



Review of national recovery plan for threatened albatrosses and giant petrels 2011-2016

INTRODUCTION

This document reviews the implementation of recovery actions and progress in meeting plan objectives and in recovery of species included in the *National recovery plan for threatened albatrosses and giant petrels 2011-2016* (DSEWPC, 2011b). The review also aims to document the current state of threatened albatrosses and giant petrels, their conservation trajectory, and any change in management actions or priorities necessary for their recovery. The review has been populated during a consultation workshop of managers and experts, held in Hobart on 11 November 2015, with comment sought on a draft review document from a range of stakeholders (see below). The review was conducted by the Department of the Environment through its Australian Antarctic Division.

The recovery plan provides a coordinated conservation strategy for albatrosses and giant petrels listed as threatened under *Environment Protection and Biodiversity Conservation Act 1999* (Cth). The plan covers 21 seabird species—19 albatross species and two giant petrel species (Table 1). These comprise seven species breeding on islands in areas under Australian jurisdiction and 14 species foraging (or potentially foraging), but not breeding, within areas under Australian jurisdiction. The plan includes three seabird species not listed as threatened under the Act (Table 1). These additional species are included because they occur in essentially the same areas, face the same conservation threats, require the same conservation actions, and some are similarly endangered as the listed species on the International Union for Conservation of Nature's Red List of Threatened Species (IUCN, 2015). The inclusion of the additional species makes the plan a more complete document.

Table 1 Species included in the recovery plan (species breeding in Australian jurisdiction are indicated by asterisk).

Listing of recovery plan species under <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) when adopted	Current listing under <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth)
Threatened species: <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) s 178	
<i>Diomedea exulans</i> (wandering albatross)*	<i>Diomedea exulans</i> (Vulnerable)
<i>Diomedea dabbenena</i> (Tristan albatross)	<i>Diomedea exulans exulans</i> (Endangered)

<i>Diomedea antipodensis</i> (Antipodean albatross)	<i>Diomedea exulans antipodensis</i> (Vulnerable)
<i>Diomedea gibsoni</i> (Gibson's albatross) ¹	<i>Diomedea exulans gibsoni</i> (Vulnerable)
<i>Diomedea amsterdamensis</i> (Amsterdam albatross)	<i>Diomedea exulans amsterdamensis</i> (Endangered)
<i>Diomedea epomophora</i> (southern royal albatross)	<i>Diomedea epomophora epomophora</i> (Vulnerable)
<i>Diomedea sanfordi</i> (northern royal albatross)	<i>Diomedea epomophora sanfordi</i> (Endangered)
<i>Thalassarche cauta</i> (shy albatross)*	<i>Thalassarche cauta cauta</i> (Vulnerable)
<i>Thalassarche steadi</i> (white-capped albatross)	<i>Thalassarche cauta steadi</i> (Vulnerable)
<i>Thalassarche salvini</i> (Salvin's albatross)	<i>Thalassarche cauta salvini</i> (Vulnerable)
<i>Thalassarche eremita</i> (Chatham albatross)	<i>Thalassarche eremita</i> (Endangered)
<i>Thalassarche bulleri</i> (Buller's albatross)	<i>Thalassarche bulleri</i> (Vulnerable)
<i>Thalassarche sp.</i> (Pacific albatross) ²	<i>Thalassarche bulleri platei</i> (Vulnerable)
<i>Thalassarche chrysostoma</i> (grey-headed albatross)*	<i>Thalassarche chrysostoma</i> (Endangered)
<i>Thalassarche melanophris</i> (black-browed albatross)*	<i>Thalassarche melanophris</i> (Vulnerable)
<i>Thalassarche impavida</i> (Campbell albatross)	<i>Thalassarche melanophris impavida</i> (Vulnerable)
<i>Thalassarche carteri</i> (Indian yellow-nosed albatross)	<i>Thalassarche carteri</i> (Vulnerable)
<i>Phoebastria fusca</i> (sooty albatross)	<i>Phoebastria fusca</i> (Vulnerable)
<i>Macronectes giganteus</i> (southern giant petrel)*	<i>Macronectes giganteus</i> (Endangered)

¹ The scientific name used in the recovery plan was *Diomedea antipodensis* consistent with taxonomy adopted by the *Agreement on the Conservation of Albatrosses and Petrels*, done 19 June 2001, 2258 UNTS 257 (entered into force 1 February 2004).

² The scientific name used in the recovery plan was *Thalassarche bulleri* consistent with the taxonomy adopted by the *Agreement on the Conservation of Albatrosses and Petrels*, done 19 June 2001, 2258 UNTS 257 (entered into force 1 February 2004).

<i>Macronectes halli</i> (northern giant petrel)*	<i>Macronectes halli</i> (Vulnerable)
Migratory species: <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) s 209	
<i>Phoebastria immutabilis</i> (Laysan albatross)	No longer listed as a migratory species.
<i>Thalassarche chlororhynchos</i> (Atlantic yellow-nosed albatross)	<i>Diomedea chlororhynchos</i>
<i>Phoebetria palpebrata</i> (light-mantled albatross)*	<i>Phoebetria palpebrata</i>

Progress in achieving the objectives of the recovery plan through the identified actions has relied, and continues to rely upon the contributions by all stakeholders including, but not limited to, the Australian and Tasmanian governments, the fishing industry, non-governmental organisations, academic institutions, scientists, innovators, manufacturers, and others with an interest and expertise in conserving threatened albatrosses and giant petrels. Progress in the recovery of threatened albatrosses and giant petrels is also advanced through Australia's international advocacy, particularly through the *Agreement on the Conservation of Albatrosses and Petrels*, done 19 June 2001, 2258 UNTS 257 (entered into force 1 February 2004); relevant regional fisheries and conservation bodies; and through engaging with Range States, and international bodies with an interest and expertise in conserving these species, particularly BirdLife International. Any future recovery plan will rely on an integrated approach involving actions at the domestic and international levels.

The recovery plan recognises that the recovery process will take longer than the life of the current plan, and that a recovery plan for threatened albatrosses and giant petrels should remain until such time as populations of these species breeding and/or foraging within Australian jurisdiction have improved to the point where populations are considered secure. Additional information about the conservation status of each species is provided in the *Background Paper: Population status and threats to albatrosses and giant petrels listed as threatened under Environment Protection and Biodiversity Conservation Act 1999* (Cth) (DSEWPC, 2011a).

The Minister for the Environment must review a recovery plan at intervals of not longer than five years. This plan is subject to review before 23 May 2016.

The review comprises four main components, as follows:

1.0: PROGRESS IN IMPLEMENTING RECOVERY ACTIONS

This heading considers what has been done during the life of the recovery plan. It provides a brief description about the extent to which each action has been implemented over life of the plan including a summary of what worked and what did not, things which impeded and assisted implementation, issues encountered during implementation, and any changes to governance or methods that were required. The status of progress under this heading for each action was determined by stakeholders during a consultation workshop.

2.0: EVALUATION AGAINST RECOVERY PLAN OBJECTIVES

This heading considers how well the recovery plan has performed in meeting its overall objective or progressing towards it. It includes a consideration of any known reasons for objectives not being achieved and/or the level of success not being measured including, if relevant, the appropriateness of the original objectives and criteria—in terms of being ‘SMART’ (specific, measureable, achievable, realistic and timely). The status of progress under this heading for each action was determined by stakeholders during a consultation workshop.

3.0: CHANGES IN CONSERVATION TRAJECTORY

This heading considers what has been learnt over the life of the recovery plan. It considers the state of the species when the recovery plan was implemented, the present state of the species, and the extent that the plan influenced any change in the conservation trajectory of the species concerned.

4.0: RECOMMENDATIONS FOR FUTURE ACTION

This heading considers potential future recovery objectives and supporting actions needed to conserve the species and mechanisms to achieve this. It considers the rationale for future recovery plan or for continuing the current recovery plan, taking into account ongoing and new threats to the conservation trajectory for the species.

Consulting with stakeholders

Consultations concerning the review of this recovery plan were undertaken with relevant stakeholders including Commonwealth, State and Territory agencies, non-governmental organisations, the stakeholder group of the *Threat Abatement Plan 2014 for the incidental catch (or bycatch) of seabirds during oceanic longline fishing operations* (seabird Threat Abatement Plan, 2014) (Commonwealth of Australia, 2014), representatives from key Commonwealth fisheries, and identified representatives of Tasmanian Indigenous interests:

a. Commonwealth

- Australian Fisheries Management Authority
- Department of Agriculture and Water Resources
- Department of the Environment—Australian Antarctic Division; Wildlife, Heritage and Marine Division
- Threatened Species Commissioner
- Threatened Species Scientific Committee

b. Threatened species conservation State and Territory agency contacts

- Australian Capital Territory
- New South Wales
- Northern Territory
- Queensland
- South Australia
- Tasmania
- Victoria
- Western Australia

c. Non-governmental organisations

- Antarctic and Southern Ocean Coalition
- BirdLife Australia
- Humane Society International
- PEW Charitable Trusts
- World Wide Fund for Nature

d. Stakeholder group of the seabird Threat Abatement Plan, 2014

Forum established by the Department of the Environment to discuss implementation and effectiveness of provisions of the seabird Threat Abatement Plan, 2014. 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.

e. Representatives from key Commonwealth fisheries

Representatives from each of the following Commonwealth-managed fisheries:

- Coral Sea Fishery
- Eastern Tuna and Billfish Fishery

- Heard Island and McDonald Islands Fishery
- Macquarie Island Fishery
- Southern and Eastern Scalefish and Shark Fishery
- Western Tuna and Billfish Fishery

f. Tasmanian Indigenous interest groups

Following initial contact with the Tasmanian Aboriginal Land and Sea Council, consultations thereafter included all identified representatives of Tasmanian Indigenous interests:

- Aboriginal Elders Council of Tasmania
- Aboriginal Land Council of Tasmania
- Cape Barren Island Aboriginal Association Inc
- Circular Head Aboriginal Corporation
- Flinders Island Aboriginal Association Inc
- Interim Aboriginal Heritage Council
- Karadi Aboriginal Corporation
- melythina tiakana warrana (Heart of Country) Aboriginal Corporation
- Palawa Aboriginal Corporation
- Six Rivers Aboriginal Corporation
- South East Tasmanian Aboriginal Corporation
- Tasmanian Aboriginal Centre
- Tasmania Aboriginal Centre (Burnie Regional Office)
- Tasmanian Aboriginal Centre (Launceston Regional Office)
- Tasmanian Aboriginal Child Care Association

- Tasmanian Aboriginal Land and Sea Council
- Tasmanian Regional Aboriginal Community Alliance
- weetaipoona Aboriginal Corporation
- Greg Lehman (Deakin University)

What happens after the review

The information in the review will be used to inform: a decision by the minister on whether a recovery plan is still required; and subsequently if a recovery plan is required, a decision on whether the existing plan is varied or a new plan prepared.

Review conducted by:

Department of the Environment, Australian Antarctic Division

Date:

25 January 2016

1.0: PROGRESS IN IMPLEMENTING RECOVERY ACTIONS

The consultation workshop noted that several actions to achieve specific objectives under the recovery plan were a compound of specific elements. Participants at the workshop requested that the evaluation provides an overall indication of the status of each action (see final column in the table below), as well as the status of specific elements for each compound action (see additional column in the table below).

Table 1.1: Review of recovery actions.

Specific Objective 1: Research and monitoring of the biology, ecology and population dynamics of albatrosses and giant petrels breeding within Australian jurisdiction is sufficient to understand conservation status and to implement effective and efficient conservation measures						
Recovery Action	Implementation details (what was and was not implemented, timeline, what worked and didn't, and any issues encountered)	Status of specific elements			Status overall	
		Completed	Some progress	No progress	Completed	Some progress
1. Population monitoring programmes Population and conservation species assessments are available for all albatrosses and petrels listed under the Agreement on the Conservation of Albatrosses and Petrels including species listed under this plan (ACAP, 2012a). Over the life of this plan population monitoring programmes have been undertaken concerning albatross and giant petrel populations breeding within Australian jurisdiction for: a. <i>Thalassarche melanophris</i> (black-browed albatross), <i>T. chrysostoma</i> (grey-headed albatross), <i>Phoebetria palpebrata</i> (light-mantled albatross), <i>Diomedea exulans</i> (wandering albatross), <i>Macronectes halli</i> (northern giant petrel), and <i>M. giganteus</i> (southern giant petrel) breeding in Tasmania on Macquarie Island—with a report prepared annually concerning the monitoring programme (McInnes & Clarke, 2011; Cleeland & Back, 2012; Cleeland & Lashko, 2013; Lawrence et al., 2014; Alderman, 2015c) b. <i>T. cauta</i> (shy albatross) breeding in Tasmania on Albatross Island, Pedra Branca, and Mewstone—with a report prepared annually concerning the monitoring programme (Alderman et al., 2010; Alderman, 2011b; Alderman et al., 2011; Alderman & Carlyon, 2012; Alderman, 2013, 2014, 2015b) c. southern giant petrel breeding in the Australian Antarctic Territory on Giganteus Island, Mac.Robertson Land; Hawker Island, Princess Elizabeth Land and Frazier Islands, Wilkes Land—with intermittent monitoring including using automatic cameras (Anon, 2011; Anon, 2013; Anon 2015, Wienecke, pers. com., 2015).						

A 1.1	Develop strategy (where required) for and obtain population estimates for all albatross and giant petrel populations breeding under Australian jurisdiction.	<p><i>A 1.1 overall</i></p> <p>This action includes two elements: (a) developing a strategy; and (b) obtaining 'reliable' population estimates. Progress varies significantly between breeding colonies. Long-term population monitoring is in place for certain sites that provides reliable population estimates. Population monitoring is ad hoc or lacking at other sites (see below). Implementation of A 1.1 is affected by logistical constraints and feasibility of population monitoring for remote breeding populations.</p>					✓	
	<p>Reliable current estimates at the time of this plan are consistently available for:</p> <ul style="list-style-type: none"> black-browed albatross <ul style="list-style-type: none"> • Macquarie Island grey-headed albatross <ul style="list-style-type: none"> • Macquarie Island light-mantled albatross <ul style="list-style-type: none"> • Macquarie Island wandering albatross <ul style="list-style-type: none"> • Macquarie Island northern giant petrel <ul style="list-style-type: none"> • Macquarie Island southern giant petrel <ul style="list-style-type: none"> • Macquarie Island shy albatross <ul style="list-style-type: none"> • Albatross Island 	<p>Long-term population monitoring of albatrosses and giant petrel species breeding in Tasmanian jurisdiction occurs at Macquarie Island that enables population estimates to be obtained. Over the life of this plan reliable estimates were consistently available:</p> <ul style="list-style-type: none"> • Black-browed albatross, grey-headed albatross, light-mantled albatross, wandering albatross, northern giant petrel, and southern giant petrel breeding in Tasmania at Macquarie Island. <p>The current annual cost of this action (and related actions, see below) for the Department of the Environment is \$38 700 (not including goods and services tax), with additional in kind contribution by the Department of Primary Industries, Parks, Water and Environment, Tasmania of >\$20 000 (not including goods and services tax). The funds are provided to the Department of Primary Industries, Parks, Water and Environment, Tasmania to implement the monitoring programme. These costs exclude logistical costs associated with Tasmanian Parks and Wildlife Service staff travelling to and staying on Macquarie Island.</p> <p>The latest results for the monitoring programme are</p>	✓					

	<ul style="list-style-type: none"> Pedra Branca Mewstone 	<p>from 2014. For the above species population and conservation status monitoring over the previous 10 years indicates:</p> <ol style="list-style-type: none"> black-browed albatross: about 45 breeding pairs; trend stable grey-headed albatross: about 60 breeding pairs; trend decreasing light-mantled albatross: about 2150 breeding pairs; trend increasing, based on partial study sites data wandering albatross: about 5 breeding pairs; trend indeterminate due to small population size northern giant petrel: about 1500 breeding pairs; trend stable or increasing despite Macquarie Island Pest Eradication Project mortalities during baiting in 2010 and 2011 southern giant petrel: about 1800 breeding pairs; trend decreasing, partly due to Macquarie Island Pest Eradication Project mortalities during baiting in 2010 and 2011. 						
		<p>Long-term population monitoring of shy albatross breeding in Tasmanian jurisdiction occurs at Albatross Island, Pedra Branca, and Mewstone that enables population estimates to be obtained. Over the life of this plan reliable estimates were consistently available:</p> <ul style="list-style-type: none"> shy albatross breeding in Tasmania at Albatross Island, Pedra Branca and Mewstone. <p>The current annual cost of this action (and related actions, see below) for the Department of the Environment is \$47 300 (not including goods and services tax), with additional in kind contribution by</p>	✓					

		<p>Department of Primary Industries, Parks, Water and Environment, Tasmania of >\$70 000 (not including goods and services tax). The funds are provided to the Department of Primary Industries, Parks, Water and Environment, Tasmania to implement the monitoring programme.</p> <p>The latest results for the monitoring programme are from 2014. For shy albatross population and conservation status monitoring indicates:</p> <ol style="list-style-type: none"> Albatross Island: about 4200 breeding pairs; trend decreasing Pedra Branca: a maximum of 170 potential breeding pairs (estimated from aerial photography); trend decreasing Mewstone: about 10,000 potential breeding pairs (estimated from aerial photography); trend indeterminate. 							
	<p>Reliable current estimates at the time of this plan are lacking for:</p> <p>black-browed albatross</p> <ul style="list-style-type: none"> Bishop and Clerk Islets Heard Island McDonald Island <p>light-mantled albatross</p> <ul style="list-style-type: none"> Heard Island McDonald Island <p>southern giant petrel</p>	<p>Limited, ad hoc population monitoring occurs of southern giant petrel breeding populations breeding in the Australian Antarctic Territory on Frazier Islands, Giganteus Island, and Hawker Island (automatic surveillance cameras are also deployed at Hawker and Frazier Islands).</p> <p>Over the life of this plan reliable current estimates were lacking for this species:</p> <ul style="list-style-type: none"> Available data for southern giant petrel indicate: <ol style="list-style-type: none"> Frazier Islands: about 230 occupied nests; no trend data available (Anon, 2013; Wienecke, pers. comm., 2015) Giganteus Island: about 2 occupied nests; no trend data available, although numbers have been 		✓					

	<ul style="list-style-type: none"> • Heard Island • McDonald Island • Australian Antarctic Territory (Frazier Islands, Giganteus Island, Hawker Island) 	<p>marginal since the 1970s (Anon, 2015; Wienecke, pers. comm., 2015)</p> <p>c. Hawker Island: about 40 occupied nests; no trend data available (Anon, 2011; Wienecke, pers. comm., 2015).</p>						
		No population monitoring of black-browed albatrosses breeding on Bishop and Clerk Islets has occurred during the life of this recovery plan. Reliable current estimates are lacking for this breeding population.			✓			
		No population monitoring of albatrosses and giant petrels breeding on Heard Island and McDonald Islands has occurred during the life of this recovery plan. Reliable current estimates were lacking for these breeding populations. However, a desktop review of data suggests that a small population of wandering albatross (two occupied nests) may be present at Heard Island (Kirkwood et al., 1989).			✓			
A 1.2	Continue long-term demographic studies of albatrosses on Macquarie Island and shy albatross on Albatross Island and assess survivorship data on a regular basis.	<p><i>A 1.2 overall</i></p> <p>This action includes three elements: (a) continuing demographic studies; (b) regularly assessing survivorship data; and (c) assessing logistical/resource feasibility of demographic studies on other populations.</p>				✓		
		Annual demographic studies have been undertaken for four albatross species breeding on Macquarie Island (see A.1.1 above) and shy albatross breeding on Albatross Island during the life of this plan. The studies include annual assessments of breeding success for all species, periodic updates of survivorship data for Macquarie Island species—update in progress (Alderman, pers. comm., 2015a), and annual updates of adult and juvenile survivorship on	✓					

		A programmable surveillance camera has been deployed on Albatross Island to assist in demographic monitoring of the breeding population (Lynch et al., 2015).						
	Where populations without demographic studies are identified as decreasing (see above action), assess the logistical and resource feasibility for undertaking banding and demographic studies on other populations to identify the driving parameter for observed population declines.	<p>Studies concerning shy albatross breeding on Pedra Branca in Tasmania indicate a decreasing trend over the past 10 years in the breeding population (Alderman, 2015b). The decrease is attributed to inter-species competition for nesting space with <i>Morus serrator</i> (Australasian gannet) (Alderman et al., 2011; ACAP, 2015t). Four programmable surveillance cameras were deployed on Pedra Branca in summer 2014 to investigate inter-species interactions, and were retrieved in winter 2015 (Alderman, 2015b).</p> <p>The size, remote location and topography make accessing shy albatross breeding on the Mewstone logistically infeasible except by using aerial surveillance. Aerial monitoring techniques allow estimation of potential breeding pairs and numbers of pre-fledging chicks.</p>	✓					
A 1.3	Australia participates in national and global dissemination of population status and trend data.	<p>Population status estimates and demographic trend data are updated annually (or as appropriate) with the Agreement on the Conservation of Albatrosses and Petrels and other relevant organisations. Australia continues within the Agreement on the Conservation of Albatrosses and Petrels to propose ways to improve population status and trend data, as well concerning identifying gaps in these data. Australia is a leader in providing available information to national and global datasets.</p> <p>The current cost of this action is subsumed in the cost of action A 1.1 (above).</p>				✓		
2. Foraging distributions								
A 2.1		A.2.1 overall					✓	

		<p>the environment including climate, wind patterns, distribution of fisheries resources and other marine processes.</p> <p>The current cost of this action is subsumed in the cost of action A 1.1 (above).</p>						
	Identify priority populations, species, age and breeding status and, where appropriate, undertake further foraging investigations.	<p>The effects of climate change and fisheries bycatch have been studied concerning shy albatross breeding on Albatross Island, Tasmania (Thomson et al., 2015). By analysing at sea distributions of Shy Albatross and comparing this to fishing effort data, estimates were determined about vulnerability to incidental bycatch. The information was coupled with climate forecast models to predict future population trends. The findings suggest seabird bycatch mitigation by fisheries must achieve a 50 per cent reduction in bycatch rate to offset losses due to predicted future rainfall and temperature. These models are intended to be iterative —taking account of updated population and demographic data as these become available, and considering improved information about links between environmental, biological and climate variable in refining the models and forecasts (Thompson et al., 2015).</p> <p>The Agreement on the Conservation of Albatrosses and Petrels has identified that seabird tracking data gaps remain for immature and juvenile albatrosses and petrels (Dias et al., 2014).</p> <p>The current cost of this action is subsumed in the cost of action A 1.1 (above).</p>		✓				
	Submit remote tracking data to Procellariiform global tracking database.	Remote tracking data are submitted to the Seabird Tracking Database managed by BirdLife International, for inclusion in the Procellariiform global tracking database (BirdLife International, 2015).	✓					

		The current cost of this action is subsumed in the cost of action A 1.1 (above).							
3. Climate change									
A 3.1	The effects of climate change predicted for the marine and terrestrial environments of albatrosses and giant petrels within Australian jurisdiction are synthesised. The likely impacts on albatrosses and giant petrels breeding and foraging within Australian jurisdiction are assessed and reported and knowledge gaps identified (long term monitoring strategies — A.1.1 — are important for understanding and tracking impacts of climate change).	<p>This action includes five elements: (a) synthesising information about the predicted effects of climate change on the marine environment affecting albatrosses and giant petrels foraging in Australian jurisdiction; (b) synthesising information about the predicted effects of climate change on the marine environment affecting albatrosses and giant petrels foraging in Australian jurisdiction; (c) assessing likely impacts of climate change on albatrosses and giant petrels within Australian jurisdiction; (d) reporting on any likely impacts of climate change on albatrosses and giant petrels within Australian jurisdiction; and (e) identifying any knowledge gaps concerning climate change effects on albatrosses and giant petrels within Australian jurisdiction.</p> <p>Existing studies in systems elsewhere indicate that climate change will affect Macquarie Island albatrosses and giant petrels in various ways. A key limitation in the ability to identify and understand relevant links are current gaps in foraging data, particularly concerning post-fledging juveniles, non-breeding adults, and pre-breeding adults (Annex B).</p> <p>Climate change has been identified as having a significant impact on shy albatross breeding on Albatross Island, Tasmania although data collection and analysis is ongoing and adaptive (Thompson, 2015). A target study to develop and evaluate mitigation options has been undertaken and this work is ongoing (Alderman and Hobday, submitted).</p> <p>The current cost of this action is largely subsumed in the</p>					✓		

		cost of action A 1.1 (above), with additional undetermined resources provided by students and other collaborators.						
Specific Objective 2: Quantify and reduce land based threats to the survival and breeding parameters of albatrosses and giant petrels breeding in areas under Australian jurisdiction								
4. Feral pest species								
B 4.1	Complete the integrated pest eradication programme on Macquarie Island targeting rabbits and rodents.	<p>Macquarie Island was declared pest-free of <i>Oryctolagus cuniculus</i> (European rabbit), <i>Rattus rattus</i> (ship rat) and <i>Mus musculus</i> (house mouse) in 2014 (Hunt G (Minister for the Environment), 2014). <i>Felis catus</i> (cat) were eradicated from Macquarie Island by 2002 (Robinson & Copson, 2014).</p> <p>The overall cost of the Macquarie Island Pest Eradication Project was \$24.6 million, funded jointly by the Commonwealth and Tasmania (PWS, 2014).</p>				✓		
B 4.2	Stringent formal quarantine measures are in place and adhered to (including regulating access to all breeding islands).	<p>Access to breeding islands is regulated under legislation, and binding measures adopted under the <i>Antarctic Treaty</i>, done 1 December 1959, 402 UNTS 71 (entered into force 23 June 1961) (Annex C). Entry is subject to conditions including concerning biosecurity including biosecurity guidelines and permit conditions.</p> <p>The current cost of this action is absorbed by the Department of the Environment and Tasmanian Parks and Wildlife Service.</p>				✓		
B 4.3	Breeding islands assessed for presence of feral species: Tasmanian islands highest priority.	<p>B 4.3 <i>overall</i></p> <p>Not all introduced animal and plant species adversely affect breeding populations of albatrosses and giant petrels. Implementation of B 4.3 is affected by logistical constraints</p>					✓	

		and feasibility of assessing remote breeding islands.						
		Macquarie Island is assessed on an ongoing basis for presence of introduced species. <i>Sturnus vulgaris</i> (common starling) and <i>Carduelis carduelis</i> (red poll) remain as non-threatening vertebrate species introductions to Macquarie Island. <i>Calliphora</i> spp. (blowfly spp.) was identified recently as an introduced invertebrate species—any potential threat posed by this species is still to be determined (Alderman, 2015c). The current cost of this action is subsumed in the cost of action A 1.1 (above).	✓					
		Annual monitoring occurs for the presence of introduced vertebrate species on Albatross Island, and for other Tasmanian locations when visits occur. In 2014/15, no introduced vertebrate species were recorded on Albatross Island or Pedra Branca. The current cost of this action is subsumed in the cost of action A 1.1 (above).	✓					
		No visits have occurred to Bishop and Clerk Islets, Heard Island and McDonald Islands during the life of this plan. Visits to southern giant petrel breeding islands in the Australian Antarctic Territory have not included assessments of the presence of feral species during the life of this plan, noting such occurrences are unlikely.			✓			
5. Human disturbance at the nest								
B 5.1	Implement or continue restrictions (through protected area and other arrangements) on human disturbance at and access to albatross and giant petrel breeding sites.	Access restrictions are now in place concerning all breeding sites for albatrosses and petrels. During the life of this plan, a review commenced for the Tasmanian Wilderness World Heritage Area, access restrictions were introduced for Albatross Island (Mooney, pers. comm., 2013), access				✓		

		<p>arrangements for Heard Island and McDonald Islands were updated, and the Antarctic Specially Protected Area arrangements for Giganteus Island, Frazier Island and Hawker Island were updated (Annex C). The restriction on access to breeding sites contributes to preventing habitat loss (BirdLife Australia et al., 2015).</p> <p>The current cost of this action is absorbed by the Department of the Environment and Tasmanian Parks and Wildlife Service.</p>						
B 5.2	Education material regarding the impacts of wildlife disturbance should be provided to all visitors to albatross and giant petrel breeding colonies.	<p>Visitors to albatross and petrel breeding colonies are provided with access to the relevant management arrangements for the area to be visited. In Tasmania visitors are accompanied by Tasmanian Parks and Wildlife Service personnel during visits to breeding colonies (Macquarie Island, Albatross Island, Pedra Branca, and Mewstone).</p> <p>The current cost of this action is absorbed by the Department of the Environment and Tasmanian Parks and Wildlife Service.</p>				✓		
6. Loss of/competition for nesting habitat								
B 6.1		<p><i>B 6.1 overall</i></p> <p>This action includes three elements: (a) monitoring the distribution and abundance of Australasian gannets on Pedra Branca; (b) documenting interactions between shy albatross and Australasian gannets on Pedra Branca; and (c) assessing appropriate methods for limiting adverse interspecies interactions on Pedra Branca. Implementation of A 6.1 remains limited (see below).</p>					✓	
	Monitor shy albatross population on Pedra Branca for the relative distribution and abundance of	During the life of this plan the breeding colony at Pedra Branca has been monitored annually using aerial	✓					

	Australasian gannet.	<p>photography. Site visits are minimised due to work health and safety reasons, logistic and disturbance issues.</p> <p>The current cost of this action is subsumed in the cost of action A 1.1 (above).</p>						
	Document interactions between shy albatross and Australasian gannet and assess appropriate methods that may limit adverse interactions between the species.	<p>Programmable surveillance cameras were deployed on Pedra Branca in December 2014 to document inter-species interactions between shy albatross and Australasian gannet. The four cameras collect 60 sec high definition videos at hourly intervals and were retrieved in winter 2015 (Alderman, 2015b). Additional cameras were scheduled for deployment later in 2015 to provide data about incubation (Alderman, pers. comm., 2015a). Analyses of these data will assist in determining whether appropriate methods exist to limit adverse interspecies interactions.</p> <p>The current cost of this action is subsumed in the cost of action A 1.1 (above).</p>			✓			
7. Parasites and disease								
B 7.1		<p><i>B 7.1 overall</i></p> <p>This action includes two elements: (a) determining the baseline presence of disease for all breeding islands; and (b) implementing quarantine measures, where appropriate. Implementation of B 7.1 remains limited (see below).</p>					✓	
	Determine baseline presence of disease on breeding islands and implement stringent quarantine measures where appropriate.	<p>No conspicuous disease has been identified on any species breeding on Macquarie Island through superficial observations during banding and re-sighting of live birds, and necropsies of deceased individuals.</p> <p>The current cost of this action is subsumed in the cost of action A 1.1 (above).</p>		✓				
		<i>Avipoxvirus</i> sp. (avian pox virus) continues to affect shy		✓				

		<p>albatross chicks on Albatross Island (Woods, 2014). Work is ongoing to isolate the vector and develop a test for exposure to the disease (to be used on other shy albatross breeding sites, and, potentially for other albatross species). A novel <i>Ixodes eudyptidis</i> (tick)-borne <i>Phlebovirus</i> (Hunter Island Group virus) has also recently been identified (Wang et al., 2014).</p> <p>Surveillance testing of <i>Influenza A virus</i> (avian influenza) was undertaken on 50 pre-fledging chicks in March 2015 and came back negative (Alderman, 2015b).</p> <p>The current cost of this action is subsumed in the cost of action A 1.1 (above).</p>						
		Other breeding colonies were not assessed during the life of this plan— Bishop and Clerk Islets, Heard Island and McDonald Islands, and southern giant petrel breeding islands in the Australian Antarctic Territory.			✓			
B 7.2	Quantify the demographic impact of disease on shy albatross on Albatross Island.	<p>The prevalence and extent of avian pox virus on the Albatross Island population is assessed annually, based on observations of symptoms and sampling to record chick condition. This disease only affects chicks and its prevalence appears to differ spatially within the breeding colony.</p> <p>Longitudinal data are required to assess the relationship between chick health, and juvenile survival and recruitment rates. These data need to be collected over a time frame that extends beyond the life of the current recovery plan.</p> <p>The current cost of this action is subsumed in the cost of action A 1.1 (above).</p>					✓	
Specific Objective 3: Quantify and reduce marine based threats to the survival and breeding parameters of albatrosses and giant petrels foraging in waters under Australian jurisdiction								

8. Incidental catch during fishing operations								
C 8.1	All actions in the Threat Abatement Plan are fully implemented.	<p>C 8.1 <i>overall</i></p> <p>An updated threat abatement plan was introduced during the life of this plan (see below).</p>					✓	
		<p>A review of the <i>Threat Abatement Plan 2006 for the incidental catch (or bycatch) of seabirds during oceanic longline fishing operations</i> (seabird Threat Abatement Plan, 2006) (DEWR, 2006) was undertaken in 2011 (DSEWPC, 2011c). The review found:</p> <p>Significant efforts have been made to implement all actions specified in the seabird TAP [seabird Threat Abatement Plan, 2006]. These actions include several management, compliance and reporting actions; the mandatory use by fishers of bycatch mitigation measures; research on improved mitigation measures; using Australian Fisheries Management Authority observers to gather data on bycatch and the effectiveness of mitigation measures; educating stakeholders and others; and estimating and reporting of bycatch. One action, to accredit individual vessels demonstrating good practice and compliance, has not been implemented for several reasons, including that no vessel has sought accreditation and that, for the largest (pelagic) fishery, mitigation measures are not yet fully effective. Significant funding by the Commonwealth and industry has been provided for implementation of actions, which have involved a wide range of stakeholders.</p> <p>The large majority of actions under the seabird TAP [seabird Threat Abatement Plan, 2006] have been substantially or fully implemented. Positive results have been achieved, including the avoidance of and</p>		✓				

		<p>reduction in seabird bycatch over nearly five years.</p> <p>The cost of this action was absorbed by the Department of the Environment, Department of Agriculture and Water Resources, and Australian Fisheries Management Authority.</p>						
		<p>An updated <i>Threat Abatement Plan 2014 for the incidental catch (or bycatch) of seabirds during oceanic longline fishing operations</i> was adopted in 2014 (seabird Threat Abatement Plan, 2014) (Commonwealth of Australia, 2014).</p> <p>Actions included in the seabird Threat Abatement Plan, 2014 are being implemented fully within the parameters of the plan.</p> <p>The current cost of this action is absorbed by the Department of the Environment, Department of Agriculture and Water Resources, and Australian Fisheries Management Authority.</p>	✓					
C 8.2	<p>The scale and nature of interactions between albatrosses and giant petrels and trawl fishing operations in Australian waters are quantified and, if required, reporting processes are improved and bycatch is mitigated. (see also [Actions] C8.6 and D13.1).</p>	<p><i>C 8.2 overall</i></p> <p>During the life of this plan considerable progress has been made concerning characterising and mitigating seabird bycatch during trawl fishing operations internationally (Løkkeborg, 2011; Melvin et al., 2011; Pierre et al., 2012; Parker et al., 2013; Pierre & Debski, 2013; ACAP, 2014a), and in Australia (Alderman, 2011a; Pierre et al., 2014; AFMA, 2015b).</p>					✓	
		<p>The Australian Fisheries Management Authority has regulated the use of warp deflectors in Commonwealth-managed trawl fisheries that reduce the incidence of heavy contact by about 75 per cent, and has developed a guide to developing new seabird mitigation devices in trawl fisheries (AFMA, 2012c, 2015b).</p> <p>The South East Trawl Fishing Industry Association received</p>		✓				

		<p>an Australian Government 'Caring for our Country' grant of \$360 000 to develop and test devices and techniques to protect seabirds in the Commonwealth and Great Australian Bight trawl sectors including water sprays and bafflers (AFMA, 2014b). These trials are almost complete and have indentified two new mitigation approaches:</p> <p>a. Water sprayer—that generates a spray barrier within which the warp wires enter the water. The Australian Fisheries Management Authority has approved the use of water sprayers as a mitigation device, as a significant improvement over using warp deflectors.</p> <p>b. Baffler—that forms a physical barrier within which the warp wires enter the water. The Australian Fisheries Management Authority is considering the results of at sea experimental trials of this device.</p>						
		<p>The nature and scale of interactions between albatrosses and giant petrels and trawl fishing operations within the jurisdiction of the States and Northern Territory remain unknown. The development of a National Plan of Action to reduce the incidental catch of seabirds in capture fisheries by the Department of Agriculture and Water Resources remains outstanding during the life of this plan including concerning trawl fishing operations.</p>			✓			
C 8.3	<p>All longline and trawl fisheries, both Commonwealth and State managed, are and continue to be assessed for the risk of albatross and giant petrel interactions, and where required, a programme for the collection, synthesis and analysis of data relating to incidental mortality of albatrosses and giant petrels is introduced.</p>	<p><i>C 8.3 overall</i></p> <p>This action includes four elements: (a) assessing Commonwealth-managed fisheries for risk of albatross and giant petrel interactions; (b) introducing a data collection programme for Commonwealth-managed fisheries where required; (c) assessing State-managed fisheries for risk of albatross and giant petrel interactions; (d) introducing a data collection programme for State-managed fisheries where required. Implementation of C 8.3 remains limited</p>					✓	

		(see below).						
		<p>The Australian Fisheries Management Authority has conducted risk assessments across all Commonwealth-managed fisheries including longline and trawl fisheries, and implemented ecological risk management strategies responding to the outcomes of the risk assessment (AFMA, 2015a; Hobday et al., 2011).</p> <p>The seabird Threat Abatement Plan, 2014 includes actions stipulating data collection requirements in Commonwealth-managed longline fisheries (Commonwealth of Australia, 2014).</p>	✓					
		Assessments have been conducted concerning the incidental catch of seabirds (including albatrosses and giant petrels) in trawl, gillnet and purse-seine fisheries (Baker & Finley, submitted) and longline fisheries (Baker & Finley, 2008; Trebilco et al., 2011). An assessment has been undertaken of seabird and commercial fisheries interactions in Tasmanian State waters (Woehler, 2013).		✓				
C 8.4	Where bycatch in a fishery is identified as significant, limits or other appropriate management arrangements to prevent significant adverse impacts on the conservation status of the albatross and giant petrel species and populations are implemented.	<p><i>C 8.4 overall</i></p> <p>C 8.4 could be read narrowly as only referring to commercial fisheries or broadly to include, for example, recreational fisheries and aquaculture, and the action encompasses Commonwealth and State-managed fisheries. Tuck (2011) cautions against over-reliance on bycatch rates in measuring fisheries performance in mitigating seabird bycatch, noting that such measures need to be considered along with changes in fishing effort, trends in overall bycatch at a species-specific level, and changes in population abundance of affected species. Tuck (2011) recommends:</p> <p>a. improving recoding and estimation of bycatch rates including identification of species bycaught</p>					✓	

		<ul style="list-style-type: none"> b. improving application and effectiveness of mitigation measures c. long-term monitoring programmes d. improving models for predicting fishery impacts on populations. 						
		<p>The seabird Threat Abatement Plan, 2014 includes criteria requiring seabird bycatch in Commonwealth-managed longline fisheries to be less than stipulated bycatch rates, either 0.05 birds per 1000 hooks, or 0.01 birds per 1000 hooks depending on the fishery, fishing sector and fishing area (Commonwealth of Australia, 2014).</p> <p>In addition to requirements under the seabird Threat Abatement Plan, 2014:</p> <ul style="list-style-type: none"> a. the Antarctic Fishery at Heard Island and McDonald Islands³ is subject to seasonal and bycatch limitations consistent with conservation measures for seabird bycatch mitigation adopted by the Commission for the Conservation of Antarctic Marine Living Resources (AFMA, 2012b; CCAMLR, 2014a, 2014b, 2104c, 2014d, 2014e, 2014f) b. the Antarctic Fishery at Macquarie Island⁴ is subject to seasonal and temporal restrictions, a species-specific bycatch limit concerning each of wandering albatross, black-browed albatross, grey-headed albatross, <i>Procellaria cinerea</i> (grey petrel), and <i>Pterodroma mollis</i> (soft-plumaged petrel), as well as conservation measures for seabird bycatch mitigation consistent with those implemented under the Convention on the 	✓					

³ Fishery defined by the *Heard Island and McDonald Islands Fishery Management Plan 2002* (AFMA, 2012b).

⁴ Fishery defined by the *Macquarie Island Toothfish Fishery Management Plan 2006* (AFMA, 2013b).

		Conservation of Antarctic Marine Living Resources (AFMA, 2013b; CCAMLR, 2014a, 2014b, 2104c).						
		The States and Northern Territory have not identified whether and to what extent seabird bycatch is occurring in fisheries within their jurisdiction including concerning recreational fisheries and aquaculture.		✓				
C 8.5	Monitor the frequency of fishing equipment ingestions / entanglement at breeding colonies as part of existing population monitoring programmes under Action A 1.1.	Ingestion and entanglement is monitored systematically, as part of the existing monitoring of breeding populations at Macquarie Island and Albatross Island. The current cost of this action is subsumed in the cost of action A 1.1 (above).				✓		
C 8.6	Determine vulnerability of species to bycatch mortality using molecular species assignment methods (and building on previous genetic provenance work).	The aspiration underlying inclusion of this action was to facilitate species identification (not provenance) where this was problematic at sea using visual methods, for example when identifying 'shy-type' albatrosses. Following development of a molecular test to determine species composition of fisheries bycatch of shy albatross (Abbott et al., 2006), analyses of seabird bycatch carcasses confirm that the range and interaction of shy albatrosses with fisheries includes the Indian Ocean and Atlantic Ocean (Abbott & Double, 2003a, 2003b; Abbott et al., 2006; Gianuca et al., 2011; Seco Pon & Tamini, 2013; Jimenez et al., 2015). Molecular tests are intended to be applied more broadly by Parties to the Agreement on the Conservation of Albatrosses and Petrels to assist with species identification.					✓	
9. Competition with fisheries for marine resources								
C 9.1		<i>C 9.1 overall</i> This action includes four elements: (a) encouraging research					✓	

		about quantifying dietary requirements of albatrosses and giant petrels breeding (priority) and foraging in Australian jurisdiction; (b) providing data concerning dietary requirements of albatross and giant petrels breeding (priority) and foraging in Australian jurisdiction to the Australian Fisheries Management Authority; (c) promoting using total dietary requirements of albatrosses and petrels into fisheries assessments; (d) promoting using total dietary requirements of albatrosses and petrels into improving management strategies. Implementation of C 9.1 remains limited (see below).						
	Encourage research to quantify the scale and nature of dietary requirements of albatrosses and giant petrels, with priority for populations breeding in Australian jurisdiction.	Work is currently being undertaken on the diet of albatrosses and giant petrels (Alderman, pers. comm., 2015a). The diet of shy albatross breeding at Albatross Island has been studied previously, and identified that fisheries discards are a component of the diet of this species (Hedd & Gales, 2001). The current cost of this action is subsumed in the cost of action A 1.1 (above).	✓					
	Provide these data to the Australian Fisheries Management Authority and other agencies managing fisheries that overlap with albatross and giant petrel species.	No work has been undertaken on this issue.			✓			
	Promote the incorporation of total dietary requirements of albatross and giant petrel populations into fisheries assessments and the development of improved management strategies.	Each Commonwealth fishery is assessed for its ecological sustainability. Direct provision for dietary requirements is not made in these assessments. The requirements of an ecosystem-based approach to fisheries management indirectly consider these aspects.			✓			
10. Dependence on fisheries discards								
C 10.1	Continue to monitor the effects of offal discharge on the reproductive success of albatrosses and	No work has been undertaken on this issue.						✓

	giant petrels, to the extent feasible.							
C 10.2	Continue to encourage management of offal discharge to prevent birds habituating to this food source.	<p>Offal discharge is regulated in Commonwealth-managed trawl and longline fisheries:</p> <p>a. Antarctic Fishery—offal discharge is prohibited (AFMA, 2012b, 2013b).</p> <p>b. Southern and Eastern Scalefish and Shark Fishery⁵—offal discharge is prohibited from longline fishing vessels when setting and hauling, and seabird management plans must include measures to manage discharges from trawl vessels to reduce seabird attraction and interaction (AFMA, 2015c). Work has commenced concerning offal management by trawl fishing vessels. A working group has been established to identify feasible, effective and efficient approaches to offal management in the Commonwealth trawl sector and Great Australian Bight Trawl sectors of the fishery. The working group includes participation by the Australian Fisheries Management Authority, South East Trawl Fishing Industry Association and industry, and its advice will likely lead to at sea trials of potential management approaches that may be included in an integrated trawl seabird bycatch mitigation strategy.</p> <p>c. Eastern Tuna and Billfish Fishery⁶ and Western Tuna and Billfish Fishery⁷—longline fishing vessels must not discharge of offal while setting, and while hauling (exemption for small boats may be granted by the Australian Fisheries Management Authority) (AFMA, 2015c).</p>				✓		

⁵ A fishery defined in the *Southern and Eastern Scalefish and Shark Fishery Management Plan 2003* (AFMA 2012c).

⁶ A fishery defined in the *Eastern Tuna and Billfish Fishery Management Plan 2010* (AFMA, 2012a).

⁷ A fishery defined in the *Western Tuna and Billfish Fishery Management Plan 2010* (AFMA, 2012d).

		<p>d. Coral Sea Fishery⁸—no offal management requirements stipulated (AFMA, 2015c).</p> <p>e. Small Pelagic Fishery⁹—offal discharge is prohibited for all mid-water trawl vessels while the fishing gear is in the water (AFMA, 2015c).</p>						
11. Marine pollution								
C 11.1	<p>Where feasible, population monitoring programmes also monitor, in a standardised manner, the incidence of:</p> <p>i) oiled birds at the nest</p> <p>ii) marine debris egestion¹⁰/entanglement at the nests</p> <p>iii) egg shell thinning.</p>	<p>This action includes three elements, as part of the existing population monitoring programmes: (a) monitoring for presence of oiled birds at the nest; (b) monitoring marine debris egestion/entanglement at the nests; and (c) monitoring egg shell thinning.</p> <p>Population monitoring at Macquarie Island and Albatross Island systematically report whether there are oiled birds, and marine debris egestion/entanglement at the nest (Alderman, 2015b, 2015c). In 2014/15, there were no reports of oiled birds or entanglement for any species at these sites. At Albatross Island nine deceased shy albatross chicks were necropsied (one contained a segment of plastic twine), and 12 plastic fragments were recovered during opportunistic surface collection (Alderman, 2015b, 2015c). Monitoring of egg-shell thinning commenced in 2015 on Albatross Island (Alderman, pers. comm., 2015a).</p> <p>The current cost of this action is subsumed in the cost of action A 1.1 (above).</p>					✓	

⁸ A fishery defined under the *Fisheries Management Regulations 1992* (Cth) and managed under the *Fisheries Management Act 1991* (Cth).

⁹ A fishery defined in the *Small Pelagic Fishery Management Plan 2009* (AFMA, 2014a).

¹⁰ Excreted unusable or undigested material.

Specific Objective 4: Educate fishers and promote public awareness of the threats to albatrosses and giant petrels								
D 12.1	Design and implement education strategies for fisheries with significant risk of albatross and giant petrel interactions.	<p>Considerable work has been undertaken concerning Commonwealth-managed fisheries. The Australian Fisheries Management Authority officers undertake regular port visits to brief industry operators about changes to management arrangements for fisheries. Management arrangement booklets and related material for each fishery highlight the importance of minimising interactions with seabirds during fishing operations, and reporting any interactions that occur, particularly in longline and trawl fisheries (AFMA, 2015c). The port visits and materials inform fishing operators about measures that help reduce interactions with seabirds including threatened albatrosses and giant petrels.</p> <p>The South East Trawl Fishing Industry Association has established industry champions to provide leadership in seabird bycatch mitigation in trawl fisheries. This work has included conducting a training and development exchange visit to New Zealand to develop the skills and knowledge of the industry champions, and is funded under an innovation grant (AFMA, 2014).</p> <p>The Australian Fisheries Management Authority has developed a Seabird Identification Guide for use by commercial fishers operating in southern Australia, and on board Australian Fisheries Management Authority observers to help identify seabird bycatch to the species level including for albatrosses and giant petrels (AFMA, 2013a). This guide augments the existing protected species identification guide (AFMA, 2006).</p> <p>Australia has helped with developing a seabird bycatch identification guide for use by fisheries observers to assist in the identification of albatrosses and some commonly caught</p>					✓	

		<p>petrels and shearwaters killed in longline operations (ACAP, 2015d), and a seabird de-hooking guide (ACAP, 2014b).</p> <p>A range of educational material is produced for fishers by the States and Northern Territory concerning topics including bycatch and marine plastics. This information includes, but is not limited to identification guides, fact sheets and educational resources for teachers. The information is ordinarily generic in nature, rather than having albatrosses and giant petrels as a focus.</p>						
D 12.2	Where feasible, encourage the development by industry and others of measures that allow consumers to distinguish products from 'albatross and giant petrel friendly' fisheries. Develop criteria that might facilitate formal recognition of such fisheries.	The Australian Marine Conservation Society has developed an online sustainability guide for seafood consumers in Australia (AMCS, 2015) The guide provides consumers with generic information about whether commercial harvesting is sustainable including whether fishing operations result in seabird bycatch. Specific information concerning albatrosses and giant petrels is not included. The guide may be downloaded onto portable computer devices.					✓	
Specific Objective 5: Achieve substantial progress towards global conservation of albatrosses and giant petrels in international conservation and fishing fora								
E 13.1	Promote best practice seabird by-catch mitigation, data collection and dissemination by foreign fishers, including through international fora such as the Commission for the Conservation of Antarctic Marine Living Resources, Commission for the Conservation of Southern Bluefin Tuna, Indian Ocean Tuna Commission, Western and Central Pacific Fisheries Commission and other applicable international arrangements to which Australia is a Party.	<p>Australia continues to advocate strongly for adoption of binding conservation measures concerning seabird bycatch mitigation in those regional fisheries bodies to which it is a member, consistent with best practice advice developed by the Agreement on the Conservation of Albatrosses and Petrels. With support from Australia, as a States Party, new and updated conservation measures concerning seabird bycatch mitigation have been adopted by:</p> <p>a. Commission for the Conservation of Southern Bluefin Tuna—a non-binding recommendation was adopted in 2011 to mitigate the impact on ecologically related species of fishing for <i>Thunnus maccoyii</i> (southern</p>					✓	

		<p>bluefin tuna).</p> <p>b. Indian Ocean Tuna Commission—a binding measure was adopted in 2012 concerning reducing the incidental bycatch of seabirds in longline fisheries in the Indian Ocean.</p> <p>c. South Pacific Regional Fisheries Management Organisation—a binding measure was adopted in 2014 concerning minimising bycatch of seabirds in areas beyond national jurisdiction in the southern Pacific Ocean.</p> <p>d. Western and Central Pacific Fisheries Commission—a binding measure was adopted in 2012 to mitigate the impact of fishing for highly migratory fish stocks on seabirds in the western and central Pacific Ocean.</p> <p>e. Commission for the Conservation of Antarctic Marine Living Resources—long-standing, binding measures concerning minimising incidental mortality of seabirds in the course of longline and trawl fishing in the Southern Ocean are subject to ongoing refinement. Fishery-specific conservation measures may impose stricter conditions including area and seasonal closures, bird mortality limits, and night setting requirements.</p> <p>The current cost of this action is absorbed by the Department of the Environment and Department of Agriculture and Water Resources.</p> <p>Australia has also advocated within the Agreement on the Conservation of Albatrosses and Petrels for coordinated action among States Parties to other regional fisheries and conservation bodies concerning adopting new and updated conservation measures concerning seabird bycatch mitigation including:</p>							
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		<p>a. Inter-American Tropical Tuna Commission—a binding measure was adopted in 2011 to mitigate the impact on seabirds of fishing for highly migratory species in the eastern Pacific Ocean</p> <p>b. International Commission for the Conservation of Atlantic Tunas—a binding measure was adopted in 2011 on reducing incidental bycatch of seabirds in longline fisheries operating in the Atlantic Ocean.</p> <p>The current cost of this action is absorbed by the Department of the Environment.</p>							
E 13.2	Use diplomatic and other means to encourage countries to co-operate to conserve albatrosses and petrels, including by avoiding or mitigating fisheries bycatch.	<p>Australia continues to encourage Range States to accede to the Agreement on the Conservation of Albatrosses and Petrels—Namibia announced in 2015 that it will accede to the Agreement. Australia continues to encourage States and fishing entities within the range of albatrosses and giant petrels to conserve these species on land and at sea. Australia engages in a range of bilateral and multilateral cooperative efforts to improve mitigation of seabird bycatch.</p> <p>The current cost of this action is absorbed by the Department of the Environment and Department of Agriculture and Water Resources.</p> <p>The Agreement on the Conservation of Albatrosses and Petrels' taxonomy for albatrosses is now used by BirdLife International, the International Union for Conservation of Nature and <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) (IUCN, 2015; del Hoyo & Collar, 2014). A review is underway of the lists of albatrosses and petrels under s 178 (threatened species), s 209 (migratory species) and s 248 (marine) of the <i>Environment Protection and Biodiversity Conservation Act</i></p>				✓			

		1999 (Cth) to improve alignment of domestic and international listings of these species.						
E 13.3	Encourage the Agreement on the Conservation of Albatrosses and Petrels to develop strong relationships with regional fisheries management organisations, the Food and Agriculture Organization of the United Nations and other relevant bodies, including by promulgating assessments of albatross and giant petrel species population trends and status, their spatial distribution and bycatch mitigation measures.	<p>Australia has been influential in the Agreement on the Conservation of Albatrosses and Petrels in encouraging mutually beneficial relationships with regional fisheries and conservation bodies. This has led the Agreement on the Conservation of Albatrosses and Petrels Secretariat to enter into memorandums of understanding with the Commission for the Conservation of Antarctic Marine Living Resources, Commission for the Conservation of Southern Bluefin Tuna, Indian Ocean Tuna Commission, Inter-American Tropical Tuna Commission, Latin American Organization for Fisheries Development, South Pacific Regional Fisheries Management Organisation, and Western and Central Pacific Fisheries Commission (ACAP, 2015a). Negotiations are ongoing concerning entering into memorandums of understanding with other regional fisheries and conservation bodies.</p> <p>The current cost of this action is absorbed by the Department of the Environment and Department of Agriculture and Water Resources.</p>					✓	
		SUMMARY ACTION STATUS				10	17	1

Table 1.2: Additional actions undertaken.

Action	Links to any existing objectives	Rationale for inclusion and implementation details
1. Disease dynamics on Albatross Island	B 7.2	Research has commenced on Albatross Island to quantify the role of disease in shaping shy albatross population demographics and to evaluate the potential for disease control as a management tool (Alderman, 2014). As part of this research, animal ethics approval was obtained to apply avian insecticide to albatross chicks mid-way through their development period, around February, and then compare the survival of treated

		<p>chicks with those in a control plot (Alderman, 2014). Survival of treated chicks after six weeks was significantly higher than those in control areas (Alderman, 2014).</p> <p>A more comprehensive investigation of disease affecting shy albatross on Albatross Island has commenced to:</p> <ul style="list-style-type: none"> a. improve the understanding of disease dynamics b. increase the efficacy and efficiency of insecticide treatment as a management tool c. identify the avian pox virus vector d. develop a molecular test to determine if birds have been exposed to the virus (Alderman, 2015b).
2. Threatened species strategy	-	<p>The Australian Government's threatened species strategy was released in July 2015 (DoE, 2015). This strategy focuses on creating safe havens, improving habitat, intervening in emergencies and tackling feral cats. Not all species are explicitly referenced—including albatrosses and giant petrels. The action plan for the strategy identifies, among other things, 20 threatened bird species for particular attention—albatrosses and giant petrels are not included. It notes reviews of individual recovery plans provide reports concerning progress in recovering threatened species. It also notes establishment of a \$30 million Threatened Species Recovery Hub, as part of the National Environmental Science Programme.</p>
3. Fisheries Research and Development Corporation's research, development and extension plan	C 8.2, C 8.3, C 8.4	<p>The Fisheries Research and Development Corporation released its research, development and extension plan for the period 2015-20 (FRDC, 2015). The plan recognises, among other things, the need to continue prioritising investment in research, development and extension that contributes to the sustainability of fishing including considering threatened, endangered and protected species.</p>
4. Recovery planning	B 4.1, B 4.3, B 5.1	<p>BirdLife Australia, the Australian Conservation Foundation and Environmental Justice Australia released a report on recovery planning in 2015 (BirdLife Australia et al., 2015). The report recommends, among other things, that recovery plans incorporate measures to protect critical habitat and avoid future habitat loss.</p>
5. Threats and priorities	Specific Objective 2 Specific Objective 3	<p>The monitored portion of the global seabird population has declined by nearly 70 per cent between 1950 and 2010 (Paleczny et al., 2015). A review of the conservation status and threats facing threatened seabird species globally highlights that in addition to existing threats identified in this plan, consideration should also be given to the potential effect on seabirds of acute mortality events, aquaculture, and energy generation in coastal and offshore marine habitats (Croxall et al., 2012).</p> <p>Globally, a review identifies that at least 400,000 birds die in gillnets each year (Zydelis et al., 2013). The</p>

		<p>review highlights that little is known about the extent of seabird mortality in gillnet fisheries in Australian waters, and development of mitigation methods is not well-advanced for this gear type. A workshop to identify technical methods for reducing bycatch of seabirds, sea turtles, and marine mammals in gillnets identified a range of visual, acoustic and other methods to mitigate seabird bycatch in gillnets for future research (Wiedenfeld et al., 2015).</p> <p>A review of conservation monitoring programmes highlights the need to include trigger points for management intervention if population declines are detected for threatened species (Lindenmayer et al., 2013). The review highlights that a trigger-based management programme will require ongoing statistically robust population monitoring.</p> <p>The impact of marine debris on marine life has been reviewed globally (Gall & Thompson, 2015), and a recent assessment highlights that the risk of marine plastic pollution impacts on seabirds is greatest at the boundary of the southern convergence, particularly in the Tasman Sea (Wilcox et al., 2015).</p> <p>A university student is assessing the visibility of different coloured gillnets to <i>Eudyptula minor</i> (little penguin) to help identify efficient and cost-effective ways to reduce bycatch of seabirds in gillnets, including penguins, albatrosses and petrels (Baker, pers. comm., 2015).</p>
6. Species	Specific Objective 1	<p>Consideration was given during the review of this plan to the scope of species covered including concerning the following species not presently listed under this plan that breed or forage in Australian jurisdiction (Annex A).</p> <ol style="list-style-type: none"> Action 8.4 indicates that seabird bycatch mitigation measures apply to the grey petrel, which breeds on Macquarie Island, and soft-plumaged petrel, which breeds on Maatsuker Island off Tasmania and on Macquarie Island (Garnett et al., 2011). A related recovery plan for 10 seabird species included the soft-plumaged petrel (DEH, 2005a, 2005b). That plan lapsed on 1 October 2015 under sunset provisions. A review is underway of the <i>Threat abatement plan for the impact of marine debris on marine vertebrate species</i> (DEWHA, 2009). That threat abatement plan identifies, in addition to albatrosses and giant petrels, <i>Halobaena caerulea</i> (blue petrel) and <i>Pterodroma leucoptera</i> (white-winged petrel) as negatively impacted by marine debris. These species were included in the recovery plan for 10 seabird species that has now lapsed. The soft-plumaged petrel, blue petrel and white-winged petrel are listed under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth). The grey petrel, <i>Procellaria aequinoctialis</i> (white-chinned petrel), <i>P. westlandica</i> (Westland petrel), and <i>P. parkinsoni</i> (black petrel) are listed under the Agreement on the Conservation of Albatrosses and Petrels

		<p>(ACAP, 2015a). The species are included in the action plan for Australian birds for 2010 as birds in danger (Garnett, 2011).</p> <p>e. Laysan albatross is not listed under s 178 of the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) as threatened, and this species has been removed from the list of migratory species under s 209 of the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth).</p> <p>Participants at the consultation workshop concerning reviewing the recovery plan agreed that a future recovery plan should amend the list of species: to remove Laysan albatross—a vagrant species for Australia, and to include grey petrel, white-chinned petrel, Westland petrel, and black petrel—species included in the list of species under the Agreement on the Conservation of Albatrosses and Petrels. The participants considered that conservation advices may assist with the recovery of the soft-plumaged petrel, white-winged petrel, and blue petrel.</p>
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DISCUSSION OF RECOVERY ACTION IMPLEMENTATION

All actions identified in the recovery plan are underway, except for one, with several actions completed. The eradication of rabbits and rodents from Macquarie Island is a major landmark for Australia in the conservation of threatened albatrosses and giant petrels breeding at this location. The revegetation of Macquarie Island in coming years is expected to improve the habitat for breeding albatrosses and giant petrels. There has been a range of important conservation work concerning shy albatross at Albatross Island. The introduction of prescribed access arrangements for Albatross Island during the life of this plan means that all breeding sites in Australian jurisdiction are now protected from human disturbance. Recent innovative work at Albatross Island involves treating shy albatross to control disease, and introduction of a surveillance camera to monitor population demographics. Access to breeding sites other than Albatross Island and Macquarie Island has been problematic. Work health and safety concerns limit the accessibility of Pedra Branca and Mewstone. There has not been an opportunity to visit Bishop and Clerk Islets, and Heard Island and McDonald Islands. Access to southern giant petrel breeding sites in the Australian Antarctic Territory at Giganteus Island, Frazier Islands, and Hawker Island is generally prohibited during the breeding season and remote surveillance cameras do not provide data adequate for demographic purposes. Certain lower priority actions have not occurred. The seabirds Threat Abatement Plan, 2014 is addressing the key threatening process of incidental catch (or bycatch) of seabirds during oceanic longline fishing operations, with levels of seabird bycatch in Commonwealth-managed longline fisheries three orders of magnitude below historical highs. This abatement is due to the combined cooperative efforts and commitment of industry, environmental stakeholders, scientific experts, and innovators.

There is considerable variation in implementation between the Commonwealth, and the States and Northern Territory. In part, the absence of a National Plan of Action to reduce the incidental catch of seabirds in capture fisheries continues to limit engagement by, and commitment to, seabird bycatch mitigation across jurisdictions. With the exception of Tasmania, the State and Territories have not identified seabird bycatch including for albatrosses and

giant petrels as a concern in their managed fisheries. Without comprehensive assessment of each fishery it is not possible to resolve the nature and scope of risk to the recovery of albatrosses and giant petrels. The focus of recovery actions has been on commercial fishing operations. Concern also exists about the impact of other fishing activities including recreational fishing and aquaculture on albatrosses and giant petrels.

2.0: EVALUATION AGAINST RECOVERY PLAN OBJECTIVES

Overall recovery plan objective: to ensure the long-term survival and recovery of albatross and giant petrel populations breeding and foraging in Australian jurisdiction by reducing or eliminating human-related threats at sea and on land.

The consultation workshop noted that several criteria to achieve specific objectives under the recovery plan were a compound of specific elements. Participants at this workshop requested that the evaluation provided an overall indication of the status of each criterion (see final column in the table below), as well as the status of specific elements for each compound criterion (see additional column in the table below).

Status progress: 0 = Cannot be assessed (criteria not measurable or actions to measure not implemented) = **achievement of objective can't be assessed**
 1 = No progress towards meeting criteria = **objective not achieved**
 2 = Criteria not met but some progress = **objective partly achieved**
 3 = Criteria met = **objective achieved**

Recovery Objective	Recovery criteria	Status progress of specific elements	Status progress overall	Comments
Specific objective 1: Research and monitoring of the biology, ecology and populations dynamics of albatrosses and giant petrels breeding within Australian jurisdiction is sufficient to understand conservation status and to implement effective and efficient conservation measures.				
1. Population monitoring programmes	A.1.1 Robust and up to date (i.e. preferably within 5 but no more than 10 years) population estimates are available for all albatross and giant petrel populations breeding under	2	2	Robust data are collected for sites where population monitoring occurs—Macquarie Island, Albatross Island, Pedra Branca and Mewstone; little or no information is available for other sites. Population estimates for Bishop and Clerk Islets, and Heard Island and McDonald Islands are more than

	Australian jurisdiction.			10 years old.
	Repeat monitoring strategies are developed for each population, tailored for logistical and other constraints and consideration given to the use of remote methods.	2		<p>Consistent monitoring strategies apply for sites where population monitoring occurs. A combination of direct and remote methodologies is used. Use of remote methods provides limited breeding phenology data concerning sites in the Australian Antarctic Territory.</p> <p>Strategies are not in place for the efficient and effective monitoring of Bishop and Clerk Islets, Heard Island and McDonald Islands, and southern giant petrel breeding sites in Antarctica—particularly concerning obtaining population estimates without causing significant disturbance of the Antarctic breeding populations. Logistical constraints underpin the lack of monitoring of these populations.</p>
	A.1.2 Robust estimates and trends for survivorship and breeding parameters of Macquarie Island and Albatross Island albatrosses are known with confidence and reported regularly.	3	2	Robust estimates and trends are available routinely for sites where population monitoring occurs.
	Extent to which demographic parameters driving population decreases in these populations are identified and described.	2		Extent to which demographic parameters are driving population decreases is known is largely contingent upon the updated adult and juvenile survival rate estimates. This is comprehensively known for Albatross Island, with work in progress for Pedra Branca and Macquarie Island, while Mewstone population trends are still being established.
	A.1.3 All population estimates and demographic trend data are updated annually (or as appropriate) with the Agreement on the Conservation of Albatrosses and Petrels and other relevant organisations.	3	2	The database of the Agreement on the Conservation of Albatrosses and Petrels is updated regularly to include any new data concerning Australian populations of albatrosses and giant petrels.

	There is alignment of conservation listings between state and federal governments and the International Union for Conservation of Nature where appropriate.	2		There are ongoing efforts by the Commonwealth, and state, and territory governments to align threatened species listings consistent with approaches used by the International Union for Conservation of Nature. Alignment is presently infeasible, due to differences in the statutory descriptions of threatened species (Annex D). There is some alignment between the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth), and the action plan for Australian birds at the Commonwealth level (Annex A).
2. Foraging distributions	A.2.1 Gaps in knowledge of foraging ranges and at sea distributions undergo regular assessment annually or as appropriate (i.e. changes to threats or population status).	2	2	Gaps remain in knowledge of foraging behaviour, as telemetry studies concerning albatross and giant petrel populations have been limited (Annex B). There are gaps in the representation of life-history stages, with data for juveniles and/or non-breeding adults generally absent. Data are insufficient to monitor changes to threats or population status.
	Priorities are identified and data are collected where appropriate.	2		A lot of work has been done to identify priorities for ongoing telemetry studies—however data collection is contingent on securing additional funding for tracking research.
	All remote tracking data are submitted to Procellariiform global tracking database.	3		Data are submitted to the Procellariiform global tracking database, as these become available.
3. Climate change	A.3.1 Where climate change is identified as having the potential for significant negative impacts in Australian populations of seabirds: i) appropriate monitoring strategies are implemented to fill information gaps ii) mitigation actions are identified and adopted where feasible and		2	Climate change is anticipated to affect albatrosses and giant petrels in Australian jurisdiction in various ways—research has identified climate change as having a significant impact on shy albatross. Additional information is required to identify and understand climate change impacts—data collection is reliant on further investigations to address existing gaps in data about foraging behaviour (Action 2.1). Further work is required to identify climate change mitigation actions.

	appropriate.			
Specific objective 2: Quantify and reduce land based threats to the survival and breeding parameters of albatrosses and giant petrels breeding within areas under Australian jurisdiction.				
4. Feral pest species	B.4.1 On Macquarie Island rabbits and rodents have been eliminated.		3	Rabbits and rodents have been eradicated on Macquarie Island.
	B.4.2 Mandatory [quarantine] measures are in place and adhered to (measured).	2	2	Strict pre-arrival biosecurity arrangements apply concerning accessing breeding populations of albatrosses and giant petrels in Australian jurisdiction. The extent to which these are adhered to is not measured consistently for each breeding site.
	No new introductions occur.	3		The Agreement on the Conservation of Albatrosses and Petrels limits consideration of introduced species of fauna and flora to those species where there are confirmed land-based threats to listed species capable of causing population-level changes. No new introductions have occurred of species attributable to human activity with a demonstrated adverse impact on albatrosses and giant petrels. An invertebrate introduction detected recently at Macquarie Island may potentially affect seabirds. Monitoring does not occur at Bishop and Clerk Islets, Heard Island and McDonald Islands, and the Australian Antarctic Territory.
	B.4.3 Accurate and up to date catalogue of feral species on all breeding islands.		3	A catalogue is maintained for sites where population monitoring occurs. The Agreement on the Conservation of Albatrosses and Petrels maintains an up-to-date catalogue for all known breeding colonies globally.

5. Human disturbance at the nest	B.5.1 Protected area arrangements or other similar controls are established or maintained, and regularly assessed.	3	3	Protected area arrangements apply to all albatross and giant petrel breeding colonies under Australian jurisdiction (Annex C).
	Access to breeding islands within areas under Australian jurisdiction is restricted to appropriate permit holders only.	3		All albatross and giant petrel breeding colonies under Australian jurisdiction are subject to prescribed access arrangements; the public does not have a general right of access and access is restricted to appropriate permit holders (Annex C).
	B.5.2 Education material is prepared and distributed as appropriate.		3	Australian Antarctic programme expeditioners receive formal briefings concerning avoiding wildlife disturbance. People seeking authorisation to visit breeding colonies are advised about restrictions set out in the relevant management plans.
6. Loss of/competition for nesting habitat	B.6.1 The relative distribution and abundance of shy albatrosses and Australasian gannets at Pedra Branca are monitored and measured.	3	2	Ongoing monitoring including through remote surveillance cameras captures information about the relative numbers and distribution of shy albatross and Australasian gannets at Pedra Branca.
	Interactions are documented and methods to limit adverse interactions are assessed and, where appropriate, implemented.	2		Remote surveillance captures information about inter-species interactions at this site, and will be used to inform decision-making concerning potential mitigation actions.
7. Parasites and disease	B.7.1 Disease presence is determined and no new diseases or parasites are transferred by humans.		0	Disease presence is being progressively monitored at Albatross Island—a reliable histological/molecular method for disease surveillance and monitoring of exposure is under development. No new disease introductions, attributable to human activity, have been documented.
	B.7.2 The impact of disease on shy albatross survival and breeding parameters is established and monitored over time.	2	2	Investigation of the impact of disease on shy albatross at Albatross Island is ongoing.

	Further research and/or mitigating actions are considered as appropriate.	3		Mitigation actions have been trialled and implemented at Albatross Island.
Specific objective 3: Quantify and reduce marine based threats to the survival and breeding parameters of albatrosses and giant petrels foraging in waters under Australian jurisdiction.				
8. Incidental catch during fishing operations	C.8.1 Robust observer data indicate bycatch rates approach or reach zero; and there is full compliance with mitigation measures.		2	<p>Observer coverage targets for longline fisheries have been met in most fisheries/seasons/areas—although differences of opinion exist among stakeholders about the proportion of observer coverage required to be ‘robust’. The progressive implementation of electronic monitoring systems is assisting in improving levels of independent monitoring of fishing operations.</p> <p>The observer data indicate bycatch rate criteria under the seabird Threat Abatement Plan, 2014 have been met in most fisheries/seasons/areas, with some fisheries having near zero to zero observed bycatch of seabirds. Management action was taken under the seabird Threat Abatement Plan, 2006 to address instances where the bycatch rate criteria were exceeded.</p> <p>Seabird bycatch rates in trawl fisheries are trending downwards with the implementation of technologies designed to reduce interactions between seabirds and trawl warps.</p> <p>Observed compliance with mitigation measures is generally high—some non-compliance issues arise that are addressed by the Australian Fisheries Management Authority, e.g. inability of bird scaring lines to meet minimum aerial extent</p>

				requirements.
	C.8.2 Where required, observer and other data collection programmes are established that report bycatch data in a timely and relevant manner, allowing for adaptive and responsive management, and the effectiveness of any mitigation actions taken.		2	Independent monitoring occurs of Commonwealth-managed fisheries involves either on board observers or electronic monitoring system approaches. This monitoring includes requirements for timely reporting of seabird bycatch to facilitate management action. There remains a paucity of information about comparable independent monitoring of State and Territory commercial and recreational fishing activities.
	C.8.3 Agreed risk assessment process developed; observer programmes in place and reporting of robust data and mitigation action where appropriate.	2	2	Risk assessments have been conducted across Commonwealth-managed fisheries with action to mitigate risks.
	Reporting of interactions with <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) listed species.	3		There is quarterly reporting about interactions with species listed under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth), and annual reporting under the seabird Threat Abatement Plan, 2014.
	C.8.4 Where the Department of the Environment identifies the potential for significant adverse impacts on albatross and giant petrel populations, associated fisheries adhere to agreed limits and facilitate timely reporting for monitoring of catch events and rates.	2/3	2/3	Enhanced seabird bycatch mitigation requirements apply where there is potential for significant adverse impacts on albatrosses and giant petrels, particularly in the Antarctic Fishery.
	Where appropriate, other measures such as closures and move on provisions have been implemented.	2/3		Seasonal closures apply to the Antarctic Fishery during the austral summer. The seabird Threat Abatement Plan, 2014 enables move on requirements for longline fishing vessels.

	<p>C.8.5 Fishing equipment ingestion/entanglement at breeding colonies is monitored and quantified.</p> <p><i>Monitoring of fishing gear entanglement and/or ingestion is a low priority action undertaken as part of a high priority action (Action A.1.1).</i></p>		2	Existing population monitoring programmes record instances of fishing equipment ingestion/entanglement when they occur.
	<p>C.8.6 Provenance of species is determined genetically and analysed in relation to fishing effort to determine species specific management actions.</p>		0	Available techniques do not allow for provenance of species to be determined presently. This has been a low priority during the life of this plan due to limited availability and funding for collection and analysis of bycatch albatrosses and giant petrels. Return of samples landed at locations beyond Australian jurisdiction is infeasible, due to quarantine requirements and shipping costs.
<p>9. Competition with fisheries for marine resources</p>	<p>C.9.1 The best available scientific data on total dietary requirements of albatrosses and giant petrels have been taken into account when the Australian Fisheries Management Authority and other fisheries management agencies:</p> <ul style="list-style-type: none"> i) strategically assess (e.g. under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth)) the ecological sustainability of each fishery that overlaps with any albatross and giant petrel species ii) develop or revise management arrangements that might otherwise adversely affect albatross and giant petrel 		0	Each Commonwealth fishery is assessed for its ecological sustainability. Direct provision for dietary requirements is not made in these assessments. The requirements of an ecosystem-based approach to fisheries management indirectly consider these aspects.

	populations (e.g. setting of catch limits, spatial/temporal closures) for fisheries overlapping with any albatross and giant petrel population.			
10. Dependence on fisheries discards	C.10.1 Quantity and quality of feasible monitoring, including by observers at-sea.		2	<p>Offal discharge is regulated in certain Commonwealth-managed fisheries longline and trawl fisheries. Observer programmes monitor adherence with offal management requirements by fishing operators.</p> <p>A doctoral student is conducting on ground biological studies to identify which species comprise the diet of albatrosses and giant petrels, and the extent to which this diet is derived from fisheries discards (Alderman, pers. comm., 2015).</p>
	C.10.2 Level of compliance with this measure [concerning management of offal] is high.		1/3	No non-compliance issues have arisen in those Commonwealth-managed fisheries where offal discharge is regulated—including in the Antarctic Fishery, and Small Pelagic Fishery, where offal discarding is prohibited. Offal management measures are under development in the trawl sectors of the Southern and Eastern Scalefish and Shark Fishery.
11. Marine pollution	C.11.1 The incidence of: <ul style="list-style-type: none"> i) oiled birds at the nest ii) marine debris egestion/entanglement at nests iii) egg shell thinning iv) are reported by each population monitoring programme in a standardised manner. 		2	Existing population monitoring programmes record instances of oiled birds and marine debris egestion/entanglement at the nest when they occur (C 8.5 relates). Monitoring of egg shell thinning has commenced at Albatross Island in 2015.
Specific objective 4:				

Educate fishers and promote awareness of the threats to albatrosses and giant petrels.				
	D.12.1 Information is disseminated to fishers as appropriate and there is a reasonable awareness of conservation issues and/or use of mitigation measures by fishers.		2	<p>Fishers in Commonwealth-managed fisheries are well informed about the need to conserve albatrosses and petrels and use of mitigation measures—though management booklets and vessel management plans.</p> <p>Education of commercial and recreational fishers in State and Territory fisheries is undertaken, but is generalised concerning threats to seabirds.</p>
	D.12.2 There is sufficient information available to vendors and consumers to allow them to distinguish “albatross and giant petrel friendly” fisheries products.		1	<p>No work has been undertaken during the life of this plan by government. The Australian Marine Conservation Society has developed an online sustainability guide for seafood consumers in Australia, which is generalised concerning threats to seabirds.</p>
Specific objective 5: Achieve substantial progress towards global conservation of albatrosses and giant petrels in international conservation and fishing fora.				
	E.13.1 Extent to which Regional Fisheries Management Organisations have implemented effective and universally applied measures to gather accurate bycatch data and minimise bycatch.	1	2	<p>There has been varying degrees of implementation of seabird bycatch measures among Regional Fisheries Management Organisations. Presently, 80 per cent of the tuna Regional Fisheries Management Organisations have adopted binding seabird bycatch mitigation measures. Monitoring programmes for Regional Fisheries Management Organisations however do not afford priority to gathering accurate seabird bycatch data—data availability and accuracy remain poor.</p>

		3		The arrangements implemented by the Commission for the Conservation of Antarctic Marine Living Resources are highly effective in gathering accurate bycatch data and minimising seabird bycatch.
	Levels of bycatch are declining and impacts on bycatch populations are thought to be sustainable.	1		Available data concerning Regional Fisheries Management Organisations continue to indicate the pervasive threat posed by fishing in areas beyond national jurisdiction on seabird generally, and threatened albatrosses and petrels in particular.
		3		Data collected by the Commission for the Conservation of Antarctic Marine Living Resources indicate levels of bycatch of seabirds in the region have declined significantly and remain at levels three orders of magnitude below historical highs.
	E.13.2 Approaches are made to relevant countries and are effective (e.g. result in improved bycatch mitigation measures being employed and in the longer term bycatch is avoided or bycatch rates are reduced).		2	The Agreement on the Conservation of Albatrosses and Petrels widely disseminates information to international conservation and fisheries forums concerning best practice guidelines for seabird bycatch mitigation, and educational materials concerning deploying seabird bycatch mitigation methods seabird identification, and de-hooking bycaught seabirds.
	E.13.3 The quality and extent of Agreement on the Conservation of Albatrosses and Petrels' relationship with Regional Fisheries Management Organisations and the extent to which they accept and implement the Agreement on the Conservation of Albatrosses and Petrels' advice.		2	<p>The Agreement on the Conservation of Albatrosses and Petrels has established memorandums of understanding with five international conservation and fisheries bodies. Best practice advice developed by the Agreement on the Conservation of Albatrosses and Petrels concerning seabird bycatch mitigation in fisheries is routinely considered as new and updated seabird bycatch mitigations measures are considered within international conservation and fishing forums.</p> <p>Binding conservation measures adopted by Regional Fisheries</p>

				Management Organisations are generally consistent with the advice of the Agreement on the Conservation of Albatrosses and Petrels.
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DISCUSSION OF ACHIEVEMENT OF RECOVERY PLAN OBJECTIVES

The overall objective of this recovery plan was ‘to ensure the long-term survival and recovery of albatross and giant petrel populations breeding and foraging in Australian jurisdiction by reducing or eliminating human-related threats at sea and on land.’ The review noted the overall objective was not anticipated to be achieved within the life of this plan. The plan nominated four recovery criteria against which judgments could be made about whether the plan would be deemed successful. This plan would be deemed successful if positive trends in terms of achieving the overall objective can be demonstrated concerning the following criteria:

Recovery criteria	Status
1. The population status and trends of albatrosses and giant petrels breeding in Australian jurisdiction are known, verified and updated and, where possible demographic parameters of those trends are known.	Positive progress with gaps remaining.
2. All Australian fisheries are assessed for their risk of adverse interactions with albatrosses and giant petrels where relevant.	Achieved for commercial fisheries, but not recreational fisheries.
Where sufficient risk is present, robust observer/data collection programmes are implemented to statistically quantify bycatch rates and best practice mitigation measures are promptly implemented to reduce/eliminate mortality.	Partially achieved, with all Commonwealth fisheries implementing risk management strategies, however there action concerning State and Territory commercial and recreational fisheries remains largely outstanding.
Where bycatch is occurring in longline fisheries, bycatch rates should be reduced in line with the requirements of the seabirds Threat Abatement Plan.	Achieved.
3. All factors adversely influencing the conservation status of albatrosses and giant petrel populations breeding and foraging within Australian jurisdiction are identified, and where feasible, prevented, minimised or eliminated.	Positive progress, as all factors have been identified, however action for some breeding populations is constrained by logistical considerations. Australia has limited ability to address the global impact of commercial fisheries on species foraging in Australian jurisdiction.
4. Education and support among fishers and fisheries management bodies is improved.	Achieved, in terms of improving education and support among fishers and fisheries management bodies concerning the need to conserve threatened species of albatrosses and petrels.

This recovery plan identified five specific objectives and a total of 28 associated recovery criteria. The evaluation indicates that four of the recovery criteria have been met during the life of this plan and progress has been made against 20 of the 28 recovery criteria. The results for the specific objectives are summarised below, based on views of stakeholders and participants at the consultation workshop.

Specific Objective	Score	Comment
1. Research and monitoring of the biology, ecology and populations dynamics of albatrosses and giant petrels breeding within Australian jurisdiction is sufficient to understand conservation status and to implement effective and efficient conservation measures.	(5 actions) 0% fully achieved	Ongoing monitoring continues of populations of albatrosses and giant petrels breeding at Macquarie Island and shy albatross breeding in Tasmania. Data have not been collected concerning Bishop and Clerk Islets, and Heard Island and McDonald Islands during the life of this plan, with the status of these populations now not ascertained for over 10 years, due to the remoteness of these locations. Data collection concerning southern giant petrel in the Australian Antarctic Territory is constrained by management arrangements that avoid disturbance at the nest during the breeding season, and the remoteness of these locations.
2. Quantify and reduce land based threats to the survival and breeding parameters of albatrosses and giant petrels breeding within areas under Australian jurisdiction.	(8 actions) 50% fully achieved	Actions undertaken during the life of this plan have resulted in a significant improvement in the management of on land threats to the conservation of albatrosses and giant petrels breeding at Macquarie Island, through the eradication of rabbits and rodents.
3. Quantify and reduce marine based threats to the survival and breeding parameters of albatrosses and giant petrels foraging in waters under Australian jurisdiction.	(10 actions) 0% fully achieved	Actions to mitigate the impact of oceanic longline fishing operations on seabirds, including threatened albatrosses and giant petrels, continue to abate seabird bycatch in these fisheries by three orders of magnitude from historical highs.
4. Educate fishers and promote awareness of the threats to albatrosses and giant petrels.	(2 actions) 0% fully achieved	Actions taken have been effective in raising awareness of the threats to albatrosses and petrels—through the combined efforts of governments, international bodies and environmental non-governmental organisations.

During the review of this recovery plan stakeholders indicated that a future recovery plan was warranted to continue conservation actions concerning threatened albatrosses and petrels. The stakeholders recognised that actions concerning the recovery of threatened albatrosses and petrels extended well beyond the five year timeframe for reviews of recovery plans, and that a future plan should include longer-term objectives and actions.

The limited progress in meeting specific objectives is due to one or a combination of the following:

- a. criteria lacking timeliness—certain measureable changes in population trends operate on a time scale beyond the life of the recovery plan
- b. criteria not feasible or practical—there is difficulty of accessing certain locations, and many human-induced impacts are outside Australian control
- c. criteria unrealistic—there is an ongoing inability to determine whether and to what extent fisheries, other than Commonwealth-managed fisheries pose a risk to threatened albatrosses and giant petrels.

3.0: CHANGES IN CONSERVATION TRAJECTORY

The following summarises the previously known, current status and conservation trajectory for each species listed under the recovery plan. The content includes information sourced, and summarised from species assessments prepared in 2012 by the Agreement on the Conservation of Albatrosses and Petrels, to which Australia contributed (ACAP, 2012a). The previously known global populations of albatrosses and giant petrels were based on the most recently available data, about which there exists considerable variability in the timing and methods employed to assess abundance. Species breeding in Australian jurisdiction are identified by an asterisk.

<i>Diomedea exulans</i> (wandering albatross)*			
Threatened species listing under <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) s 178	Conservation status for birds occurring in Australian jurisdiction (Garnett et al., 2011)		Threatened species listing on Red List of Threatened Species (IUCN, 2015): Version 2015.4
	Australian breeding population	Population visiting Australian territory	
Vulnerable	Critically endangered	Vulnerable	Vulnerable
Understanding at the time of publication of recovery plan			
Distribution, abundance	Details about species distribution, abundance, ecology, habitat and threats are contained in the recovery plan (DSEWPC, 2011b), background paper produced to support the development of the plan (DSEWPC, 2011a), and action plan for Australian birds (Garnett et al., 2011). Based on a combination of published and unpublished data submitted to the Agreement on the Conservation of Albatrosses and Petrels, the total annual breeding population in 2007 was estimated at approximately 8050 pairs (ACAP, 2012u), while the Macquarie Island population was about four breeding pairs annually (DSEWPC, 2011b).		
Ecology, habitat			
Threats			
Trajectory predicted	Long term population studies have been conducted on all five islands or island groups where the species breeds (ACAP, 2012u; DSEWPC, 2011a). All populations have shown a decrease at some stage over the last 25 years. The Indian Ocean populations (Crozet, Kerguelen and Prince Edward Islands) have increased recently, but the South Georgia population has shown a continuous decline. The status of the extremely small population on Macquarie Island is currently uncertain, with relative trends in numbers and survival in the past similar to those observed in the Indian Ocean populations, prior to an apparent decline in recent years.		
Current understanding (ACAP, 2012u, 2015b; Alderman, 2015c; Dilley et al., 2015)			

Distribution, abundance	<p>This species breeds on subantarctic island groups of Crozet, Kerguelen, Prince Edward, South Georgia and Macquarie Island, with reports of breeding attempts at Heard Island. The species is widely distributed across high southern latitudes including Australia's southern, subantarctic and Antarctic jurisdiction.</p> <p>The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels indicates that there are about 8100 annual breeding pairs. There are about five breeding pairs on Macquarie Island (Alderman, 2015c). There are no new data concerning whether this species continues attempts at breeding on Heard Island.</p>
Ecology, habitat	<p>This is a biennial breeding species. Breeding season exceeds one year. Egg laying occurs in December-January with eggs mostly hatching in March. Adults begin breeding when about 7-10 years old. This species is mostly a diurnal feeder, taking prey by surface seizing, and is known for following fishing vessels to access fisheries discards.</p>
Threats	<p>The major threat affecting this species (as with many other albatross and petrel species) is incidental mortality in longline fishing operations. Chicks are also vulnerable to accumulation of anthropogenic marine debris and fishery-related debris, such as secondary ingestion of discarded hooks. There is reported predation of about one per cent of chicks at Marion Island by the house mouse (Dilley et al., 2015).</p>
Trajectory predicted	<p>The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels (population trend 1993-2013) indicated that the population trend was declining—with high trend confidence. The Macquarie Island population trend is indeterminate due to its small size (Alderman, 2015c).</p>
Evaluation of change in conservation trajectory of the species	
<p>The conservation trajectory of wandering albatross is declining globally, and this trend is unlikely to reverse unless incidental mortalities during fishing operations are significantly reduced. The very small Australian population of this species is of a size that does not permit its conservation trajectory to be determined. Very strict seabird bycatch mitigation measures in Australian fisheries adjacent to Macquarie Island minimise the risk of incidental mortalities from fishing activities. A future recovery plan should attach particular importance to confirming whether wandering albatross have established a permanent foothold on Heard Island.</p>	

Diomedea dabbenena (Tristan albatross)			
Threatened species listing under Environment Protection and Biodiversity Conservation Act 1999 (Cth) s 178	Conservation status for birds occurring in Australian jurisdiction (Garnett et al., 2011)		Threatened species listing on Red List of Threatened Species (IUCN, 2015): Version 2015.4
	Australian breeding population	Population visiting Australian territory	
Endangered	-	Critically Endangered	Critically Endangered
Understanding at the time of publication of recovery plan			
Distribution, abundance	Details about species distribution, abundance, ecology, habitat and threats are contained in the recovery plan (DSEWPC, 2011b), background paper produced to support the development of the plan (DSEWPC, 2011a), and action plan for Australian birds (Garnett et al., 2011). Based on a combination of published and unpublished data submitted to the Agreement on the Conservation of Albatrosses and Petrels, the total annual breeding population in 2007 was approximately 1700 pairs, and the total population numbered about 11,000 individuals (ACAP, 2012t).		
Ecology, habitat			
Threats			
Trajectory predicted	Trend calculation has been problematic for both populations, because only short sequence of reliable data existed, exacerbated by the inter-annual fluctuations in the proportion of the population that attempted to breed, a situation inherent to biennial breeders (ACAP, 2012t). Available information suggested Gough Island was decreasing at a rate of about three per cent per year, and mean chick production (12 years of data, 1979-2007) was decreasing annually by one per cent, pointing to low adult survival as a major cause, with low annual rates of chick production also a significant negative factor.		
Current understanding (ACAP, 2012t, 2015b)			
Distribution, abundance	This species is endemic to Tristan da Cunha and with colonies on two islands: Gough Island and Inaccessible Island. The Inaccessible Island colony is not considered viable as it continues to decline, and has produced an average of less than one chick per year since the 1990s. Accordingly, Gough Island effectively holds the entire global breeding population. The species is widely distributed across high southern latitudes including Australia’s southern, subantarctic and Antarctic jurisdiction. The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels indicates that there are about 1650 breeding pairs.		

Ecology, habitat	This is a colonial, biennial breeding species. The breeding season lasts one year. Adults normally commence laying in January-February, with egg hatching occurring in March-April. The chicks fledge in November-January. Adults begin breeding on average when 10 years old. There is no specific information about this species' feeding habits, except for a study suggesting they may often feed at night.
Threats	This species is vulnerable to capture on longlines in the southwest Atlantic Ocean. Longline fishing mortality is believed to account in large measure for the low observed adult survival. Mortality associated with trawling vessels is not well known. Drowning in driftnets (including gear lost at sea) appears to have abated as a significant threat, but information is also lacking. Remains of chicks on Gough Island occasionally include plastic debris, but the extent and severity of plastic ingestion is unknown. A major threat exists on Gough Island where predation by the introduced house mouse on chicks is widespread, accounting annually for 30-40 per cent of all failed nesting attempts.
Trajectory predicted	The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels (population trend 1993-2013) indicated that the population trend was declining—with high trend confidence.
Evaluation of change in conservation trajectory of the species	
The conservation trajectory of Tristan albatross is declining globally, and this trend is unlikely to reverse unless incidental mortalities during fishing operations are significantly reduced, and house mouse predation on chicks on Gough Island is halted through an eradication programme.	

<i>Diomedea antipodensis</i> (Antipodean albatross) ¹¹			
Threatened species listing under <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) s 178	Conservation status for birds occurring in Australian jurisdiction (Garnett et al., 2011)		Threatened species listing on Red List of Threatened Species (IUCN, 2015): Version 2015.4
	Australian breeding population	Population visiting Australian territory	
Vulnerable	-	Endangered	Vulnerable
Understanding at the time of publication of recovery plan			
Distribution, abundance	Details about species distribution, abundance, ecology, habitat and threats are contained in the recovery plan (DSEWPC, 2011b), background paper produced to support the development of the plan (DSEWPC, 2011a), and action plan for Australian birds (Garnett et al., 2011). Based on a combination of published and unpublished data submitted to the Agreement on the Conservation of Albatrosses and Petrels, the total annual breeding population during 2007-2009 was about 11,500 pairs representing about 44,500 mature individuals (ACAP, 2012c).		
Ecology, habitat			
Threats			
Trajectory predicted	Available information indicated a decline in the adult breeding populations over 1997-2009 on Antipodes Island by about six per cent; on Adams Island by about 12 per cent (2005-2008); and on Auckland Islands by about 40 per cent (ACAP, 2012c).		
Current understanding (ACAP, 2012c, 2015b)			
Distribution, abundance	This species is endemic to New Zealand’s subantarctic Antipodes, Auckland and Campbell Islands, with a breeding pair reported on Pitt Island in the Chatham Islands. The species is widely distributed across high southern latitudes including Australia’s south-eastern and subantarctic jurisdiction. The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels indicates that there are about 8200 annual breeding pairs.		
Ecology, habitat	This is a biennial breeding species. Egg laying occurs from late December to early February, depending on location, with hatching in March-April. Chicks fledge after nine months. Adults begin breeding when about 7-8 years old. The species feeds by surface		

¹¹ The Agreement on the Conservation of Albatrosses and Petrels includes *Diomedea gibsoni* (Gibson's albatross) as a sub-species of Antipodean albatross.

	seizing of prey, with studies indicating a high degree of nocturnal feeding.
Threats	The major threat affecting this species is incidental mortality in longline fishing operations—in domestic waters and Pacific Ocean. There is a suggestion that the steep decline in the breeding population may be linked to oceanographic changes in the Tasman Sea. Few land-based threats are considered to cause population-level changes to the two main populations: feral <i>Sus scrofa</i> (pig) has caused major habitat damage, as well as egg and chick predation on Auckland Island that may be limiting potential growth in numbers of birds breeding at this location, while house mouse on Antipodes Island does not appear to pose a threat.
Trajectory predicted	The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels (population trend 1993-2013) indicated that the population trend was declining—with medium trend confidence.
Evaluation of change in conservation trajectory of the species	
The conservation trajectory of Antipodean albatross is declining globally, and this trend is unlikely to reverse unless incidental mortalities during fishing operations are significantly reduced.	

<i>Diomedea amsterdamensis</i> (Amsterdam albatross)			
Threatened species listing under <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) s 178	Conservation status for birds occurring in Australian jurisdiction (Garnett et al., 2011)		Threatened species listing on Red List of Threatened Species (IUCN, 2015): Version 2015.4
	Australian breeding population	Population visiting Australian territory	
Endangered	-	-	Critically Endangered
Understanding at the time of publication of recovery plan			
Distribution, abundance	Details about species distribution, abundance, ecology, habitat and threats are contained in the recovery plan (DSEWPC, 2011b), background paper produced to support the development of the plan (DSEWPC, 2011a), and action plan for Australian birds (Garnett et al., 2011). Based on a combination of published and unpublished data submitted to the Agreement on the Conservation of Albatrosses and Petrels, the total population was estimated in 2007 to be approximately 140-150 birds (about 90 adults) with a breeding population of about 25 pairs annually (ACAP, 2012b).		
Ecology, habitat			
Threats			
Trajectory predicted	Available information indicated that the number of breeding pairs remained stable (ACAP, 2012b).		
Current understanding (ACAP, 2012b, 2015b)			
Distribution, abundance	This species is endemic to Amsterdam Island in the southern Indian Ocean. The species is widely distributed across high southern latitudes including Australia’s south-western jurisdiction. The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels indicates that there are about 30 annual breeding pairs.		
Ecology, habitat	This species breeds biennially. Egg laying normally occurs in late February-March, with eggs hatching in May. Chicks fledge in about eight months. Adults begin breeding at about nine years of age. The feeding behaviour of this species is yet to be determined.		
Threats	The extremely low population size and restricted breeding area of this species, limited to one breeding site, combine to significantly increase the threat to its survival. Due to the low population size, few records exist that quantify the threats this species faces at sea, however, the foraging range for this species extends up to 4000 km from the breeding site, and overlaps with		

	<p>longline fishing operations targeting tropical tuna species. Human disturbance in the past through widespread use of fire and habitat destruction by introduced cattle have combined to degrade the breeding sites and decrease the breeding site range across the island. Fencing of cattle has reduced their impact, but the habitat has been further degraded by draining of a peat bog on the plateau. Avian cholera has recently been identified as the cause of a decline in the population of Indian yellow-nosed albatross on Amsterdam Island. If the occurrence of this disease is confirmed in Amsterdam albatross, the population would face a high risk of extinction within 20-30 years. Predation by the introduced ship rat and feral cat remains a significant threat.</p>
Trajectory predicted	<p>The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels (population trend 1993-2013) indicated that the population trend was increasing—with high trend confidence.</p>
Evaluation of change in conservation trajectory of the species	
<p>The conservation trajectory of Amsterdam albatross is increasing globally from a very low level, and this trend may continue through the intensive efforts by France to conserve the breeding colony.</p>	

Diomedea epomophora (southern royal albatross)			
Threatened species listing under Environment Protection and Biodiversity Conservation Act 1999 (Cth) s 178	Conservation status for birds occurring in Australian jurisdiction (Garnett et al., 2011)		Threatened species listing on Red List of Threatened Species (IUCN, 2015): Version 2015.4
	Australian breeding population	Population visiting Australian territory	
Vulnerable	-	Vulnerable	Vulnerable
Understanding at the time of publication of recovery plan			
Distribution, abundance	Details about species distribution, abundance, ecology, habitat and threats are contained in the recovery plan (DSEWPC, 2011b), background paper produced to support the development of the plan (DSEWPC, 2011a), and action plan for Australian birds (Garnett et al., 2011). Based on a combination of published and unpublished data submitted to the Agreement on the Conservation of Albatrosses and Petrels, the total breeding population was estimated in 1996 to be approximately 13,000 pairs, equivalent to a total population of about 50,000 individuals (ACAP, 2012s).		
Ecology, habitat			
Threats			
Trajectory predicted	Available information indicated that the main population on Campbell Island was stabilising at about 8000 nests, and the population on Enderby Island in the Auckland Islands was growing steadily, following recolonisation in the 1950s, to about 55 nests, with the status of the colonies on Adams Island and Auckland Island unknown (ACAP, 2012s).		
Current understanding (ACAP, 2012s, 2015b)			
Distribution, abundance	This species is endemic to New Zealand, breeding only on Campbell Island (99 per cent of the population) and in the Auckland Islands. The species is widely distributed across high southern latitudes including Australia’s southern, subantarctic and Antarctic jurisdiction. The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels indicates that there are about 7900 annual breeding pairs.		
Ecology, habitat	This species breeds biennially. Egg laying occurs from November-December with eggs hatching in February-March. Chicks fledge after 7-8 months. Adults begin breeding when 6-12 years old. The feeding behaviour of this species suggests an emphasis on scavenging dying or moribund prey, from fishing vessels, supported by active predation of prey species.		

Threats	This species is at risk of incidental capture in domestic and international longline fisheries in the Pacific and Atlantic Oceans, and in New Zealand trawl fisheries. Fish hook and plastic ingestion has been reported. There are currently few land-based threats that would result in population-level changes. The spread of the <i>Dracophyllum</i> scrub on Campbell Island and Enderby Island may reduce breeding habitat in the future.
Trajectory predicted	The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels (population trend 1993-2013) indicated that the population trend was stable—with medium trend confidence.
Evaluation of change in conservation trajectory of the species	
The conservation trajectory of southern royal albatross is stable globally.	

<i>Diomedea sandfordi</i> (northern royal albatross)			
Threatened species listing under <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) s 178	Conservation status for birds occurring in Australian jurisdiction (Garnett et al., 2011)		Threatened species listing on Red List of Threatened Species (IUCN, 2015): Version 2015.4
	Australian breeding population	Population visiting Australian territory	
Endangered	-	Endangered	Endangered
Understanding at the time of publication of recovery plan			
Distribution, abundance	Details about species distribution, abundance, ecology, habitat and threats are contained in the recovery plan (DSEWPC, 2011b), background paper produced to support the development of the plan (DSEWPC, 2011a), and action plan for Australian birds (Garnett et al., 2011). Based on a combination of published and unpublished data submitted to the Agreement on the Conservation of Albatrosses and Petrels, the total breeding population was estimated in 1995 to be approximately 6500-7000 pairs, equivalent to a total mature population of about 17,000 individuals (ACAP, 2012n).		
Ecology, habitat			
Threats			
Trajectory predicted	Available information indicated the current population trend for the Chatham Islands population of this species was unknown, while the small colony at Taiaroa Head was increasing (ACAP, 2012n).		
Current understanding (ACAP, 2012n, 2015b)			
Distribution, abundance	This species is endemic to New Zealand, breeding only in the Chatham Islands (over 99 per cent of the population, of which 60 per cent breed at the Forty Fours) and at Taiaroa Head on the Otago Peninsula on New Zealand’s South Island. The species is widely distributed across high southern latitudes including Australia’s southern, subantarctic and Antarctic jurisdiction. The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels indicates that there are about 5700 annual breeding pairs.		
Ecology, habitat	This is a colonial, biennial breeding species. Egg laying occurs between October-December, and eggs hatch between January-February. Chicks fledge after eight months. Adults begin breeding when 6-8 years old. The feeding behaviour of this species suggests an emphasis on scavenging dead or moribund prey, discards and offal from fishing vessels, supported by active predation of prey species.		

Threats	Fisheries-related mortality is not considered a major threat to this species, as reported capture rates in longline fisheries around New Zealand and the western Atlantic Ocean have been low. A variety of persistent chlorinated organic compounds have been detected in eggs and chicks, but the level of residues is considered low and not expected to have adverse effects on bird health. The major threat to this species could be habitat degradation on the breeding islands as a result of severe storms and changed climatic conditions. There is a history of significant harvesting of this species on the privately owned Chatham Islands by local residents, and while harvesting of chicks may still occur, this is likely to be limited in extent.
Trajectory predicted	The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels (population trend 1993-2013) indicated that the population trend was unknown.
Evaluation of change in conservation trajectory of the species	
Any change in the conservation trajectory of northern royal albatross cannot be presently determined.	

Phoebastria immutabilis (Laysan albatross)			
Threatened species listing under Environment Protection and Biodiversity Conservation Act 1999 (Cth) s 178	Conservation status for birds occurring in Australian jurisdiction (Garnett et al., 2011)		Threatened species listing on Red List of Threatened Species (IUCN, 2015): Version 2015.4
	Australian breeding population	Population visiting Australian territory	
Not listed	-	-	Near Threatened
Understanding at the time of publication of recovery plan			
Distribution, abundance	Details about species distribution, abundance, ecology, habitat and threats are contained in the recovery plan (DSEWPC, 2011b), background paper produced to support the development of the plan (DSEWPC, 2011a), and action plan for Australian birds (Garnett et al., 2011). Based on a combination of published and unpublished data submitted to the Agreement on the Conservation of Albatrosses and Petrels, the total breeding population was estimated in 2009 to be about 591,000 pairs (ACAP, 2012k).		
Ecology, habitat			
Threats			
Trajectory predicted	Available information indicated the current population trend for the varied significantly between individual breeding sites but was generally stable, with the largest breeding colonies Laysan Island slightly declining, and Midway Atoll increasing (ACAP, 2012k).		
Current understanding (ACAP, 2012k, 2015b)			
Distribution, abundance	This species breeds on numerous oceanic islands across the tropical/subtropical North Pacific. The low coral islands of the north western Hawaiian Islands are the core of the breeding population (over 99 per cent of the global nesting population). The species is widely distributed across higher latitudes of the northern Pacific Ocean, and a vagrant visitor to Australia’s north-eastern jurisdiction. The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels indicates that there are about 670,000 annual breeding pairs.		
Ecology, habitat	This is a colonial, annual breeding species. Egg laying occurs in November-December, and eggs hatch in January. Chicks fledge when 5 months old. Adults usually begin breeding when 8-9 years of age. This species is mostly a diurnal feeder, taking prey by surface seizing, and is known for following fishing vessels to scavenge fisheries discards.		

Threats	<p>Fisheries bycatch is a noted source of mortality for this species, primarily in northern Pacific Ocean pelagic longline fisheries, with bycatch also occurring in trawl and demersal longline fisheries off Alaska. High levels of organochlorine contaminants and mercury have been documented with diet considered to be the primary route of exposure. Oil spills and oily water from at sea dumping of bilge waste have led to small numbers of oiled birds being recorded at colonies. Plastics ingestion by chicks is considered a contributing factor to morbidity and mortality. Feral species including cat, rat, <i>Canis lupus familiaris</i> (dog), and <i>Herpestes javanicus</i> (Indian mongoose) are identified as significant predators for either or both chicks and adults at some breeding colonies. Predation by native species of nests has been observed at one location by <i>Corvus corax clarionensis</i> (clarion raven) and <i>Masticophis anthonyi</i> (clarion racer), however the magnitude of the impact of these native predators, and an unidentified ant species, is unknown. Projected sea-level rise is a serious threat breeding populations on low-lying islands. Feral plant species have degraded habitat in some locations, e.g. <i>Verbesina encelioides</i> (golden crown-beard) and <i>Casuarina equisetifolia</i> (ironwood). Lead poisoning (from lead paint on old buildings) may affect about five per cent of chicks on Midway Atoll. Although chicks may be affected by avian pox virus, infection does not appear to affect overall reproductive success.</p>
Trajectory predicted	<p>The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels (population trend 1993-2013) indicated that the population trend was stable—with high trend confidence.</p>
Evaluation of change in conservation trajectory of the species	
The conservation trajectory of Laysan albatross is stable globally, despite this species being subject to a range of threats at sea and on land.	

Thalassarche cauta (shy albatross)*			
Threatened species listing under Environment Protection and Biodiversity Conservation Act 1999 (Cth) s 178	Conservation status for birds occurring in Australian jurisdiction (Garnett et al., 2011)		Threatened species listing on Red List of Threatened Species (IUCN, 2015): Version 2015.4
	Australian breeding population	Population visiting Australian territory	
Vulnerable	Vulnerable	-	Near Threatened
Understanding at the time of publication of recovery plan			
Distribution, abundance	Details about species distribution, abundance, ecology, habitat and threats are contained in the recovery plan (DSEWPC, 2011b), background paper produced to support the development of the plan (DSEWPC, 2011a), and action plan for Australian birds (Garnett et al., 2011). Based on a combination of published and unpublished data submitted to the Agreement on the Conservation of Albatrosses and Petrels, the total breeding population in 2007 was approximately 12,750 pairs, with the total population estimated as approximately 55,000-60,000 individuals (ACAP, 2012p), while Australian estimates indicated there were about 5200 pairs on Albatross Island, approximately 9000-11,000 pairs on Mewstone, and about 220 potential breeding pairs on Pedra Branca (DSEWPC, 2011b).		
Ecology, habitat			
Threats			
Trajectory predicted	Available information indicated that the population trend on Albatross Island was stable, the population trend on Mewstone was unknown and the population trend on Pedra Branca was decreasing (ACAP, 2012p; DSEWPC, 2011b).		
Current understanding (ACAP, 2012p, 2015b; Alderman, 2015b)			
Distribution, abundance	This species is endemic to Australia and breeds on only three islands off Tasmania: Albatross Island, Pedra Branca and Mewstone. The species is widely distributed across high southern latitudes including, in particular, Australia’s southern and subantarctic jurisdiction. The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels indicates that there are about 14,600 annual breeding pairs. Recent information from 2014 indicates there are about 4200 pairs on Albatross Island, approximately 10,000 potential breeding pairs on the Mewstone, and about 170 potential breeding pairs on Pedra Branca (Alderman, 2015b).		

Ecology, habitat	This is a colonial, annual breeding species. Egg laying occurs normally in September, and eggs hatch in December. Chicks fledge when about 4.5 months old. Adults begin breeding when 5-6 years old. This species is mostly a diurnal feeder, taking prey by surface seizing, and plunge-diving to 3-7 m in depth.
Threats	Incidental mortality of this species in fishing operations is thought to pose the greatest threat conservation threat including longline and trawl fisheries in waters off southern Australia and southern Africa, with the magnitude of the impact poorly understood. The species is also exposed to marine debris, plastic ingestion and pollution, but shows relatively low levels of heavy metal contamination. Few threats exist at breeding sites. Avian pox virus infection is common on Albatross Island and this disease has been associated with chick mortality and hence depressed breeding. Australasian gannets breeding on Pedra Branca have been increasing by about four per cent a year since 1985 and the increased competition for limited nesting space may explain the sharp decline chick numbers at this location. Pedra Branca is occasionally exposed to extreme wave action.
Trajectory predicted	The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels (population trend 1993-2013) indicated that the population trend was increasing—with low trend confidence. Recent 10-year trend information from 2014 now suggests the population trend is decreasing at all three breeding islands (Alderman, 2015b).
Evaluation of change in conservation trajectory of the species	
The conservation trajectory of shy albatross is declining globally, based on improved population data, and this trend is unlikely to reverse unless incidental mortalities during fishing operations are significantly reduced, and disease and other breeding site pressures are also reduced.	

Thalassarche steadi (white-capped albatross)			
Threatened species listing under Environment Protection and Biodiversity Conservation Act 1999 (Cth) s 178	Conservation status for birds occurring in Australian jurisdiction (Garnett et al., 2011)		Threatened species listing on Red List of Threatened Species (IUCN, 2015): Version 2015.4
	Australian breeding population	Population visiting Australian territory	
Vulnerable	-	Vulnerable	Near Threatened
Understanding at the time of publication of recovery plan			
Distribution, abundance	Details about species distribution, abundance, ecology, habitat and threats are contained in the recovery plan (DSEWPC, 2011b), background paper produced to support the development of the plan (DSEWPC, 2011a), and action plan for Australian birds (Garnett et al., 2011). Based on a combination of published and unpublished data submitted to the Agreement on the Conservation of Albatrosses and Petrels, the total breeding population in 2008 was approximately 97,000 pairs (ACAP, 2012v).		
Ecology, habitat			
Threats			
Trajectory predicted	Available information indicated that population trends could not be calculated (ACAP, 2012v).		
Current understanding (ACAP, 2012v, 2015b)			
Distribution, abundance	This species is endemic to New Zealand with colonies on three islands in the Auckland Islands group, Bollon’s Island in the Antipodes Islands group, and occasionally on the Forty-Fours in the Chatham Islands group. The species is widely distributed across high southern latitudes including Australia’s southern, subantarctic and Antarctic jurisdiction. The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels indicates that there are about 100,500 annual breeding pairs.		
Ecology, habitat	This is an annual to biennial breeding species. Eggs laying occurs in November, and chicks hatch in February. Chicks fledge when about 6-7 months old. Information is lacking about when adults begin breeding. The species employs surface feeding and diving to access prey species, and fisheries discards are believed to form a significant dietary component.		
Threats	Fisheries bycatch is a major threat to this species, particularly in domestic trawl, pelagic longline and demersal longline fisheries. High levels of bycatch mortality are estimated (over 8000 birds annually) in trawl and longline fisheries in the Southern Ocean, particularly off southern Africa, and to a lesser extent in the south-western Atlantic Ocean. No information exists on the potential		

	effects of contaminants, oil spills or marine debris on this species. Feral pig and cat predation of chicks occurs on Auckland Island, while all remaining areas remain free from introduced mammals.
Trajectory predicted	The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels (population trend 1993-2013) indicated that the population trend was unknown.
Evaluation of change in conservation trajectory of the species	
Any change in the conservation trajectory of white-capped albatross cannot be presently determined.	

Thalassarche salvini (Salvin’s albatross)			
Threatened species listing under Environment Protection and Biodiversity Conservation Act 1999 (Cth) s 178	Conservation status for birds occurring in Australian jurisdiction (Garnett et al., 2011)		Threatened species listing on Red List of Threatened Species (IUCN, 2015): Version 2015.4
	Australian breeding population	Population visiting Australian territory	
Vulnerable	-	Vulnerable	Vulnerable
Understanding at the time of publication of recovery plan			
Distribution, abundance	Details about species distribution, abundance, ecology, habitat and threats are contained in the recovery plan (DSEWPC, 2011b), background paper produced to support the development of the plan (DSEWPC, 2011a), and action plan for Australian birds (Garnett et al., 2011). Based on a combination of published and unpublished data submitted to the Agreement on the Conservation of Albatrosses and Petrels, the total breeding population in 1998 was estimated to be approximately 32,000 pairs (ACAP, 2012o).		
Ecology, habitat			
Threats			
Trajectory predicted	Available information indicated that the population trends at both island groups were unknown due to lack of adequate comparable census data (ACAP, 2012o).		
Current understanding (ACAP, 2012o, 2015b)			
Distribution, abundance	This species is endemic to New Zealand, breeding only on the Bounty Islands and the Western Chain of Snares Islands, with extremely small outlier breeding recorded at other locations. The species is widely distributed across high southern latitudes including Australia’s south-eastern and subantarctic jurisdiction. The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels indicates that there are about 42,200 annual breeding pairs.		
Ecology, habitat	This is a colonial, annual breeding species. Egg laying occurs in August-September, and eggs hatch in October-November. Chicks fledge when about four months old. The age when adults begin breeding is unknown. The foraging strategies of this species are yet to be determined.		
Threats	Fisheries bycatch is a major threat to this species, particularly in domestic trawl and demersal longline fisheries, and pelagic longline fisheries in the eastern Pacific Ocean. All breeding sites are free of introduced predators or other land-based threats.		

Trajectory predicted	The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels (population trend 1993-2013) indicated that the population trend was decreasing—with low trend confidence.
Evaluation of change in conservation trajectory of the species	
The conservation trajectory of Salvin's albatross is declining globally, and this trend is unlikely to reverse unless incidental mortalities during fishing operations are significantly reduced.	

Thalassarche eremita (Chatham albatross)			
Threatened species listing under Environment Protection and Biodiversity Conservation Act 1999 (Cth) s 178	Conservation status for birds occurring in Australian jurisdiction (Garnett et al., 2011)		Threatened species listing on Red List of Threatened Species (IUCN, 2015): Version 2015.4
	Australian breeding population	Population visiting Australian territory	
Endangered	-	-	Vulnerable
Understanding at the time of publication of recovery plan			
Distribution, abundance	Details about species distribution, abundance, ecology, habitat and threats are contained in the recovery plan (DSEWPC, 2011b), background paper produced to support the development of the plan (DSEWPC, 2011a), and action plan for Australian birds (Garnett et al., 2011). Based on a combination of published and unpublished data submitted to the Agreement on the Conservation of Albatrosses and Petrels, the total breeding population in 1998 was estimated to be approximately 4500 pairs with the total number of individuals estimated to be 18,000-20,000 (ACAP, 2012h).		
Ecology, habitat			
Threats			
Trajectory predicted	Available information indicated that the population trend had not been assessed systematically (ACAP, 2012h).		
Current understanding (ACAP, 2012h, 2015b)			
Distribution, abundance	This species is endemic to New Zealand, breeding only on The Pyramid in the Chatham Islands. The species is widely distributed across high southern latitudes including Australia’s south-eastern and subantarctic jurisdiction. The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels indicates that there are about 5200 annual breeding pairs.		
Ecology, habitat	This is a colonial, annual breeding species. Egg laying occurs in September-October, and eggs hatch in November-December. Chicks fledge when about 5-6 months old. Adults begin breeding when seven years old.		
Threats	Limited information indicates this species is at some risk of bycatch in New Zealand’s pelagic longline, demersal longline and trawl fisheries, and longline fisheries in the eastern Pacific Ocean. The single breeding site significantly increases the vulnerability of this species to all threats. The Pyramid is privately owned and is not currently subject to legal protection. Annual harvesting of chicks may occur, but is likely to be of limited extent. Habitat degradation due to severe storms and changing climatic conditions		

	is considered a major conservation threat.
Trajectory predicted	The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels (population trend 1993-2013) indicated that the population trend was stable—with medium trend confidence.
Evaluation of change in conservation trajectory of the species	
The conservation trajectory of Chatham albatross is stable globally.	

<i>Thalassarche bulleri</i> (Buller’s albatross) ¹²			
Threatened species listing under <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) s 178	Conservation status for birds occurring in Australian jurisdiction (Garnett et al., 2011)		Threatened species listing on Red List of Threatened Species (IUCN, 2015): Version 2015.4
	Australian breeding population	Population visiting Australian territory	
Vulnerable	-	Near Threatened	Near Threatened
Understanding at the time of publication of recovery plan			
Distribution, abundance	Details about species distribution, abundance, ecology, habitat and threats are contained in the recovery plan (DSEWPC, 2011b), background paper produced to support the development of the plan (DSEWPC, 2011a), and action plan for Australian birds (Garnett et al., 2011). Based on a combination of published and unpublished data submitted to the Agreement on the Conservation of Albatrosses and Petrels, the total breeding population in 2005 was estimated to be about 30,500 pairs (ACAP, 2012f).		
Ecology, habitat			
Threats			
Trajectory predicted	Available information indicated that the population trend varied between breeding colonies: Snares Islands was likely increasing, with the trend for Solander Islands and Chatham Islands uncertain (ACAP, 2012f).		
Current understanding (ACAP, 2012f, 2015b)			
Distribution, abundance	This species is endemic to New Zealand, breeding only four island groups: the Snares Islands, Solander Islands, the Sisters and Forty-Fours in the Chatham Islands, and Rosemary Rock in the Three Kings Islands. The species is widely distributed across high southern latitudes including Australia’s south-eastern jurisdiction. The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels indicates that there are about 29,900 annual breeding pairs.		
Ecology, habitat	This is a colonial, annual breeding species. Egg laying mostly occurs in January, and eggs hatch in March-April—although this varies depending on location. Chicks fledge when about 6-7 months old. Adults begin breeding on average when 10-11 years old.		

¹² The Agreement on the Conservation of Albatrosses and Petrels includes *Thalassarche* sp. (Pacific albatross) as a sub-species of Buller's albatross.

Threats	Incidental mortality in fishing operations is likely the greatest threat to this species, particularly domestic pelagic and demersal longline, and trawl fisheries, with reports of bycatch in Australian and Chilean pelagic longline fisheries. All breeding colonies are on privately owned islands that are not currently subject to legal protection. Annual harvesting of chicks may occur, but is likely to be of limited extent. Habitat degradation due to severe storms and changing climatic conditions is considered a major conservation threat on the Forty Fours and Sisters in the Chatham Islands.
Trajectory predicted	The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels (population trend 1993-2013) indicated that the population trend was stable—with low trend confidence.
Evaluation of change in conservation trajectory of the species	
The conservation trajectory of Buller's albatross is stable globally.	

<i>Thalassarche chrysostoma</i> (grey-headed albatross)*			
Threatened species listing under <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) s 178	Conservation status for birds occurring in Australian jurisdiction (Garnett et al., 2011)		Threatened species listing on Red List of Threatened Species (IUCN, 2015): Version 2015.4
	Australian breeding population	Population visiting Australian territory	
Endangered	Critically Endangered	Vulnerable	Endangered (uplisted in 2013 from Vulnerable, in light of improved knowledge)
Understanding at the time of publication of recovery plan			
Distribution, abundance	Details about species distribution, abundance, ecology, habitat and threats are contained in the recovery plan (DSEWPC, 2011b), background paper produced to support the development of the plan (DSEWPC, 2011a), and action plan for Australian birds (Garnett et al., 2011). Based on a combination of published and unpublished data submitted to the Agreement on the Conservation of Albatrosses and Petrels, the total annual breeding population in 2007 was estimated to be about 96,000 pairs (ACAP, 2012i), with about 110 annual breeding pairs on Macquarie Island (DSEWPC, 2011b).		
Ecology, habitat			
Threats			
Trajectory predicted	Available information indicated that the population trend for the overall population and most major populations of this species were either declining or unknown due to a lack of regular, comparable surveys: at South Georgia (about 50 per cent of the global population), Bird Island, and Campbell Island the population was declining, while the population was increasing on Marion Island, with the small population on Macquarie Island stable (ACAP, 2012i; DSEWPC, 2011b).		
Current understanding (ACAP, 2012i, 2015b; Alderman, 2015c)			
Distribution, abundance	This species breeds on six subantarctic islands or archipelagos: South Georgia, Crozet, Kerguelen, Prince Edward, Campbell and Macquarie Islands, and two island groups off southern Chile: Diego Ramirez and Ildefonso. The species is widely distributed across high southern latitudes including Australia’s southern, subantarctic and Antarctic jurisdiction. The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels indicates that there are about 97,700 annual breeding pairs. There are about 60 breeding pairs on Macquarie Island (Alderman, 2015c).		

Ecology, habitat	This is a biennial breeding species, with a small proportion breeding annually. Egg laying occurs in October, and eggs hatch mostly in December. Chicks fledge when about 4-5 months old. Adults begin breeding on average when 12-13.5 years old, depending on location. The species feeds by surface feeding and plunge-diving to 6 m in depth, with infrequent following of fisheries vessels. Diving mostly occurs in daylight, with a large proportion of prey ingested at night.
Threats	This predominately oceanic species is less likely to be at risk of continental shelf-based longline fisheries, while breeding birds are susceptible to bycatch in these fisheries in waters adjacent to the breeding islands. The species remains at risk of bycatch in Southern Ocean pelagic fisheries worldwide. Plastic litter items may be found in food sampling. Land-based threats are not considered to cause population level changes at any of the breeding sites. The threat of introduced rabbits and rodents to this species on Macquarie Island has been mitigated through a successful eradication programme.
Trajectory predicted	The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels (population trend 1993-2013) indicated that the population trend was declining—with medium trend confidence. Recent 10-year trend information from 2014 now suggests the population trend on Macquarie Island is declining (Alderman, 2015c).
Evaluation of change in conservation trajectory of the species	
The conservation trajectory of grey-headed albatross is declining globally, and this trend is unlikely to reverse unless incidental mortalities during fishing operations are significantly reduced. The decline in grey-headed albatross numbers at Macquarie Island is not presently explicable, but the breeding population is expected to benefit from the eradication of rabbits and rodents from the island.	

Thalassarche melanophris (black-browed albatross)*			
Threatened species listing under Environment Protection and Biodiversity Conservation Act 1999 (Cth) s 178	Conservation status for birds occurring in Australian jurisdiction (Garnett et al., 2011)		Threatened species listing on Red List of Threatened Species (IUCN, 2015): Version 2015.4
	Australian breeding population	Population visiting Australian territory	
Vulnerable	Endangered	Endangered	Near Threatened (downlisted in 2013 from Endangered, in light of an increasing population)
Understanding at the time of publication of recovery plan			
Distribution, abundance	Details about species distribution, abundance, ecology, habitat and threats are contained in the recovery plan (DSEWPC, 2011b), background paper produced to support the development of the plan (DSEWPC, 2011a), and action plan for Australian birds (Garnett et al., 2011). Based on a combination of published and unpublished data submitted to the Agreement on the Conservation of Albatrosses and Petrels, the total annual breeding population in 2012 was estimated to be about 602,000 pairs (ACAP, 2012e), with about 600 pairs on Heard Island, about 80 pairs on McDonald Islands, about 140 on Bishop and Clerk Islets, and about 60 pairs on Macquarie Island (DSEWPC, 2011b).		
Ecology, habitat			
Threats			
Trajectory predicted	Available information indicated that population trend data for most sites were limited due to a lack of regular, comparable surveys, with considerable variation in trend data between individual sites, and while trend data were not available for Heard Island and McDonald Islands and Bishop and Clerk Islets, the population on Macquarie Island remained stable (ACAP, 2012e; DSEWPC, 2011b).		
Current understanding (ACAP, 2012e, 2015b; Alderman, 2015c)			
Distribution, abundance	This species breeds on seven subantarctic islands or archipelagos: South Georgia, Crozet, Kerguelen, Antipodes, Heard and McDonald, and Macquarie Islands, and Bishop and Clerk Islets, as well as the Falkland Islands and four island groups off Chile, with additional breeding populations identified in southern Chile. The species is widely distributed across high southern latitudes including Australia’s southern, subantarctic and Antarctic jurisdiction. The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels		

	indicates that there are about 673,000 annual breeding pairs. There are about 45 breeding pairs on Macquarie Island (Alderman, 2015c). There are no new abundance data concerning the breeding populations on Heard Island and McDonald Islands, and Bishop and Clerk Islets.
Ecology, habitat	This is a colonial, annual breeding species, although only about 75 per cent of successful breeders breed in the following year. Egg laying occurs in September-October, and eggs hatch in December. Chicks fledge when about four months old. Adults begin breeding when 8-13 years old. The species targets prey by surface seizing and plunge-diving to 4.5 m in depth, and frequently follows fishing vessels to scavenge on discards. Carrion feeding occurs at some island locations.
Threats	The distribution of this species overlaps with a number of major fisheries, and it is one of the most common bycatch species, particularly in pelagic and demersal longline and trawl fisheries off southern Africa and South America, and trawl fisheries off the Falkland Islands. Land-based threats are not considered to cause population-level changes at any of the breeding sites. Volcanism remains a threat at Heard Island and McDonald Islands. The threat of introduced rabbits and rodents to this species on Macquarie Island has been mitigated through a successful eradication programme.
Trajectory predicted	The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels (population trend 1993-2013) indicated that the population trend was increasing—with high trend confidence. Recent 10-year trend information from 2014 now suggests the population trend on Macquarie Island is stable (Alderman, 2015c). There are no new population trend data concerning the breeding populations on Heard Island and McDonald Islands, and Bishop and Clerk Islets.
Evaluation of change in conservation trajectory of the species	
The conservation trajectory of black-browed albatross is increasing globally, and this trend is likely to continue, with the population on Macquarie Island stable. There are no new population trend data concerning the breeding populations on Heard Island and McDonald Islands, and Bishop and Clerk Islets.	

Thalassarche impavida (Campbell albatross)			
Threatened species listing under Environment Protection and Biodiversity Conservation Act 1999 (Cth) s 178	Conservation status for birds occurring in Australian jurisdiction (Garnett et al., 2011)		Threatened species listing on Red List of Threatened Species (IUCN, 2015): Version 2015.4
	Australian breeding population	Population visiting Australian territory	
Vulnerable	-	Vulnerable	Vulnerable
Understanding at the time of publication of recovery plan			
Distribution, abundance	Details about species distribution, abundance, ecology, habitat and threats are contained in the recovery plan (DSEWPC, 2011b), background paper produced to support the development of the plan (DSEWPC, 2011a), and action plan for Australian birds (Garnett et al., 2011). Based on a combination of published and unpublished data submitted to the Agreement on the Conservation of Albatrosses and Petrels, the total annual breeding population in 1998 was estimated to be approximately 21,000 pairs (ACAP, 2012g).		
Ecology, habitat			
Threats			
Trajectory predicted	Available information indicated that population trend was unknown (ACAP, 2012g).		
Current understanding (ACAP, 2012g, 2015b)			
Distribution, abundance	This species is endemic to New Zealand breeding only on Campbell Island. The species is widely distributed across high southern latitudes including Australia’s southern, subantarctic and Antarctic jurisdiction. The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels indicates that there are about 21,600 annual breeding pairs.		
Ecology, habitat	This is a colonial, annual breeding species. Egg laying occurs in September-October, and eggs hatch in December. Chicks fledge when about 4 months old. Adults begin breeding when 6-13 years old. The species feeds by surface-seizing and is believed capable of diving to 5 m in depth. Prey species are believed to be obtained from mostly natural sources, rather than discards from fisheries.		
Threats	This species is at risk of bycatch in longline fisheries in New Zealand and Australian waters, and trawl fisheries in New Zealand waters. There are no known, confirmed land-based threats capable of causing population-level changes.		
Trajectory predicted	The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels		

	(population trend 1993-2013) indicated that the population trend was stable—with low trend confidence.
Evaluation of change in conservation trajectory of the species	
The conservation trajectory of Campbell albatross is stable globally.	

<i>Thalassarche carteri</i> (Indian yellow-nosed albatross)			
Threatened species listing under <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) s 178	Conservation status for birds occurring in Australian jurisdiction (Garnett et al., 2011)		Threatened species listing on Red List of Threatened Species (IUCN, 2015): Version 2015.4
	Australian breeding population	Population visiting Australian territory	
Vulnerable	-	Endangered	Endangered
Understanding at the time of publication of recovery plan			
Distribution, abundance	Details about species distribution, abundance, ecology, habitat and threats are contained in the recovery plan (DSEWPC, 2011b), background paper produced to support the development of the plan (DSEWPC, 2011a), and action plan for Australian birds (Garnett et al., 2011). Based on a combination of published and unpublished data submitted to the Agreement on the Conservation of Albatrosses and Petrels, the total annual breeding population in 1998 was estimated to be approximately 36,000 pairs, corresponding to a total population of between 160,000-180,000 individuals (ACAP, 2012j).		
Ecology, habitat			
Threats			
Trajectory predicted	Available information indicated that the population trend was declining at the one island where regular surveys of breeding pairs had occurred (Amsterdam Island—home to about 65 per cent of the global population) (ACAP, 2012j). Trend data were lacking for the other breeding colonies.		
Current understanding (ACAP, 2012j, 2015b)			
Distribution, abundance	This species breeds on subantarctic island groups of Amsterdam, St Paul, Crozet, Kerguelen and Prince Edward Islands, with one record of a single pair on the Chatham Islands. The species is widely distributed across high southern latitudes including Australia’s southern and subantarctic jurisdiction. The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels indicates that there are about 39,300 annual breeding pairs.		
Ecology, habitat	This is a colonial, annual breeding species. Egg laying occurs in September-October, and eggs hatch in November-December. Chicks fledge when about 4 months old. Adults begin breeding when about 9 years old. The feeding behaviour of this species involves surface-seizing of prey and shallow dives.		

Threats	The range of this species overlaps significantly with, and is at risk of bycatch during, longline fishing operations off Western Australia, as well as sub-tropical and subantarctic waters. The main breeding site on Amsterdam Island is at risk of disease outbreaks due to <i>Pasteurella multocida</i> (avian cholera) and <i>Erysipelas</i> , which were the cause of disease outbreaks in the 1980s. Except for feral cat and rat on Amsterdam Island, there is little evidence of detrimental impacts due to introduced mammals.
Trajectory predicted	The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels (population trend 1993-2013) indicated that the population trend was decreasing—with medium trend confidence.
Evaluation of change in conservation trajectory of the species	
The conservation trajectory of Indian yellow-nosed albatross is declining globally, and this trend is unlikely to reverse unless incidental mortalities during fishing operations are significantly reduced, along with the risk of disease outbreak on Amsterdam Island.	

Thalassarche chlororhynchos (Atlantic yellow-nosed albatross)			
Threatened species listing under Environment Protection and Biodiversity Conservation Act 1999 (Cth) s 178	Conservation status for birds occurring in Australian jurisdiction (Garnett et al., 2011)		Threatened species listing on Red List of Threatened Species (IUCN, 2015): Version 2015.4
	Australian breeding population	Population visiting Australian territory	
Not Listed	-	-	Endangered
Understanding at the time of publication of recovery plan			
Distribution, abundance	Details about species distribution, abundance, ecology, habitat and threats are contained in the recovery plan (DSEWPC, 2011b), background paper produced to support the development of the plan (DSEWPC, 2011a), and action plan for Australian birds (Garnett et al., 2011). Based on a combination of published and unpublished data submitted to the Agreement on the Conservation of Albatrosses and Petrels, the annual breeding population in 2008 was uncertain with the global population estimated to be between 50,000-80,000 individuals (ACAP, 2012d).		
Ecology, habitat			
Threats			
Trajectory predicted	Available information indicated that there were no recently available population trend data for this species upon which an overall population trend could be calculated (ACAP, 2012d).		
Current understanding (ACAP, 2012d, 2015b)			
Distribution, abundance	This species is endemic to the United Kingdom territory of Tristan da Cunha and breeds on all four major islands: Tristan, Gough, Nightingale and Inaccessible, as well as Middle and Stoltenhoff Islets. The species is widely distributed across high southern latitudes, predominately in the southern Atlantic Ocean, and is a vagrant visitor to southern Australian jurisdiction. The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels indicates that there are about 33,600 annual breeding pairs.		
Ecology, habitat	This is a colonial, annual breeding species. Egg laying occurs in September-October, and eggs hatch in November-December. Chicks fledge when about six months old. Adults begin breeding when 6-13 years old. The feeding behaviour of this species involves surface-seizing of prey and occasional dives, and the species is known to rely significantly on scavenging discards from fishing vessels.		

Threats	This species is considered vulnerable to bycatch in pelagic longline and trawl fisheries in the western Atlantic Ocean and off southern Africa. Plastic ingestion occurs, but its effects are unknown. There are currently no known, confirmed threats to this species at any breeding site.
Trajectory predicted	The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels (population trend 1993-2013) indicated that the population trend was stable—with low trend confidence.
Evaluation of change in conservation trajectory of the species	
The conservation trajectory of Atlantic yellow-nosed albatross is stable globally.	

Phoebetria fusca (sooty albatross)			
Threatened species listing under Environment Protection and Biodiversity Conservation Act 1999 (Cth) s 178	Conservation status for birds occurring in Australian jurisdiction (Garnett et al., 2011)		Threatened species listing on Red List of Threatened Species (IUCN, 2015): Version 2015.4
	Australian breeding population	Population visiting Australian territory	
Vulnerable	-	Endangered	Endangered
Understanding at the time of publication of recovery plan			
Distribution, abundance	Details about species distribution, abundance, ecology, habitat and threats are contained in the recovery plan (DSEWPC, 2011b), background paper produced to support the development of the plan (DSEWPC, 2011a), and action plan for Australian birds (Garnett et al., 2011). Based on a combination of published and unpublished data submitted to the Agreement on the Conservation of Albatrosses and Petrels, the annual breeding population in 1998 was about 15,600 breeding pairs, representing approximately 100,000 individual birds (ACAP, 2012q).		
Ecology, habitat			
Threats			
Trajectory predicted	Available information indicated there was limited information available to determine population trends for this species, but declines were reported at all sites where repeated surveys had been carried out (ACAP, 2012q).		
Current understanding (ACAP, 2012q, 2015b)			
Distribution, abundance	This species breeds on subantarctic islands: Prince Edward, Marion, Kerguelen, Crozet, Amsterdam, and St Paul Islands, as well in the Atlantic Ocean on islands in the Tristan Da Cunha group (approximately 60 per cent of the global population). The species is widely distributed across high southern latitudes including Australia’s southern and subantarctic jurisdiction. The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels indicates that there are about 12,100 annual breeding pairs.		
Ecology, habitat	This is a solitary or small colony, biennial breeding species. Egg laying occurs in September-October, and eggs hatch in December. Chicks fledge when about 5-6 months old. Adults begin breeding on average when about 12 years old. The species is a diurnal feeder, mainly feeding by surface-seizing of prey, and its diet includes carrion on islands. Following of fishing vessels occurs to scavenge offal.		

Threats	The primary threat to this species is mortality associated with pelagic longline fishing operations, particularly in high seas fisheries in the southern Atlantic Ocean, and Indian Ocean. Little information exists concerning the potential impact of contaminants, oil spills or marine debris, although some plastic debris is present in stomach contents and pellets. Threats at breeding sites are poorly known due to inaccessibility of nests and lack of monitoring at most sites. There is no evidence of significant effects from introduced feral mammal species: cat and rat, with one instance of predation by feral mouse on Gough Island at Tristan Da Cunha. There may be an impact of disease—avian cholera and <i>Erysipelas</i> —on Amsterdam Island.
Trajectory predicted	The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels (population trend 1993-2013) indicated that the population trend was declining—with very low trend confidence.
Evaluation of change in conservation trajectory of the species	
The conservation trajectory of sooty albatross is declining globally, and this trend is unlikely to reverse unless incidental mortalities during fishing operations are significantly reduced.	

Phoebetria palpebrata (light-mantled albatross)*			
Threatened species listing under Environment Protection and Biodiversity Conservation Act 1999 (Cth) s 178	Conservation status for birds occurring in Australian jurisdiction (Garnett et al., 2011)		Threatened species listing on Red List of Threatened Species (IUCN, 2015): Version 2015.4
	Australian breeding population	Population visiting Australian territory	
Not Listed	Endangered	Near Threatened	Near Threatened
Understanding at the time of publication of recovery plan			
Distribution, abundance	Details about species distribution, abundance, ecology, habitat and threats are contained in the recovery plan (DSEWPC, 2011b), background paper produced to support the development of the plan (DSEWPC, 2011a), and action plan for Australian birds (Garnett et al., 2011).		
Ecology, habitat			
Threats	Based on a combination of published and unpublished data submitted to the Agreement on the Conservation of Albatrosses and Petrels, the annual breeding population in 1998 was about 21,600 breeding pairs, representing approximately 140,000 individual birds (ACAP, 2012I), with approximately 200-500 pairs on Heard Island, an unknown population on McDonald Islands, and about 1200 pairs on Macquarie Island (DSEWPC, 2011b).		
Trajectory predicted	Available information indicated there was insufficient information available to determine overall population trends for this species (ACAP, 2012I), with the trends for the breeding populations on Heard Island and McDonald Islands unknown, and Macquarie Island stable (DSEWPC, 2011b).		
Current understanding (ACAP, 2012I, 2015b; Alderman, 2015c)			
Distribution, abundance	This species breeds on several subantarctic islands: South Georgia, Prince Edwards, Marion, Kerguelen, Crozet, Auckland, Campbell, Antipodes, Heard, McDonald and Macquarie. The species is widely distributed across high southern latitudes including Australia’s southern, subantarctic and Antarctic jurisdiction. The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels indicates that there are about 12,000 annual breeding pairs. Current abundance on Macquarie Island is measured by a spatial survey of study sites that estimates there are about 2150 breeding pairs on the island (Alderman, 2015c). There are no new data available for Heard Island and McDonald Islands.		

Ecology, habitat	This is solitary or small colony, biennial breeding species. Egg laying occurs in October-November, and chicks hatch in December-January. Chicks fledge when about 4-5 months, depending on location. Adults begin breeding when 7-12 years old. The species employs surface seizing, surface filtering and plunge-diving to about 12 m in depth for prey species. Feeding on carrion also occurs on islands and may be an important component of diet.
Threats	The primary threat to this species is mortality associated with pelagic longline fishing operations in high southern latitudes including small numbers bycaught in Australian jurisdiction. Little information exists on the potential impact of contaminants, oil spills or marine debris, although some plastic debris has been reported as present in stomach contents and pellets. Threats at breeding sites are poorly known. The threat of introduced rabbits and rodents to this species on Macquarie Island has been mitigated through a successful eradication programme. Volcanism remains a threat at Heard Island and McDonald Islands.
Trajectory predicted	The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels (population trend 1993-2013) indicated that the population trend was stable—with low trend confidence. Recent 10-year trend information from 2014 now suggests the population trend on Macquarie Island is increasing (Alderman, 2015c). There are no new population trend data concerning the breeding populations on Heard Island and McDonald Islands.
Evaluation of change in conservation trajectory of the species	
The conservation trajectory of light-mantled albatross is stable globally, with the population on Macquarie Island increasing. There are no new population trend data concerning the breeding populations on Heard Island and McDonald Islands.	

Macronectes giganteus (southern giant petrel)*			
Threatened species listing under Environment Protection and Biodiversity Conservation Act 1999 (Cth) s 178	Conservation status for birds occurring in Australian jurisdiction (Garnett et al., 2011)		Threatened species listing on Red List of Threatened Species (IUCN, 2015): Version 2015.4
	Australian breeding population	Population visiting Australian territory	
Endangered	-	-	Least Concern
Understanding at the time of publication of recovery plan			
Distribution, abundance	Details about species distribution, abundance, ecology, habitat and threats are contained in the recovery plan (DSEWPC, 2011b), background paper produced to support the development of the plan (DSEWPC, 2011a), and action plan for Australian birds (Garnett et al., 2011). It is difficult to estimate the sizes of breeding populations of this species at some locations—colonies may be small and widely dispersed, and a substantial proportion of the breeding population may be absent in any one year, as birds may take years off from breeding (‘sabbaticals’) (ACAP, 2012r). Based on a combination of published and unpublished data submitted to the Agreement on the Conservation of Albatrosses and Petrels, the annual breeding population in 2009 was about 46,800 breeding pairs, representing approximately 100,000 individual birds (ACAP, 2012r), with about 2500 pairs on Macquarie Island, about 3000 pairs on Heard Island, about 1400 pairs on McDonald Islands, and in the Australian Antarctic Territory about three occupied nests on Giganteus Island, about 45 occupied nests on Hawker Island and about 170 occupied nests on Frazier Islands (DSEWPC, 2011b).		
Ecology, habitat			
Threats			
Trajectory predicted	Available information indicated there was insufficient information available to determine overall population trends for this species (ACAP, 2012r), with the trend for the breeding population on Heard Island and McDonald Islands unknown, Macquarie Island and Giganteus Island stable, and Hawker Island and Frazier Islands possibly stable (DSEWPC, 2012b). Mortalities including 17 carcasses in 2010, and 21 carcasses in 2011 were recorded under the Macquarie Island Pest Eradication Project, due to secondary poisoning (PWS, 2014).		
Current understanding (ACAP, 2012r, 2015b; Alderman, 2015c)			
Distribution, abundance	This species breeds on 10 subantarctic islands, six islands off South America and numerous sites in the Antarctic including: Heard and McDonald Islands, Macquarie Island, and Giganteus Island, Hawker Island and Frazier Islands in the Australian Antarctic		

	<p>Territory. The species is widely distributed across high southern latitudes including Australia's southern, subantarctic and Antarctic jurisdiction.</p> <p>The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels indicates that there are about 47,000 annual breeding pairs, with about 1800 pairs on Macquarie Island, about 4 occupied nests on Giganteus Island, about 45 occupied nests on Hawker Island and about 230 occupied nests on Frazier Islands.. There are no new data concerning the abundance of this species on Heard Island and McDonald Islands.</p>
Ecology, habitat	<p>This is an annual breeding species—engaging in sabbatical periods of non-breeding averaging about 1.4 years. Depending on latitude and location, egg laying occurs between September-November, and eggs hatch in October-January. Chicks fledge when about 3-4 months old. Adults begin breeding when 5-11 years old. The species exhibit scavenging behaviours, preying on penguin and seal carrion on islands, as well as surface-seizing.</p>
Threats	<p>The primary threat to this species is mortality associated with pelagic longline fishing operations in high southern latitudes including small numbers bycaught in Australian jurisdiction. Little information exists on the potential impact of contaminants, oil spills or marine debris, although some plastic debris has been reported as present in stomach contents and pellets. Threats at breeding sites are poorly known. The threat of introduced rabbits and rodents to this species on Macquarie Island has been mitigated through a successful eradication programme. Volcanism remains a threat at Heard Island and McDonald Islands.</p>
Trajectory predicted	<p>The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels (population trend 1993-2013) indicated that the population trend was increasing—with medium trend confidence. Recent 10-year trend information from 2014 suggests the population trend on Macquarie Island is decreasing, due to secondary mortalities from the pest eradication programme (Alderman, 2015c). There are no new population trend data concerning the breeding populations on Heard Island and McDonald Islands, and Giganteus Island, Hawker Island and Frazier Islands in the Australian Antarctic Territory.</p>
Evaluation of change in conservation trajectory of the species	
<p>The conservation trajectory of southern giant petrel is increasing globally, with the population on Macquarie Island decreasing. The Macquarie Island population is expected to recovery from declines caused by secondary poisoning during feral pest eradication on the island. There are no new population trend data concerning the breeding populations on Heard Island and McDonald Islands, and Giganteus Island, Hawker Island and Frazier Islands in the Australian Antarctic Territory.</p>	

Macronectes halli (northern giant petrel)*			
Threatened species listing under Environment Protection and Biodiversity Conservation Act 1999 (Cth) s 178	Conservation status for birds occurring in Australian jurisdiction (Garnett et al., 2011)		Threatened species listing on Red List of Threatened Species (IUCN, 2015): Version 2015.4
	Australian breeding population	Population visiting Australian territory	
Vulnerable	-	-	Least Concern
Understanding at the time of publication of recovery plan			
Distribution, abundance	Details about species distribution, abundance, ecology, habitat and threats are contained in the recovery plan (DSEWPC, 2011b), background paper produced to support the development of the plan (DSEWPC, 2011a), and action plan for Australian birds (Garnett et al., 2011). Based on a combination of published and unpublished data submitted to the Agreement on the Conservation of Albatrosses and Petrels, the annual breeding population in the late 1990s was about 11,200 breeding pairs (ACAP, 2012m), with about 1700 pairs on Macquarie Island (DSEWPC, 2011b).		
Ecology, habitat			
Threats			
Trajectory predicted	Available information indicated there was insufficient information available to determine overall population trends for this species, as the population has shown both decreases and increases across its breeding range (ACAP, 2012m), with the Macquarie Island population considered as stable and potentially increasing (DSEWPC, 2012b). Significant mortalities including 306 carcasses in 2010, and 387 carcasses in 2011 (of which over 80 per cent were male) were recorded under the Macquarie Island Pest Eradication Project, due to secondary poisoning (PWS, 2014).		
Current understanding (ACAP, 2015m, 2015b, Alderman, 2015c)			
Distribution, abundance	This species breeds on subantarctic islands including South Georgia, Prince Edward, Crozet, Kerguelen, Auckland, Campbell, Antipodes, and Macquarie Islands. The species is widely distributed across high southern latitudes including Australia’s southern, subantarctic and Antarctic jurisdiction. The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels indicates that there are about 10,300 annual breeding pairs, with about 1500 pairs on Macquarie Island.		
Ecology, habitat	This is a solitary or colonial, annual breeding species—with 15-40 per cent of adults recorded as engaging in sabbatical periods of non-breeding each year. Egg laying occurs in August-October, and eggs hatch from October-December. Chicks fledge when		

	about 3-4 months old. Adults begin breeding when 4-11 years old. The species is the main scavenger species within its range, and engages in surface seizing of prey, surface diving and pursuit to 2 m in depth, and feeding on carrion.
Threats	The most serious threat to this species is mortality associated with commercial fishing activities in the Southern Ocean, particularly demersal longlining, with some additional mortality due to trawling. Other marine threats may include ingestion of or entanglement in marine debris (both plastic and fishery-related), fouling from oil spills and shooting by commercial fishing vessels to reduce stealing of baits. Contamination by pollutants through dietary sources is also a potential concern, with relatively high concentrations of organic pollutants and heavy metals found in feathers and other tissues. No land-based threat is considered to have the scope or severity to cause population-level changes to this species. The threat of introduced rabbits and rodents to this species on Macquarie Island has been mitigated through a successful eradication programme.
Trajectory predicted	The current summary of status of albatross and petrel species of the Agreement on the Conservation of Albatrosses and Petrels (population trend 1993-2013) indicated that the population trend was increasing—with medium trend confidence. Recent 10-year trend information from 2014 suggests the population trend on Macquarie Island is either stable or increasing, after a decrease in abundance, due to secondary mortalities from the pest eradication programme (Alderman, 2015c). Recent modelling suggests that the population will recovery to the pre-poisoning levels of 2009 by 2017 (Tuck et al., unpublished).
Evaluation of change in conservation trajectory of the species	
The conservation trajectory of northern giant petrel is increasing globally, with the population on Macquarie Island decreasing. The Macquarie Island population is expected to recovery from declines caused by secondary poisoning during feral pest eradication on the island.	

Discussion of recovery plan contribution to changes in conservation trajectory

Albatrosses and petrels remain among the world's most threatened species. Albatrosses and giant petrels continue to breed at only six locations within Australian jurisdiction. These remote islands constitute habitat that is critical to the survival of albatrosses and giant petrels within Australian jurisdiction. The breeding habitat for the endemic shy albatross represents its entire breeding habitat. No other islands or sites within areas under Australian jurisdiction have been identified as breeding habitat for albatrosses and giant petrels, although the potential exists for additional breeding sites for southern giant petrel to be identified within the Australian Antarctic Territory.

While Australian breeding populations of albatrosses and petrels, other than the endemic shy albatross, generally represent a small proportion of global populations, these species make a significant contribution to Australia's biodiversity.

Within the five-year timeframe of a recovery plan there is insufficient time to determine accurately population trajectories of threatened albatrosses and giant petrels. Caution is appropriate concerning assessing population status of the 21 albatross and giant petrel species referred to in the existing recovery plan. With this in mind, of the 12 populations for which population monitoring occurred during the life of this plan: one population has shown an increase over the past 10 years—light-mantled albatross at Macquarie Island; two populations remain stable or are increasing—black-browed albatross and northern giant petrel at Macquarie Island; one population remains indeterminate due to its small size—wandering albatross at Macquarie Island; the status of three populations is unknown—southern giant petrel at Giganteus Island, Hawker Island and Frazier Islands; and five populations are declining—grey-headed albatross, and southern giant Petrel at Macquarie Island, and shy albatross at Albatross Island, Pedra Branca and Mewstone. The decline in grey-headed albatross numbers at Macquarie Island is not presently explicable. The abundance of southern giant petrel and northern giant petrel breeding at Macquarie Island is expected to rebound. The long-term benefits of eradication of rabbits and rodents on Macquarie Island, particularly concerning vegetation habitat improvements, outweighed the short-term effects of secondary poisoning. There are a range of factors likely to be contributing to a decline in shy albatross numbers, notably incidental catch during trawl fishing and (to a lesser extent) longline fishing operations, disease, and competition for nesting space at Pedra Branca. No population data have been collected concerning the remaining eight populations for a period of over 10 years: black-browed albatross at Bishop and Clerk Islets; black-browed albatross, light-mantled albatross, southern giant petrel, and wandering albatross at Heard Island; and black-browed albatross, light-mantled albatross, and southern giant petrel at McDonald Islands.

This recovery plan has provided a strong policy foundation for action domestically to conduct ongoing monitoring of threatened albatrosses and giant petrels at key breeding sites in Tasmania. This monitoring was of considerable importance to identifying and addressing secondary poisoning effects from the Macquarie Island Pest Eradication Project, and will facilitate the monitoring of the recovery of affected populations if continued into the future. Population monitoring of shy albatross breeding populations has facilitated a more accurate picture of the conservation trajectory for this species. The decline in the conservation trajectory shy albatross suggests that a re-evaluation should occur of the listing category in light of recent information. As shy albatross is endemic to Australia, it is crucial that action under a future recovery plan, and other related management arrangements, contributes to resolving and mitigating, where feasible, adverse impacts on this species. Despite inclusion under the recovery plan, it is unlikely that information concerning the conservation status of threatened albatrosses and giant petrels at Heard Island and McDonald Islands will be updated in the foreseeable future. Addressing the lack of conservation status data for affected species should be a priority action under a future recovery plan.

This recovery plan also provided an important foundation for action in international conservation and fisheries forums to establish and improve conservation measures concerning seabird bycatch mitigation in fisheries and to improve conservation of breeding populations on land. Australia's influence and engagement in work of the Agreement on the Conservation of Albatrosses and Petrels has been highly influential in developing best and improving advice for Range States about addressing threats to albatrosses and giant petrels on land and at sea (including States whose vessels fish in the range of albatrosses and petrels). There has been varying degrees of implementation by regional fisheries bodies of conservation measures concerning seabird bycatch mitigation and collection of bycatch information through scientific observer programmes, and further international efforts will be required to improve the effectiveness of these measures over time. Absent effective international conservation action, Australia will be unable to secure the conservation of threatened albatrosses and giant petrels that breed and forage within Australian jurisdiction.

The threat of marine debris including microplastics has increased in significance during the life of this plan, and there is now particular concern about the risk of marine plastic to seabirds in the Tasman Sea. The understanding of the potential effects of climate change, particularly concerning shy albatross, has also increased during the life of this plan, and this threat may assume greater significance in future.

4.0: RECOMMENDATIONS FOR FUTURE ACTION

Proposals for an updated recovery plan objectives/actions will need to be 'SMART' (specific, measureable, achievable, realistic and timely). The following recommendations also attempt to overcome difficulties in the existing plan concerning inclusion of compound actions.

Actions required to maximise chances of long-term survival in nature	Existing, modified, new	Existing mechanisms (if any)	Comments
Overall objective: <i>... ensure the long-term survival and recovery, and improve the conservation status of threatened albatross and petrel populations breeding and foraging in Australian jurisdiction.</i>	Modified	Overall objective: <i>... to ensure the long term survival and recovery of albatross and giant petrel populations breeding and foraging in Australian jurisdiction by reducing or eliminating human related threats at sea and on land.</i>	The time frame for recovery of threatened albatrosses and petrels is recognised as extending over a 20-30 year period or longer, depending on the life history of individual species.
Objective 1 Improve the protection of threatened albatrosses and petrels breeding and foraging in Australian jurisdiction.	New	-	This specific objective is included to address a gap in the existing recovery plan. The current plan considered minimising human disturbance at the nest, and the need for quarantine measures to avoid introductions of feral pest species. Both actions are threats to conservation status. The specific objective ensures there is a focus on protecting threatened albatrosses and petrels breeding and foraging in Australian jurisdiction, recognising that implementation will necessarily involve action at the domestic level, as well as international advocacy by Australia, particularly through the Agreement on the Conservation of Albatrosses and Petrels.
Strategy 1: Increase protection of albatross and petrel species breeding and foraging in Australian jurisdiction			
1a	New	-	This action would ensure listings of albatrosses and petrels breeding and foraging are updated in light of

Update threatened species status listings for albatrosses and petrels breeding and foraging in Australian jurisdiction in light of changes in conservation status.			new information about species' conservation status. The current plan identified a decline in the conservation status of certain species (Annex E).
1b Protect all breeding sites of albatrosses and petrels in Australian jurisdiction.	Modified	<p>B 5.1</p> <p>Implement or continue restrictions (through protected area and other arrangements) on human disturbance at and access to albatross and giant petrel breeding sites.</p> <p>B 5.2</p> <p>Education material regarding the impacts of wildlife disturbance should be provided to all visitors to albatross and giant petrel breeding colonies.</p>	<p>Protection of albatrosses and petrels relies on protecting those sites where breeding occurs. The action provides flexibility to protect any additional breeding sites that are identified during the life of a future recovery plan. The modification ensures protection of breeding sites may occur for reasons other than preventing human disturbance or quarantine.</p> <p>The action would ensure potential visitors to breeding sites are informed about the need for supervised visits, avoiding risks of human disturbance, preventing introduction of feral pest species, and avoiding other potential impacts. The action allows flexibility to control access to new breeding sites, and to adjust controls in light of changes in the extent of existing breeding sites.</p>
1c Improve alignment of conservation listings of threatened albatrosses and petrels across Australian jurisdictions.	Modified	<p>A 1.3</p> <p>Australia participates in national and global dissemination of population stats and trend data.</p>	Alignment would facilitate complementary actions across jurisdictions to improve the conservation of albatrosses and petrels breeding and foraging in Australian jurisdiction. A high-level commitment between the Commonwealth, States and Territories would be required for alignment to be secured, as currently the threatened species status varies considerably across jurisdictions (Annex D).
Objective 2 Improve the understanding of the size, structure and population trends of	Modified	<p>Specific Objective 1</p> <p>Research and monitoring of the biology, ecology and population dynamics of albatrosses and giant</p>	The proposed specific objective would broaden the scope of potential actions that collectively improve the conservation status of breeding populations of

threatened albatrosses and petrels breeding and foraging in Australian jurisdiction.		petrels breeding within Australian jurisdiction is sufficient to understand conservation status and to implement effective and efficient conservation measures	albatrosses and petrels. The current plan's objective focuses on the sufficiency of research and monitoring for species breeding within Australian jurisdiction.
Strategy 2: Ensure population and conservation status of breeding populations in Australian jurisdiction are effectively monitored			
2a Identify gaps in demographic data and associated analyses for each breeding population, and develop a prioritised strategy to ensure sufficient data are available to underpin conservation management decision-making.	Modified	A 1.1 Develop strategy (where required) for obtaining population demographic data for all albatross and giant petrel populations breeding under Australian jurisdiction. A 2.1 (part) At sea data for albatross and giant petrel populations breeding within Australian jurisdiction are evaluated with respect to: <ul style="list-style-type: none"> • Gaps and limitations in sample size; • Overlap with fisheries and consequent risk; and • Population trend 	The action would provide a framework for regular monitoring of all breeding populations to ensure that changes in conservation status can be identified. The strategy would include, among other things, site-specific guidance concerning which demographic data should be obtained and in what order of priority, recognising logistical constraints, particularly for remote locations.
2b Ensure breeding populations are monitored in line with the following monitoring timeframes, subject to logistical constraints: <ul style="list-style-type: none"> • each year: Macquarie Island albatrosses and petrels, Tasmanian (Albatross Island, Pedra Branca, and the Mewstone) shy albatross • at least every five years: Australian Antarctic Territory (Giganteus, Hawker 	Modified	A 1.2 Continue long-term demographic studies of albatrosses on Macquarie Island and shy albatrosses on Albatross Island and assess survivorship data on a regular basis. Where populations without demographic studies are identified as decreasing (see above action), assess the logistical and resource feasibility for undertaking banding and demographic studies on other populations to identify the driving parameter for observed population declines.	This action would ensure that long-term annual monitoring of key populations occurs, and clear expectations are established concerning regular monitoring of remote populations.

<p>and Frazier Islands) southern giant petrel</p> <ul style="list-style-type: none"> at least every 10 years: Bishop and Clerk Islets black-browed albatross, Heard Island albatrosses and petrels, McDonald Island albatrosses and petrels. 		<p>A 2.1 (part)</p> <p>Identify priority populations, species, age and breeding status and, where appropriate, undertake further foraging investigations ...</p>	
<p>2c</p> <p>Obtain population dynamics data for each breeding population, where feasible, in line with desired monitoring timeframes, which might include:</p> <ul style="list-style-type: none"> conducting long-term demographic studies assessing survivorship identifying driving parameters for observed population changes identifying overlap of foraging range with fisheries identifying population trends and changes in these over time quantifying scale and nature of dietary requirements assessing effect of offal discharge on reproductive success. 	Modified	<p>A 1.2 (above)</p> <p>C 9.1 (part)</p> <p>Encourage research to quantify the scale and nature of dietary requirements of albatrosses and giant petrels, with priority for populations breeding in Australian jurisdiction.</p> <p>Provide these data to the Australian Fisheries Management Authority and other agencies managing fisheries that overlap with albatross and giant petrel species.</p> <p>C 10.1</p> <p>Continue to monitor the effects of offal discharge on the reproductive success of albatrosses and giant petrels, to the extent feasible.</p>	<p>The action would incorporate actions under the current plan concerning ongoing demographic studies of populations and assessing survivorship data on a regular basis, as well as foraging distribution and diet studies.</p>
<p>2d</p> <p>Identify options to expand the range of innovative, cost-effective techniques for collecting and analysing demographic data for populations.</p>	New	-	<p>The action would facilitate further innovation including concerning remote monitoring and using alternative approaches to analyse population data, for example 'citizen science'.</p>

2e Contribute to national and global dissemination of population and conservation status data.	Modified	A 1.3 Australia participates in national and global dissemination of population status and trend data. A 2.1 (part) ... Submit remote tracking data to Procellariiform Global Tracking database.	The action would maintain Australia's ongoing efforts in contributing to relevant data repositories, particularly those of the Agreement on the Conservation of albatrosses and petrels and Procellariiform Global Tracking database hosted by BirdLife International.
Objective 3 Improve effectiveness of management measures that reduce land-based threats to albatrosses and petrels breeding within Australian jurisdiction.	Modified	Specific Objective 2 Quantify and reduce land based threats to the survival and breeding parameters of albatrosses and giant petrels breeding in areas under Australian jurisdiction	The objective would support efforts to improve measures tackling threats to albatrosses and petrels breeding within Australian jurisdiction. Identifying the nature and scale of these threats would be an action under the specific objective.
Strategy 3: Prevent introduction of species to breeding islands that are likely to have a population level effect			
3a Implement effective pre-arrival quarantine measures for any visits to breeding islands.	Modified	B 4.2 Stringent formal quarantine measures are in place and adhered to (including regulating access to all breeding islands).	Action would maintain emphasis on avoiding future introductions of feral pest species to breeding islands, especially in light of the eradication of rabbits and rodents on Macquarie Island.
3b Monitor breeding islands regularly for presence of introduced species using a risk-based approach.	Modified	B 4.3 Breeding islands assessed for presence of feral species: Tasmanian islands highest priority.	The action would maintain existing action concerning assessing breeding islands for the presence of feral pest species, while ensuring that monitoring efforts are cost-effective by applying a risk-based approach to any monitoring.
3c Develop a rapid response strategy about responding to introductions to each breeding island of species likely to have a population level effect on threatened albatrosses and petrels.	New	-	The action would ensure that pre-agreed actions were identified for implementation in circumstances where an introduced species was identified on a breeding island as likely to have a population level effect on threatened albatrosses and petrels. This risk-based approach would ensure that any actions taken were

			feasible, efficient and effective in responding to the threat.
Strategy 4: Identify whether competition with native species for nesting habitat is causing population declines			
4a Where feasible, study effect of competition between shy albatross and Australasian gannets for nesting habitat on Pedra Branca.	Modified	B 6.1 Monitor shy albatross population on Pedra Branca for the relative distribution and abundance of Australasian gannets. Document interactions between shy albatross and gannets and assess appropriate methods that may limit adverse interactions between the species.	The action would seek to quantify the extent to which inter-species competition for nesting space is affecting the conservation status of shy albatross at Pedra Branca.
4b Develop risk based options about reducing levels of inter-species competition on Pedra Branca, where the inter-species competition for nesting habitat affects the breeding population status of shy albatross.	Modified	B 6.1 (above)	The action would ascertain whether any mitigation measures were efficient, effective and feasible in all the circumstances. This action would allow a determination about whether or not it is necessary to intervene in a natural process of competition between native species in circumstances where the breeding population status of the affected species is at risk.
4c Where appropriate, implement cost-effective measures to reduce levels of inter-species competition on Pedra Branca.	New	B 6.1 (above)	The action facilitates implementation of measures to address competition between the native species, where necessary.
Strategy 5: Identify diseases likely to have a population level effect on breeding populations			
5a Survey for the presence of candidate diseases on all breeding islands.	Modified	B 7.1 (part) Determine baseline presence of disease on breeding islands and implement stringent quarantine measures	The action would maintain ongoing work on monitoring breeding colonies for the presence of disease (including parasites), and in identifying the risk of population level effects.

		where appropriate.	
<p>5b</p> <p>Undertake a gap analysis and risk assessment concerning the risk of disease introductions and effects on breeding islands.</p>		<p>B 7.2</p> <p>Quantify the demographic impact of disease on shy albatrosses on Albatross Island.</p>	<p>The action would identify the risk of population level effects from diseases.</p>
<p>5c</p> <p>Where necessary, develop risk-based strategy for mitigating risk of population level effects of disease on breeding populations.</p>	New	-	<p>The action would ensure that any strategy for mitigating disease effects was based on the risk of population level effects on breeding populations, concerning whether or not to address a natural process of disease affecting a wild population.</p>
<p>5d</p> <p>Where appropriate, implement cost-effective measures to mitigate the risk of population level effects of disease on breeding populations.</p>	New	<p>B 7.1 (part)</p> <p>... implement stringent quarantine measures where appropriate.</p>	<p>The action would anticipate, as appropriate, further action addressing disease and parasites impacts on Albatross Island, and at other breeding colonies.</p>
<p>Objective 4</p> <p>Reduce marine based threats to albatrosses and petrels in Australian jurisdiction.</p>	Modified	<p>Specific Objective 3</p> <p>Quantify and reduce marine based threats to the survival and breeding parameters of albatrosses and giant petrels foraging in waters under Australian jurisdiction</p> <p>Specific Objective 4</p> <p>Educate fishers and promote public awareness of the threats to albatrosses and giant petrels</p> <p>Specific Objective 5</p> <p>Achieve substantial progress towards global conservation of albatrosses and giant petrels in</p>	<p>The specific objective continues the current approach of the recovery plan and would be focused on improving the measures tackling marine based threats to albatrosses and petrels foraging within Australian jurisdiction.</p>

		international conservation and fishing fora	
Strategy 6: Reduce incidental catch (or bycatch) of seabirds during fishing operations in Australian jurisdiction			
6a Mitigate seabird bycatch during oceanic longline fishing operations.	Modified	C 8.1 All actions in the Threat Abatement Plan are fully implemented.	The action would contribute to the ongoing mitigation of the incidental catch (or bycatch) of seabirds (including albatrosses and petrels) during oceanic longline fishing operations through the implementation of the seabird Threat Abatement Plan, 2014. It provides flexibility concerning working with the States and Northern Territory to mitigate, where necessary, bycatch in longline fisheries in each jurisdiction. It is widely recognised that as well as directly interacting with longlines, albatrosses and petrels are also bycaught during secondary attacks on baited hooks brought back to the surface by other diving seabirds.
6b Quantify risk of seabird bycatch during other fishing operations – including, but not limited to, trawling, gillnetting and recreational fishing.	Modified	C 8.2 (part) The scale and nature of interactions between albatrosses and giant petrels and trawl fishing operations in Australian waters are quantified	The action would assist Commonwealth, State and Northern Territory fisheries agencies to take practical steps to identify the nature and scale of seabird bycatch across commercial and recreational fisheries within each jurisdiction.
6c Where required, mitigate the risk of seabird bycatch in identified commercial and recreational fisheries.	Modified	C 8.2 (part) ... if required, reporting processes are improved and bycatch is mitigated.	The action would facilitate introduction of seabird bycatch mitigation measures, in other Commonwealth, State and Northern Territory fisheries where there is an identified risk to seabirds from the commercial fishing operations, and/ or recreational fishing. The action anticipates consideration of best and improving practices for reducing seabird bycatch in these sectors, based on improved data collection to inform decision-making. Mitigation measures may include, among other things, education and awareness, fishing gear modification, bird scaring and exclusion devices, offal discharge management, and temporal and spatial

			closures.
6d Reduce risk of harmful interactions with seabirds from offal discharges during fishing operations, with particular emphasis to be given to longline and trawl fishing operations.	Modified	C 10.2 Continue to encourage management of offal discharge to prevent birds habituating on this food source.	The action would facilitate innovation by industry to reduce the risk of seabirds being attracted to fishing vessels by offal discharges during fishing operations, which increases the risk of seabird bycatch.
6e Develop options for avoiding or minimising offal discharge during commercial fishing operations.	New	C 10.2 Continue to encourage management of offal discharge to prevent birds habituating on this food source.	The action would facilitate innovation in offal management with the aim of avoiding offal discharging during fishing operations. Options which might be considered would include, among other things, improved fishing vessel designs, approaches for retaining offal while on fishing grounds, and offal reception facilities on shore.
6f Develop within one year, and adopt and implement within two years, Australia's National Plan of Action to reduce the incidental catch of seabirds in capture fisheries.	Modified	C 8.4 Where bycatch in a fishery is identified as significant, limits or other appropriate management arrangements to prevent significant adverse impacts on the conservation status of the albatross and giant petrel species and populations are implemented.	The action would establish a timeframe for the timely implementation of Australia's National Plan of Action to reduce the incidental catch of seabirds in capture fisheries. This plan would ensure improvements are made to the data collection and analysis arrangements necessary to identify the range of threats to seabird populations from capture fisheries, and would outline the mitigation and management measures necessary to avoid or minimise seabird bycatch in identified fisheries.
Strategy 7: Monitor effects of fishing on albatrosses and petrels in Australian jurisdiction			
7a Improve data collection in commercial and recreational fisheries about levels of bycatch of seabird species, particularly albatrosses and petrels.	New	-	This action recognises the benefits of making further improvements to management arrangements in commercial fisheries to improve information flows concerning bycaught seabirds, and to facilitate better reporting by recreational fishers about seabird interactions.

7b Improve identification of bycaught species through applying molecular genetic techniques.	Modified	C.8.6 Determine vulnerability of species to bycatch mortality using molecular species assignment methods (and building on previous genetic provenance work).	The action would continue existing work to help identify bycaught species that closely resemble each other, particularly 'shy-type albatrosses'.
7c Monitor frequency of fishing equipment ingestion / entanglement at breeding colonies.	Existing	C 8.5 Monitor the frequency of fishing equipment ingestions / entanglement at breeding colonies as part of existing population monitoring programmes under Action A 1.1.	The action would be undertaken as part of population and conservation status monitoring.
7d Encourage development of fisheries assessments that incorporate information concerning total dietary requirements of albatross and giant petrel populations.	Modified	C 9.1 (part) Promote the incorporation of total dietary requirements of albatross and giant petrel populations into fisheries assessments and the development of improved management strategies.	This action would facilitate incorporation into fisheries assessment models consideration of the sustainability of fisheries harvesting strategies concerning effects on associated and dependent species of albatrosses and petrels. These considerations may increase in importance in a changing climate.
Strategy 8: Maintain and increase community awareness, understanding and involvement in reducing marine based threats to albatrosses and petrels			
8a Establish a stakeholder group to discuss implementation and effectiveness of recovery plan actions.	New	-	The action would require the Department of the Environment to establish a forum to discuss implementation and effectiveness of recovery plan actions. Participation would include representatives from government, the fishing industry, environmental and Indigenous non-governmental organisations, and experts closely involved with the recovery of threatened albatrosses and petrels. The establishment, governance and terms of reference and frequency of meetings for the forum would be consistent with those for recovery teams for threatened species.

8b Inform, support and encourage fishers to be involved in mitigating the effects of fishing on seabirds.	Modified	D.12.1 Design and implement education strategies for fisheries with significant risk of albatross and giant petrel interactions.	The action would extend the scope of education and awareness to include, among other things, school education activities, and raising awareness among recreational fishers.
8c Raise awareness in the community about species covered in the recovery plan, for example by providing information to enable consumers, where appropriate, to make informed choices about the sustainability of fisheries including the risks of fishing operations to seabirds.	Modified	D 12.2 Where feasible, encourage the development by industry and others of measures that allow consumers to distinguish products from "albatross and giant petrel friendly" fisheries. Develop criteria that might facilitate formal recognition of such fisheries.	The action would help improve community awareness and understanding of the threats faced by albatrosses and petrels, and about ways the public may contribute to recovery efforts.
Objective 5 Achieve substantial progress towards global conservation of albatrosses and giant petrels in international conservation and fishing forums	Existing	Specific Objective 5 Achieve substantial progress towards global conservation of albatrosses and giant petrels in international conservation and fishing fora.	International advocacy continues to be needed as the range of albatrosses and petrels breeding and foraging in Australian jurisdiction extends internationally to include the high seas and jurisdictions of a range of other nations across the southern hemisphere.
Strategy 9: Advocate for effective international measures for conserving albatrosses and petrels			
9a Undertake effective advocacy of best and improving practices for reducing seabird bycatch and improving monitoring of seabird bycatch in international fisheries and conservation forums.	Modified	E 13.1 Promote best practice seabird by-catch mitigation, data collection and dissemination by foreign fishers, including through international fora such as the Commission for the Conservation of Antarctic Marine Living Resources, Commission for the Conservation of Southern Bluefin Tuna, Indian Ocean Tuna Commission, Western and Central Pacific Fisheries Commission and other applicable international arrangements to which Australia is a Party.	The action would increase Australia's continuing efforts directly within international forums, particularly through the Agreement on the Conservation of Albatrosses and Petrels, and regional fisheries and conservation bodies, to ensure feasible, efficient and effective measures are adopted and implemented, and evaluated concerning conserving albatrosses and petrels. The action would aim to progressively increase the rigor of mitigation measures to improve monitoring and surveillance of fishing operations concerning seabird bycatch, and to avoid or minimise interactions with seabirds in capture fisheries. The action would

			also aim to progressively increase actions by coastal states concerning the conservation and recovery of breeding populations of albatrosses and petrels within their jurisdiction.
9b Facilitate designing and implementing education strategies for fishers about reducing interactions with albatrosses and petrels.	Modified	D.12.1 Design and implement education strategies for fisheries with significant risk of albatross and giant petrel interactions.	The action would continue Australia's contribution through the Agreement on the Conservation of Albatrosses and Petrels concerning the design, development and dissemination of information for fishers about the nature and extent of bycatch of albatrosses and petrels, and best and improving practices for reducing seabird bycatch.
9c Encourage through diplomatic and other means Range States to cooperate to conserve albatrosses and petrels.	Modified	E 13.2 Use diplomatic and other means to encourage countries to co-operate to conserve albatrosses and petrels, including by avoiding or mitigating fisheries bycatch.	The action would continue Australia's efforts to improve international cooperation in conserving albatrosses and petrels, particularly through the Agreement on the Conservation of Albatrosses and Petrels, as well as directly with Range States (including States whose fishing vessels fish within the range of albatrosses and petrels).
Objective 6 Improve understanding of generalised threats to albatrosses and giant petrels breeding and foraging within Australian jurisdiction	New		Specific attention would be given to the following generalised threats that adversely affect both breeding and foraging populations of albatrosses and petrels.
Strategy 10: Increase understanding of the effects of climate change			
10a Study the effects of climate change on albatrosses and petrels breeding and foraging within Australian jurisdiction.	Modified	A 3.1 The effects of climate change predicted for the marine and terrestrial environments of albatrosses and giant petrels within Australian jurisdiction are synthesised. The likely impacts on albatrosses and giant petrels breeding and	The action would facilitate further work to identify relevant links between albatross and petrel demographics and behaviour in a changing climate including research into diet, foraging patterns, and breeding phenology.

		foraging within Australian jurisdiction are assessed and reported and knowledge gaps identified (long term monitoring strategies — A.1.1 — are important for understanding and tracking impacts of climate change).	
Strategy 11: Reduce the effects of marine debris, microplastics and pollution			
11a Contribute, where relevant, to implementing actions within the marine debris Threat Abatement Plan.	New	-	The <i>Threat Abatement Plan for the impacts of marine debris on vertebrate marine life</i> (marine debris Threat Abatement Plan) (DEWHA, 2009) is presently under review. The action would facilitate implementation of relevant actions identified within a future marine debris Threat Abatement Plan.
11b Continue monitoring of breeding colonies for marine debris, microplastics and marine pollution impacts including, where feasible: <ul style="list-style-type: none"> • incidence of oiled birds at nest • levels of marine debris egestion/entanglement at nest • effect of microplastics and marine pollution • incidence of eggshell thinning. 	Modified	C 11.1 Where feasible, population monitoring programmes also monitor, in a standardised manner, the incidence of: <ul style="list-style-type: none"> i) oiled birds at the nest ii) marine debris egestion/entanglement at the nests iii) egg shell thinning. 	The action would facilitate monitoring of the effect of a range of marine pollutants on breeding populations of albatrosses and petrels.
11c Develop risk-based response strategies, where appropriate, to marine pollution incidents with the potential to affect breeding populations.	New	-	The action would ensure that oil pollution and other marine pollution incident response strategies consider potential effects on albatrosses and petrels breeding within Australian jurisdiction.

The following actions are not proposed to be included in a future recovery plan.

Objective/action	Reason for non inclusion	Comments
B 4.1 Complete the integrated pest eradication programme on Macquarie Island targeting rabbits and rodents.	Action completed.	Risk-based actions are proposed for a future recovery plan that would focus on preventing and responding to new introductions of species capable of causing population-level changes to albatrosses and petrels.
C 8.3 All longline and trawl fisheries, both Commonwealth and State managed, are and continue to be assessed for the risk of albatross and giant petrel interactions, and where required, a programme for the collection, synthesis and analysis of data relating to incidental mortality of albatrosses and giant petrels is introduced.	Action completed.	Action is completed for Commonwealth-managed fisheries, and the Australian Fisheries Management Authority reviews its risk assessments on an ongoing basis.
	Action unrealistic in current form.	Action proposed under a future recovery plan concerning developing Australia's National Plan of Action to reduce the incidental catch of seabirds in capture fisheries may encourage State-managed fisheries to undertake risk assessments.
E 13.3 Encourage the Agreement on the Conservation of Albatrosses and Petrels to develop strong relationships with Regional Fisheries Management Organisations, the Food and Agriculture Organization of the United Nations and other relevant bodies, including by promulgating assessments of albatross and giant petrel species population trends and status, their spatial distribution and bycatch mitigation measures.	Action completed.	This is now an acknowledged ongoing aspect of the work undertaken under the Agreement on the Conservation of Albatrosses and Petrels.

Discussion of recommendations for future actions

Consultation workshop participants are in agreement that an updated recovery plan should be developed if the recovery of threatened species of albatrosses and petrels under the *Environment Protection and Biodiversity Conservation act 1999* (Cth) is to be advanced. The preponderance of key threats to identified species remain, with the important exception of feral pest rabbit and rodent species on Macquarie Island that have been eradicated within the life of the existing plan. The potential scope and scale of marine debris including microplastics as a conservation threat has increased in light of improved information, however the affect of these on threatened albatrosses and petrels at the population level requires further research. The consultation workshop participants agreed that an updated plan should include reworded to include objectives and actions that were 'SMART' (specific, measureable, achievable, realistic and timely). It was also agreed that an updated plan should be designed to advance the recovery of the affected species over the longer term, in line with timeframes for population-level changes to be detected. There was support for removing completed actions, building upon actions already undertaken and pursuing new actions likely to improve the conservation status of albatrosses and petrels breeding and foraging in Australian jurisdiction. Consultation workshop participants supported including additional petrel species in an updated plan to encompass those petrel species breeding and foraging in Australian jurisdiction that are listed under the Agreement on the Conservation of Albatrosses and petrels.

Suggested model for species management/communication

A future recovery plan would establish a stakeholder group to discuss implementation and effectiveness of recovery plan actions (action 8a above). The action would require the Department of the Environment to establish a forum to discuss implementation and effectiveness of recovery plan actions. Participation would include representatives from government, the fishing industry, environmental and Indigenous non-governmental organisations, and experts closely involved with the recovery of threatened albatrosses and petrels. The establishment, governance and terms of reference and frequency of meetings for the forum would be consistent with those for recovery teams for threatened species.

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Annex A — Albatross and petrel species considered in the review

Species considered in review of National recovery plan for threatened albatrosses and giant petrels 2011-2016 (DSEWPC, 2011)		<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth)	The action plan for Australian birds 2010 (Garnett et al., 2011)		IUCN Red List of Threatened Species (IUCN, 2015)
Species name	Common name	Section 178	Australian breeding population	Population visiting Australian territory	Version 2015.4
ALBATROSSES					
Genus <i>DIOMEDEA</i>					
<i>Diomedea exulans</i>	Wandering Albatross	Vulnerable	Critically endangered	Vulnerable	Vulnerable
<i>Diomedea dabbenena</i>	Tristan Albatross	Endangered <i>Diomedea exulans exulans</i>	-	Critically Endangered	Critically Endangered
<i>Diomedea antipodensis</i>	Antipodean Albatross	Vulnerable <i>Diomedea exulans antipodensis</i>	-	Endangered Antipodean Albatross (Auckland Islands)	Vulnerable
<i>Diomedea gibsoni</i>	Gibson's Albatross	Vulnerable <i>Diomedea exulans gibsoni</i>	-	Endangered <i>Diomedea antipodensis gibsoni</i>	Not listed
<i>Diomedea amsterdamensis</i>	Amsterdam Albatross	Endangered <i>Diomedea exulans amsterdamensis</i>	-	-	Critically Endangered
<i>Diomedea epomophora</i>	Southern Royal Albatross	Vulnerable <i>Diomedea epomophora epomophora</i>	-	Vulnerable	Vulnerable
<i>Diomedea sanfordi</i>	Northern Royal Albatross	Endangered <i>Diomedea epomophora</i>	-	Endangered	Endangered

		<i>sandfordi</i>			
Genus <i>PHOEBASTRIA</i>					
<i>Phoebastria immutabilis</i>	Laysan Albatross	Not listed	-	-	Near Threatened
Genus <i>THALASSARCHE</i>					
<i>Thalassarche cauta</i>	Shy Albatross	Vulnerable <i>Thalassarche cauta cauta</i>	Vulnerable	-	Near Threatened
<i>Thalassarche steadi</i>	White-capped Albatross	Vulnerable <i>Thalassarche cauta steadi</i>	-	Vulnerable	Near Threatened
<i>Thalassarche salvini</i>	Salvin's Albatross	Vulnerable <i>Thalassarche cauta salvini</i>	-	Vulnerable	Vulnerable
<i>Thalassarche eremita</i>	Chatham Albatross	Endangered	-	-	Vulnerable
<i>Thalassarche bulleri</i>	Buller's Albatross	Vulnerable	-	Near Threatened	Near Threatened
<i>Thalassarche sp.</i>	Pacific Albatross	Vulnerable <i>Thalassarche bulleri platei</i>		Near Threatened <i>Thalassarche bulleri bulleri</i> (Buller's albatross (southern)) <i>Thalassarche bulleri platei</i> (Buller's albatross (northern))	Not Listed
<i>Thalassarche chrysostoma</i>	Grey-headed Albatross	Endangered	Critically Endangered	Vulnerable	Endangered
<i>Thalassarche melanophrys</i>	Black-browed Albatross	Vulnerable	Endangered	Endangered <i>Thalassarche melanophrys</i>	Near Threatened

<i>Thalassarche impavida</i>	Campbell Albatross	Vulnerable <i>Thalassarche melanophris impavida</i>	-	Vulnerable	Vulnerable
<i>Thalassarche carteri</i>	Indian Yellow-nosed Albatross	Vulnerable	-	Endangered	Endangered
<i>Thalassarche chlororhynchos</i>	Atlantic Yellow-nosed Albatross	Not listed	-	-	Endangered
Genus PHOEBETRIA					
<i>Phoebetria fusca</i>	Sooty Albatross	Vulnerable	-	Endangered	Endangered
<i>Phoebetria palpebrata</i>	Light-mantled Albatross	Not listed	Endangered	Near Threatened	Near Threatened
PETRELS					
Genus MACRONECTES					
<i>Macronectes giganteus</i> ¹³	Southern Giant Petrel	Endangered	-	-	Least Concern
<i>Macronectes halli</i> ¹⁴	Northern Giant Petrel	Vulnerable	-	-	Least Concern
Genus HALOBAENA					
<i>Halobaena caerulea</i>	Blue Petrel	Vulnerable	Critically Endangered	Least Concern	Least Concern
Genus PTERODROMA					
<i>Pterodroma leucoptera</i>	White-winged Petrel	Endangered	Vulnerable <i>Pterodroma leucoptera</i> (Gould's petrel) <i>Pterodroma leucoptera leucoptera</i> (Gould's petrel (Australian))	Vulnerable <i>Pterodroma leucoptera</i> (Gould's petrel) <i>Pterodroma leucoptera caledonica</i> (Gould's petrel (New Caledonian))	Vulnerable

¹³ Garnett et al. (2011) assessed this species as no longer meeting the threatened species criteria.

¹⁴ Garnett et al. (2011) assessed this species as no longer meeting the threatened species criteria.

				<i>Pterodroma leucoptera leucoptera</i> (Gould's petrel (Australian))	
<i>Pterodroma mollis</i>	Soft-plumaged Petrel	Vulnerable	Critically Endangered	Least Concern	Least Concern
Genus <i>PROCELLARIA</i>					
<i>Procellaria cinerea</i>	Grey Petrel	Not listed	Endangered	Near Threatened	Near Threatened
<i>Procellaria aequinoctialis</i>	White-chinned Petrel	Not listed	-	Vulnerable	Vulnerable
<i>Procellaria westlandica</i>	Westland Petrel	Not listed	-	Vulnerable	Vulnerable
<i>Procellaria parkinsoni</i>	Black Petrel	Not listed	-	Vulnerable	Vulnerable

Annex B — Telemetry studies of albatrosses and giant petrels breeding on Macquarie Island

Species	Breeding adults		Non-breeding adults/pre-breeders		Post-fledging juveniles	
	Number tracked	Days at sea	Number tracked	Days at sea	Number tracked	Days at sea
Wandering Albatross	4	185	2	288	2	157
Black-Browed Albatross	5	115	0	0	2	175
Grey-headed Albatross	7	96	0	0	1	53
Light-mantled Albatross	12	172	0	0	0	0
Southern Giant Petrel	3	81	1	40	6	256
Northern Giant Petrel	4	34	0	3	5	195

Source: Alderman (2015c).

Annex C — Limiting access to albatross and giant petrel breeding sites

Breeding site	Prescription	Applicable legislation
Albatross Island, Tasmania	Public does not have a general right of access. Entry requires authorisation by the Parks and Wildlife Service, Tasmania, and may be subject to conditions.	<i>National Parks and Reserves Management Act 2002</i> (Tas) s 37; <i>National Parks and Reserved Land Regulations 2009</i> (Tas) regs 17(1)(c), 28
Pedra Branca and Mewstone, Tasmania	Public does not have a general right of access. Entry requires authorisation by the Parks and Wildlife Service, Tasmania, and may be subject to conditions. Located within the Tasmanian Wilderness World Heritage Area.	<i>National Parks and Reserves Management Act 2002</i> (Tas) s 37; <i>National Parks and Reserved Land Regulations 2009</i> (Tas) regs 17(1)(a), 28; <i>Tasmanian Wilderness World Heritage Area (TWWHA) Management Plan 1999</i> (Tas) (under review) (DPIPWE, 2014a)
Macquarie Island, Tasmania	Public does not have a general right of access. Entry requires authorisation by the Parks and Wildlife Service, Tasmania, and may be subject to conditions. Access subject to a permitting system administered by Parks and Wildlife Service, Tasmania that allows just 1000 people to visit the island each year, subject to strict pre-arrival biosecurity protocols. Located within the Macquarie Island Nature Reserve and World Heritage Area.	<i>National Parks and Reserves Management Act 2002</i> (Tas) s 37; <i>National Parks and Reserved Land Regulations 2009</i> (Tas) regs 17(1)(b), 28; <i>Macquarie Island Nature Reserve and World Heritage Area Management Plan 2006</i> (Tas)
Heard Island and McDonald Islands, External Territory	Public does not have a general right of access. Entry is allowed in accordance with a permit issued by the Department of the Environment, and may be subject to conditions. Located within the Heard Island and McDonald Islands World Heritage Area and Marine Reserve.	<i>Heard Islands and McDonald Islands Act 1953</i> (Cth) s 10; <i>Environment Protection and Management Ordinance 1987</i> (Cth) s 12; <i>Heard Islands and McDonald Islands Marine Reserve Management Plan 2014-2024</i> (Cth)
Giganteus Island, Mac.Roberston Land, Australian Antarctic Territory	Entry is prohibited except in accordance with a permit issued by an appropriate national authority. Permits to enter the Giganteus Island Restricted Zone may only be issued for the purpose of conducting censuses. Located in the Rookery Islands Antarctic Specially Protected Area.	<i>ATCM Measure 2 (2015): Management Plan for Antarctic Specially Protected Area No. 102: Rookery Islands, Holme Bay, Mac.Roberston Land</i> , paragraph 7(i) (Anon, 2015)

Frazier Island, Wilkes Land, Australian Antarctic Territory	Entry is prohibited except in accordance with a permit issued by an appropriate national authority. Permits to enter the Area during the breeding season of southern giant petrels may only be issued for the purpose of conducting censuses. Located in the Frazier Islands, Windmill Islands Antarctic Specially Protected Area.	<i>ATCM Measure 14 (2013): Management Plan for Antarctic Specially Protected Area No. 160: Frazier Islands, Windmill Islands, Wilkes Land, East Antarctica</i> , paragraphs 7(i), (iii) (Anon, 2013)
Hawker Island, Princess Elizabeth Land, Australian Antarctic Territory	Entry is prohibited except in accordance with a permit issued by an appropriate national authority. Permits to enter the Area during the breeding season for southern giant petrels may only be issued if the activity is non-invasive and cannot reasonably be undertaken during the non-breeding season. Located in the Hawker Island Antarctic Specially Protected Area.	<i>ATCM Measure 9 (2011): Management Plan for Antarctic Specially Protected Area No. 167: Hawker Island, Princess Elizabeth Land</i> , paragraphs 7(i), (iii) (Anon, 2011)

Annex D — Threatened species status of albatrosses and petrels by jurisdiction

Commonwealth		Commonwealth	Western Australia	South Australia	Tasmania	Victoria	New South Wales	Queensland
<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) s 269A(2); or included in plan (additional species considered in the review are indicated by asterisk)		<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) s 178	<i>Wildlife Conservation Act 1950</i> (WA)	<i>National Parks and Wildlife Act 1972</i> (SA)	<i>Threatened Species Protection Act 1995</i> (Tas)	<i>Flora and Fauna Guarantee Act 1988</i> (Vic)	<i>Threatened Species Conservation Act 1995</i> (NSW)	<i>Nature Conservation Act 1992</i> (Qld)
ALBATROSSES								
Genus <i>DIOMEDEA</i>								
<i>Diomedea exulans</i>	Wandering Albatross	Vulnerable	Rare or is likely to become extinct	Vulnerable	Endangered	Threatened	Endangered	Vulnerable
<i>Diomedea dabbenena</i>	Tristan Albatross	Endangered <i>Diomedea exulans exulans</i>	Rare or is likely to become extinct	-	-	-	-	Least Concern
<i>Diomedea antipodensis</i>	Antipodean Albatross	Vulnerable <i>Diomedea exulans antipodensis</i>	-	-	-	-	Vulnerable	Vulnerable <i>Diomedea antipodensis antipodensis</i>
<i>Diomedea gibsoni</i>	Gibson's Albatross	Vulnerable <i>Diomedea exulans gibsoni</i>	Rare or is likely to become extinct	-	-	-	Vulnerable	Vulnerable <i>Diomedea antipodensis gibsoni</i>
<i>Diomedea amsterdamensis</i>	Amsterdam Albatross	Endangered <i>Diomedea exulans amsterdamensis</i>	Rare or likely to become extinct	-	-	-	-	Least Concern

<i>Diomedea epomophora</i>	Southern Royal Albatross	Vulnerable <i>Diomedea epomophora epomophora</i>	Rare or is likely to become extinct	Vulnerable <i>Diomedea epomophora epomophora</i>	-	Threatened	-	Least Concern
<i>Diomedea sanfordi</i>	Northern Royal Albatross	Endangered <i>Diomedea epomophora sandfordi</i>	Rare or is likely to become extinct	Endangered <i>Diomedea epomophora sandfordi</i>	-	-	-	Least Concern
Genus PHOEBASTRIA								
<i>Phoebastria immutabilis</i>	Laysan Albatross	-	-	-	-	-	-	Least Concern
Genus THALASSARCHE								
<i>Thalassarche cauta</i>	Shy Albatross	Vulnerable <i>Thalassarche cauta cauta</i>	Rare or is likely to become extinct	Vulnerable <i>Diomedea cauta cauta</i>	Vulnerable	Threatened <i>Diomedea cauta</i>	Vulnerable	Vulnerable
<i>Thalassarche steadi</i>	White-capped Albatross	Vulnerable <i>Thalassarche cauta steadi</i>	Rare or is likely to become extinct	-	-	-	-	Vulnerable
<i>Thalassarche salvini</i>	Salvin's Albatross	Vulnerable <i>Thalassarche cauta salvini</i>	Rare or is likely to become extinct	Vulnerable <i>Diomedea cauta salvini</i>	-	-	-	Least Concern Wildlife
<i>Thalassarche eremita</i>	Chatham Albatross	Endangered	-	-	-	-	-	Least Concern Wildlife
<i>Thalassarche bulleri</i>	Buller's Albatross	Vulnerable	-	Vulnerable <i>Diomedea bulleri</i>	-	Threatened	-	Vulnerable
<i>Thalassarche sp.</i>	Pacific Albatross	Vulnerable <i>Thalassarche bulleri platei</i>	-	-	-	-	-	Least Concern Wildlife

<i>Thalassarche chrysostoma</i>	Grey-headed Albatross	Endangered	Rare or is likely to become extinct	Vulnerable <i>Diomedea chrysostoma</i>	Endangered	Threatened	-	Vulnerable
<i>Thalassarche melanophrys</i>	Black-browed Albatross	Vulnerable	Rare or is likely to become extinct	-	Endangered <i>Thalassarche melanophrys</i>	-	Vulnerable	Least Concern Wildlife
<i>Thalassarche impavida</i>	Campbell Albatross	Vulnerable <i>Thalassarche melanophrys impavida</i>	Rare or is likely to become extinct	Vulnerable <i>Diomedea melanophrys impavida</i>	-	-	-	Least Concern Wildlife
<i>Thalassarche carteri</i>	Indian Yellow-nosed Albatross	Vulnerable	Rare or is likely to become extinct	Endangered <i>Diomedea chlororhynchos carteri</i>	-	Threatened	-	Vulnerable
<i>Thalassarche chlororhynchos</i>	Atlantic Yellow-nosed Albatross	-	Rare or is likely to become extinct	Endangered <i>Diomedea chlororhynchos chlororhynchos</i>	-	-	-	Least Concern Wildlife
Genus <i>PHOEBETRIA</i>								
<i>Phoebetria fusca</i>	Sooty Albatross	Vulnerable	Rare or is likely to become extinct	Endangered <i>Diomedea fusca</i>	-	Threatened	Vulnerable	Vulnerable
<i>Phoebetria palpebrata</i>	Light-mantled Albatross	-	-	Vulnerable <i>Diomedea palpebrata</i>	Vulnerable	Threatened	-	Least Concern Wildlife
PETRELS								
Genus <i>MACRONECTES</i>								
<i>Macronectes giganteus</i>	Southern Giant Petrel	Endangered	-	Vulnerable	Vulnerable	Threatened	Endangered	Endangered

<i>Macronectes halli</i>	Northern Giant Petrel	Vulnerable	-	-	Rare	Threatened	Vulnerable	Vulnerable
Genus <i>PROCELLARIA</i>								
<i>Procellaria cinerea</i> *	Grey Petrel	-	-	-	Endangered	-	-	Least Concern Wildlife
<i>Procellaria aequinoctialis</i> *	White-chinned Petrel	-	Rare or is likely to become extinct	-	-	-	-	Least Concern Wildlife
<i>Procellaria westlandica</i> *	Westland Petrel	-	-	-	-	-	-	Least Concern Wildlife
<i>Procellaria parkinsoni</i> *	Black Petrel	-	-	-	-	-	-	Least Concern Wildlife

Annex E — Breeding populations of albatrosses and giant petrels within Australia

Breeding location	Species	Estimated breeding population 2011	Population trend 2011	Estimated breeding population currently	Population trend currently	Most recent data
Macquarie Island	Black-browed Albatross	~60	Stable	~45	Stable	2014
	Light-mantled Albatross*	~1200	Stable	~2150—based on spatial survey	Increasing	2014
	Grey-headed Albatross*	~110	Stable	~60	Decreasing	2014
	Wandering Albatross*	~4	Stable/decreasing?	~5	Indeterminate	2014
	Northern Giant Petrel	~1700	Stable/increasing?	~1500—affected by pest eradication	Stable/increasing?	2014
	Southern Giant Petrel	~2500	Stable	~1800—affected by pest eradication	Decreasing	2014
Bishop and Clerk Islets	Black-browed Albatross	~140	Unknown	No data	Unknown	1993
Heard Island	Black-browed Albatross	~600	Unknown	No data	Unknown	2000
	Light-mantled Albatross*	200-500	Unknown	No data	Unknown	1954
	Southern Giant Petrel	~3000	Unknown	No data	Unknown	1988

	Wandering Albatross	~2 occupied nests	Unknown	No data	Unknown	1988
McDonald Islands	Light-mantled Albatross*	Unknown	Unknown	No data (visits not permitted)	Unknown	-
	Black-browed albatross	~80	Unknown	No data (visits not permitted)	Unknown	1981
	Southern Giant Petrel	~1400	Unknown	No data (visits not permitted)	Unknown	1979
Giganteus Island	Southern Giant Petrel	~3 occupied nests	Stable	~4 occupied nests	Unknown	2015
Hawker Island	Southern Giant Petrel	~45 occupied nests	Stable?	~45 occupied nests	Unknown	2011
Frazier Islands	Southern Giant Petrel	~170 occupied nests	Stable?	~230 occupied nests	Unknown	2013
Albatross Island	Shy Albatross	~5200	Stable	~4200	Decreasing	2014
Mewstone	Shy Albatross	9000-11,000	Unknown	~10,000 potential breeding pairs	Decreasing	2014
Pedra Branca	Shy Albatross	~220 potential breeding pairs	Decreasing	~170 potential breeding pairs	Decreasing	2014

* Denotes biennial breeding species, accordingly breeding population estimates represent annual census not total breeding population.

Source: Alderman (2015b, 2015c), DSEWPC (2011b), Wienecke, pers. comm. (2015).