragraph 1(b)(i) simultaneously: i.e. (1) branch line weighting, (2) night setting and (3) bird scaring lines. All three recommended measures are demonstrated to be effective; however, each has limitations when used alone. There is a period of time when hooks are accessible to birds even when branch lines are weighted. Night setting used alone is less effective at reducing seabird bycatch for nocturnally active birds and during bright moon light conditions. Bird scaring lines used alone can rarely protect baited hooks beyond the aerial extent of the line. Consequently, the simultaneous use of the three ACAP recommended seabird bycatch mitigation measures compensates for these limitations.

¹ Although not clearly specified in the text of CMM 09-2017, we have assumed the reference here is to Annex 1 Paragraph 1(b)(i).

² Although not clearly specified in the text of CMM 09-2017, we have assumed the reference here is to Paragraph 1(b)(ii).

³ Although not clearly specified in the text of CMM 09-2017, we have assumed the reference here is to Paragraph 1(b)(i).

Requiring the application of two rather than one mitigation measure (as currently specified in clause 1(b)(ii)) would improve the current measure provided that certain levels of observer coverage or electronic monitoring are achieved and very low rates of seabird mortality are recorded (i.e. <0.01 birds/1000 hooks). If a vessel fails to meet these conditions, it should be required to apply all three mitigation measures.

Setting lines at night may be impractical or impossible at high latitudes during the summer (e.g. south of 50° South during the period November-February nights are short or non-existent). In line with management measures used by the Commission for the Conservation of Antarctic Marine Living Resources, it may be appropriate to enable daytime setting with suitable monitoring, seabird bycatch limits and controls.

- **Proposed CMM change 2.4:** Revise Annex 1 Paragraph 1(b)(ii)(a) to increase alignment with ACAP Best Practice Advice by requiring vessels to use two of three measures (line weighting, bird scaring lines, setting at night) simultaneously, while maintaining a seabird mortality rate less than 0.01 birds/1000 hooks.
- **Proposed CMM change 2.5:** Revise Annex 1 Paragraph 1(b)(ii)(b) to require a minimum of 30% observer coverage or electronic monitoring to ensure confidence in seabird mortality rates.
- **Proposed CMM change 2.6:** Revise Annex 1 Paragraph 1 to allow daytime setting at high latitudes during summer, when using BSLs and line weighting, with appropriate monitoring and limits on seabird bycatch.
- **Proposed CMM change 2.7:** Revise Annex 1 Paragraph 2(a) to require all three best practice measures (line weighting, bird scaring lines, setting at night) simultaneously, consistent with ACAP Best Practice Advice, should a vessel's seabird mortality rate exceed 0.01 birds/1000 hooks.

Annex 1 Paragraph 4 of CMM 09-2017 details additional measures which can be implemented, including bird deterrent curtains, responsible offal management and avoiding fishing at peak areas and periods of seabird foraging activity, and any other experimental measure to reduce seabird bycatch.

Regarding temporal management of important seabird foraging areas, temporary closures have proven to be a very effective mechanism to reduce incidental mortality of seabirds in fisheries in some areas. Given the potential for high levels of interactions between seabirds and fishing activities in the SPRFMO Convention Area at certain times and locations, further research is warranted into better understanding these interactions. Subsequently, the potential effectiveness of implementing spatial and/or temporal management measures as a seabird mitigation measure in the SPRFMO Convention Area could be assessed.

- **Other suggestion b):** Encourage SPRFMO Members and CNCPs to support research into assessing the risk to seabirds posed by fishing effort in the SPRFMO Convention Area to provide accurate information and guidance on effective spatial and/or temporal management measures that could be implemented to help reduce incidental seabird mortality.

ACAP Best Practice Advice does not currently have specific guidance on bird deterrent 'curtains' but does recognise 'Bird Exclusion Devices' (BED) as an additional best practice measure for minimising seabird bycatch during hauling of longlines. Annex 1 Paragraph 8 (referred to in Annex 1 Paragraph 4) would benefit from including more specific guidance on how bird deterrent curtains (or similar BEDs)

can be constructed and implemented. Provisionally, guidance from the ACAP Best Practice Advice for Demersal Longline Fisheries could be used, with future amendments based upon feedback from Members and CNCPs which implement curtains or BEDs. In future, Annex1, Paragraph 8 of CMM-09-2017 should be amended to provide more specific guidance on construction and implementation of such devices.

- **Other suggestion c):** Encourage SPRFMO Members and CNCPs that use bird deterrent curtains to report research to ACAP on development and effectiveness of bird deterrent curtains to enhance future ACAP Best Practice Advice.

Annex 1, Paragraph 5 notes that the use of cachalotera nets on trot lines is best practice mitigation but that global minimum standards are not yet developed.

- **Other suggestion d):** Encourage SPRFMO Members and CNCPs to report details of gear configuration of cachalotera nets on trot lines to the Scientific Committee so that effectiveness can be assessed, and Minimum Standards developed.

Annex 1, Paragraph 7 describes the specifications of Bird Scaring Lines (BSL) that are deployed in accordance with Annex 1 Paragraph 1(b)(i)(b). If it is assumed that all vessels operating in the SPRFMO Convention area are $\geq 24\text{m}$ in length, then all but one of the BSL specifications in Annex 1 Paragraph 7 align closely with ACAP Best Practice Advice. Where they differ is that for vessels $\geq 24\text{m}$, ACAP recommends that two (paired) BSLs should be used simultaneously to effectively reduce seabird interactions with hooked lines. In contrast, CMM 09-2017 Annex 1 Paragraph 7(a) currently specifies that only 'one or more bird scaring lines must be carried and deployed whenever fishing gear is set'. We recognise there may be some practical challenges to overcome before mandating the use of two BSL by all vessels, so propose to amend Annex 1 Paragraph 4 to clarify that the simultaneous use of two (paired) BSLs is encouraged as best practice.

- **Proposed CMM change 2.8:** Amend Annex 1 Paragraph 4 to encourage two (paired) BSLs to be used simultaneously for vessels $\geq 24\text{m}$, whenever fishing gear is being set from the vessel, in line with ACAP Best Practice Advice.

3.3.Trawl

ACAP Best Practice Advice to reduce incidental catch of seabirds in trawl fisheries includes:

- Measures to reduce general attractiveness to seabirds, through management of offal and discards,
- Measures to reduce cable strikes through deployment of bird scaring lines and not using net monitoring cables, and
- Measures to reduce net entanglement through cleaning nets and minimising the time the net is on the water surface during hauling.

It is important to note that there is no single solution to reduce or avoid incidental mortality of seabirds in trawl fisheries, and that the most effective approach is to use the measures listed above in combination.

Annex 2, Paragraphs 1(c) and 1(d) outline two measures (cleaning nets after every shot and minimising the amount of time the net is on the water during hauling) which are encouraged to be used in addition to those in Paragraph 1(a) and 1(b). These measures align closely with ACAP Best Practice Advice for reducing the risk of net entanglements. A third measure, which can be applied for pelagic trawl gear

in particular, is to apply net binding, together with weights incorporated into the net belly prior to setting. Specific guidance on net binding is provided in ACAP's Best Practice Advice document for reducing the impact of pelagic and demersal trawl fisheries on seabirds.

- **Proposed CMM change 3.1:** Amend Annex 2 Paragraph 1 by adding a third additional measure ('net binding') which is also encouraged to be applied by pelagic trawlers.

Annex 2 Paragraph 2 details circumstances where flagged vessels can relax the number of mitigation measures listed in Annex 2 Paragraph 1 to zero; if a seabird mortality is recorded after use of mitigation measures is relaxed, that the flagged vessel must apply the mitigation measures outlined in Annex 2, Paragraph 1 for at least one year. This does not align with ACAP Best Practice Advice for reducing incidental mortality of seabirds in trawl fisheries. ACAP continues to recommend the application of a precautionary approach whereby effective mitigation measures are simultaneously and consistently applied, even if low seabird bycatch rates are recorded.

- **Proposed CMM change 3.2:** Revoke Annex 2 Paragraph 2 to maintain consistency with ACAP Best Practice Advice which recommends the precautionary approach of always using mitigation measures which have proved effective at reducing incidental mortality of seabirds in trawl fisheries. As no one measure can reduce or avoid incidental mortality of seabirds, then the most effective approach is to use the measures listed in Annex 2 Paragraph 1 in combination.

Annex 2 Paragraph 3 describes the specifications of Bird Scaring Lines (BSL) that are deployed in accordance with Annex 2 Paragraph 1(a)(i). Annex 2 Paragraph 3(c) specifies that, to avoid deflection of BSLs away from cables in strong cross winds, the BSLs must tow a buoy or cone attached to the end of the line to create tension and keep the line straight. An in-water section that creates sufficient drag to achieve the required aerial extent and placement is an essential specification for an effective BSL. For trawl fisheries the Tamini Tabla⁴ was added into the section on BSL minimum standards of the ACAP Best Practice Advice document for trawl fisheries as this device has now been demonstrated to improve BSL performance and is readily available. The Tamini Tabla is an offsetting towed device attached to the terminal end of the BSL and has a buoyant upper board with three 45° vertical keels, which are weighted for stability. Under forward motion of the vessel, the keels cause the device to move outward of the trawl cables and therefore maintain the BSL from entangling with trawl cables.

- **Proposed CMM change 3.3:** Amend the first sentence of Annex 2 Paragraph 3(c) to stipulate that BSLs must have an in-water section that creates sufficient drag to achieve the required aerial extent and placement in strong cross winds, such as by attaching a buoy or cone, or another ACAP-recommended device (e.g. the Tamini Tabla).

Annex 2 Paragraph 4 describes the specifications of bird bafflers that are deployed in accordance with Annex 2 Paragraph 1(a)(ii). Bird Bafflers are actively used in trawl fisheries in the South Pacific, including in New Zealand domestic fisheries. ACAP does not currently recommend bird bafflers as a mitigation measure due to limited evidence having been reported on their effectiveness and recognises the need for further research and testing to demonstrate and assess efficacy.

⁴ Tamini, L. L.; Braun, S.; Chavez, L. N.; Dellacasa, R. F. & E. Frere. 2023. La Tamini Tabla: desarrollo y diseño final. Agreement on the Conservation of Albatrosses and Petrels, Eleventh Meeting of the Seabird Bycatch Working Group, Edinburgh, UK, 15 - 17 May 2023. SBWG11 Inf 20 Rev 1.

- **Other suggestion e):** Encourage SPRFMO Members and CNCPs to report research on the development and effectiveness of bird bafflers to the Scientific Committee and to ACAP, so that effectiveness can be fully assessed and inform future ACAP advice.

In trawl fisheries, seabirds can be injured or killed upon collision with net monitoring cables and their use in some trawl fisheries has been prohibited. CMM 09-2017 Annex 2 Paragraph 1(a) does include net monitoring cables when they are in use, however the illustrations do not include net monitoring cables and thus do not illustrate the need to ensure the aerial length of these cables are adequately protected. Current ACAP Best Practice Advice for trawl fisheries is that net monitoring cables should not be used (wireless systems can be used instead). However, where this is impracticable, it is recommended that both of the following are implemented: (1) BSLs are deployed, and are specifically positioned to deter birds away from the net monitoring cable; and (2) a snatch block is installed at the stern of the vessel to draw the net monitoring cable close to the water and thus reduce its aerial extent. These should also be used in conjunction with responsible offal/discard management. The use of snatch blocks has raised safety concerns from operators, and ACAP has recently considered reports on various novel mitigation options under development for net monitoring cables. It is envisaged that further advice may be developed in the coming years.

- **Proposed CMM change 3.4:** Amend CMM 09-2017 Annex 2 Paragraph 1(a) and associated diagrams, to adequately define the need to deter birds from the net monitoring cables where their use cannot be avoided, in line with ACAP Best Practice Advice.

3.4. Other fishing methods

CMM 09-2017 provides specific mitigation measures to be implemented for demersal longlines and trawl fishing gears (Annex 1 and 2, respectively), and we have outlined in Section 2.2 and 2.3 how those mitigation measures could be more closely aligned with ACAP Best Practice Advice. We note, however, that there are other types of fishing methods also managed by SPRFMO, notably purse seine, jigging, potting and hand/drop/dahn lining fishing. ACAP does not currently have established guidance for reducing incidental mortality of seabirds for all these fisheries but is currently researching and developing mitigation measures specifically for purse seine fisheries. A toolbox of mitigation measures for purse seine fisheries ([SBWG10 Doc 19](#)), originally endorsed by AC12, has been further updated ([SBWG12 Inf 12](#)). The mitigation measures developed have yet to be widely tested across different purse seine operations, so their general applicability to the method remains unknown. Further trial and testing of these and other mitigation measures across the range of SPRFMO purse seine fishing operations would greatly benefit our understanding of their wider practicality and effectiveness. Given the potential risk of jigging fisheries on seabirds ([SC6-Doc31](#)), assessing bycatch rates and development of effective mitigation measures should also be prioritised (see other suggestion a) in section 3.1).

- **Other suggestion f):** Encourage SPRFMO Members and CNCPs that operate purse seine fishing in SPRFMO Convention Area to consider the trial of mitigation measures to reduce incidental mortality of seabirds, including those described in the toolbox being developed by ACAP, and report findings to Scientific Committee and ACAP to inform future advice.
- **Other suggestion g):** Encourage SPRFMO Members and CNCPs to report seabird bycatch and seabird bycatch mitigation use in all fisheries where mitigation measures are not yet required, particularly purse seine and jigging fisheries, to support development of effective bycatch mitigation measures.

4. Review of CMM 02-2025 (Data Standards)

The management of seabird-fisheries interactions, particularly the reduction of incidental mortality, relies on the effective collection, analysis and reporting of seabird bycatch and associated data. It is well recognised that the implementation of observer programmes that include the collection and management of seabird bycatch and associated data, is a highly effective means of monitoring fisheries performance with respect to seabird bycatch and use of mitigation measures. ACAP recently formalised [data collection guidelines for observer programmes](#), drawing on a number of reviews, workshops and other initiatives. These guidelines aim to inform the establishment and implementation of effective and standardised data collection and reporting protocols for fishery observer programmes. We recognise that there is growing use and potential for electronic monitoring technologies, and ACAP also provides complementary guidelines on [fisheries electronic monitoring systems](#) in relation to seabird bycatch. This review has been restricted to observer programme protocols, but data collected through electronic systems should seek consistency where possible.

This review of CMM 02-2025 focuses on comparing the standards in Annex 7 (Standard for Observer Data), to the recommended data collection variables for longline and trawl fisheries outlined in Tables 1a and 1b, respectively, of the ACAP guidelines. The following variables are recommended by ACAP but are not included in CMM 02-2025. Those variables in bold have been identified by ACAP as critical for assessing seabird bycatch and ideally should be collected either by observers or through other data reporting.

General/all fishing methods

- **Sea state (Beaufort Scale)**
- Moon phase
- Wind strength and direction
- Cloud cover (important for night setting)
- Depth fished (average/target depth) (although it is noted that for longlines, bottom depth at start of set, and for trawl, gear depth (of footrope) at start of fishing, is already included in CMM 02-2025 Annex 7 Section D and B, respectively)
- Seabird abundance counts

Longline

- **Date gear deployed** (although note, recording Start time of gear deployment is specified in CMM 02-2025 Annex 7 Section D)
- Date gear retrieved (although note, recording End time of gear deployment is specified in CMM 02-2025 Annex 7 Section D)
- Start time of gear retrieval
- Latitude at end of gear retrieval (although note, recording Set end position (lat/lon) is specified in CMM 02-2025 Annex 7 Section D)
- Longitude at end of gear retrieval (although note, recording Set end position (lat/lon) specified in CMM 02-2025 Annex 7 Section D)
- Setting speed
- Composition (%) of bait used (although note, recording bait type – e.g. fish/squid/mixed is specified in specified in CMM 02-2025 Annex 7 Section D)

- Branchline/ganglion length
- Distance between branchlines
- Line setter used (yes/no)
- Line setter speed
- Hook size
- Hook type
- Average horizontal distance between bait entry point and tori line
- **Dumping of bait/offal (yes/no).** Also describe if dumping of offal took place during setting and hauling and whether offal was dumped on the opposite side of the hauling bay. (Note however, while recording offal management is specified in specified in CMM 02-2025 Annex 7 Section D, there is no specification to record when offal dumping takes place (setting or hauling) or if dumped on the opposite side of hauling bay).
- Deck lighting astern of the vessel (yes/no)
- Bait caster used (yes/no)

Trawl

- **Start and end time of trawl turns**
 - **End time of haul**
 - Latitude at trawl turns
 - Longitude at trawl turns
 - Tow speed
 - **Total number of trawl hours/tows (ideally both)**
 - **Total number of trawl hours/tows (ideally both) observed (crucial for calculating seabird bycatch levels)**
 - Main discard species
 - **Net monitoring cable** (yes/no). If used, where does the cable enter the water in relation to warps
 - Door type and area
 - Lengthener mesh
 - Sweep length
 - Deck lighting astern of vessel (yes/no)
 - **Warp strike observations**
- **Proposed CMM change 5.1:** Amend Annex 7, Sections B and D in CMM 02-2025 as relevant to include those variables listed above that are recommended by ACAP, with a priority focus on those variables listed in bold as critical for assessing seabird bycatch, where feasible given the capacity of observer programmes.

A basic understanding of the variety and abundance of seabird species present around a vessel during fishing activity can inform estimates of the bycatch risk posed by that fishing vessel. When in close attendance to trawl vessels, seabirds, particularly albatrosses and larger petrels, risk injury or mortality through collision with warp cables or monitoring cables. Detecting such normally unobserved mortality requires specialised data collection. At the third meeting of the Scientific Committee (SC03), protocols and data collection templates for seabird abundance counts and warp

strike observations presented in document [SC-03-25](#) were endorsed. Members were encouraged to collect data on seabird observations and warp strikes using these templates, and to report results to the Scientific Committee. The protocols and data collection templates have also been included in the ACAP data collection guidelines for observer programmes (Annex 2 and 3, respectively). However, as noted above, SPRFMO CMM 02-2025 does not currently specify that seabird abundance counts (for any SPRFMO fishery) be recorded, or that warp strike observations be recorded in trawl fisheries. While there has been a focus on collecting such seabird interaction data with trawl fisheries, it would be valuable to collect data for other fishing methods posing potential bycatch risk to seabirds, such as purse seine, jig, potting and hand/drop/dahn lining. Such data would inform an improved understanding of the potential risks to seabirds and thus whether additional bycatch mitigation management is needed. Collecting such data for some fishing methods may pose particular challenges, for example, jig operations are at night when visual observation is limited. Further intersessional work could be undertaken to investigate and develop appropriate methodologies.

- **Other suggestion i):** Ensure that seabird-related data, including seabird abundance counts, where undertaken, are reported to the Secretariat
- **Other suggestion j):** the Scientific Committee task the Secretariat to provide it with a report on any seabird abundance or warp strike observation data that has been submitted by SPRFMO Members and CNCPs since the data templates were endorsed.
- **Other suggestion k):** the Scientific Committee consider developing appropriate seabird abundance and interaction observation templates for all fishing methods posing potential bycatch risk to seabirds.

5. Recommendations

It is recommended that the Scientific Committee:

- **Notes:**
 - that the proposed changes to CMM09-2017 Minimising Bycatch of Seabirds in the SPRFMO Convention Area and CMM02-2025 Data Standards presented here align with best practice as advised by the Agreement on the Conservation of Albatrosses and Petrels (ACAP);
 - that work is proposed here to further develop seabird mitigation methods and specifications for demersal longline, trawl fisheries, purse seine and jig fisheries (see Table 1).
- **Agrees:**
 - to encourage SPRFMO Members and CNCPs to support research and reporting on developing bycatch mitigation methods and specifications to inform the development of ACAP Best Practice Advice (see Table 1, suggestions c, d, e, f);
 - to encourage SPRFMO Members and CNCPs to support research into spatiotemporal risk, seabird interaction and bycatch monitoring, bycatch mitigation effectiveness through seabird abundance counts, and to report these data to inform further development of seabird bycatch mitigation measures, particularly in purse seine and jig fisheries (see Table 1, suggestions b, g, h, i, j);
 - to include a task within its work plan to further develop seabird bycatch mitigation methods and specifications for all SPRFMO fisheries and consider these for inclusion in CMM09-2017 where needed (see Table 1, suggestion a).
- **Recommends** to the Commission the adoption of the changes proposed here to CMM09-2017 Minimising Bycatch of Seabirds in the SPRFMO Convention Area and CMM02-2025 Data Standards (see Table 1).

Table 1 Compilation of proposed changes to conservation management measures (09-2017 and 02-2025) and suggestions for broader work to support to the development of seabird mitigation methods and specifications.

Proposed CMM Changes: 09-2017		CMM Clause reference
1.1	Include a paragraph under General Provisions that clearly states General Provisions 4-13 apply to all fishing methods managed by SPRFMO.	General Provisions
1.2	Amend paragraph 6 of CMM 09-2017 to require vessel crew follow the latest ACAP seabird handling advice as relevant to the fishing method used.	Paragraph 6
1.3	Add a paragraph to the General Provisions of CMM 09-2017 to require all fishing vessels operating in the Convention Area to follow the sections relevant to seabirds and fishing vessels of the National Light Pollution Guidelines for Wildlife, including Marine Turtles, Seabirds and Migratory Shorebirds developed by Australia.	General Provisions

2.1	Amend Annex 1 Paragraph 1(a) to include requirement to remove all hooks from any biological waste before it is discharged.	Annex 1 Paragraph 1(a)
2.2	Amend the text of Footnote 1 of Annex 1 Paragraph 1(a) to include advice on which side biological waste should be discharged if this is necessary during fishing operations and include the text in the body of the text.	Annex 1 Paragraph 1(a)
2.3	Amend Annex 1 Paragraph 1(b)(i) of CMM 09-2017 to very clearly state that all three of the listed measures (line weighting, bird scaring lines, setting at night) should be used in combination to have the greatest chance of effectively mitigating seabird bycatch.	Annex 1 Paragraph 1(b)(i)
2.4	Revise Annex 1 Paragraph (b)(ii)(a) to increase alignment with ACAP Best Practice Advice by requiring vessels to use two of three measures (line weighting, bird scaring lines, setting at night) simultaneously, while maintaining a seabird mortality rate less than 0.01 birds/1000 hooks.	Annex 1 Paragraph 1(b)(ii)
2.5	Revise Annex 1 Paragraph (b)(ii)(b) to require a minimum of 30% observer coverage or electronic monitoring to ensure confidence in seabird mortality rates.	Annex 1 Paragraph 1(b)(ii)
2.6	Revise Annex 1 Paragraph 1 to allow daytime setting at high latitudes during summer, when using BSLs and line weighting, with appropriate monitoring and limits on seabird bycatch.	Annex 1 Paragraph 1
2.7	Revise Annex 1 Paragraph 2(a) to require all three best practice measures (line weighting, bird scaring lines, setting at night) simultaneously, consistent with ACAP Best Practice Advice, should a vessel's seabird mortality rate exceed 0.01 birds/1000 hooks.	Annex 1 Paragraph 2(a)
2.8	Amend Annex 1 Paragraph 4 to encourage two (paired) BSLs to be used simultaneously for vessels $\geq 24\text{m}$, whenever fishing gear is being set from the vessel, in line with ACAP Best Practice Advice.	Annex 1 Paragraph 4
3.1	Amend Annex 2 Paragraph 1 by adding a third additional measure ('net binding') which is also encouraged to be applied by pelagic trawlers.	Annex 2 Paragraph 1
3.2	Revoke Annex 2 Paragraph 2 to maintain consistency with ACAP Best Practice Advice which recommends the precautionary	Annex 2 Paragraph 2

	approach of always using mitigation measures which have proved effective at reducing incidental mortality of seabirds in trawl fisheries. As no one measure can reduce or avoid incidental mortality of seabirds, then the most effective approach is to use the measures listed in Annex 2 Paragraph 1 in combination.	
3.3	Amend the first sentence of Annex 2 Paragraph 3(c) to stipulate that BSLs must have an in-water section that creates sufficient drag to achieve the required aerial extent and placement in strong cross winds, such as by attaching a buoy or cone, or another ACAP-recommended device (e.g. the Tamini Tabla).	Annex 2 Paragraph 3(c)
3.4	Amend CMM 09-2017 Annex 2 Paragraph 1(a) and associated diagrams, to adequately define the need to deter birds from the net monitoring cables where their use cannot be avoided, in line with ACAP Best Practice Advice.	Annex 2 Paragraph 1(a)
Proposed CMM Change for CMM 02-2025		CMM Clause reference
5.1	Amend Annex 7, Sections B and D in CMM 02-2025 as relevant to include those variables listed above that are recommended by ACAP, with a priority focus on those variables listed in bold as critical for assessing seabird bycatch, where feasible given the capacity of observer programmes.	Annex 7, Sections B and D
Other suggestions		
a	The Scientific Committee to include a task within its work plan to ensure seabird interactions across all SPRFMO fisheries are adequately understood and specifications for mitigating seabird bycatch for all SPRFMO fisheries are developed – based on available best practice advice – and considered for inclusion in CMM09-2017 where needed.	
b	Encourage SPRFMO Members and CNCPs to support research into assessing the risk to seabirds posed by fishing effort in the SPRMFO Convention Area to provide accurate information and guidance on effective spatial and/or temporal management measures that could be implemented to help reduce incidental seabird mortality.	
c	Encourage SPRFMO Members and CNCPs that use bird deterrent curtains to report research to ACAP on development and effectiveness of bird deterrent curtains to enhance future ACAP Best Practice Advice.	
d	Encourage SPRFMO Members and CNCPs to continue reporting details of gear configuration of cachalotera nets on trot lines to the Scientific Committee so that effectiveness can be assessed, and Minimum Standards developed.	

e	Encourage SPRFMO Members and CNCPs to report research on the development and effectiveness of bird bafflers to the Scientific Committee and to ACAP, so that effectiveness can be fully assessed and inform future ACAP advice.
f	Encourage SPRFMO Members and CNCPs that operate purse seine fishing in SPRFMO Convention Area to consider the trial of mitigation measures to reduce incidental mortality of seabirds, including those described in the toolbox being developed by ACAP, and report findings to Scientific Committee and ACAP to inform future advice.
g	Encourage SPRFMO Members and CNCPs to report seabird bycatch and seabird bycatch mitigation use in all fisheries where mitigation measures are not yet required, particularly purse seine and jigging fisheries, to support development of effective bycatch mitigation measures.
h	Ensure that seabird-related data, including seabird abundance counts, where undertaken, are reported to the Secretariat
i	The Scientific Committee task the Secretariat to provide it with a report on any seabird abundance or warp strike observation data that has been submitted by SPRFMO Members and CNCPs since the data templates were endorsed.
j	The Scientific Committee consider developing appropriate seabird abundance and interaction observation templates for all fishing methods posing potential bycatch risk to seabirds.

6. Acknowledgments

We are grateful for comments and advice from members of the South Pacific Working Group (SPACWG) that have improved the proposals in this paper.