Endangered Species Foundation

Protecting New Zealand's rarest of the rare

Antipodean Albatross

Diomedea antipodensis antipodensis

Conservation Status: Nationally Critical

The traveller

Antipodean albatross on nest. DOC

Quickfacts

Nationally Critical conservation status

Breeds predominantly on the largely unchanged Antipodes Island

Interactions with fisheries operations have contributed to declines in the past

Recent oceanic changes likely contribute to declines today

The traveller

The remoteness of the most isolated of New Zealand's sub-Antarctic islands perhaps provides some hope for the endemic Antipodean wandering albatross. Lying 750 km south east of the South Island of New Zealand, the Antipodes Islands were named after their position (antipodal – meaning 'on the opposite side of') on the other side of the globe to London, England. Maori call the island Moutere Mahue, meaning 'abandoned' or 'deserted', and Antipodes Island is secluded. Over the past 100 years, human visits to the island have been scarce, contributing to its largely unchanged landscape. The central cone, Mt Galloway, rising to 366 m, provides a clue to the islands Pleistocene volcanic past. The tussock grasses (mostly *Poa littorosa*), low woody shrub (*Coprosma antipoda*) and shield fern (*Polystichum vestitum*) dominate the landscape and provides a home to the islands wildlife. Sheer basalt cliff faces dropping below the sea offers a home to many sessile (non-moving) marine invertebrates living amongst a diverse range of seaweeds. In 2014, the Antipodes Island/Moutere Mahue Marine Reserve was created, providing protection for 12 nautical miles surrounding the islands. Due to its isolation, mice (*Mus musculus*) are the only mammalian pest species; however, mice

TE KAUPAPA TIAKI KARAREHE, TIPU MŌREAREA O AOTEAROA

have been implicated previously in albatross chick mortality events on other sub-Antarctic Islands. Due to this risk, a mice eradication project was undertaken on the Antipodes Islands over winter 2016.

Detecting population changes can be difficult for long-lived species such as Antipodes wandering albatross. Breeding is biennial, with each breeding year on land separated by a sabbatical year at sea. Birds only sometimes re-use previous nests as the warmer climate of Antipodes Island provides an abundance of usable tussock nesting material. A single egg is laid starting in early January, with young chicks hatching by March or April. They make at least one new nest close to their current nest before their chick fledges the next year. After fledging, birds will return to the island three years later and only start breeding at seven years of age. Annual population monitoring has been occurring since 1994, with a break in 2006 followed by reduced monitoring in 2007-2011. Monitoring increased again in 2012. Estimating the population size of Antipodean albatross using resighting of banded birds and annual census counts have been used to provide annual estimates of population size. This population monitoring has previously been vital for discovering previous population declines, and will be required into the future to determine the efficacy of conservation efforts.

Antipodean albatross spend the majority of their lives at sea, only returning to the Antipodes Islands (and occasionally Campbell and Chatham Islands) to breed every second year. Primary feeding grounds are across the Pacific Ocean east of New Zealand, with secondary feeding grounds in the Tasman Sea. More recently, foraging distances have increased, with foraging occurring in the central and eastern south Pacific Ocean, along the continental shelf off Chile and the eastern coast of Australia. Visits to the Chilean coast by males and females are now more frequent than they were 10 year ago.

It is during these long periods at sea, away from the relative safety of the breeding grounds on Antipodes Island, which pose the greatest threat to the birds. A single abnormally warm La Nina phase of the El Nino southern oscillation event likely contributed to low numbers of chicks fledging in the late 1990's as the birds struggled to find food in their traditional foraging areas. However, a La Nina event is unlikely to have been the cause of declines noted between the 1970's and 1990's. These declines are at least in part caused by accidental capture of Antipodean albatross by fishing boats during the early days of southern-blue fin tuna fishing and long-line fisheries in the oceans around southern New Zealand. Discarded bait and fish make for easy feeding for Antipodean albatross which are often seen following fisheries boats waiting for this easy feed. But feeding around fisheries operations is wrought with danger – birds can hit fishing lines and boat cables, or swallow baited hooks before they sink. This has the effect of injuring and killing birds, as well as altering their natural behaviour. Fortunately, due to gradual declines since the 1990's in fishing effort in areas inhabited by Antipodean albatross, and the adoption of bycatch mitigation techniques by fishers, population declines have been lessened. This fall in fisheries effort coincided

with an increase in Antipodean albatross numbers in 2004.

The number of years that female Antipodean albatross live has been found to be shorter than the male lifespan, resulting in a skewed sex imbalance and males are now courtship dancing with other males. Females also forage over larger distances than males, which increases the chance of their being killed as bycatch or encountering adverse environmental conditions (such as high sea temperatures, low productivity or weak winds). Also, increases in the number of deaths of female Antipodean albatross has coincided with increases in the amount of daytime fishing by swordfish fleets in the South Pacific Ocean.

Decreases in nest success (the number of chicks that fledge from their nest) are also thought to be contributing to population declines, as are the increased numbers of deaths of female birds. The number of nesting Antipodean albatross sharply declined between 2005 and 2007, followed by a slow decline with counts of nesting birds currently remaining stable, but has not returned to their previous numbers.

The current decline in the number of Antipodean albatross has been attributed partly to changes in the ocean as a result of climate change. Warm sea surfacetemperatures and altered wind and rainfall patterns both offshore and on land cause increased exposure and heat stress to chicks, and make foraging for food more difficult due to changes in the movement and abundance of their prey species. At times, adult Antipodean albatross are not able to find sufficient food to feed their chick.

The fishing industry has been proactive at adopting techniques to minimise their impact on seabirds. Line weighting, bafflers, tori lines and bait dyes are techniques that eliminate or dramatically reduce the number of seabirds caught.

The Antipodean albatrosses

The Antipodean albatross species *Diomedea antipodensis* consists of two subspecies, the smaller, darker Antipodean albatross *D. a. antipodensis*, and the larger, paler Gibson's Antipodean albatross *D. a. gibsoni*. These are both large birds with pink bills and brown plumage accompanied by black upper-wings and a white face. Adult weights range from 4.5 – 8.5 kg with males generally identified by their lighter plumage colour than females. Clutches consist of a single egg with breeding occurring every second year. Eggs are usually white, specked with red-brown dots concentrated on the larger end. Their large 3 m wing span provides them with a low energetic cost gliding flight used extensively during their extended periods at sea.

What next for the Antipodean albatross?

The threats to the survival of the Antipodes albatross are:
1. Climate change
2. Fisheries bycatch
3. Potential mouse predation on chicks

To successfully protect the Antipodean albatross from these threats, the following must be achieved in order for the conservation programme to succeed. Ideally, this should be done by:

1. Assessing the effect of climate change on Antipodean albatross populations.
Researching the effects of increased sea temperatures and altered ocean currents or wind patterns on both the birds and their prey species is required to determine the effect climate change may on the population. Increased stress, energy expenditure and difficulty in finding food during foraging trips during the breeding season are likely to have disastrous flow-on effects on the number of chicks that survive.

2. Continuing the assessment of fisheries bycatch and use of bycatch mitigation devices.
Continuing existing fishing best-practices to reduce the impact on seabirds is critical. Increased observation during fisheries operations can provide a more accurate representation of the number of birds affected by fisheries bycatch and will help in determined the efficacy of mitigation devices.

3. Keeping the Antipodes Islands pest free.
So far the isolation of the Antipodes Islands has prevented the introduction of many mammalian pests that threaten mainland bird species. Eradication of the Antipodes Island mouse population, attempted in 2016, will help increase nest survival and increase invertebrate and plant diversity that can contribute to poor island health. While the islands are a Nature Reserve and are surrounded by a Marine Reserve, landing is permitted if visitors obtain a permit. Pests can arrive to island as stowaways on boats or in stores during these visits, or scientific expeditions. The risk of inadvertently introducing pests to remote islands can be minimised by ensuring visiting expeditions adhere to strict island biosecurity measures.

4. Continued population monitoring.
Continued population monitoring must be undertaken to detect changes in productivity, nest success and adult and chick survival. The influence the uneven sex ratio is having on the population also needs to be further investigated. Population monitoring has been

vital in determining the impact of fisheries and climate change on Antipodean albatross populations in the past and needs to continue into the future.

The cost of this work is unknown and is mainly funded through the Department of Conservation's Conservation Services Programme funded through fishing levys and internal Island Biosecurity work.

More information

Website: New Zealand Birds Online – Antipodean albatross. Link
Website: Wikipedia -Antipodes Islands. Link
Website: DOC – Antipodes Island. Link
Website: Southern Seabird Solutions. Link
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Report: Antipodean wandering albatross decline. By Graeme Elliott, Kath Walker. 2015. PDF
Plan: Action Plan for seabird conservation in New Zealand (Part A: Threatened Seabirds). By Graeme A. Taylor. Threatened Species Occasional Publication No. 16. Department of Conservation, Wellington. PDF

Photos

Banding young Antiopdean albatross. DOC

This webpage represents the views of the Endangered Species Foundation of New Zealand and not necessarily those of other individuals or organisations involved in the conservation of this species.

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