



**Australian Government**

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**Department of the Environment and Energy**

Australian Antarctic Division

DRAFT

# THREAT ABATEMENT PLAN

for the incidental catch (or bycatch) of  
seabirds during oceanic longline fishing  
operations



2017

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# Table of Contents

<b>Table of Contents</b>	<b>ii</b>
<b>Glossary</b>	<b>iii</b>
<b>Summary</b>	<b>1</b>
<b>Introduction</b>	<b>2</b>
<b>Threat abatement plans</b>	<b>3</b>
<b>Background</b>	<b>4</b>
<b>Objective</b>	<b>6</b>
<b>Actions to achieve the objective</b>	<b>7</b>
<i>Mitigation actions</i>	<i>7</i>
<i>Research and development, and innovation</i>	<i>9</i>
<b>Other actions</b>	<b>10</b>
<i>Data collection and analysis</i>	<i>10</i>
<b>Criteria to measure performance of threat abatement plan</b>	<b>12</b>
<b>Duration and cost of threat abatement process</b>	<b>13</b>
<b>Organisations and persons involved in evaluating the performance of threat abatement plan</b>	<b>14</b>
<b>Major ecological matters that may be affected by threat abatement plan</b>	<b>15</b>
<b>References</b>	<b>16</b>
<b>Annex: Summary of the seabird species affected by oceanic longline fishing in the Australian Fishing Zone</b>	<b>18</b>

# Glossary

<b>ACAP</b>	<i>Agreement on the Conservation of Albatrosses and Petrels</i> , done 19 June 2001, 2258 UNTS 257 (entered into force 1 February 2004).
<b>AFMA</b>	Australian Fisheries Management Authority.
<b>Antarctic Fishery</b>	Fisheries defined by the <i>Heard Island and McDonald Islands Fishery Management Plan 2002</i> (AFMA, 2016b), the <i>Macquarie Island Toothfish Fishery Management Plan 2006</i> (AFMA, 2016c), and any new and exploratory fisheries operating under the framework of the <i>Convention on the Conservation of Antarctic Marine Living Resources</i> , done 20 May 1980, 1329 UNTS 47 (entered into force 7 April 1982).
<b>Australian Fishing Zone</b>	Area of waters between three nautical miles and 200 nautical miles seaward of the baselines.
<b>Branch line</b>	Secondary line with an individual baited hook and attached to the mainline of a longline by a clip.
<b>Bycatch</b>	Unintentional catch of a seabird during longline fishing.
<b>Bycatch rate</b>	Number of seabirds observed caught per 1000 hooks set during longline fishing (see also definition of <i>interaction</i> ).
<b>Caught</b>	Where a seabird is either hooked or entangled in fishing gear, regardless of whether the seabird is landed on board the fishing vessel.
<b>CMS</b>	<i>Convention on the Conservation of Migratory Species of Wild Animals</i> , done 23 June 1979, 1651 UNTS 333 (entered into force 1 November 1983).
<b>Coral Sea Fishery</b>	A fishery defined under the <i>Fisheries Management Regulations 1992</i> and managed under the <i>Fisheries Management Act 1991</i> .
<b>Criteria</b>	Maximum permissible bycatch rate at or above which a management response is required.
<b>Dead seabird</b>	A seabird caught by a longline shall be considered to be dead if: <ol style="list-style-type: none"> <li>1. it is obviously dead (i.e. shows no muscle movement or corneal reflex); or</li> <li>2. it is landed alive, but displays any of the following pathologies that may lead to death on its release: <ol style="list-style-type: none"> <li>a. fracture of a wing bone, a leg bone or beak;</li> <li>b. broken feather shafts on more than two primary feathers on either wing;</li> <li>c. substantial damage to the patagial tendon (indicated by a drooping wing or the inability to fly upon release);</li> <li>d. an open wound (other than superficial injuries in which there is no subcutaneous muscle damage);</li> </ol> </li> </ol>

	<ul style="list-style-type: none"> <li>e. waterlogged or hydrocarbon-soiled plumage; or</li> <li>f. any bird released with a hook in situ.</li> </ul>
<b>Demersal finfish</b>	Fish that are normally caught on the seabed.
<b>Electronic monitoring system</b>	Video recording system involving cameras positioned on a fishing vessel enabling fishing operations (including setting and hauling) to be recorded, and where the recordings are subject to independent viewing by an AFMA scientific observer for compliance and auditing purposes.
<b>EPBC Act</b>	<i>Environment Protection and Biodiversity Conservation Act 1999.</i>
<b>Eastern Tuna and Billfish Fishery</b>	A fishery defined in the <i>Eastern Tuna and Billfish Fishery Management Plan 2010</i> (AFMA, 2016a).
<b>Fishing areas</b>	Areas within the Eastern Tuna and Billfish Fishery or Western Tuna and Billfish Fishery south of the parallel of 25 degrees South divided for the purposes of the criteria into five degree latitudinal bands.
<b>Fishing gear</b>	Any longline fishing gear deployed by a fishing vessel including seabird mitigation devices.
<b>Fishing operator</b>	Person who holds a fishing concession, as defined under the <i>Fisheries Management Act 1991</i> .
<b>Fishing seasons</b>	Seasons defined, for the purposes of the criteria, into two: summer 1 September–30 April, and winter 1 May–31 August.
<b>Independent monitoring</b>	Using an AFMA scientific observer or other independent observer approved by AFMA and/or an electronic monitoring system approved by AFMA to independently monitor and record fishing activities including seabird bycatch.
<b>Interaction</b>	<p>In the context of this threat abatement plan an interaction with a seabird occurs where a seabird is observed as caught under one of the following situations:</p> <ol style="list-style-type: none"> <li>1. dead not landed on board – birds observed to be killed by direct interaction with fishing gear, but not landed on the fishing vessel;</li> <li>2. dead landed on board – birds killed by direct interaction with fishing gear and landed on the fishing vessel;</li> <li>3. alive landed on board the fishing vessel following direct interaction with fishing gear: <ol style="list-style-type: none"> <li>a. injured; or</li> <li>b. released uninjured; or</li> </ol> </li> <li>4. alive and released while not on board the fishing vessel following direct interaction with fishing gear: <ol style="list-style-type: none"> <li>a. injured; or</li> <li>b. released uninjured.</li> </ol> </li> </ol>

<b>IUCN</b>	International Union for Conservation of Nature.
<b>Longline fishing</b>	Setting one or more single lines (mainline) that contains many individual hooks on branch lines. The mainline can either be anchored or drifting. It can be oriented vertically or horizontally, and vary considerably in length and number of hooks.
<b>Night</b>	Period after nautical dusk and before nautical dawn. Nautical dusk and nautical dawn are defined as set out in the Nautical Almanacs for relevant latitude, local time and date.
<b>Night setting</b>	Setting of all hooks deployed by a fishing vessel during night.
<b>Observed caught</b>	Number of seabirds reported caught by an AFMA scientific observer or other independent observer approved by AFMA and/or reported caught by the fishing operator in compliance with arrangements for the fishery where longline fishing is subject to independent monitoring using an electronic monitoring system approved by AFMA.
<b>Observed hooks set and hauled</b>	Number of hooks reported as set and hauled: (a) by an AFMA scientific observer or other independent observer approved by AFMA, and/or (b) by the fishing operator in the logbook records in compliance with arrangements for the fishery, where longline fishing is subject to independent monitoring using an electronic monitoring system approved by AFMA.
<b>Offal</b>	Discarded waste from the processing of fish (including, among other things, discarded fish and other organisms, and used baits), discarded food and food scraps. The discharge of offal from longline fishing vessels is regulated by Division 3 of the <i>Fisheries Management Regulations 1992</i> .
<b>Pelagic finfish</b>	Fish that are normally caught on the sea surface or in the water column.
<b>Seabird</b>	For the purposes of the criteria, all species in the Class Aves that are caught by any part of the fishing gear and observed to be either dead or alive.
<b>Southern and Eastern Scalefish and Shark Fishery</b>	A fishery defined in the <i>Southern and Eastern Scalefish and Shark Fishery Management Plan 2003</i> (AFMA, 2016d).
<b>Stakeholder group</b>	Forum established by the Department of the Environment and Energy to discuss implementation and effectiveness of provisions of this threat abatement plan. Participation includes representatives from government, the fishing industry, and environmental non-governmental organisations and experts closely involved with alleviating the impact of longline fishing on Australian seabirds.
<b>Western Tuna and Billfish Fishery</b>	A fishery defined in the <i>Western Tuna and Billfish Fishery Management Plan 2005</i> (AFMA, 2016e).

# Summary

Oceanic longlining is a fishing method used to target pelagic and demersal finfish and shark species. This method involves setting one or more single mainlines containing many individual hooks on branch lines. The mainline can either be anchored or drifting. It can be oriented vertically or horizontally in the water column, and can vary considerably in length and number of hooks. Longlining occurs in almost all Australian waters.

The adverse impact of longline fishing activities on seabirds was not fully realised until the 1980s. The incidental catch (or bycatch) of seabirds during oceanic longline fishing operations was listed as a key threatening process on 24 July 1995. Threat abatement plans for this key threatening process have been in place since 1998 with the current plan, *Threat Abatement Plan the incidental catch (or bycatch) of seabirds during longline fishing operations*, made on [tba]. The ultimate aim of this plan is to achieve zero bycatch of seabirds from longline fishing in Commonwealth fisheries.

Considerable progress has been made under successive threat abatement plans to reduce the impact of oceanic longlining on seabirds. This has been achieved through the combined efforts of the fishing industry, researchers and non-governmental stakeholders working with government to reduce seabird bycatch in longline fisheries in a feasible, effective and efficient way. The prescriptions in this plan recognise this success and seek to avoid or minimise the incidental capture of seabirds.

Threat abatement plans provide a national strategy to guide the activities of government, industry and research organisations in abating the impact of key threatening processes. The content of a plan must provide for the research, management and other actions necessary to reduce the key threatening process to an acceptable level. Content requirements and matters to be taken into consideration are outlined in s 271 of the *Environment Protection and Biodiversity Conservation Act 1999*. Accordingly, this plan, among other things, states the objective to be achieved; specifies the actions to achieve the objective; states the criteria to measure performance of the plan; identifies the organisations and persons involved in evaluating the performance of the plan; and identifies albatross and other seabird species affected by the key threatening process. The plan is subject to review within five years.

# Introduction

This threat abatement plan replaces the *Threat Abatement Plan 2006 for the incidental catch (or bycatch) of seabirds during oceanic longline fishing operations* (Department of the Environment and Heritage, 2006) that was varied by the *Threat Abatement Plan 2014 for the incidental catch (or bycatch) of seabirds during longline fishing operations* (Department of the Environment, 2014). It has been developed by the Department of the Environment and Energy to continue to implement existing, as well as new actions needed to abate the listed key threatening process of incidental catch (or bycatch) of seabirds during oceanic longline fishing operations in a feasible, effective and efficient way. The plan binds the Commonwealth and its agencies in responding to the impact of longline fishing activities on seabirds, and identifies the research, management and other actions needed to reduce the impacts of this key threatening process on affected seabird species. The plan will be reviewed within five years.



# Threat abatement plans

Under s 270A of the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) the Commonwealth Government develops threat abatement plans; implements the actions under these plans that are its direct responsibility; and facilitates the implementation of actions where other groups share the implementation responsibilities (e.g. fishers, states and territories). Part 13 of the EPBC Act describes the process, content and consultation required when making or varying a threat abatement plan. The legislation requires the Government to implement the plans to the extent to which they apply in areas under Commonwealth control and responsibility. In addition, government agencies must not take any actions that contravene a threat abatement plan. Where a plan applies outside Commonwealth areas in states or territories, the Commonwealth must seek the cooperation of the affected jurisdiction, with a view to jointly implementing the threat abatement plan.

# Background

Oceanic longline fishing is a method used to target pelagic and demersal finfish and shark species. Longline fishing occurs in almost all Australian waters today. The adverse impact of longline fishing activities on seabirds was not fully realised until the 1980s when seabird bycatch was first reported and then documented (Morant et al., 1983; Weimerskirch & Jouventin, 1987).

The incidental catch (or bycatch) of seabirds during oceanic longline fishing operations was listed as a key threatening process on 24 July 1995. Under Commonwealth legislation, now the EPBC Act, an initial threat abatement plan was prepared and approved by the Minister in 1998. Following review after five years a second plan was approved by the Minister in 2006. A review of that plan was undertaken in 2011 with a variation released in 2014. This *Threat Abatement Plan for the incidental catch (or bycatch) of seabirds during oceanic longline fishing operations* replaces the plan made in 2006 (as varied).

This threat abatement plan meets the requirements of the EPBC Act and coordinates national action to alleviate the impact of longline fishing activities on seabirds in Australian waters. Its content reflects changes and improvements which have occurred during the life of the previous plan and highlights the expectation of best and improving practice in all longline fisheries in achieving the ultimate goal and interim objective of this plan. It applies to all longline fisheries under Commonwealth jurisdiction.

Over the life of the previous threat abatement plans, substantial progress has been achieved towards reducing the key threatening process. The incidental bycatch rates for several fisheries are well below 0.01 or 0.05 birds per 1000 hooks, the maximum permissible levels set as a performance indicator under the previous plan. The prescriptions in this plan recognise this success and seek to avoid or minimise the incidental capture of seabirds.

Only five longline fisheries operating in the Australian Fishing Zone have been identified as having significant or potential seabird bycatch problems. These are the Eastern Tuna and Billfish Fishery, the Western Tuna and Billfish Fishery, the Antarctic Fishery, the Coral Sea Fishery and the Southern and Eastern Scalefish and Shark Fishery. These fisheries are managed by the Australian Fisheries Management Authority (AFMA).

Information on the level and nature of interactions between seabirds and fishing gear has increased significantly since 1995, and there is now extensive information available upon which to base decision-making. Considerable research and development activities have been undertaken into seabird bycatch mitigation measures including at-sea trials. This work could not have been achieved without the continued engagement and support of industry.

The prescriptions in this threat abatement plan also draw on best and improving practices in seabird bycatch mitigation for oceanic longline fishing developed under the *Agreement on the Conservation of Albatrosses and Petrels* (ACAP) (ACAP, 2016a; 2016b). This international agreement, to which Australia is a Party, aims to achieve and maintain a favourable conservation status for albatrosses and petrels. ACAP has been developed under the auspices of another international agreement, the *Convention on the Conservation of Migratory Species of Wild Animals* (CMS).

There is now increased confidence concerning the effectiveness of several mitigation measures, particularly line weighting strategies, use of bird-scaring lines, retention of offal during line setting, and night setting (in certain instances). These mitigation measures form the basis of the prescriptions set out in this threat abatement plan.

This threat abatement plan is closely linked to other plans for threatened seabird species; the *Threat Abatement Plan for the impacts of marine debris on vertebrate marine life* (Department of the Environment and Energy, 2017); Australia's National Plan of Action for reducing the incidental catch of seabirds in Australian fisheries that is being prepared to meet Australia's commitment to the *International Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries* (FAO, 1999); and the *National Policy on Fisheries Bycatch* (DAFF, 1999) that is under review. This threat abatement plan relies on recovery plans to collect specific data on population trends of those threatened species found breeding in Australia. Of particular relevance is the *National recovery plan for threatened albatrosses and giant petrels* (DSWEPC, 2011), which updates the first recovery plan for albatrosses and giant petrels that was released in 2001. The recovery plan sets out a coordinated conservation strategy for albatrosses and giant petrels listed as threatened under the EPBC Act. It considers threats to albatrosses and giant petrels both at terrestrial breeding sites and at sea in their foraging habitat.

This threat abatement plan represents an important component of Australia's domestic contribution to the global conservation of seabirds by managing the threat of incidental catch (or bycatch) of seabirds during oceanic longline fishing operations. However, conservation of migratory seabird species relies on more than Australian action. Mitigation strategies, such as those outlined in this plan, should be pursued in international waters and waters under the jurisdiction of other nations, particularly those in the southern hemisphere. Australia is actively pursuing such action through, among other things, those regional fisheries management organisations to which it is a Party, the Commission for the Conservation of Antarctic Marine Living Resources, ACAP and CMS.

The following sets out the threat abatement plan for the listed key threatening process of *incidental catch (or bycatch) of seabirds during oceanic longline fishing operations*.

# Objective

Threat abatement plans must state the objective to be achieved (EPBC Act s 271(2)(a)). The ultimate aim of this threat abatement plan is to achieve a zero bycatch of seabirds, especially threatened albatross and petrel species, in all longline fisheries. However, using currently available mitigation methods, this aim may not be realistic in the short-term, although it is expected that improved and emerging mitigation measures will mean near-zero bycatch is feasible within the life of this plan. Therefore, the objective of this threat abatement plan is to avoid seabird bycatch or minimise seabird bycatch and bycatch rates during oceanic longline fishing operations in the Australian Fishing Zone.

As many seabird species have large distributional ranges, actions by Australia alone are unlikely to be sufficient to prevent any decline in some populations. Accordingly, Commonwealth Government agencies will pursue the global adoption of bycatch and other threat mitigation strategies through international conservation and fisheries management forums.

The objective of this threat abatement plan is to be achieved through five key actions:

1. **Mitigation** – effective measures will continue to be applied, both through legislative frameworks and fishing practices, to avoid seabird bycatch or minimise seabird bycatch and bycatch rates, recognising the importance of other factors such as safety, practicality and the characteristics of the fishery.
2. **Education** – results from data analysis will continue to be communicated throughout the community, stakeholder groups and international forums, and programs will continue or be established to provide information and education to longline operators.
3. **International initiatives** – advocacy in international conservation and fisheries management forums in support of global adoption of seabird by-catch mitigation trigger and other limits, and effective bycatch and other threat mitigation methods.
4. **Research and Development and Uptake** – continued support of research into developing and reviewing the efficiency, effectiveness and uptake of new and improved mitigation measures.
5. **Innovation** – innovation in ‘bird friendly’ fishing measures and devices will continue to be encouraged.

Data collection and analysis are other key actions of this threat abatement plan. Data will be collected and analysed to assess the performance of this threat abatement plan including mitigation measures and to improve knowledge of seabird-longline interactions.

# Actions to achieve the objective

Threat abatement plans must specify actions needed to achieve the objective(s) (EPBC Act s 271(2)(c)). This threat abatement plan requires that government agencies identified below implement the following actions. The EPBC Act also requires that all government agencies act in a manner that is consistent with and does not undermine the provisions of this plan.

## Mitigation actions

1. AFMA will require all pelagic longline tuna fishers operating within either the Eastern Tuna and Billfish Fishery or the Western Tuna and Billfish Fishery, or both fisheries, southwards of the parallel of 25 degrees South to:
  - a. employ a line-weighting strategy approved by AFMA that enables the bait to be rapidly taken below the reach of most seabirds;
  - b. employ either of the following:
    - i. at least one bird-scaring line constructed to a specified standard approved by AFMA, or use another proven mitigation measure approved by AFMA for use without such a line; or
    - ii. only set longlines at night;
  - c. not discharge offal during line setting; and
  - d. employ, as part of an adaptive management approach to seabird bycatch mitigation, such other mitigation measures as AFMA may stipulate following consultation with the Department of the Environment and Energy  
  
(including, but not limited to, use of bird scaring lines, bird exclusion devices and/or managing offal discharge during line hauling, night setting, and area closures).
2. AFMA will continue to require domestic and foreign vessels in all longline fisheries operating within Australian jurisdiction to adopt proven mitigation measures that ensure the performance criteria for each fishery are achieved in all areas and seasons.
3. AFMA will implement an appropriate management response (described below) if the circumstances described in the table below occur, or data analysis indicates that the performance criteria, defined in this threat abatement plan, have not been met in any fishing area, season or fishery, or that independent monitoring has dropped below acceptable levels. Consistent with an adaptive management approach, the management response will be implemented as soon as practical, but no later than within three months of identification of a problem.

Problem	Management response
Bycatch incidents where more than one seabird is killed on a single trip by an individual longline fishing vessel	<p>AFMA will investigate and determine if the cause was as a result of inadequate or non-compliant implementation of mitigation measures and/or a lack of effectiveness of mitigation measures.</p> <p>In the event of non-compliance, AFMA will take appropriate corrective action, including monitoring of future compliance.</p> <p>Any information of possible ineffectiveness of mitigation measures will be reviewed in consultation with the Department of the Environment and Energy and agreement reached on what corrective and monitoring actions, if any, are required.</p>
Criterion for a longline fishery exceeded in a fishing area or fishery during one season	<p>AFMA will:</p> <ol style="list-style-type: none"> <li>review the mitigation measures currently deployed in the fishing area or fishery and the relevant circumstances — environmental conditions and fishing practices including compliance — this review will include examination of all relevant seabird incident data, independent monitoring reports and other information;</li> <li>assess, in consultation with the Department of the Environment and Energy, whether it is feasible and desirable to further improve existing mitigation measures; and</li> <li>implement improved mitigation measures to address the bycatch problem, if identified.</li> </ol>
Criterion for a longline fishery exceeded in a fishing area or fishery in the next corresponding season	<p>AFMA will implement additional mitigation measures, if identified, for individual vessels that have exceeded the criterion. AFMA must consider suspension from fishing using longline fishing methods until AFMA and the Department of the Environment and Energy are satisfied with mitigation measures implemented on affected vessels.</p> <p>AFMA may also close the fishing area or fishery to fishing using longline fishing methods until AFMA and the Department of the Environment and Energy are satisfied that mitigation measures are available for deployment to enable the criterion to be achieved.</p>
Independent monitoring of a fishing area, fishery and/or season does not meet coverage levels in the criteria	<p>AFMA will take such actions as are necessary to promptly increase independent monitoring levels to meet specified levels.</p>

- AFMA will consider the different demersal longline sectors in the Southern and Eastern Scalefish and Shark Fishery when applying a management response.
- AFMA will take into account the conservation status of seabirds caught during longline fishing operations in determining whether a more rigorous management response is required.

6. AFMA and the Department of the Environment and Energy will report annually to the stakeholder group on progress towards achieving the objective of this threat abatement plan and implementation of actions under the plan.
7. AFMA will implement extension and training programs for longline fishers, where appropriate.
8. AFMA will implement a risk based compliance strategy to ensure that all requirements of this threat abatement plan relevant to the mitigation of seabird bycatch are complied with. AFMA will provide to the stakeholder group annual summary compliance reports including using, as appropriate, templates, such as those required by the Commission for the Conservation of Southern Bluefin Tuna. These reports will include an assessment of the effectiveness of implementation of all mitigation measures, and will describe any incidents of non-reporting of interactions or mortalities.
9. AFMA and the Department of Agriculture and Water Resources will communicate the results of implementing this threat abatement plan, and will promote seabird bycatch mitigation and the need to use effective mitigation measures to foreign fishers through international fisheries forums. The Department of Agriculture and Water Resources will report annually to the stakeholder group on progress made on this action.
10. The Department of the Environment and Energy will communicate the results of implementing this threat abatement plan. It will promote seabird bycatch mitigation and the need to use effective mitigation measures in relevant international conservation forums, including ACAP and CMS. The Department of the Environment and Energy will report annually to the stakeholder group on progress made on this action.

## **Research and development, and innovation**

11. AFMA, the Department of Agriculture and Water Resources and the Department of the Environment and Energy will promote and support research and development of new and existing mitigation measures, including by facilitating access to and awareness among stakeholders of fisheries research funding programs, particularly those conducting research and development on measures to mitigate seabird bycatch mortalities.
12. AFMA will support trials of seabird bycatch mitigation measures and devices under operational conditions by granting individual scientific permits to operators. As appropriate, the Department of the Environment and Energy will provide advice to help in ensuring the experimental design of trials is scientifically robust. Measures will be tested for a sufficient amount of fishing effort and in a manner that takes proper account of differences across seasons and between boats, and gives confidence in the results. Once a new seabird bycatch mitigation measure or device has been demonstrated to consistently and effectively meet the threat abatement plan criteria, it may be included in the management arrangements for fisheries.
13. AFMA will encourage innovation in the research, development, adoption and review of effective seabird bycatch mitigation measures and devices including international research.

# Other actions

## Data collection and analysis

14. AFMA will collect data on the bycatch of seabirds, and effectiveness of mitigation measures. In addition to collecting these data from fishing operator logbook reports AFMA will independently monitor fishing activities through the use of AFMA scientific observers or other independent observers approved by AFMA and/or electronic monitoring systems approved by AFMA. The level of independent monitoring shall be commensurate with the nature and level of seabird bycatch in each fishing area, season and fishery, and will comply with the requirements set out below.
15. The minimum level of on-board observer coverage by AFMA scientific observers or other independent observers is set out in the table below.

Fishery	Minimum level of on board observer coverage
Eastern Tuna and Billfish Fishery and Western Tuna and Billfish Fishery	5% of all hooks set and hauled in each fishing area
Southern and Eastern Scalefish and Shark Fishery	10% of all hooks set and hauled in each of the demersal longline sectors
Coral Sea Fishery	10% of all hooks set and hauled
Antarctic Fishery	20% of all hooks set, and 40% of all hooks hauled
All other longline fisheries (including new and developing fisheries)	10% of all hooks set and hauled

16. Video footage collected as part of independent monitoring using an electronic monitoring system will be subject to independent auditing. AFMA will ensure auditing results in accurate reporting by fishing operators of hooks set, seabird interactions and the effectiveness of mitigation measures.
17. AFMA will continue to require that all seabirds killed on longlines in the Australian Fishing Zone are:
- if feasible, brought aboard the vessel;
  - reported to AFMA;
  - reported to the Australian Bird and Bat Banding Scheme, if banded;



- d. if feasible, collected whole or tissue sampled for analysis, and stored on board the vessel in a manner that limits decay, while meeting any vessel food safety requirements established by the Department of Agriculture and Water Resources; and
- e. if feasible, either transported, as a whole seabird specimen or tissue sample, to a storage and analysis facility nominated by the Department of the Environment and Energy, or undergo other analysis, as required by the Department with these costs met by the Department.

The Department of the Environment and Energy 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.

18. AFMA and the Department of the Environment and Energy will analyse and review seabird-fisheries interactions data to assess seabird bycatch levels by fishing area, season, fishery and fishing method to monitor compliance with the criteria. These analyses will be prepared annually and take into account possible biases in independent monitoring. The analyses will be provided to the stakeholder group and will show, for each fishing area, season and fishery, the observed and overall bycatch rates, together with the species composition of any seabird bycatch, if available.
19. AFMA will ensure that logbooks for all longline fisheries and/or electronic monitoring system information collection procedures accurately record:
  - a. number of seabirds caught;
  - b. species of seabirds caught;
  - c. life status of seabirds caught;
  - d. type of bait used;
  - e. fishing gear and mitigation measures used and stage of operation when the seabird bycatch occurred;
  - f. time of day/night of line setting and haul;
  - g. date and location of the catch; and
  - h. external factors (such as weather conditions and moon phase) that may influence seabird bycatch.
20. AFMA will use independent monitoring to validate seabird bycatch data collected by fishing operators and reported through the logbook system, and to identify potential deficiencies in existing programs.
21. AFMA, the Department of Agriculture and Water Resources and the Department of the Environment and Energy, together with representatives of key stakeholders and relevant experts, will collaborate to consider the impact of actions under this threat abatement plan on other marine species.

# Criteria to measure performance of threat abatement plan

Threat abatement plans must state criteria against which achievement of the objective(s) is to be measured (EPBC Act s 271(2)(b)). This threat abatement plan requires that seabird bycatch in all fishing areas, seasons and fisheries is less than the following bycatch rates:

Fishery	Bycatch rate
Eastern Tuna and Billfish Fishery	0.05 birds per 1000 hooks in each fishing area
Western Tuna and Billfish Fishery	0.05 birds per 1000 hooks in each fishing area
Southern and Eastern Scalefish and Shark Fishery	0.01 birds per 1000 hooks in each of the demersal longline sectors
Coral Sea Fishery	0.01 birds per 1000 hooks
Antarctic Fishery	0.01 birds per 1000 hooks
All other longline fisheries (including new and developing fisheries)	0.01 birds per 1000 hooks

Seabird bycatch occurs where a seabird is observed caught during longline fishing (see also the definition of *interaction*). This is the number of seabirds reported caught: (a) by an AFMA scientific observer or other independent observer approved by AFMA on board the fishing vessel, and/or (b) by the fishing operator in the logbook records in compliance with arrangements for the fishery where longline fishing is subject to independent monitoring using an electronic monitoring system approved by AFMA.

AFMA will monitor performance against these criteria at a fishery level and for individual vessels. AFMA may, as appropriate, hold individual vessels responsible for meeting the criteria and apply a management response to vessels that breach the criteria.

These criteria have been set on the basis of annual fishing levels at the time this threat abatement plan was approved. Trends in fishing effort will be reviewed annually and, if fishing levels increase or decrease significantly (by more than 20 per cent), AFMA and the Department of the Environment and Energy may review the maximum permissible bycatch rates identified above, taking into account spatial and temporal trends, and the vulnerability of seabird species encountered. AFMA, the Department of Agriculture and Water Resources and the Department of the Environment and Energy, may arrange more sophisticated analyses in any instances where bycatch rates are close to the maximum permissible levels and are uncertain.

## Duration and cost of threat abatement process

Threat abatement plans may identify the duration and cost of the threat abatement process (EPBC Act s 271(4)(a)). This threat abatement plan will be reviewed within five years of its coming into force. The cost of this plan will be covered under the core business expenditure of the affected agencies. There are costs to industry in meeting the requirements set out in this plan. The overall costs should be similar to those incurred in implementing the previous plan, and are not expected to significantly increase, and may decrease in some instances as a result of this plan. These costs are an unavoidable consequence of the need to abate the incidental catch (or bycatch) of seabirds during oceanic longline fishing operations in a feasible, effective and efficient manner.

# Organisations and persons involved in evaluating the performance of threat abatement plan

Threat abatement plans may identify the organisations and persons involved in evaluating performance of the plan (EPBC Act s 271(4)(b)). The Department of the Environment and Energy will evaluate performance of this threat abatement plan in consultation with key stakeholders and relevant seabird experts. It will report the results of the review to the Minister for the Environment and Energy, through the Threatened Species Scientific Committee.

## Major ecological matters that may be affected by threat abatement plan

Threat abatement plans may specify any major ecological matters that will be affected by the plan (EPBC Act s 271(4)(c)). This threat abatement plan is unlikely to affect other ecological matters, but all actions undertaken will take into account any impacts on the conservation status of non-seabird species including threatened sharks, marine mammals and marine reptiles.

# References

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# Annex: Summary of the seabird species affected by oceanic longline fishing in the Australian Fishing Zone

The following reflects current information on the taxonomy and conservation status of each seabird species, including information from the IUCN Red List of Threatened Species Version 2016-3 (IUCN, 2016) and ACAP. A distinction is drawn between species that breed and forage in areas under Australian jurisdiction and species foraging, but not breeding in areas under Australian jurisdiction. The likely incidence in longline bycatch is assessed in the absence of seabird mitigation measures.

Species breeding in areas under Australian jurisdiction				
Species name	International conservation status	EPBC Act listing	Likely incidence in longline bycatch	Jurisdiction and location of breeding areas
Wandering albatross <i>Diomedea exulans</i>	Vulnerable	Vulnerable	Moderate	<b>Australia:</b> Heard Island, Macquarie Island <b>France:</b> Iles Crozet, Iles Kerguelen <b>South Africa:</b> Prince Edward Islands <b>United Kingdom/Argentina:</b> South Georgia (Islas Georgias del Sur)
Black-browed albatross <i>Thalassarche melanophris</i>	Near Threatened	Vulnerable	High	<b>Australia:</b> Heard Island and McDonald Islands, Macquarie Island <b>Chile:</b> island groups of Diego de Almagro, Diego Ramirez, Evangelistas, and Ildefonso; islets in the Magallanes region, and Tierra del Fuego <b>France:</b> Iles Crozet, Iles Kerguelen <b>New Zealand:</b> Antipodes Island, Campbell Island <b>United Kingdom/Argentina:</b> Falklands Islands (Islas Malvinas), South Georgia (Islas Georgias del Sur)
Shy albatross <i>Thalassarche cauta</i>	Near Threatened	Vulnerable	Moderate	<b>Australia:</b> Tasmanian islands of Albatross, Mewstone, and Pedra Branca
Grey-headed albatross <i>Thalassarche chrysostoma</i>	Endangered	Endangered	Moderate	<b>Australia:</b> Macquarie Island <b>Chile:</b> island groups of Diego Ramirez, and Ildefonso <b>France:</b> Iles Crozet, Iles Kerguelen <b>South Africa:</b> Prince Edward Islands



Species breeding in areas under Australian jurisdiction				
Species name	International conservation status	EPBC Act listing	Likely incidence in longline bycatch	Jurisdiction and location of breeding areas
Light-mantled albatross <i>Phoebastria palpebrata</i>	Near Threatened	Not listed	Low	<b>New Zealand:</b> Campbell Island <b>United Kingdom/Argentina:</b> South Georgia (Islas Georgias del Sur)  <b>Australia:</b> Heard Island, Macquarie Island <b>France:</b> Iles Crozet, Iles Kerguelen <b>New Zealand:</b> Antipodes Island, Auckland Islands, Campbell Island <b>South Africa:</b> Prince Edward Islands <b>United Kingdom/Argentina:</b> South Georgia (Islas Georgias del Sur)
Northern Giant Petrel <i>Macronectes halli</i>	Least concern	Vulnerable	Low	<b>Australia:</b> Macquarie Island <b>France:</b> Iles Crozet, Iles Kerguelen <b>New Zealand:</b> Antipodes Island, Auckland Islands, Campbell Island, Chatham Island <b>South Africa:</b> Prince Edward Islands <b>United Kingdom/Argentina:</b> South Georgia (Islas Georgias del Sur)
Southern Giant Petrel <i>Macronectes giganteus</i>	Least concern	Endangered	Low	<b>Antarctica:</b> Australian Antarctic Territory (Frazier, Hawker and Giganteus Islands), Antarctic Peninsula, South Orkney Islands, South Shetland Islands, Terre Adélie <b>Argentina:</b> Isla Arce, Isla de los Estados, Isla Gran Robredo, Isla Observatorio <b>Australia:</b> Heard Island and McDonald Islands, Macquarie Island <b>Chile:</b> Isla Noir, Islas Diego Ramirez <b>France:</b> Iles Crozet, Iles Kerguelen <b>Norway:</b> Bouvet Island <b>South Africa:</b> Prince Edward Islands
Southern Giant Petrel <i>continued</i>				<b>United Kingdom/Argentina:</b> Falklands Islands (Islas Malvinas), South Georgia (Islas Georgias del Sur), South Sandwich Islands (Islas Sandwich del Sur) <b>United Kingdom:</b> Gough Island

Species breeding in areas under Australian jurisdiction				
Species name	International conservation status	EPBC Act listing	Likely incidence in longline bycatch	Jurisdiction and location of breeding areas
Great-winged Petrel <i>Pterodroma macroptera</i>	Least Concern	Not listed	Moderate	<b>Australia:</b> southern and southwestern Australia <b>France:</b> Iles Crozet, Iles Kerguelen <b>New Zealand:</b> North Island <b>South Africa:</b> Prince Edward Island <b>United Kingdom:</b> Tristan da Cunha Group
Grey Petrel <i>Procellaria cinerea</i>	Near Threatened	Not listed	Moderate	<b>Australia:</b> Macquarie Island <b>France:</b> Iles Amsterdam, Iles Crozet, Iles Kerguelen <b>New Zealand:</b> Antipodes Islands, Campbell Islands <b>South Africa:</b> Prince Edward Islands <b>United Kingdom:</b> Tristan da Cunha Group
Wedge-tailed shearwater <i>Ardenna pacificus</i>	Least Concern	Not listed	Moderate	<b>Australia:</b> numerous island and coastal locations <b>Other:</b> extensive distribution
Flesh-footed shearwater <i>Ardenna carneipes</i>	Least Concern	Not listed	High	<b>Australia:</b> southern Australia <b>France:</b> Ile St Paul <b>New Zealand:</b> North Island
Sooty shearwater <i>Ardenna griseus</i>	Near Threatened	Not listed	Low	<b>Australia:</b> southeastern Australia (including Macquarie Island) <b>Chile:</b> southern <b>New Zealand:</b> islands off New Zealand <b>United Kingdom/Argentina:</b> Falkland Islands (Islas Malvinas)
Short-tailed shearwater <i>Ardenna tenuirostris</i>	Least Concern	Not listed	Low	<b>Australia:</b> southern Australia
Southern skua <i>Stercorarius antarcticus</i>	Least Concern	Not listed	Low	<b>Australia:</b> Heard Island and McDonald Islands, Macquarie Island <b>Other:</b> extensive distribution across sub-Antarctic

Species foraging in areas under Australian jurisdiction				
Species name	International conservation status	EPBC Act listing	Likely incidence in longline bycatch	Jurisdiction and location of breeding areas
Tristan albatross <i>Diomedea dabbenena</i>	Critically endangered	Endangered	Low	<b>United Kingdom:</b> Tristan da Cunha Group
Antipodean albatross <i>Diomedea antipodensis</i>	Vulnerable	Vulnerable	Low	<b>New Zealand:</b> Antipodes Island, Auckland Islands, Campbell Island
Northern royal albatross <i>Diomedea sanfordi</i>	Endangered	Endangered	Low	<b>New Zealand:</b> Chatham Islands (Big Sister Island, Little Sister Island, Forty-fours Island), South Island (Otago Peninsula, Taiaroa Head)
Southern royal albatross <i>Diomedea epomophora</i>	Vulnerable	Vulnerable	Low	<b>New Zealand:</b> Auckland Islands, Campbell Island, South Island (Taiaroa Head)
Amsterdam albatross <i>Diomedea amsterdamensis</i>	Critically Endangered	Endangered	Low	<b>France:</b> Iles Amsterdam
Campbell albatross <i>Thalassarche impavida</i>	Vulnerable	Vulnerable	High	<b>New Zealand:</b> Campbell Island
Buller's albatross <i>Thalassarche bulleri</i>	Near Threatened	Vulnerable	Low	<b>New Zealand:</b> Chatham Islands, Snares Islands, Solander Islands, Three Kings Islands
White-capped albatross <i>Thalassarche steadi</i>	Near Threatened	Vulnerable	Moderate	<b>New Zealand:</b> Antipodes Islands, Auckland Islands, Chatham Islands
Salvin's albatross <i>Thalassarche salvini</i>	Vulnerable	Vulnerable	Low	<b>New Zealand:</b> Bounty Islands, Snares Islands
Chatham albatross <i>Thalassarche eremita</i>	Vulnerable	Endangered	Low	<b>New Zealand:</b> Chatham Island

Species foraging in areas under Australian jurisdiction				
Species name	International conservation status	EPBC Act listing	Likely incidence in longline bycatch	Jurisdiction and location of breeding areas
Atlantic yellow-nosed albatross <i>Thalassarche chlororhynchos</i>	Endangered	Not listed	Low	<b>United Kingdom:</b> Tristan da Cunha Group
Indian yellow-nosed albatross <i>Thalassarche carteri</i>	Endangered	Vulnerable	Moderate	<b>France:</b> Iles Amsterdam, Iles Crozet, Iles Kerguelen, Iles St Paul <b>South Africa:</b> Prince Edward Islands
Sooty albatross <i>Phoebastria fusca</i>	Endangered	Vulnerable	Low	<b>France:</b> Iles Amsterdam, Iles Crozet, Iles Kerguelen, Iles St Paul <b>South Africa:</b> Marion Island, Prince Edward Island <b>United Kingdom:</b> Tristan da Cunha Group
White-chinned Petrel <i>Procellaria aequinoctialis</i>	Vulnerable	Not listed	Moderate	<b>France:</b> Iles Crozet, Iles Kerguelen <b>New Zealand:</b> Antipodes Islands, Auckland Islands, Campbell Islands <b>South Africa:</b> Prince Edward Island <b>United Kingdom/Argentina:</b> Falklands Islands (Islas Malvinas), South Georgia (Islas Georgias del Sur)
Westland Petrel <i>Procellaria westlandica</i>	Vulnerable	Not listed	Low	<b>New Zealand:</b> South Island (Punakaiki)
Black Petrel <i>Procellaria parkinsoni</i>	Vulnerable	Not listed	Low	<b>New Zealand:</b> Great Barrier Island, Little Barrier Island