DRAFT REPORT to the First International Meeting on the Establishment of the South Pacific Regional Fisheries Management Organisation – For First International Meeting on the Establishment of the South Pacific Regional Fisheries Management Organisation Discussions Only

SPECIES PROFILE FOR:

Chatham Albatross (*Thalassarche eremita*)

Photo by Dick Newell

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1. Overview

The Chatham Albatross breeds at a single site in the Chatham Islands, New Zealand, and migrates across the South Pacific to spend the austral winter in the EEZs of Peru and Chile. It is one of 12 species of albatross that are distributed within the South Pacific. While percent time spent in high seas areas is relatively low, many of these albatross species have small population sizes and/or high threat status making them vulnerable to an increase in mortality through interaction with fisheries. Bycatch rates in the high seas areas are largely unknown, but bycatch of Chatham Albatross has been recorded in various trawl and longline fisheries within EEZs. Given their high threat status it is important to monitor bycatch rates within fisheries of the South Pacific. Effective mitigation measures exist which are capable of significantly reducing seabird bycatch in both demersal and pelagic longline fisheries. Research has also indicated that measures such as tori lines can be used to reduce seabird bycatch by trawlers. Management of offal and discards is likely to be a key measure to reduce seabird bycatch in both longline and trawl fisheries.

2. Taxonomy

2.1 Phylum: Chordata
2.2 Class: Aves
2.3 Order: Procellariiformes
2.4 Family: Diomedeidae
2.5 Genus and species: *Thalassarche eremita*
2.6 Scientific synonyms: *Diomedea cauta eremita* (Murphy 1930)
2.7 Common names: Chatham Albatross, Chatham Island Mollymawk

3. Species characteristics

3.1 Distribution and depth

Satellite tracking data for Chatham Albatross have been collected by C.J.R Robertson, D.G. Nicholls, M.D. Murray and Department of Conservation New Zealand (Nicholls and Robertson, 2000; Robertson et al, 2000), and contributed to BirdLife's Global Procellariiform Tracking Database (BirdLife, 2004a).

During the breeding season (Sept-April), Chatham Albatross forage almost entirely within the New Zealand EEZ around the Chatham Islands (**Fig. 1a**). From late January to early April, failed breeders, followed by successful breeders and fledging juveniles, migrate across the South Pacific to the South American coast (**Fig. 1b**). Tracked birds have completed this journey in 11-30 days (BirdLife, 2004a). Birds then move north along the Humboldt Current into Peruvian coastal waters, consolidating in a wintering area north of 20°S (**Fig. 1c**). Chatham Albatrosses return to the breeding colony from July-August, following a more northerly route (Robertson et al, 2000; **Fig. 1b**).

3.1.1 Area occupied outside EEZs

Satellite tracking data indicate that 98% of the breeding distribution is within the EEZ of New Zealand and 90% of the sedentary wintering distribution is within the EEZs of Peru and Chile (BirdLife, 2004a).

3.1.2 Other potential areas where the species may be found

At least some Chatham Albatross also have straggled west of Chatham Islands to the south and west coasts of Tasmania (Reid and James, 1997, cited in Brooke, 2004) and as far as South Africa (cited in Brooke, 2004).

3.2 Habitat

Chatham Albatross forage mainly over continental slopes, particularly over upwellings (BirdLife, 2004a). Data for the closely related Shy Albatross in Tasmania found that 87% of dives were less than 3.5m in depth (max depth 7.4m) (Hedd et al, 1997).

3.3 Biological characteristics

Chatham Albatross first return to the colony when aged four years, and records indicate first breeding from aged seven years (Robertson et al, 2000; 2001).

3.4 Morphological characteristics

Medium-sized albatross with dark-grey head, dark back, a white rump and white underparts with black thumbmark at base of leading edge of underwing. The adult bill is chrome yellow with dark spot at tip of lower mandible. Juveniles have a blue-grey bill with black tips to both mandibles.

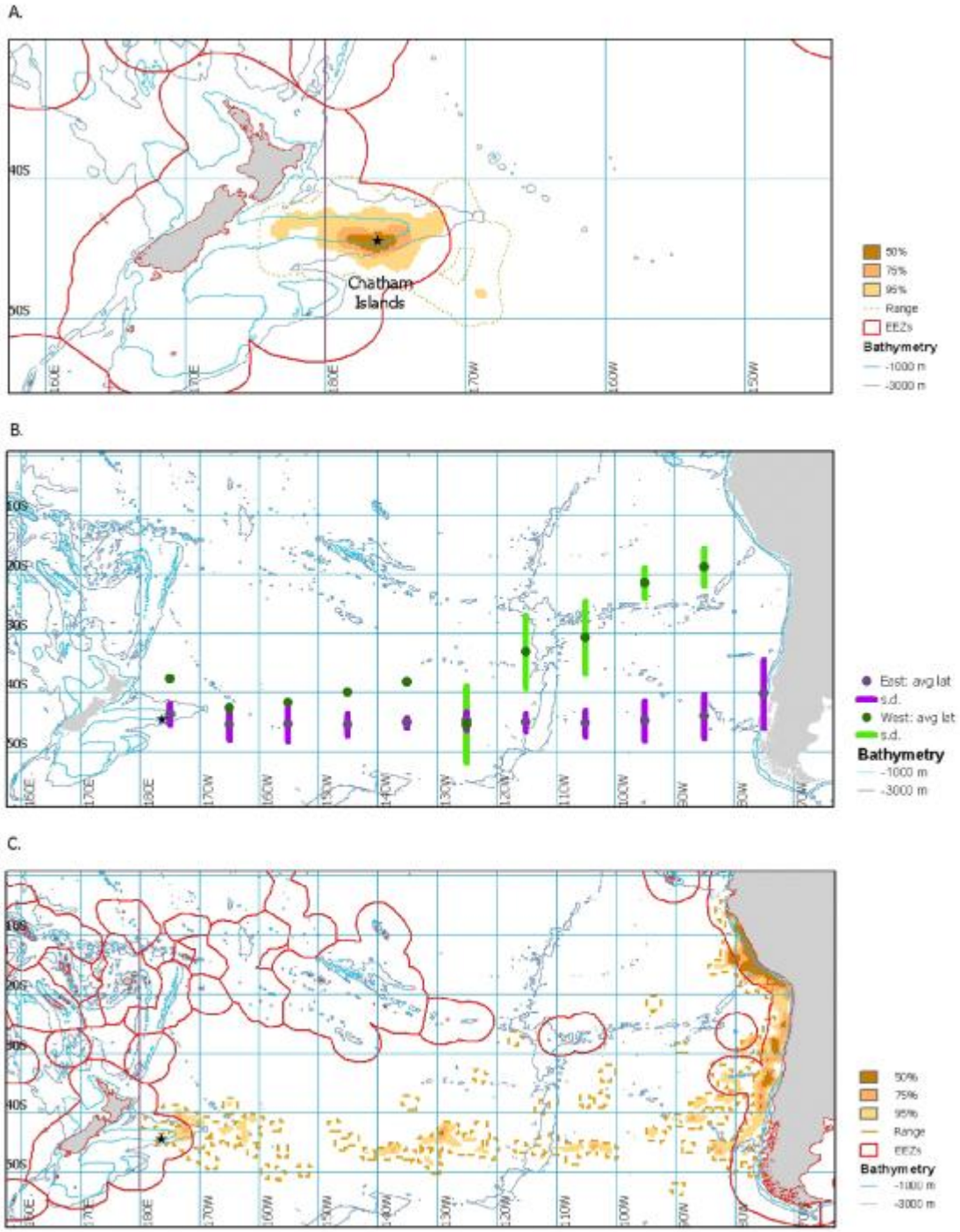
3.5 Role of the species in the ecosystem

Mostly feeds on squid, fish and crustacea (krill).

3.6 Population structure

The late onset of breeding leads to a relatively high proportion of the total population consisting of sub-adult birds. There is a marked difference in the distribution of breeding-aged birds during the breeding season compared to the non-breeding season. Less is known about the location of sub-adult birds during the 4–6 years following fledging before they return to the breeding colony (Robertson et al, 2001).

Figure 1. Distribution of breeding and non-breeding Chatham Albatross. A. Breeding distribution (birds tracked Oct-March, n=10 individuals). B. easterly and westerly migration routes of failed and post-breeders tracked from Jan-Aug (east: n=10 indivs; west: n=4 indivs). C. Foraging areas of dispersing failed and post-breeders tracked from Jan-Aug (n=9 indivs). The probability contours indicate the amount of time that birds spend within a given area, for example birds spent 95% of their time within the 95% area. Tracking data contributed by C.J.R. Robertson, D.G. Nicholls and M.D. Murray, New Zealand (Roberson et al, 2000). Figure reproduced from *Tracking Ocean Wanderers* (BirdLife, 2004a).



4. Fisheries characterisation

4.1 Distribution of fishing activity

The distribution of demersal longline, pelagic longline and trawl fisheries are all relevant with respect to potential seabird bycatch. This species occurs in the trawl and longline bycatch in New Zealand. Other prominent seabird species in the incidental take of these fisheries include Buller's Albatross and White-capped Albatross.

A review of autopsies of seabirds returned by on-board observers within the New Zealand EEZ between 1996-2002, recorded Chatham Albatross killed in the ling demersal longline fishery, the pelagic tuna longline fishery and the trawl fishery (Robertson et al, 2004) (note: some fisheries in the EEZ did not have observer coverage). In New Zealand's EEZ, Chatham Albatross has been recorded in trawl fisheries on the Chatham Rise targeting hake (*Merluccius australis*) and orange roughy (*Hoplostethus atlanticus*) (Baird 2004a, 2004b), and Buller's albatross have been observed caught in hoki (*Macruronus novaezelandiae*) and squid (*Nototodarus spp.)* fisheries (Baird 2001, 2004c). A range of target trawl fisheries have reported catching Salvin's albatross including hoki, scampi (*Metanephrops challengeri*), jack mackerel (*Trachurus* spp.) and southern blue whiting (*Micromesistius australis*) fisheries (Baird 2001, 2004b, 2004c).

Substantial numbers of Chatham, Buller's and Salvin's Albatross have also been recorded attending fishing vessels in the Humboldt Current System, including being attracted at close range by discarded offal. (Spear et al 2003). In Peru, Chatham Albatross are among the 8 or more species of albatrosses that have been recorded as bycatch within the artisanal longline fisheries, with an estimate of 194 - 544 birds entangled per year (FAO, 2003, Mangel & Alfaro Shigueto, 2004). It is expected that there may be seabird interactions with trawl fisheries in the region, but no data are available (FAO, 2003).

Few or no data exist for seabird bycatch rates in high seas areas of the South Pacific. Scientific observer coverage is a pre-requisite in identifying those fisheries that capture seabirds, and is currently low or non-existent in high seas areas. Anecdotal information and band returns from island areas across the mid and eastern Pacific indicate that seabird incidental captures do occur (Department of Conservation unpublished data).

4.2 Fishing technology

Within industrial demersal and pelagic longline fisheries, the use of seabird bycatch mitigation measures to reduce seabird bycatch has been well documented and proven highly efficient.

Less is known for trawl fisheries, but knowledge has been boosted through research in the Falkland Islands (Sullivan et al. in press) and North Pacific. Strike by warp cables and entanglement in nets are two key sources of mortality. In a New Zealand study in the 2004/05 squid trawl fishery, birds were hit by warp cables at a rate of 5 birds per hour, in a manner that could reduce their survival (Abraham, in press). In the NZ trawl fisheries some 50% of 1600+birds returned from the observed trawl fisheries 1996-2005 showed evidence of warp-strike contact. Some 80% of these birds were albatrosses. The other 50% were recovered from the net with little or no warp-strike damage and 80% of these were petrel – principally sooty shearwaters and white-chinned petrels (C.J.R. Robertson personal communication).

Offal and discards provide significant attractants to birds (Abraham in press, Robertson, 2003a; Sullivan et al in press) and control of these discharges may significantly reduce the risk of bird interaction.

4.3 Catch history

Chatham Albatross have been recorded as bycatch within longline fisheries in New Zealand and Peru (FAO, 2003; Mangel & Alfaro Shigueto, 2004; Robertson et al, 2004), and within New Zealand trawl fisheries (Robertson et al, 2004, Baird 2004a and 2004b) (see notes above).

4.4 Non-target fish catch

4.5 Non-fish catch

4.6 Fish stock potential

4.7 Fishery value

Avoidance of seabird bycatch has potential economic gains for fishing vessels by reducing both the bait loss and interference with setting or hauling hooks.

5. Status and trends

5.1 Productivity

Chatham Albatross first breed aged 7 years (Robertson et al, 2001). While productivity is relatively high for albatrosses, the late onset of breeding means that productivity is ***very low*** in fish stock terms.

5.2 Population size

5,300 identifiable nest sites per year (of which 7% estimated as not active) (Robertson et al 2003b), with an estimated 11,000 adult (mature) birds (BirdLife, 2004b).

Overall, the continuing similarity in both nesting area and numbers of nests provides continuing evidence of some stability in the population (C.J.R. Robertson, personal communication). Annual surplus population not known.

5.3 Fishery exploitation

5.4 Stock status

Critically Endangered (IUCN, 2004). This species is confined to an extremely small area (Pyramid Rock, Chatham Is) when breeding. This islet underwent a significant decline in habitat condition in the 1980s as a result of extreme weather events, though this has rectified itself quite well (C.J.R. Robertson, personal communication). Past trends are unknown, but population is currently considered stable. Due to its small size, the population could be vulnerable to increased fishing mortality.

5.5 Management implications

Due to the small population size and high threat status of Chatham Albatross, mortality through bycatch in fisheries is a potential threat to the population. There is currently no information on bycatch rates of Chatham Albatross in high seas areas.

Key measures to reduce seabird bycatch in trawl fisheries include management or removal (by meal plant) of discharge of offal and discards, which act as the principal

attractant of seabirds to factory processing vessels. Potential additional mitigation measures include use of tori lines or other measures to keep birds away from cables and nets.

Mitigation measures to reduce seabird bycatch in longline fisheries are well developed, and include use of tori lines, night-setting, line-weighting and blue-dyed bait. Management of offal and discards within longline fisheries is also a potentially key measure which should be pursued in order to avoid attracting birds to fishing vessels at times when they are vulnerable to capture, mostly during setting or hauling.

6. Species/community management

6.1 Fisheries management by area/sub-area/jurisdiction

New Zealand and Chile have developed National Plans of Action for reducing Incidental Catch of Seabirds in Longline Fisheries (NPOA-Seabirds). These outline their strategy for working with the fishing industry to limit the level of seabird mortality for each fishery, and include requirements or codes of practise for use of bycatch mitigation measures, research programs for collecting data on bycatch rates, education and training programs and how compliance will be monitored.

6.2 Research underway

Research on population demographic parameters is currently underway through the New Zealand Ministry of Fisheries, with modelling of existing data, and collection of new data on the breeding site (Ministry of Fisheries, 2005). Dietary and foraging studies are being undertaken in a programme that started in 2005, and will extend for 5 years, with a focus on risks to the species from fishing (both trawl and longline) in New Zealand waters. No data has been collected on seabird bycatch rates within high seas areas

7. Threats

Chatham albatross has been assessed as a Critically Endangered threatened species (IUCN, 2004). See also 'Stock Status'

8. Information on similar species

Other albatross species within the South Pacific include Antipodean, Black-browed, Buller's, Campbell, Grey-headed, Light-mantled, Northern and Southern Royal, Salvin's, Wandering and Waved albatrosses. These species are also at risk from interaction with fisheries, and many have been recorded as bycatch within New Zealand or Peruvian EEZs (FAO, 2003; Mangel & Alfaro Shigueto, 2004; Robertson et al, 2004), making the collection of scientific observer data on seabird bycatch rates also highly important for these species. In addition, while the Global *Procellariiform* Tracking Database, coordinated by BirdLife International, contains breeding distribution data for most of these species, the collection of further data on migration and non-breeding distribution within the South Pacific is a priority.

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