



Australian Government

Department of Agriculture,  
Fisheries and Forestry

# **NPOA-Seabirds Jurisdiction Report 2020**

Fisheries Branch



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We acknowledge the Traditional Custodians of Australia and their continuing connection to land and sea, waters, environment and community. We pay our respects to the Traditional Custodians of the lands we live and work on, their culture, and their Elders past and present.

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# Summary

The Australian Government has voluntarily adopted two standards to address the issue of seabirds being caught incidentally in global commercial fisheries. These are the International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries (IPOA-Seabirds) and the Agreement on the Conservation of Albatrosses and Petrels (ACAP). To implement these agreements domestically, the Australian Government has developed a National Plan of Action (NPOA-Seabirds) to minimise interactions with seabirds in Australia’s wild capture fisheries. To measure progress against the goals in the NPOA-Seabirds, the Australian Government, together with every state government and the Northern Territory Government provide regular updates on seabird interactions in Australian fisheries. This report summarises the reports from all relevant Australian jurisdictions.

# Introduction

In 2018 the Australian, state and Northern Territory governments endorsed the National Plan of Action for Minimising Incidental Catch of Seabirds in Australian Capture Fisheries (NPOA-Seabirds) (Agriculture 2018a) to provide a national approach to mitigating the impact of fishing on seabirds.

NPOA-Seabirds encourages jurisdictions to:

- identify fishing activities that potentially interact with seabirds
- assess and appropriately review management arrangements to minimise seabird interactions
- collaborate and educate fishers of their responsibility to minimise impacts on seabirds.

Implementing the NPOA-Seabirds is a voluntary commitment made by the Australian, state and Northern Territory governments.

The goal of Australia's NPOA-Seabirds is to minimise and, where practicable, eliminate the incidental catch of seabirds in capture fisheries. To achieve this, NPOA-Seabirds has 5 objectives:

- **Objective 1** Understand the extent of the incidental catch of seabirds.
- **Objective 2** Implement best-practice seabird bycatch mitigation in capture fisheries to
  - minimise or, where practicable, eliminate the incidental catch of seabirds
  - contribute towards achieving and maintaining a favourable conservation status for seabirds.
- **Objective 3** Promote development of innovative mitigation procedures and technologies that are feasible, effective and efficient.
- **Objective 4** Increase awareness and understanding of the incidental catch of seabirds and best-practice mitigation.
- **Objective 5** Promote adoption of effective mitigation measures in regional fisheries and conservation bodies.

These objectives align with Australia's voluntary commitment to the *International Plan of Action for reducing incidental catch of seabirds in longline fisheries* (FAO 1999) and the Food and Agriculture Organization of the United Nations' best-practice guidelines for reducing incidental catch of seabirds in capture fisheries (FAO 2012) (see Appendix A: FAO best-practice guidelines for reducing incidental catch of seabirds in capture fisheries).

Under each NPOA-Seabirds objective, actions have been developed and agreed in consultation with jurisdictions. Each jurisdiction has agreed to complete specific actions that are relevant to their fishery profile, within their capacity to complete and that will contribute to Australia meeting the objectives (see Appendix B).

NPOA-Seabirds is not intended to direct legislative change among jurisdictions. Instead, the plan encourages jurisdictions to identify risks posed to seabirds by fishing activities, understand these risks and work within legislative and management frameworks to mitigate them.

## **Purpose**

The Department of Agriculture, Fisheries and Forestry NPOA-Seabirds Secretariat collects information on the progress of relevant Australian, state and Northern Territory jurisdictions in implementing the NPOA-Seabirds and prepares this annual report on behalf of the Australian Fisheries Management Forum (AFMF) Fisheries Management Subcommittee. The report contains data on seabird interactions from jurisdictions' fisheries (commercial, charter and recreational) management arrangements to minimise interactions and current education programs.

## **Reporting priorities for 2020**

The implementation of NPOA-Seabirds is an iterative process. It builds on previous information and expands the capability of jurisdictions to mitigate risks to seabirds through consultation with industry and other stakeholders, along with collaboration between the jurisdictions. Not all jurisdictions that have reported seabird interactions are expected to be in the position to implement best practice mitigation measures immediately, but expertise is expected to increase over time.

This report focuses on the:

- capacity of jurisdictions to accurately report seabird interactions
- suitability of existing management measures to mitigate seabird interactions for seabirds interacted with during this reporting period
- approaches that jurisdictions are taking to engage and educate fishers on minimising seabird interactions, particularly fatal or wounding interactions.

# Status of NPOA-Seabirds objectives

While changing circumstances present growth opportunities, businesses will also contend with challenges. In export markets, our businesses will face strong competition from other food exporting nations. Climate change and constraints on our planet’s natural resources will be a continuing challenge through the 21st century.

## **Objective 1 Understand the extent of the incidental catch of seabirds**

Data from the Commonwealth, the states and the Northern Territory has provided a comprehensive picture of seabird interactions across Australian fisheries. Appendix C provides a summary of seabird interactions for each jurisdiction.

Standardised reporting of interactions provides data that is comparable across jurisdictions and highlights opportunities for jurisdictions to learn from each other where different interaction rates exist. Appendix D provides the seabird interaction reporting protocols required by each jurisdiction.

Seabird interactions have been standardised against effort units relative to the gear type employed. While this does not provide a comparison between different gear types, it allows fisheries managers to compare interaction rates from year to year and help determine the efficacy of implemented management measures aimed at reducing interactions.

Queensland, South Australia and the Northern Territory have reported nil seabird interactions during the reporting period. Tasmania also reported nil interactions although reports for the rock lobster fishery are excluded as no catch and effort data for 2020 has been entered into the FILM database for analysis.

## **Objective 2 Implement best-practice seabird bycatch mitigation in capture fisheries**

Most jurisdictions provided information about the current seabird interaction mitigation measures implemented for their commercial, charter and recreational fisheries (see Appendix E).

The Australian Fisheries Management Authority (AFMA) has reviewed seabird interactions and mitigation management measures in Commonwealth fisheries over the reporting period.

AFMA is required to review and amend applicable management measures in line with Australia’s international and regional obligations towards seabird bycatch management. AFMA is required to apply measures for its longline fisheries in response to actions and triggers set through the Threat Abatement Plan for the incidental catch (or bycatch) of seabirds during oceanic longline fishing operations (2018) (TAP–Seabirds) (Agriculture 2018). As a result, AFMA must review their mitigation measures regularly.

AFMA is also required to publicly report interactions with threatened, endangered, and protected (TEP) species on a quarterly basis.

New South Wales and South Australia stated their environmental impact statements returned low risk scores for seabird interactions within their commercial fisheries.

### **Objective 3 Promote development of innovative mitigation procedures and technologies that are feasible, effective and efficient**

AFMA and New South Wales have programs in place that directly engage or encourage industry to engage in innovation and research to reduce the risk of seabird interactions and mortality rates. The higher risk fisheries, such as line and hook, generally have good mitigation measures in place and promote industry adaption and innovation to achieve positive outcomes to reduce seabird interaction rates. A summary of research programs relevant to seabird interaction mitigation is provided at Appendix F

### **Objective 4 Increase awareness and understanding of incidental catch of seabirds and best-practice mitigation**

Most jurisdictions develop seabird identification, interaction mitigation and interaction responses guides, which they issue to commercial fishers. Guides are also available to recreational fishers through online resources. Some jurisdictions also provide resources for fishers on seabird emergency handling and response procedures. A summary of education programs is provided at Appendix G.

Generally, each jurisdiction has similar approaches to education and awareness programs on seabird interactions for commercial fishers. Logbook reporting of seabird interactions is required for commercial fishing in all jurisdictions. Training programs for vessel masters in some jurisdictions also include components that focus on seabird interaction mitigation and responses.

Differences exist between jurisdictions on the guidance, tools and facilities provided to recreational fishers in relation to seabird interactions. Codes of practice for charter and recreational fishers are widely available throughout the jurisdictions.

### **Objective 5 Promote adoption of effective mitigation measures in regional fisheries and conservation bodies**

Australia is a member of several regional fisheries management organisations (RFMO) and regional conservation bodies that are relevant to the implementation of the NPOA-Seabirds. These RFMOs and regional conservation bodies recognise that the incidental catch of seabirds is a significant conservation threat that impacts a range of seabird species, particularly threatened albatross and petrel species. Australia sends representatives to relevant meetings of each of these bodies to advocate, for stringent and effective mitigation measures concerning seabirds.

Regional fisheries management organisations relevant to NPOA-Seabirds:

- Commission for the Conservation of Southern Bluefin Tuna (CCSBT)
- Indian Ocean Tuna Commission (IOTC)
- South Pacific Regional Fisheries Management Organisation (SPRFMO)
- Southern Indian Ocean Fisheries Agreement (SIOFA)
- Western and Central Pacific Fisheries Commission (WCPFC).

Regional conservation bodies and other international agreements or conventions:

- Agreement on the Conservation of Albatrosses and Petrels (ACAP)
- Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)
- Convention on the Conservation of Migratory Species of Wild Animals (CMS).

Each RFMO has adopted binding conservation and management measures concerning mitigating the impact of fisheries on seabirds. Each organisation generally follows its own path in the development, implementation, evaluation and updating of these measures. Accordingly, implementation of measures is not uniform across the Indian Ocean and Pacific Ocean (or the Atlantic Ocean), with certain exceptions.

### **Western and Central Pacific Fisheries Commission**

The Western and Central Pacific Fisheries Commission (WCPFC) seabird conservation and management measure was substantially revised in 2018, led by New Zealand with technical and advocacy support from Australia. Key improvements in the revised measure (CMM 2018-03) included:

- extending the geographic scope of mandatory use of mitigation equipment to areas south of 25 degrees south, in line with scientific advice
- approving the use of ACAP-endorsed hook shielding devices as a mitigation measure
- providing for clearer reporting on seabird interactions and use of mitigation equipment to provide better information for scientific assessment of fishery impacts on seabirds and the effectiveness of mitigation measures.

WCPFC16 (2019) further strengthened the measure through adopting ACAP's guidelines on the safe handling and release of seabirds', as a supplement to CMM 2018-03.

WCPFC17 (2020) did not review CMM 2018-03 noting that a key element of the revised measure (the extension of geographic scope of mandatory mitigation) did not come into effect until 1 January 2020, however the Commission agreed to prioritise assessment of compliance with CMM 2018-03 in the 2021 compliance monitoring review process (covering 2020 activities).

Australia has continued to support a large-scale seabird impact analysis as a priority scientific research project for WCPFC. In WCPFC subsidiary bodies and other regional meetings, Australia has highlighted that the results of this study demonstrate significant impacts of regional fisheries on seabird populations in hotspots adjacent to the Australian Exclusive Economic Zone.

Despite the impact of COVID-19 on monitoring, control and surveillance (MCS) activities (largely due to the need to ensure the health and safety of crew and inspectors), Australia still led and participated in high seas MCS operations during the reporting period, that included focus on monitoring compliance with seabird bycatch CMMs.

### **Southern Indian Ocean Fisheries Agreement (SIOFA)**

Australia supported a European Union (EU) proposal for a new measure to mitigate seabird bycatch in the SIOFA area (CMM 2019/13 Conservation and Management Measure on mitigation of seabird bycatch in demersal longlines and other demersal fishing gears fisheries). Australia also worked to strengthen the measure to be more compatible with high mitigation standards in adjacent areas, including the mandatory use of bird scaring lines and a prohibition of offal discharge south of 25 degrees south. The measure applies to demersal longlining, demersal pots and traps.

### **Convention for the Conservation of Southern Bluefin Tuna (CCSBT)**

Australia has contributed significantly to the development of a multi-year seabird strategy, which was initiated at the 12th meeting of the CCSBT Ecologically Related Species Working Group (ERSWG12). ERSWG12 decided that the strategy should include research, monitoring needs, and actions for reducing uncertainty and associated risks.

Australia is also working with other CCSBT members and BirdLife International to develop a project proposal for enhancing education on and implementing ecologically related species seabird measures within CCSBT fisheries. This work is ongoing.

In October 2019 CCSBT updated its seabird measure, Resolution to Align CCSBT's Ecologically Related Species measures with those of other tuna RFMOs. Each year the commission aligns this measure with those of the IOTC, WCPFC, and the International Convention for the Conservation of Atlantic Tunas.

The update included changes implemented by WCPFC in 2018 concerning pelagic longlining. WCPFC now allows the use of hook-shielding devices, which encase the point and barb of baited hooks to prevent seabird attacks during line setting.

Between 2013 and 2017 Australia worked to have a binding measure on seabird bycatch mitigation agreed by CCSBT'. However, consensus on the measure could not be reached.

As a fallback, Australia supported a broader ecologically related species measure proposed by New Zealand and the European Union, which was agreed by the CCSBT in 2018.

### **South Pacific Regional Fisheries Management Organisation (SPRFMO)**

In 2020 SPRFMO did not update its seabird measure, CMM 09-2017 Conservation and Management Measure for minimising bycatch of seabirds in the SPRFMO Convention Area. The measure was last updated in 2017 and applies to demersal longlining and trawl fishing.

In October 2019 the SPRFMO Scientific Committee agreed to continue work on a southern hemisphere quantitative risk assessment concerning the impact of fishing on seabird populations. The committee also supported an exchange of practice on identification of seabirds.

## **Indian Ocean Tuna Commission (IOTC)**

There was no change to the current IOTC seabird measure, Resolution 12/06 on reducing the incidental bycatch of seabirds in longline fisheries, which was last updated in 2012.

In September 2019 the Working Party on Ecosystems and Bycatch agreed to review the IOTC seabird measure in 2022, including its impact on reducing seabird bycatch. The working party also agreed to examine cryptic mortality of seabird in longline fisheries, post-release survival rates for seabirds and review safe release techniques.

## **Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)**

There is a high standard of seabird mitigation in CCAMLR fisheries. In October 2019 CCAMLR endorsed advice to remove requirements for vessels to demonstrate full compliance with associated conservation measures in the previous season to access fishing season extensions. The removal of this barrier for newly built vessels to access the season extension periods at the Heard Island and McDonald Islands (HIMI) toothfish fishery, without compromising conservation outcomes, removed disincentives for operators to upgrade their fishing vessels to those with world-class seabird mitigation standards.

CCAMLR applies consistent measures across its convention area, which includes the Southern Ocean and adjacent areas within the border of the Antarctic Convergence. CCAMLR has a strong interest in ensuring that complementary measures apply in adjacent fisheries, particularly those of SIOFA, SPRFMO, and CCSBT.

In October 2019 CCAMLR also adopted a measure to allow trial use of net monitoring cables in krill fishing vessels using continuous trawling. In October 2020 this trial was extended to the 2020/21 fishing season to enable the net monitoring cable trial to continue for another year. There is a current prohibition on the use of net monitoring cable technology in CCAMLR fisheries due to risk of bird strikes. The trial measures are consistent with ACAP best practice guidelines concerning seabird bycatch mitigation when using net monitoring cables. In addition to extending the trial, CCAMLR also established a dedicated e-group in the 2020/21 intersessional period to address issues regarding strikes on net monitoring cables and warps, bird abundance around vessels, higher level of observer coverage, use of spotlights and options for more effective mitigation.

## **Agreement for the Conservation of Albatross and Petrels (ACAP)**

Due to the COVID-19 pandemic ACAP Members did not meet in 2020.

In 2019 ACAP's Advisory Committee declared that a conservation crisis continues to be faced by its 31 listed species, with thousands of albatrosses, petrels and shearwaters directly impacted because of fisheries operations. To increase awareness of this crisis ACAP inaugurated a World Albatross Day to be held annually on 19 June the date the Agreement was signed in 2001, from 2020 onwards.

The next proposed meeting is the Twelfth Meeting of ACAP's Advisory Committee (AC12) – which will be held as a virtual meeting from 30 to 31 August and 1 to 2 September 2021. Meetings of the Seabird Bycatch Working Group, and the Population and Conservation Status Working Group will precede AC12.

## **Convention on the Conservation of Migratory Species of Wild Animals (CMS)**

The 13th Conference of Parties (CoP13) to the Convention on the Conservation of Migratory Species (CMS) was held in India from 17 to 22 February 2020. It was a very productive CoP, with a significant focus on the 10 listing nominations, endorsement of Australia's National Light Pollution Guidelines for Marine Turtles, Seabirds and Migratory Shorebirds, and several resolutions designed to improve the operation of the Convention, such as the establishment of an ongoing review process for COP-Appointed Councillors.

### **Resolutions adopted at CoP12**

Australia's participation in the development and finalisation of relevant resolutions was positive. Those of most interest to Australia that were adopted include:

- Endorsement of Australia's National Light Pollution Guidelines for Wildlife, including Marine Turtles, Seabirds and Migratory Shorebirds. The Guidelines provide theoretical, technical and practical information required to assess if a lighting project is likely to affect wildlife; and the management tools to minimise and mitigate that affect.
- COP-Appointed Councillor Subject Areas – Australia chaired the intersessional working group that was responsible for reviewing current COP-Appointed Councillor subject areas and developing an ongoing review process to ensure currency of the subject areas. The ability of COP-Appointed Councillors to provide expert advice on migratory species issues is of great benefit to both the Convention and Parties, and it is important that these expert areas are aligned with the current issues being explored and discussed in the Convention.
- There were a significant number of resolutions adopted in relation to various species, including swim-with programs, one calling for greater recognition of ecological connectivity in relation to the post-2020 biodiversity framework, and a decision seeking greater clarity of both CMS and CITES species listings.

### **Nominations**

Proposals to include 10 species on the Appendices were considered, and all were agreed. There was much discussion in Species Working Groups, and statements made in the Conference proper, regarding the merits of a number of proposals, including those to list the little bustard, Antipodean Albatross, smooth hammerhead and school shark.

Species proposals agreed for which Australia is a range state:

- Antipodean Albatross – Appendix I
- Oceanic White-tip Shark – Appendix I
- Smooth Hammerhead Shark – Appendix II
- School Shark – Appendix II.

# Appendix A: FAO best-practice guidelines for reducing incidental catch of seabirds in capture fisheries

The Food and Agriculture Organization of the United Nations' (FAO) best practices to reduce incidental catch of seabirds in capture fisheries were developed to assist countries in preparing and implementing a more effective National Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries (NPOA-Seabirds).

- 1) Address incidental catch of seabirds in all capture fisheries.
- 2) Advocate seabird bycatch mitigation in regional fisheries and conservation bodies.
- 3) Identify extent of seabird bycatch in capture fisheries.
- 4) Implement mitigation measures.
- 5) Conduct mitigation research and development.
- 6) Provide education, training and outreach.
- 7) Conduct independent monitoring.
- 8) Establish objectives to avoid and minimise incidental catch of seabirds.
- 9) Implement monitoring and reporting arrangements (FAO 2009)

# Appendix B: Implementation reporting template

**Table B1 Implementation status of Objective 1 Understand the extent of incidental catch of seabirds**

Action	Priority	Jurisdictional responsibility	Implementation notes
1.1 Conduct a qualitative or quantitative assessment of the level of incidental catch of seabirds and current use of mitigation measures in all relevant fisheries.	2019	<ul style="list-style-type: none"> <li>AFMA, New South Wales, Queensland, Northern Territory, South Australia, Tasmania, Victoria, Western Australia</li> </ul>	Jurisdictions are asked to complete jurisdictional implementation reports and seabird interaction reports for each fishery prior to the Q4 2019 AFMF fisheries management sub-committee meeting.
1.2 Develop a national data standard for logbook reporting of incidental catch of seabirds and the use of mitigation measures in commercial fisheries.	2019	<ul style="list-style-type: none"> <li>DAFF</li> </ul>	Data standards are to be developed by the Commonwealth. The standards will be developed based on analysis of information collected under Action item 1.1 and consistent with Appendix B of the NPOA. Data standards will be presented to all state and territory agencies at the Q4 2019 AFMF fisheries management sub-committee meeting.
1.3 Implement a national data standard for logbook reporting, ensuring comparable, representative and verifiable time-series information.	2020	<ul style="list-style-type: none"> <li>AFMA, New South Wales, Queensland, Northern Territory, South Australia, Tasmania, Victoria, Western Australia</li> </ul>	Data standards should be implemented by all fishery agencies by 2020. If not implemented, agencies must be able to show that they are in the process of implementing the standards or justify why the standard will not be implemented.
1.4 Identify gaps in existing monitoring and data collection programs for recreational fishing to understand the incidental catch of seabirds.	2021	<ul style="list-style-type: none"> <li>Commonwealth: AFMA, DAFF</li> <li>New South Wales, Queensland, Northern Territory, South Australia, Tasmania, Victoria, Western Australia</li> <li>Recreational fishing representation</li> </ul>	Agencies should work with recreational fishing associations to identify data deficiencies and areas/activities that present higher risks of seabird interaction that should be prioritised for further investment and action.
1.5 In capture fisheries with uncertain seabird catch levels, conduct independent monitoring to provide impartial and representative data.	2021	<ul style="list-style-type: none"> <li>AFMA, New South Wales, Queensland, Northern Territory, South Australia, Tasmania, Victoria, Western Australia</li> <li>Commercial industry representation</li> </ul>	In consultation with AFMF, the Commonwealth will recommend what capture fisheries this should apply to upon analysis of information collected under action 1.1. Fisheries are to be identified by the Commonwealth at the Q4 2019

Action	Priority	Jurisdictional responsibility	Implementation notes
			AFMF fisheries management subcommittee meeting.
1.6 Investigate potential for additional tools for seabird identification, such as morphological diagnostic tools or DNA identification kits.	2020	<ul style="list-style-type: none"> <li>• AFMA, New South Wales, Queensland, Northern Territory, South Australia, Tasmania, Victoria, Western Australia</li> <li>• R&amp;D organisations</li> <li>• eNGOs</li> <li>• Commercial industry representation</li> <li>• Recreational fishing representation</li> </ul>	Agencies to provide a list of research projects they are supporting as part of the annual jurisdictional implementation report they complete for the AFMF fisheries management subcommittee meeting.
1.7 Analyse collected information to determine the extent of incidental catch of seabirds in capture fisheries.	2020	<ul style="list-style-type: none"> <li>• Lead: DAFF</li> <li>• Support: AFMF</li> </ul>	Commonwealth to complete annually based on actions completed each year. Report to be provided to AFMF fisheries management subcommittee each year. Reporting will be dependent on data provided.

**AFMA** Australian Fisheries Management Authority. **AFMF** Australian Fisheries Management Forum. **DAFF** Department of Agriculture, Fisheries and Forestry.

**Table B2 Implementation status of Objective 2 Implement best-practice seabird bycatch mitigation in capture fisheries**

Action	Priority	Jurisdictional responsibility	Implementation notes
2.1 Identify and review use of existing mitigation measures in all relevant capture fisheries against best practice (using ACAP advice where appropriate).	2020	<ul style="list-style-type: none"> <li>• Commonwealth: AFMA, DAFF</li> <li>• New South Wales, Queensland, Northern Territory, South Australia, Tasmania, Victoria, Western Australia</li> </ul>	This will be completed as part of the 2019 seabird interaction report.
2.2 Assess the need for mitigation practices in all capture fisheries and implement best-practice mitigation where identified.	2021	<ul style="list-style-type: none"> <li>• AFMA</li> <li>• New South Wales, Queensland, Northern Territory, South Australia, Tasmania, Victoria, Western Australia</li> <li>• Commercial industry representation</li> </ul>	This will be completed as part of the 2019 seabird interaction report.

**ACAP** Agreement on the Conservation of Albatrosses and Petrels. **AFMA** Australian Fisheries Management Authority. **DAFF** Department of Agriculture, Fisheries and Forestry.

**Table B3 Implementation status of Objective 3 Promote development of innovative mitigation procedures and technologies that are feasible, effective and efficient**

Action	Priority	Jurisdictional responsibility	Implementation notes
3.1 Encourage and support innovation in mitigation, including through research, development and extension.	Ongoing	<ul style="list-style-type: none"> <li>Commonwealth: AFMA, DAFF</li> <li>New South Wales, Queensland, Northern Territory, South Australia, Tasmania, Victoria, Western Australia</li> <li>Commercial industry representation</li> <li>Recreational fishing representation</li> </ul>	Agencies to provide a list of research projects they are supporting as part of the annual report they complete for the AFMF fisheries management sub-committee.
3.2 Assess the need for changed mitigation practices in all capture fisheries and implement best-practice mitigation where identified.	2019	<ul style="list-style-type: none"> <li>AFMA</li> <li>New South Wales, Queensland, Northern Territory, South Australia, Tasmania, Victoria, Western Australia</li> </ul>	This will be completed as part of the 2019 seabird interaction report.
3.3 Develop national guidelines for conducting research on seabird bycatch mitigation.	2019	<ul style="list-style-type: none"> <li>DAFF</li> </ul>	Guidelines are to be developed by the Commonwealth. This is yet to occur.
3.4 Develop a set of effective technologies that can be applied to different fisheries.	2019	<ul style="list-style-type: none"> <li>AFMA</li> <li>New South Wales, Queensland, Northern Territory, South Australia, Tasmania, Victoria, Western Australia</li> </ul>	Appendix C of NPOA-Seabirds incorporates an initial set as recommended by ACAP. This should be reviewed throughout the life of NPOA-Seabirds based on new research and implementation findings from each jurisdiction.
3.5 Develop management arrangements that complement best-practice mitigation measures.	2019	<ul style="list-style-type: none"> <li>AFMA</li> <li>New South Wales, Queensland, Northern Territory, South Australia, Tasmania, Victoria, Western Australia</li> </ul>	This will be completed as part of the 2019 seabird interaction report.

**ACAP** Agreement on the Conservation of Albatrosses and Petrels. **AFMA** Australian Fisheries Management Authority. **AFMF** Australian Fisheries Management Forum. **DAFF** Department of Agriculture, Fisheries and Forestry.

**Table B4 Implementation status of Objective 4 Increase awareness and understanding of the incidental catch of seabirds and best-practice mitigation**

Action	Priority	Jurisdictional responsibility	Implementation notes
4.1 Incorporate information about the incidental catch of seabirds and effective mitigation techniques within commercial and recreational education programs.	2019	<ul style="list-style-type: none"> <li>AFMA</li> <li>New South Wales, Queensland, Northern Territory, South Australia, Tasmania, Victoria, Western Australia</li> </ul>	Will be reported annually to AFMF fisheries management sub-committee as part of the jurisdictional implementation report.

Action	Priority	Jurisdictional responsibility	Implementation notes
		<ul style="list-style-type: none"> <li>eNGOs</li> <li>Commercial industry representation</li> </ul>	
4.2 Promote methods for recognising and reporting interactions with seabirds.	Ongoing	<ul style="list-style-type: none"> <li>AFMA</li> <li>New South Wales, Queensland, Northern Territory, South Australia, Tasmania, Victoria, Western Australia</li> <li>eNGOs</li> <li>Commercial industry representation</li> </ul>	Will be reported annually to AFMF fisheries management sub-committee as part of the jurisdictional implementation report.
4.3 Develop and promote duty of care and seabird handling techniques, especially for hooked and entangled seabirds.	Ongoing	<ul style="list-style-type: none"> <li>AFMA</li> <li>New South Wales, Queensland, Northern Territory, South Australia, Tasmania, Victoria, Western Australia</li> <li>eNGOs</li> <li>Commercial industry representation</li> </ul>	Will be reported annually to AFMF fisheries management sub-committee as part of the jurisdictional implementation report.
4.4 Provide guidance and raise awareness on best practice for minimising interactions with fishing gear and discarded gear.	Ongoing	<ul style="list-style-type: none"> <li>AFMA</li> <li>New South Wales, Queensland, Northern Territory, South Australia, Tasmania, Victoria, Western Australia</li> </ul>	Will be reported annually to AFMF fisheries management sub-committee as part of the jurisdictional implementation report.
4.5 Promote best-practice mitigation of seabird interactions in codes of conduct.	Ongoing	<ul style="list-style-type: none"> <li>AFMA</li> <li>New South Wales, Queensland, Northern Territory, South Australia, Tasmania, Victoria, Western Australia</li> <li>eNGOs</li> <li>Commercial industry representation</li> </ul>	Will be reported annually to AFMF fisheries management sub-committee as part of the jurisdictional implementation report.

**AFMA** Australian Fisheries Management Authority. **AFMF** Australian Fisheries Management Forum.

**Table B5 Implementation status of Objective 5 Promote adoption of effective mitigation measures in regional fisheries and conservation bodies**

Action	Priority	Jurisdictional responsibility	Implementation notes
5.1 Advocate for effective mitigation measures in regional fisheries and conservation bodies	Ongoing	<ul style="list-style-type: none"> <li>AFMA, DAFF, AFMF</li> </ul>	Will be reported annually to AFMF fisheries management sub-committee as part of the jurisdictional implementation report.

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Action	Priority	Jurisdictional responsibility	Implementation notes
5.2 Encourage collaborative research between countries.	Ongoing	<ul style="list-style-type: none"> <li>• AFMA, DAFF, AFMF</li> </ul>	Will be reported annually to AFMF fisheries management sub-committee as part of the jurisdictional implementation report.

**AFMA** Australian Fisheries Management Authority. **AFMF** Australian Fisheries Management Forum. **DAFF** Department of Agriculture, Fisheries and Forestry.

# Appendix C: Jurisdiction interaction report

**Table C1 Fisheries in all Australian jurisdictions that may interact with seabird species**

Jurisdiction	Fishery	Gear type	Target fish species	Seabird species interacted
Commonwealth	ETBF	Longline	Yellowfin Tuna, Albacore Tuna, Bigeye Tuna and Swordfish	Wandering Albatross, Shy Albatross, Short Tailed Shearwater, Cape Petrel, Shearwaters (not sp.), Albatross (not sp.), Birds (not sp.)
	HIMI	Longline/Trawl	Patagonian Toothfish, Mackerel Icefish	White Chinned Petrel, Southern Giant Petrel, Grey Petrel
	Macquarie Island	Longline	Patagonian Toothfish	No interactions.
	SESSF	Commercial trawl	Blue Grenadier, Tiger Flathead, Silver Warehou, Pink Ling, Eastern School Whiting	White Chinned Petrel, Shy Albatross, Buller's Albatross, Black Browed Albatross, Petrels (not sp.), Prions (not sp.), Shearwaters (not sp.), Birds (not sp.), Albatross (not sp.)
	SESSF	Gillnet	Blue-Eye Trevalla, Pink Ling, Gummy Shark	Shy Albatross, Red Cormorant, Little Penguin, Shearwaters (not sp.), Petrels (not sp.), Prions (not sp.), Cormorants (not sp.), Birds (not sp.), Albatross (not sp.)
	SESSF	Hook (longline, dropline, handline, rod and reel)	Blue-Eye Trevalla, Pink Ling, Gummy Shark	White Chinned Petrel, Southern Royal Albatross, Shy albatross, Shearwaters (not sp.), Birds (not sp.), Albatross (not sp.)
	WTBF	Longline	Yellowfin Tuna, Albacore Tuna, Bigeye Tuna and Swordfish	Flesh-Footed Shearwater, Albatross (not sp.)
New South Wales	Recreational/charter	Handline, rod and reel	Multi-species	Flesh-footed Shearwater
South Australia	Lakes and Coorong Fishery	Large mesh gill nets, small mesh gill nets	Mulloway, Black Bream, Greenback Flounder, Yelloweye Mullet, Golden Perch, Bony Herring, Common Carp, Pipi	Cormorant (not sp.), Grebe (not sp.)
	Marine Scalefish Fishery	Squid jigs, dab nets, longline, set nets, haul nets, handlines and other	Southern Calamari, Southern Garfish, Snapper, King George Whiting, Whaler Sharks, Mulloway, Yelloweye Mullet, Sand Crab, Snook, Vongole, Australian Herring, WA Salmon, Yellowfin Whiting,	Cormorant (not sp.)

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Jurisdiction	Fishery	Gear type	Target fish species	Seabird species interacted
			Black Bream, Cuttlefish, Rays/Skates, School Sharks, Gummy Sharks, Leatherjackets, Silver Trevally, Bluethroat Wrasse, Ocean Jackets and other.	
Tasmania	Commercial Rock Lobster Fishery	Baited lobster pots	Southern Rock Lobster	Seabirds (not sp.)
	Commercial Scalefish Fishery	Danish Seine net	Southern School Whiting and Tiger Flathead	Seabirds (not sp.)
	Commercial Scalefish Fishery	Handheld squid jig	Gould’s Squid	Albatross (not sp.)
Western Australia	South Coast Purse Seine Fishery	Purse Seine	Pilchards, Yellowtail Scad	Flesh-Footed Shearwater
Victoria	n/a	n/a	n/a	n/a
Northern Territory	n/a	n/a	n/a	n/a
Queensland	n/a	n/a	n/a	n/a

**ETBF** Eastern Tuna and Billfish Fishery. **HIMI** Heard Island and McDonald Island. **SESSF** Southern and Eastern Scalefish and Shark Fishery. **WTBF** Western Tuna and Billfish Fishery. **n/a** Not available. **Not sp.** Seabird not identified to species level.

**Table C2 Interactions with seabirds in Australian fisheries, by gear type, 2020**

Jurisdiction	Fishery	Gear type	Total interactions (no.)	Fatal or unknown interactions (no.)	Fatal or unknown interactions (%)	Effort units	Effort (no.)	Total interactions per unit effort ('000)	Fatal or unknown interactions per unit effort ('000)
Commonwealth	ETBF	Longline	37	31	84	Hooks	8,128,999	0.0046	0.0038
	HIMI	Longline	8	8	100	Hooks	8,816,170	0.0009	0.0009
	HIMI	Trawl	4	4	100	Hours	361	11.0803	11.0803
	Macquarie Island	Longline	0	0	n/a	Hooks	1,992,827	0	0
	SESSF	Commercial trawl	9	6	67	Hours	50,296	0.1789	0.1193
	SESSF	Gillnet	209	201	96	Metres	31,011,037	0.0067	0.0065

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Jurisdiction	Fishery	Gear type	Total interactions (no.)	Fatal or unknown interactions (no.)	Fatal or unknown interactions (%)	Effort units	Effort (no.)	Total interactions per unit effort ('000)	Fatal or unknown interactions per unit effort ('000)
	SESSF	Hook (longline, dropline, handline, rod and reel)	18	12		67 Hooks	7,535,324	0.0024	0.0016
	WTBF	Longline	5	2		40 Hooks	231,085	0.0216	0.0087
New South Wales	Recreational/charter	Handline, rod and reel	1	0		0 Days	2,321	0.4308	0
South Australia	Lakes and Coorong Fishery	Large mesh gill nets, small mesh gill nets	0	0	n/a	Days	5,553	0	0
	Marine Scalefish Fishery	Squid jigs, dab nets, longline, set nets, haul nets, handlines and other	0	0	n/a	Days	65,500	0	0
Tasmania	Commercial Rock Lobster Fishery	Baited lobster pots	0	0	n/a	Hours	49.5	0	0
	Commercial Scalefish Fishery	Danish seine net, handheld squid jig, gillnets, hooks, purse seine net, beach seine net	0	0	n/a	Days	2,979	0	0
Victoria	Corner Inlet Fishery	Seine net and mesh net	1	0		0 n/a	n/a	n/a	n/a
	Eel Fishery	Fyke net	3	3		100 n/a	n/a	n/a	n/a

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Jurisdiction	Fishery	Gear type	Total interactions (no.)	Fatal or unknown interactions (no.)	Fatal or unknown interactions (%)	Effort units	Effort (no.)	Total interactions per unit effort ('000)	Fatal or unknown interactions per unit effort ('000)
Western Australia	South Coast Purse Seine Fishery	Purse seine	107	7	6.54	Days	n/a	n/a	n/a
Northern Territory	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Queensland	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

**ETBF** Eastern Tuna and Billfish Fishery. **HIMI** Heard Island and McDonald Island. **SESSF** Southern and Eastern Scalefish and Shark Fishery. **WTBF** Western Tuna and Billfish Fishery. **n/a** Not available. Seabird interaction numbers cannot be provided for the Tasmanian Commercial Rock Lobster Fishery as no catch and effort data for 2020 has been entered into the FILMS database for analysis.

# Appendix D: Jurisdiction responses and action tracking – reporting programs

**Table D1 Seabird interaction reporting protocols, by jurisdiction**

Jurisdiction	Category	Activities
Commonwealth	ETBF/WTBF	Electronic monitoring, electronic logbooks (implemented in 2020), feather kits (for DNA testing of species ID), observers if required.
	HIMI	Two observers are required on each boat. E-monitoring is currently being trialled. Observers take photos and biological samples.
	SESSF	<p>AFMA collects data on interactions with seabirds through:</p> <ul style="list-style-type: none"> <li>Logbooks – all fishers are required to report any interactions they have through their logbooks.</li> <li>Observers – observers collect biological data and make environmental observations which contributes to the monitoring of fishing interactions with seabirds.</li> </ul> <p>In the gillnet, hook and trap sector:</p> <ul style="list-style-type: none"> <li>All boats fishing full time with demersal longlines, including automatic longlines, are required to have an AFMA-approved operational e-monitoring system.</li> <li>All seabirds killed on longlines deployed by Commonwealth fishing vessels in the Australian Fishing Zone must, if feasible, collect a whole seabird specimen or tissue samples to undergo analysis by the Department of Climate Change, Energy, the Environment and Water (DCCEEW). DCCEEW will analyse collected seabird specimens or tissue samples to determine, as appropriate, species, subspecies, provenance (where possible), age, sex and breeding status and other relevant circumstances of the bycatch incident.</li> </ul>
New South Wales	Commercial	<p>Observer programs include wildlife abundance and interaction data collection.</p> <p>Catch and effort logbooks.</p>
	Charter/recreational	Observer programs.
Northern Territory	Commercial	<p>It is a statutory requirement for commercial and charter operators to report interactions with threatened, endangered and protected wildlife to the relevant state or Commonwealth authority, e.g. in NT waters interactions must be reported to the NT Marine WildWatch Hotline, any interaction that occurs within Commonwealth waters must be reported to the Department of Environment within 7 days. The interaction must also be recorded in the fisher logbooks.</p>
	Charter	<p>In the NT charter fishery, operators are required to submit regular logbooks, including the reporting of interactions with threatened, endangered and protected species. No interactions were recorded from this fishery in 2019.</p> <p>It is a statutory requirement for commercial and charter operators to report interactions with threatened, endangered and protected wildlife to the relevant state or Commonwealth authority, e.g. in NT waters interactions must be reported to the NT Marine WildWatch</p>

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Jurisdiction	Category	Activities
		Hotline, and any interaction that occurs within Commonwealth waters must be reported to the Department of the Environment within 7 days. The interaction must also be recorded in the fisher logbooks.
	Recreational	<p>A NT-wide survey of recreational fishing catch and effort was conducted in 2018 to 2019. There were no reported interactions with seabirds from this survey.</p> <p>Since 2014, the NT has had a regular program of conducting recreational fishing surveys annually. The catch of all species is routinely recorded within these surveys, including threatened, endangered and protected species.</p> <p>The Recreational fishing Code of Practice is currently being updated to meet requirements under incoming animal welfare legislation.</p>
	Public reporting	Members of the public can also report interactions to the NT Marine WildWatch Hotline or the Department of the Environment.
Queensland	Commercial	Commercial fishers are required to report interactions with seabirds in the Species of Conservation Interest (SOCi) Logbook. This logbook includes an identification guide for reporting on birds of conservation interest.
	Charter	Licensed charter fishers in Queensland are required to report interactions with seabirds via the SOCi Logbook. The SOCi Logbook allows the Department of Agriculture and Fisheries to identify the degree of seabird interactions in the recreational sector as fishers are required to report the species, the number of interactions, the fate of the interaction (released alive/injured/ dead), and the type of fishing gear.
	Recreational	The Department of Agriculture and Fisheries has released a new recreational fishing pocket guide - 'Queensland recreational boating and fishing guide: 2019–2020'. The guide includes a section providing information to assist anglers in minimising their impacts on marine life, including seabirds. DAF has previously published similar online guides to provide information on minimising fishing-related impacts on SOCi. Recreational anglers can also report interactions with seabirds to the RSPCA animal hotline on 1300 ANIMAL (1300 264 625).
	Public reporting	The Department of Agriculture and Fisheries and the Department of Environment and Science both receive occasional written correspondence and reports to customer service centres concerning fishing related bird entanglements and injuries.
South Australia	Commercial/charter	All licensed fishers are required to report interactions with threatened, endangered and protected species (including all seabirds) in the Wildlife Interaction Logbook - summary reports are produced annually. The Department of Primary Industries and Regions is currently in the process of implementing electronic logbook reporting across all managed fisheries.
Tasmania	Commercial	Logbooks as well as some observer coverage during pre-season surveys.
Victoria	Commercial	Commercial fishers report interactions in their logbook. This information is collated and managed accordingly. There is an additional option for fishers to contact the Duty Officer to discuss any concerns they may have in relation to the management of interactions. Commercial fishers may also contact their representative body Seafood Industry Victoria.
	Recreational	<p>The Victorian Fisheries Authority website provides an option for fishers to contact them directly with any concerns in relation to fishing. Recreational fishers may also contact their representative body VRFish.</p> <p>It should be noted that anecdotal evidence shows hook and line fishing methods used by recreational and charter fishing have a low risk of interaction with seabirds.</p>

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Jurisdiction	Category	Activities
Western Australia	Commercial	Commercial fishers are required to report interactions via monthly catch and effort statistics logbook returns.
	Public reporting	Sick and injured seabirds can be reported to the Wildcare Helpline operated by the Department of Biodiversity, Conservation and Attractions.

**AFMA** Australian Fisheries Management Authority. **ETBF** Eastern Tuna and Billfish Fishery. **HIMI** Heard Island and McDonald Island. **SESSF** Southern and Eastern Scalefish and Shark Fishery. **WTBF** Western Tuna and Billfish Fishery.

# Appendix E: Jurisdiction responses and action tracking – mitigation measures

**Table E1 Seabird mitigation measure per jurisdiction**

Jurisdiction	Activities
Commonwealth	<p><b>Eastern Tuna and Billfish Fishery (ETBF)</b></p> <p>The fishery is managed in accordance with a Threat Abatement Plan (TAP) for oceanic longline fishing and requires fishers to use tori lines when setting during the day, weighted branch lines. From 1 Jan 2020, vessels that have a history of high interactions and breach the TAP trigger rate in 2020 will be required to implement additional mitigation measures (either night setting, stronger line weighting, hookpods or shift their area of operation).</p>
	<p><b>Heard Island and McDonald Island (HIMI)</b></p> <p>The fishery is managed in accordance with CCAMLR Conservation measures. For Longline, integrated weight line (IWL) with 50g/m of lead is required to be used and tori lines must be deployed whilst setting gear. A brickle curtain must be deployed whilst hauling. During high-risk times (April, 15 September to November) boats are restricted to a three-bird catch limit, which if reached exclude them from the fishery.</p>
	<p><b>Southern and Eastern Scalefish and Shark Fishery (SESSF)</b></p> <p>AFMA approved seabird management plans (SMPs) are compulsory for all Commonwealth otter board trawl vessels in the SESSF (Commonwealth Trawl Sector, East Coast Deep Water Trawl and Great Australian Bight Trawl Sector). SMPs identify and set out individually tailored mitigation measures that help reduce seabird interactions with warp wires. SMPs include physical devices to reduce seabird interactions and measures to manage the discharge of biological waste from vessels to reduce seabird attraction and interactions.</p>
	<p><b>Commonwealth Trawl Sector</b></p> <p>Otter trawl vessels must comply with one of the following mitigation measures:</p> <ol style="list-style-type: none"> <li>1) bird bafflers, which meet the specified criteria</li> <li>2) water sprayers</li> <li>3) pinkies with zero offal discharge.</li> </ol> <p>To ensure interactions with seabirds are minimised, additional management arrangements have been introduced (2019–20) that require zero discharge of biological material for otter board trawl vessels when fishing in high-risk areas. The definition of biological material allows for discarding of sensitive large animals such as shark and rays, and small items such as oil and scales that reflect the reality of wet boat operations. These new arrangements will be phased in from 1 November 2019. From this date, biological material must be retained when fishing gear is in the water south of latitude -39 degrees South and west of longitude 147 degrees East, during daylight hours. From 1 July 2020, the requirements will be extended to south of -38 degrees South. Daylight hours is defined as the hours of light between the times of nautical dusk and nautical dawn.</p> <p>Exemptions to the new rule will be considered if operators can demonstrate offal management techniques that remove the risk to seabirds interacting with trawl warps.</p>

Jurisdiction	Activities
	<p><b>Gillnet, Hook and Trap Sector</b></p> <p>To reduce the bycatch of seabirds during oceanic longline operators, all demersal hook concession holders must abide by the TAP. Automatic longline mitigation measures include:</p> <ul style="list-style-type: none"> <li>• an approved Seabird Mitigation Plan</li> <li>• tori Lines deployed when setting, which must comply with specifications</li> <li>• a bird excluder device (brickle curtain) must be deployed during the haul</li> <li>• set at night only for remainder of trip if a seabird mortality occurs</li> <li>• set at night only for the remainder of a TAP season if interaction rate exceeds 0.01 seabirds per 1000 hooks</li> <li>• baits used must be non-frozen</li> <li>• offal must not be discharged while setting or hauling.</li> </ul> <p>Demersal longline sector mitigation measures:</p> <ul style="list-style-type: none"> <li>• offal must not be discharged while setting or hauling. An exemption for small boats may be given by AFMA.</li> </ul> <p><b>Western Tuna and Billfish Fishery (WTBF)</b></p> <p>The fishery is managed in accordance with a TAP for oceanic longline fishing and requires fishers to use tori lines when setting during day, weighted branch lines, have electronic monitoring and ER and collect feathers from dead birds for DNA based species identification.</p>
New South Wales	Industry Code of Practice and advisory material in the Saltwater Recreational Fishing Guide.
Northern Territory	<p><b>Commercial</b></p> <p>Most commercial fisheries that operate in the NT have an Environmental Management System that contains mitigation techniques to reduce interactions with non-target species. Each commercial fishery also has a Code of Practice.</p> <p><b>Recreational</b></p> <p>A recreational fishing code of practice is currently being developed.</p>
Queensland	<p><b>Commercial</b></p> <p>In line with commitments in the Sustainable Fisheries Strategy 2017–2027, the Department of Agriculture and Fisheries (DAF) has recently published a series of Ecological Risk Assessments (ERA) including assessment of fishing related risks to seabirds. Risks to seabirds were found to be either low or negligible in all inshore net fisheries, the commercial crab fishery, line fisheries for Spanish Mackerel, coral reef species and rocky reef species, river and inshore beam trawling, finfish trawling and coral harvesting.</p> <p><b>Recreational</b></p> <p>DAF liaises with peak bodies representing the recreational sector to encourage responsible fishing and best practice for handling and releasing seabirds.</p>
South Australia	Management plans for individual fisheries are prepared according to requirements of the <i>Fisheries Management Act 2007</i> .

Jurisdiction	Activities
Tasmania	<p data-bbox="443 252 613 272"><b>Scalefish Fishery</b></p> <p data-bbox="443 288 1980 341">In 2015 net free areas were increased to protect seabirds such as little penguins. Limits are set on soak times for gillnets and setlines. There are areas of state waters where setlines and nets (multiple types) cannot be used. The small number of endorsements allows limited access to net free areas.</p>
Victoria	<p data-bbox="443 368 2040 480">Orders in Council under the <i>Flora and Fauna Guarantee Act 1995</i>, <i>Wildlife Act 1975</i> and <i>Fisheries Act 1995</i> have been in place for several years to authorise the take of protected species (including seabirds) incidental to licenced commercial eel fishing activities and subject to interaction reporting and other conditions. Without these Orders, commercial eel fishers may not report interactions with protected species such as seabirds for fear of prosecution under Victorian legislation. This would mean that there would be little systematic information on the nature and extent of interactions that can be factored into fisheries management.</p> <p data-bbox="443 496 2040 571">The VFA and the Department of Environment, Land, Water and Planning (DELWP) also have an agreement in place in relation to the management of commercial fishing interactions with protected species (including seabirds). The agreement outlines the process by which the VFA and DELWP work together to help minimise and avoid protected species interactions during commercial fishing operations.</p>
Western Australia	<p data-bbox="443 608 763 628"><b>South Coast Purse Seine Fishery</b></p> <p data-bbox="443 644 1688 665">Implementation of a Special Management Period and Voluntary mitigation initiatives are set out in an industry Code of Practice.</p> <p data-bbox="443 681 703 702">Current initiatives include:</p> <ul data-bbox="443 718 1061 783" style="list-style-type: none"> <li data-bbox="443 718 860 738">• voluntary moratorium on dawn fishing.</li> <li data-bbox="443 754 1061 775">• weighted nets to increase vertical tension and reduce folds.</li> </ul>

# Appendix F: Jurisdiction responses and action tracking – research programs

**Table F1 Seabird mitigation research programs per jurisdiction**

Jurisdiction	Activities
Commonwealth	<p><b>Commonwealth trawl sector:</b></p> <p>While bafflers have been shown to reduce interactions with seabirds, there are still instances where vessels interact with seabirds in high-risk areas. To ensure interactions with seabirds are minimised, additional management arrangements were introduced in the 2019-20 SESSF season, that require zero discharge of biological material for otter board trawl vessels when fishing gear is deployed in high-risk areas. Biological material is defined as whole fish, or any fish based biological material not being retained, traditionally referred to as discards or offal, but does not include small hard parts such as scales, fins or fish oil. The definition of biological material allows for the discarding of sensitive large animals such as sharks and rays as well as small items such as oil and scales that reflect the reality of wet boat operations. Sharks, rays and protected species which are alive and have a reasonable likelihood of post-capture survival should be returned to the water quickly and carefully. These new arrangements were phased in from 1 November 2019. From this date, biological material must be retained while fishing gear is in the water south of latitude 39° S and west of longitude 147° E, during daylight hours. Daylight hours are defined as the hours of light between the times of nautical dusk and nautical dawn. Following this, the requirement was extended to south of 38° S from 1 July 2020. Exemptions to the arrangements will be considered if operators can demonstrate offal management techniques that remove the risk to seabirds interacting with trawl warps. Requests for exemption will be considered against a set of guidelines available on the AFMA website ('Environment and research' – 'Protected species management' – 'Protected species' – 'Seabirds'). Exemptions to the new offal retention requirements for otter board trawl vessels are being considered by AFMA if operators can demonstrate offal management techniques that remove the risk to seabirds interacting with trawl warps. To help generate innovation, the South East Trawl Fishing Industry Association received funding from the Fisheries Research and Development Corporation.</p> <p>The project objectives are:</p> <ol style="list-style-type: none"> <li>1) Development of strategies to remove seabird from danger zone (between trawl warps and the water)</li> <li>2) When successful distribute these strategies to other trawl fishers allowing them to duplicate them where possible</li> </ol>
New South Wales	The NSW Marine Estate Management Strategy's Action 5 Reducing impacts on threatened and protected species (Sub-action 5.5 Expanded Commercial Fishery Observer program) requires the Department of Primary Industries to develop and implement management responses to threats to threatened and protected species and species assemblages identified through the observer program (e.g. conduct a pilot program to trial gear modifications and technologies to reduce interactions, entanglements or bycatch in fishing gear).
Northern Territory	None.
Queensland	The Department of Agriculture and Fisheries (DAF) has no proposed research projects for these topics. Interactions with seabirds are rare in Queensland's commercial fisheries and this type of research is therefore considered to be low priority. The Queensland Department of Environment and Science (DES) does

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Jurisdiction	Activities
	undertake some necropsies on deceased seabirds and maintains records for research purposes. This research database records information about causes of seabird deaths, including fishing related incidents.
South Australia	Research is currently not considered a priority due to low seabird interactions across all SA-managed fisheries.
Tasmania	None.
Victoria	Due to limited interactions between commercial fishing operations and seabirds in Victoria, the Victorian Fisheries Authority is not currently undertaking any research relevant to this matter.
Western Australia	A visual identification tool is available to all commercial fisheries state-wide – the Marine Protected Species Identification Guide.

**ETBF** Eastern Tuna and Billfish Fishery. **WTBF** Western Tuna and Billfish Fishery. **AFMA** Australian Fisheries Management Authority. **SESSF** Southern and Eastern Scalefish and Shark Fishery.

# Appendix G: Jurisdiction responses and action tracking – education programs

**Table G1 Education programs and resources provided per jurisdiction**

Jurisdiction	Activities
Commonwealth	<p>Online educational material and information:</p> <p>Operators are issued with a Management Arrangements Booklet at the start of each season, which details reporting requirements. This is within operators' concession conditions.</p> <p>The AFMA website contains information regarding seabird bycatch, including why it is an issue and best practice for mitigation and handling.</p>
New South Wales	The NSW Department of Primary Industries Community Programs (Education Officer & Fishcare program), advisory resources, recreational fishing guides, first responders resource guide for seabird emergencies, codes of practice (recreational and commercial), Oceanwatch Master Fisherman Program (commercial), and web-based resources.
Northern Territory	Grant monies have been provided to erect fishing line disposal bins at key land-based fishing locations.
Queensland	Fisheries Queensland plays a significant role in educating fishers about how they can minimise their impact on protected species. The Department of Agriculture and Fisheries (DAF) website has a comprehensive education package, which includes several guides for both recreational and commercial fishers. A comprehensive guide is available on the website, 'Looking after protected species in Queensland - seabird care and handling for commercial and recreational fishers.' DAF liaises with peak bodies representing the recreational sector to encourage responsible fishing and best practice for handling and releasing seabirds.
South Australia	All licensed fishers are required to report interactions with threatened, endangered and protected species in the Wildlife Interaction Logbook, which includes an identification guide for seabirds. Summary reports of all interactions with threatened and protected species (including seabirds) are produced annually.
Tasmania	None reported.
Victoria	<p>The Victorian Fisheries Authority has produced a range of resources to support and educate commercial fishers associated with seabird interaction reporting. These include:</p> <ul style="list-style-type: none"> <li>• production of a Protected Species Identification Guide for Commercial Fishers, which includes seabirds to assist commercial fishers with easy identification.</li> <li>• information in annual logbooks which provides detailed instructions on responses to interactions including handling techniques.</li> </ul>
Western Australia	The South Coast Purse Seine Fishery (SCPSF) has formulated a Code of Practice for Responsible Fishing, which sets out guidelines and standards of behaviour for responsible fishing practices within the fishery with a view to ensuring the effective conservation, management and development of resources. The Code of Practice includes a Manual for (Net) Setting Protocol and Wildlife Interaction and Species Identification Guide. The Department of Primary Industries and Regional Development also runs a seabird bycatch observer program on board SCPSF vessels.

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<b>Jurisdiction</b>	<b>Activities</b>
	Protected species interaction reporting requirements (including seabirds) for commercial fisheries are stipulated as part of the management arrangements of the fisheries. Commercial fishers are required to report interactions via logbook returns.

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**AFMA** Australian Fisheries Management Authority

# References

Department of Agriculture 2018a, [National Plan of Action for Minimising Incidental Catch of Seabirds in Australian Capture Fisheries](#), Department of Agriculture and Water Resources, Canberra, accessed 8 January 2020.

Department of Agriculture 2018b, [Threat Abatement Plan for the incidental catch \(or bycatch\) of seabirds during oceanic longline fishing operations \(2018\)](#), Department of Environment and Energy, Canberra, accessed 8 January 2020.

FAO 1999, [International Plan of Action for reducing incidental catch of seabirds in longline fisheries](#), Food and Agriculture Organization of the United Nations, Rome, accessed 25 November 2021.

FAO 2009, [Fishing operations. 2. Best practices to reduce incidental catch of seabirds in capture fisheries](#), Food and Agriculture Organization of the United Nations, Rome, accessed 25 November 2021.