



Agreement on the Conservation of Albatrosses and Petrels
Interim Secretariat provided by the Australian Government

First Meeting of Advisory Committee

Hobart, Australia, 20 – 22 July 2005

Agenda Item No .13
ACAP/AC1/Inf.16
New Zealand

Seabird Bycatch in New Zealand Fisheries

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Ministry of Fisheries, New Zealand

Abstract

The captures of albatrosses and petrels in certain New Zealand fisheries are estimated each year using Ministry of Fisheries scientific observer data. The numbers of seabirds estimated caught in four New Zealand fisheries are reported for three recent fishing years¹ (2000/01 to 2002/03). The numbers of individuals of ACAP species returned for identification from New Zealand fishing operations is also reported.

Seabird-capture statistics

Seabird captures have been estimated in four main New Zealand fisheries over the fishing years 2000/01 to 2002/03. Estimates for the 2003/04 fishing year are not available at this time. These statistics include seabirds that are caught and released alive but do not include seabirds returned from fishing vessels whose cause of death was unrelated to interactions with fishing gear during fishing operations, such as seabirds killed by striking vessels. The fisheries covered consist of two long-line fishing fleets, with up to six large vessels fishing for tunas using pelagic longlining, and six auto-longline vessels targeting ling (*Genypterus blacodes*) using demersal longlining. Two trawl fisheries were monitored; a group of up to 28 vessels, fishing for arrow squid (*Nototodarus sloani*, *N. gouldi*) in sub-antarctic waters in the summer and autumn, and up to 70 vessels targeting hoki (*Macruronus novaeselandiae*) throughout the year. The estimates shown are the extrapolated numbers of seabirds caught for fishery areas and seasons where observer coverage was sufficient to enable estimation of captures (see Baird 2004a, b and c for details).

Table 1. Numbers of seabirds estimated captured in four New Zealand fisheries from observer data (CV in brackets). Percentages are average observer coverage percentages of effort for each fishery across all fishery areas. Totals are the sum of seabirds estimated caught for these four fisheries in areas where estimates of captures were produced².

Fishing year	New Zealand Charter Tuna	Ling Auto longline	Hoki Trawl	Squid Trawl	Total estimated seabirds caught for the 4 fisheries
2000-01	16 (6)	2367 (12)	1065 (9)	586 (11)	4034
(% cover)	97%	9%	16%	51%	
2001-02	81 (4)	1450 (16)	334 (33)	710 (11)	2575
(%cover)	95%	8%	12%	13%	
2002-03	136 (8)	542 (10)	269 (23)	841 (12)	1788
(% cover)	91%	34%	11%	14%	

The trends in capture totals presented in Table 1 should be interpreted with caution, as the total number of seabirds estimated caught depends on the number of fishery areas that receive observer coverage, which can vary from year to year. Real decreases in seabird catch statistics have been discernable only in the ling autolongline fishery, where line-weighting

¹ A fishing year starts on 1 October and ends 30 September in the following year

² Baird 2005. Incidental capture of seabird species in commercial fisheries in New Zealand waters, 2002-03. New Zealand Fisheries Assessment Report 2005/02. Ministry of Fisheries, Wellington. Baird 2004a. Incidental capture of seabird species in commercial fisheries in New Zealand waters, 2000-01. New Zealand Fisheries Assessment Report 2004/58. Ministry of Fisheries, Wellington. Baird 2004b. Incidental capture of seabird species in commercial fisheries in New Zealand waters, 2001-02. New Zealand Fisheries Assessment Report 2004/60. Ministry of Fisheries, Wellington.

regimes were introduced on some vessel in 2002, and levels of observer coverage have allowed a degree of confidence in extrapolated capture rates.

The numbers of seabirds reported from the trawl fisheries (hoki and squid) includes only birds landed on the vessel during fishing operations, and does not include birds striking trawl warps or falling into the sea following death or injury. In a recent study by the Ministry of Fisheries³, observers were asked to record heavy (potentially injury-causing) contacts between birds and trawl warps in 15-minute observation periods during fishing in the southern squid fishery. The rate of heavy trawl warp contacts was measured at 5 birds per hour of trawling. Thus, the total number of birds affected by trawl fishing operations is likely to be significantly underestimated in the figures presented above.

Observer coverage in several fisheries of significant tonnage⁴ is not sufficient to enable estimation of seabird captures, including long-lining targeting tunas (for the fleet of smaller vessels), ling and snapper (*Pagrus auratus*). Further, some of the other middle-depths and deep-water trawl fisheries have not had adequate observer coverage to enable estimation of seabird captures. These fisheries operate in similar seasons and with similar fishing gears as those targeting hoki and squid. No estimates of seabird captures in inshore fisheries (trawl, line, net and pot) are available, as observer coverage on these smaller vessels has been inadequate.

ACAP species caught in New Zealand fisheries

Seabirds killed on fishing vessels with a Ministry of Fisheries observer are usually returned for identification. This sample comprises a proportion (around 60%) of those caught, though there may be biases in which species are returned and which fisheries are sampled that can skew the species proportions returned. The total numbers of specimens of ACAP species returned from observed trips for identification for the 1996/97 to 2001/02 fishing years are shown in Table 2. Observer coverage has been variable across New Zealand fishing fleets during this time, and some birds are released alive, injured or uninjured. Thus, figures in Table 2 do not represent the total catch by species for these taxa.

Table 2. ACAP species recovered from fishing operations within the New Zealand Exclusive Economic Zone and returned for identification during the fishing years 1996/97 to 2001/02. × indicates the method of fishing by which the taxa have been observed caught.

Taxon	Numbers returned from New Zealand fishing operations 1996-2002 ⁵	Trawl	Demersal Longline	Pelagic Longline
Albatrosses				
<i>Diomedea antipodensis</i>	91	×		×
<i>Diomedea gibsoni</i>	34		×	×
<i>Thalassarche steadi</i>	486	×	×	×
<i>Thalassarche salvini</i>	183	×	×	×

³ Abraham. unpublished. Warp strike observations. Unpublished report to the Ministry of Fisheries, 30 May 2005.

⁴ Sullivan, et al. Report from the Fishery Assessment Plenary, May 2005. Stock Assessment and Yield Estimates. Ministry of Fisheries, Wellington.

⁵ Robertson et al. 2004. Autopsy report for seabirds killed and returned from New Zealand fisheries, 1 October 2001 to 30 September 2002. Birds returned by Ministry of Fisheries observers to the Department of Conservation. DoC Science Internal Series: 155. Department of Conservation, Wellington.

Taxon	Numbers returned from New Zealand fishing operations 1996-2002 ⁵	Trawl	Demersal Longline	Pelagic Longline
<i>Thalassarche eremita</i>	13	×	×	×
<i>Thalassarche bulleri</i>	105	×	×	×
<i>Thalassarche melanophris</i>	31	×		×
<i>Thalassarche impavida</i>	71	×		×
Petrels				
<i>Procellaria aequinoctialis</i>	711	×	×	×
<i>Procellaria parkinsoni</i>	9			×
<i>Procellaria cinerea</i>	464	×	×	×

ACAP listed species have been caught across a range of fishing methods. Currently it is not assessed whether the level of mortality of these species is likely to affect species population viability, but current modelling research on key populations will attempt to assess this in the future.

Recreational and customary fishing⁶

Some seabirds are known to be caught in non-commercial fishing operations. At this time, there are neither estimates of capture rates nor details of species affected by this mortality.

Seabird interactions in out-of-zone fishing by New Zealand vessels

New Zealand fishing vessels fish outside of the New Zealand Exclusive Economic Zone, sometimes under established Regional Fisheries Management Organisations (RFMOs), and at other times on the high seas or in other countries' Exclusive Economic Zones.

In the CCAMLR longline fishery for toothfish *Dissostichus* spp. New Zealand vessels reported no seabird catch during the seven years to 2003/04. One hundred percent of fishing effort was observed during this period.

Reporting arrangements for other RFMO's are not currently in place for seabird mortality. Thus estimates of captures in these fisheries are unavailable.

⁶ Customary fishing is defined as activities undertaken in pursuance of recognised rights of indigenous peoples.