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Conservation Status of Albatrosses and Petrels and Advice on Reducing their Bycatch in WCPFC Fisheries

WCPFC-SC18-2022/EB-WP-03 (Rev.01)

ACAP[1]

[1] Agreement on the Conservation of Albatrosses and Petrels

Conservation Status of Albatrosses and Petrels and Advice on Reducing their Bycatch in WCPFC Fisheries

Agreement on the Conservation of Albatrosses and Petrels (ACAP)

Abstract

The incidental mortality (bycatch) of seabirds in longline and trawl fisheries continues to be a serious global concern, especially for threatened albatrosses and petrels, resulting in a Conservation Crisis being declared by the Agreement on the Conservation of Albatrosses and Petrels (ACAP) in 2019. The need for international cooperation in addressing this concern was a major reason for establishing ACAP. There are currently 31 species listed in Annex 1 of the Agreement. Of the 22 species of albatrosses, 17 breed and/or forage in the WCPFC Convention Area, as do six of the nine listed petrel species. This paper provides a summary of the population status and current trends of these 23 species as well as information on high priority populations that occur in the WCPFC Area. We also provide an update on ACAP best practice bycatch mitigation advice for pelagic longline fisheries and other resources relevant to seabird bycatch including new guidance on observer programme and electronic monitoring data collection.

INTRODUCTION

The Agreement on the Conservation of Albatrosses and Petrels (ACAP) provides a framework for coordinating and undertaking international activity to mitigate known threats to albatross and petrel populations. Most species listed in Annex 1 of ACAP have extensive at-sea distributions (see **Table 1** for those species distributed in the WCPFC Area). The greatest threat to these species is incidental mortality (bycatch) in fisheries. A global review estimated that at least 160,000 (and potentially in excess of 320,000) seabirds are killed annually in longline fisheries worldwide (Anderson *et al*. 2011). A 2017 risk assessment for pelagic longline fisheries in the Southern Hemisphere indicated very high levels of annual potential fatalities of ACAP species (Abraham *et al*. 2017).

Given the overlap between ACAP species and WCPFC fisheries, ACAP cooperates with WCPFC through a Memorandum of Understanding (https://www.acap.aq/documents/mous/1437-mou-between-acap-secretariat-and-wcpfc/file), which was signed in December 2007. ACAP has regularly participated in WCPFC meetings and presented updates to the Scientific Committee on best practice mitigation measures and guidelines, as well as on population status and trends of ACAP species.

CONSERVATION STATUS, POPULATION SIZE AND TRENDS OF ACAP SPECIES

Albatrosses and large petrels are amongst the most threatened groups of birds in the world, due in large part to the impacts of bycatch, which, for many species, remains the most serious threat and continues to drive ongoing population declines (Phillips *et al*. 2016; Clay *et al*. 2019; Dias *et al*. 2019). ACAP was established to address this concern. Of the 23 species of albatrosses and large petrels that overlap in distribution with the WCPFC Convention Area, the International Union for Conservation of Nature (IUCN) currently lists 13 species as threatened with extinction (four *Endangered* and eight *Vulnerable*) and another seven as *Near Threatened*.

Comprehensive knowledge of population size, trend and demographic parameters is fundamental to many aspects of albatross and petrel conservation, and is vital to monitoring the effectiveness of management actions. ACAP collates breeding site, trend and other data for all species listed under the Agreement. Although the size of most populations has been determined at some point in time, the trend and current demographic rates for many populations are less well known, due to the high level of resources required to access remote breeding sites at appropriate intervals. Determination of global trends can also be difficult because populations of the same species at different sites may show different trajectories.

At its sixth meeting in August 2021, ACAP's Population and Conservation Status Working Group (PaCSWG) examined the current (2001 - 2020) global trends of species listed under the Agreement. The approach combines census information submitted to the ACAP database (http://data.acap.aq) and results of any available population models. The time span of two decades was considered appropriate to reflect the trend of these long-lived species, some of which breed only every two years, and which may show high annual variation in breeding numbers. The trends are reviewed on a triennial basis or sooner if sufficient new information becomes available for any of the species.

Of the 23 species of albatrosses and large petrels that overlap in their distribution with the WCPFC Area, the PaCSWG assessed:

- nine as *declining* over the last 20 years
- six as *stable*
- two as *unknown*
- six as *increasing*

Information on the conservation status, population size, and trends of these species is summarised in **Table 1**. Further information can also be found in the species assessments (https://www.acap.aq/resources/acap-species) developed by ACAP which provide comprehensive information on distribution, biology and threats. These will be progressively updated.

ACAP High Priority Populations

ACAP has also identified nine High Priority Populations, which represent more than 10% of the global population of a particular species, and were declining at more than 3% per year over a 20 year period for which a major underlying cause was incidental mortality in fisheries. Five of these populations breed and/or forage in the WCPFC Area (see **Table 1**), including the Antipodean Albatross *Diomedea antipodensis* breeding on Antipodes Islands, which represents 47% of the global total for the species (Walker and Elliott 2017). Since 2005 there has been a dramatic population crash, with an ongoing population decline of 5% per annum and 8% decline in adult female survival (Richard 2021). Considering the absence of land-based threats, the main cause of high mortality appears to be fisheries bycatch across the foraging range in the South Pacific. If this steep and rapid decline continues at the current rate, it is predicted that this population of *D. antipodensis* will decline a further 82% over the next 27 years, or one generation period of these birds (Richard 2021).

ACAP ADVICE FOR REDUCING BYCATCH OF SEABIRDS IN FISHERIES

Much of the work of ACAP's Seabird Bycatch Working Group (SBWG) focuses on routinely reviewing and updating best practice mitigation advice for industrial fishing gear types (principally pelagic and demersal longline, and trawl gear). The most recent review took place in August 2021, at the 10th meeting of the Seabird Bycatch Working Group (SBWG10), with updates endorsed by the 12th meeting of ACAP's Advisory Committee (AC12). The ACAP review process recognises that factors such as safety, practicality and the characteristics of the fishery should also be taken into account when considering the efficacy of seabird bycatch mitigation measures and consequently in the development of advice and guidelines on best practice.

Updates to pelagic longline mitigation measures

ACAP recommends that the most effective way to reduce seabird bycatch in pelagic longline fisheries is to use the following three best practice measures simultaneously: (1) branch line weighting, (2) night setting and (3) bird scaring lines. Three hook-shielding devices (the 'Hookpod-LED', the 'Hookpod-mini' and the 'Smart Tuna Hook') and one underwater bait setting device (the 'Underwater Bait Setter, Skadia Technologies') have been assessed and recently incorporated in the ACAP best practice advice.

The effectiveness of the Underwater Bait Setter (Skadia Technologies), and the Hookpod-mini at reducing seabird bycatch was assessed by the SBWG at its most recent meeting and endorsed by AC12 in 2021. Underwater bait setting devices deploy baited hooks at a pre-determined depth immediately at the stern of the vessel. These devices deploy baited hooks individually underwater down a track fitted to the fishing vessel's transom in a vertical manner enclosed in a capsule or similar device to eliminate any visual stimulus for seabirds following the vessel. The capsule is pulled quickly underwater to a predetermined target depth that can be adjusted in response to the dive capabilities of seabirds attending the vessel during line setting to prevent interactions. The Underwater Bait Setter (Skadia Technologies) was assessed based on experimental and operational data from the Australian Eastern Tuna and Billfish Fishery, the Uruguayan Pelagic Longline Fishery, and the New Zealand Pelagic Longline Fishery. These trials showed promising results, with impressive reductions in seabird bycatch.

Hook-shielding devices encase the point and barb of baited hooks to prevent seabird attacks during line setting until a prescribed depth is reached (a minimum of 10 metres), or until after a minimum period of immersion (a minimum of 10 minutes). The new hook-shielding device assessed, the Hookpod-mini, is positioned at the hook, encapsulating the barb and point of the hook during setting, and remains attached until it reaches 10 m in depth, when the hook is released. Experimental and operational data are now available concerning the performance of the Hookpod-mini in pelagic longline fisheries in Brazil and New Zealand.

The full 2021 ACAP review of mitigation measures and best practice advice for pelagic longline fisheries (https://www.acap.aq/resources/bycatch-mitigation/mitigation-advice/3956-acap-2021-pelagic-longlines-mitigation-review-bpa/file) is available on the ACAP website. ACAP has also produced Advice on Improving Safety when Hauling Branch lines during Pelagic

Longline Fishing Operations (https://www.acap.aq/resources/bycatch-mitigation/mitigation-advice/3959-acap-2021-pelagic-longlines-safety-when-hauling-bpa/file).

Mitigation methods detailed in WCPFC CMM 2018-03 are partially aligned with ACAP best practice advice. The use of weighted branch lines, night setting and tori-lines is recommended for WCPFC waters south of 25ºS, although only two measures are required south of 30ºS and only one measure 25-30ºS rather than the simultaneous use of all three. Hook-shielding devices are also recommended as an option. However, seabird mitigation measures currently listed for waters north of 23ºN include seabird mitigation methods not currently recommended by ACAP. Underwater Bait Setters are not recognised in CMM 2018-03 and the specification for weighted branch lines does not align with ACAP best practice advice and some available options will have reduced mitigation effectiveness. A detailed assessment comparing the measures outlined in CMM2018-03 and ACAP best practice advice may provide a useful framework to identify opportunities to further improve the CMM and ultimately further reduce the impact of WCPFC fisheries on seabirds.

Bycatch Monitoring

It is well recognised that the implementation of observer programmes that include the collection and management of seabird bycatch and associated data is a highly effective means of monitoring fisheries performance with respect to seabird bycatch and use of mitigation measures. ACAP recently formalised data collection guidelines for observer programmes (https://www.acap.aq/bycatch-mitigation/bycatch-monitoring/3971-acap-data-collection-guidelines-for-observer-programmes/file), drawing on a number of reviews, workshops and other initiatives. These guidelines aim to inform the establishment and implementation of effective and standardised data collection and reporting protocols for fishery observer programmes.

AC12 also endorsed guidelines on electronic monitoring systems (https://www.acap.aq/bycatch-mitigation/bycatch-monitoring/3958-acap-em-guidelines/file).

OTHER RELEVANT RESOURCES

The advice for reducing the bycatch of seabirds associated with trawl and longline fisheries is available on the ACAP website (https://www.acap.aq/bycatch-mitigation/mitigation-advice) together with other relevant resources (https://www.acap.aq/bycatch-mitigation), such as the ACAP-BirdLife bycatch mitigation factsheets (https://www.acap.aq/bycatch-mitigation/bycatch-mitigation-fact-sheets). The factsheets are currently being updated into a new more concise format. Updates are already in progress for key longline mitigation options, with updates for trawl mitigation options prioritised for the current intersessional period.

A number of other guidelines, including Sampling guidelines to assess plastic ingestion in ACAP species (https://www.acap.aq/resources/acap-conservation-guidelines/3728-plastics-sampling-guidelines/file) are also available. The guidelines and recommendations are generalizable to other taxa and the protocols can be applied broadly both in the field by non-expert personnel, as well as by specialized personnel in the case of live birds or teams performing full necropsies in controlled settings.

AC12 also endorsed Light Pollution Guidelines for Wildlife (https://www.environment.gov.au/biodiversity/publications/national-light-pollution-guidelines-wildlife) developed by Australia. The guidelines aim to raise awareness of the potential impacts of artificial light on wildlife and provide a framework for assessing and managing these impacts.

We recommend that the Scientific Committee

- note the updated conservation status and population trend of albatross and petrel species in the WCPFC area, including five priority populations of concern.
- note that ACAP seabird bycatch mitigation advice has been updated to include additional best practice options.
- note that CMM2018-03 varies from ACAP best practice advice in several ways.
- consider a detailed review of CMM2018-03 against ACAP best practice advice in order to identify options to further reduce the impact of WCPFC longline fisheries on albatrosses and petrels.

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Table 1. *Summary of global IUCN conservation status and current trends of ACAP species with distribution in WCPFC waters. Breeding sites where populations have been identified as meeting the criteria for ACAP High Priority Populations (> 10% of the global population, declining > 3% per year, at risk from fisheries) are in red font.*

Species	2021 IUCN Status[1]	Occurrence in WCPFC Area: Breeding (B) Foraging (F)	Number of sites (ACAP)[2]	Breeding site responsibility	Annual breeding pairs (last census)[3]	Current Population Trend 2001-2020[4]
Diomedea antipodensis Antipodean Albatross	EN	B-F	6	NZ (Antipodes Islands)	7,107 (1995-2020)	↓
Diomedea sanfordi Northern Royal Albatross	EN	B-F	5	NZ	4,080 (2018)	↓
Procellaria westlandica Westland Petrel	EN	B-F	1	NZ	6,223 (2019)	↑
Thalassarche carteri Indian Yellow-nosed Albatross	EN	F	6	France (Amsterdam Island), South Africa	33,974 (1984-2016)	↓
Thalassarche chrysostoma Grey-headed Albatross	EN	B-F	29	Australia, Chile, France, NZ, South Africa, South Georgia (Islas Georgias del Sur)*	80,863 (1982-2020)	↓
Diomedea epomophora Southern Royal Albatross	VU	B-F	4	NZ	7,921 (1989-2018)	↔
Diomedea exulans Wandering Albatross	VU	B-F	28	Australia, France, South Africa, South Georgia (Islas Georgias del Sur)*	9,400 (1981-2021)	↓
Phoebastria albatrus Short-tailed Albatross	VU	B-F	2		889 (2002-2017)	↑
Procellaria aequinoctialis White-chinned Petrel	VU	B-F	73	Falkland Islands (Islas Malvinas)*, France, New Zealand, South Africa, South Georgia (Islas Georgias del Sur)*	1,118,033 (1984-2019)	↓
Procellaria parkinsoni Black Petrel	VU	B-F	2	NZ	6,970 (2016-2021)	↔
Thalassarche eremita Chatham Albatross	VU	B-F	1	NZ	5,296 (2017)	↔
Thalassarche impavida Campbell Albatross	VU	B-F	2	NZ	24,338 (2020)	↔
Thalassarche salvini Salvin's Albatross	VU	B-F	12	NZ	26,496 (1986-2019)	↓
Phoebastria immutabilis Laysan Albatross	NT	B-F	17		806,693 (1982-2019)	↔
Phoebastria nigripes Black-footed Albatross	NT	B-F	13		70,524 (1995-2019)	↑

Species	2021 IUCN Status[1]	Occurrence in WCPFC Area: Breeding (B) Foraging (F)	Number of sites (ACAP)[2]	Breeding site responsibility	Annual breeding pairs (last census)[3]	Current Population Trend 2001-2020[4]
Phoebetria palpebrata Light-mantled Albatross	NT	B-F	71	Australia, France, New Zealand, South Africa, South Georgia (Islas Georgias del Sur)*	15,975^ (1954-2021)	?
Procellaria cinerea Grey Petrel	NT	B-F	17	Australia, France, New Zealand, South Africa, UK	86,959# (1981-2018)	↓
Thalassarche cauta Shy Albatross	NT	B-F	3	Australia	15,019 (2015-2021)	↓
Thalassarche bulleri Buller's Albatross	NT	B-F	10	NZ	33,268 (1984-2019)	↔
Thalassarche steadi White-capped Albatross	NT	B-F	5	NZ	62,922 (2009-2017)	?
Macronectes giganteus Southern giant Petrel	LC	B-F	119	Antarctic Treaty, Argentina, Australia, Chile, Falkland Islands (Islas Malvinas)*, France, South Africa, South Georgia (Islas Georgias del Sur)*, UK	46,127 (1958-2021)	↑
Macronectes halli Northern giant Petrel	LC	B-F	50	Australia, France, New Zealand, South Africa, South Georgia (Islas Georgias del Sur)*	11,551 (1973-2021)	↑
Thalassarche melanophris Black-browed Albatross	LC	B-F	65	Australia, Chile, Falkland Islands (Islas Malvinas)*, France, New Zealand, South Georgia (Islas Georgias del Sur)*	689,468 (1982-2020)	↑

[1] **CR** = Critically Endangered, **EN** = Endangered, **VU** = Vulnerable, **NT** = Near Threatened, **LC** = Least Concern
The IUCN Red List of Threatened Species. Version 2021-1. <www.iucnredlist.org>

[2] **Site:** usually an entire, distinct island or islet, or rarely, section of a large island (>3,000km^2)

[3] ACAP database. <data.acap.aq>. 31 August 2021

[4] **ACAP Trend:** ↑ increasing, ↓declining, ↔ stable, ? unknown. **n.b. the overall trend for the species may not reflect particular regional or site trends.**

*A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Islas Malvinas), South Georgia and the South Sandwich Islands (Islas Georgias del Sur e Islas Sandwich del Sur) and the surrounding maritime areas.

^ excluding Auckland estimates of 5,000 pairs – not reliable/not supported

incomplete global estimate - Prince Edward Islands numbers unknown