

The tuna fishers folder



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This folder is provided to you as part of a project that represents an advance in the relationship between tuna fishers of New Zealand and the Department of Conservation. It is hoped that through this project that there can be a greater level of understanding of the seabird bycatch problem by both the tuna fishers and by DoC. It is hoped that this project will provide ideas and information that will help to minimise seabird bycatch using sensible, economic, and practical, measures.

The employment of an advisory officer offers us not only a chance to hear of new developments in minimising seabird bycatch, but also to enable us, as fishers, to present our own ideas on, and solutions to the problem. As individuals who make a living in close association with the marine environment, you will be able to provide valuable feedback from your own experiences.

There is increasing pressure on the fishing industry both internationally and at home to continually review it's operating standards to ensure environmentally responsible practices are developed and that where possible implemented. New Zealand has lead the way internationally and much has already been done by the industry and government officials in New Zealand to achieve this. This project gives us an additional opportunity to demonstrate that ours is a responsible fishery that provides an environmentally friendly product based upon reasonable harvest rules and sound economic practices.

Solutions to the seabird bycatch issue are becoming available, and these are solutions that could benefit tuna fishers financially. This has not been the case for others, such as driftnet fishers, who lost their industry because they could not find an effective solution to their environmental problems.

We must ensure that our fishery remains competitive at an international level and that conservation measures do not burden the fishery with a level of cost that destroys the economics of the fishery. This fishery produces jobs and export earnings for New Zealanders.

It is your decision as a fisher to accept the challenges posed by the problem of seabird bycatch, and take steps to prevent this problem putting you out of business.

We need your commitment and your energy to find effective solutions that the industry can accept and will adhere to with integrity - that way the longline fishers will have a viable business to pass onto future generations.



Brent Marshall

Introduction



This folder was put together for you as an introduction to a 12-month project which has been undertaken by the Department of Conservation's Science & Research Unit in association with members of the pelagic longlining industry.

Essentially the project employs an “advisory officer” who will attempt to contact all skippers in the tuna fleet working out of the various ports in the North Island, and consult with them on how they can minimise their seabird bycatch. It is hoped that this will be a two-way process, with the fishers having an important role to play in giving advice and opinions on how they feel they can prevent seabird bycatch. After all, most of the fishers have had a lot of experience with seabirds and their behaviour around fishing boats.

One of the aims of this project is to get some feedback from the fishers involved, as there is a real feeling that something needs to be given back to the fishing industry, and we need some ideas on how we can best help you out. We have some ideas of our own which are discussed later on in the folder: some of our research has been using archival data recorders to find out what happens to longline gear once you set it, and what happens once a fish takes your bait. More about that later.

At the end of this project, we hope that we will have provided you with ideas and information that will help you minimise your seabird bycatch, and maybe even help you catch more fish while you are at it. At least it will provide you with information that may be useful or interesting to you, or teach you something more about the birds that you encounter on every trip.

Cheers

Dave Kellian, Advisory Officer, Seabird/Fisheries Interactions



DOUGLAS WRIGHT

LIGHT-MANTLED SOOTY ALBATROSS

LIGHT-MANTLED SOOTY ALBATROSS

(*Phoebastria palpestris*)

This slender albatross has relatively long narrow wings and a very long pointed tail. It is dark grey, except that the head, tail and main flight feathers are sooty-brown. Each eye has an incomplete white eye-ring, and the bill is black with a blue line along the lower mandible. Juveniles are similar in appearance, but have brown scalloping over the neck and back. The light-mantled sooty albatross has a circumpolar distribution, nesting on many subantarctic islands, including the Antipodes, Auckland and Campbell Island groups in the New Zealand region. The world population is estimated at 23,000 pairs. Light-mantled sooty albatrosses are biennial breeders, returning to Campbell Island in October to start nesting. Pairs nest solitary or in small groups. Nest sites include coastal cliff ledges or a terrace of an island peak. The nest consists of a shallow bowl atop a small pedestal of soil and vegetation. The single egg, which is white with reddish-brown speckling at the broader end, is laid during late October-early November. Incubation takes about 10 weeks, and the chick flies off to sea when about 20 weeks old. (80 cm)

NATIVE



PAUL MORSE

ROYAL ALBATROSS (toroa)

ROYAL ALBATROSS

(*Diomedea eximiosa*)

This endemic seabird has a circumpolar distribution over the southern oceans. It is massive, weighing about 9 kilograms, and is readily distinguished from wandering albatrosses at close quarters by having a black margin along the cutting edge of the upper mandible. The wings are usually black above, but occasionally have some white along the leading edge of the inner wing. The rest of the plumage is white, except that juveniles have black flecking over their crowns, backs, flanks and tails. The eyes are dark brown, and the legs and feet pink to bluish-white. The northern subspecies, *D. e. eximiosa*, has completely black upper wings, and the southern subspecies, *D. e. epomops*, has areas of white along the leading edge and towards the centre of the inner part of the wing. About thirty pairs of northern royal albatrosses breed at Tairātea Head, Otago Peninsula. The rest of the approximately 6500 pairs of northern royal albatrosses nest at the Chatham Islands. The southern royal albatrosses, of which there are about 14,000 pairs, nest on the Campbell and Auckland Islands. (115 cm)

ENDEMIC



PAUL MORSE

WANDERING ALBATROSS (toroa)

WANDERING ALBATROSS

(*Diomedea exulans*)

The wandering albatross has a variable plumage which differs between subspecies and with age. The lack of the black cutting edge of the upper mandible distinguishes the wandering albatross from the royal. Other features that help to distinguish it are the usually black or mottled black leading edges of the inner upper wing on all but the whitest birds, and the black-tipped tail. Juveniles start out dark brown, except for white over the face and much of the under wings. Gradually the plumage whitens over the next 10-15 years, firstly over the belly and later over the back and upper inner part of the wings. There are about 32,000 breeding pairs of wandering albatrosses, of which about 17,000 nest in the New Zealand region. Two of the four subspecies breed in the New Zealand region. *D. e. antipodensis* breeds on the Antipodes and Campbell Islands (c. 9000 pairs), and *D. e. gibbsii* on the Auckland Islands (c. 8000 pairs). Wandering albatrosses can be seen in coastal waters of New Zealand throughout the year, particularly around Stewart Island and in Cook Strait, during winter. Their diet consists of squid, fish, octopuses, crustacea and fishing boat offal taken from the surface or by diving to one to two metres. (115 cm)

NATIVE



PAUL MORSE

BLACK-BROWED MOLLYMAWK (toroa)

BLACK-BROWED MOLLYMAWK

(*Diomedea melanophrys*)

The distinctive features of the adult black-browed mollymawk are the broad black margins of the under wings and the yellow-orange bill. The upper wings are black, the tail tip grey-black and each eye has a distinct black brow running through and above the eye, the rest of the plumage being white. Immatures are evident by their grey plumage over the crown and hindneck, grey-black under wings, and greyish-green bill with darker tip. The black-browed mollymawk is the most numerous species of the albatross-mollymawk group, numbering about half a million pairs, of which about 25,000 nest in the New Zealand region. There are two subspecies, both of which nest in the region and breed annually. The subantarctic black-browed mollymawk (*D. m. melanophrys*) nests in small numbers at the Antipodes. The Snares and Campbell Island groups, while the New Zealand black-browed mollymawk (*D. m. epomops*) nests only on Campbell Island. The New Zealand subspecies is distinguishable from the subantarctic form by its more distinct eyebrow, more extensive black edges on the under wings, and yellowish eye. Black-browed mollymawks are attracted to fishing boats to eat offal. (90 cm)

NATIVE

PAGES 14, 15, 17 AND 23 FROM: NEW ZEALAND'S NATIVE SEABIRDS. PENGUIN POCKET GUIDES, 1998. TEXT BY RALPH POWLESLAND (REPRODUCED WITH PERMISSION).

The birds

New Zealand and its dependent territories are home to some 93 species of breeding seabird, one of the biggest collections of seabirds in the world. Many of these breed on the mainland or on the inshore islands surrounding the coastline. Human modification and the introduction of land-based predators, such as rats and cats, have meant that in the last 150 years several of New Zealand's seabirds have disappeared or have reduced in number to the extent that there is a danger that some of these species will not recover. With the removal of predators from the island homes of these seabirds, there is a good chance that something can be done about reducing the mortalities during nesting and the breeding season.

These control measures, however, are useless once the birds go back to sea, and this is the area of greatest concern. Most of the seabirds that we come across when we are out on fishing boats are natural scavengers, and will instinctively take anything that resembles their natural food: squid, small fish such as pilchards and sanmar. The baits used in longlining obviously overlap with the natural foods of these birds, but not only that: the birds have learned that fishing boats provide a consistent and predictable supply of food.

This problem has increased due to the dumping of used baits and offal during hauling. The birds are now so used to this consistent food supply that they will follow fishing boats in preference to finding their own food (put yourself in the same situation—what would you rather do!). Because the birds are now used to taking their food from behind fishing boats, it is becoming a lot harder to discourage them from the baits.

What this means is that the only thing coming between these seabirds and your fishing gear is the seabird control measures that you have put in place on your vessel. The two primary seabird bycatch reduction measures are night setting and the use of a bird scaring (tori) line, but several other bycatch reduction measures have been trialed and are still under investigation as potentially useful preventative tools. For example, you may have heard of the work done recently with underwater setting. Most of these measures are only in the early stages of development, and all are voluntary except for the tori line which has been required by legislation since 1993 on pelagic longliners.



GREY-HEADED MOLLYMAWK

GREY-HEADED MOLLYMAWK

(*Diomedea chrysostris*)

The head, neck and mantle of the adult grey-headed mollymawk are grey, but feathers are paler on the forehead and darker around the eye. There is a narrow white crescent of feathers below and to the rear of each eye. The upper wings and back are blackish, and the under wings white with broad black margins, the front margin being wider than the rear one. The chest, belly and rump are white, and the tail is grey. Adult grey-headed mollymawks have strikingly marked bills, with black sides, yellow top and bottom, and a pinkish tip. Immatures have darker grey heads, black under wings or with a narrow grey or white central stripe, and dark grey bills with blackish tips. This species nests on many subantarctic islands around the world, but only on Campbell Island in the New Zealand region. It is a biennial breeder – those pairs that rear their chicks miss a year before returning to nest again. The population on Campbell Island has declined since the 1940s. Since few are killed during fishing operations, it is suspected that changed food supplies as a result of ocean warming has caused the decline. (80 cm)

NATIVE



BULLER'S MOLLYMAWK

BULLER'S MOLLYMAWK

(*Diomedea bulleri*)

The adult Buller's mollymawk has a grey head, neck, mantle and tail, with the forehead and crown being lighter in colour. The upper wing and back are blackish-grey, and the under wings are white with black margins, the leading margin being slightly broader. The bill is black with yellow along the top, bottom and tip. There are two subspecies, the northern Buller's mollymawk (*D. b. plaza*) which nests at the Three Kings and Chatham groups, and the southern Buller's mollymawk (*D. b. bulleri*) which nests on The Snares and Solander Islands. The southern subspecies has a finer bill and lighter coloured forehead. The northern subspecies nests from October to January, and the southern from January to October. The natural diet of the Buller's mollymawk consists of squid, fish, krill, octopuses, tunicates and carrion, fishing boat discards probably dominate the diet of many individuals these days. Many Buller's mollymawks have been killed accidentally during fisheries operations in southern New Zealand waters. Even so, the population at The Snares has increased by 78 per cent during 1969-92. In contrast, the population at the Chathams seems to have declined since the 1970s, probably related to a deterioration in nesting habitat. (80 cm)

ENDEMIC



WHITE-CAPPED (SHY) MOLLYMAWK

WHITE-CAPPED (SHY) MOLLYMAWK

(*Diomedea cauta*)

There are four subspecies of the white-capped mollymawk, of which three nest in the New Zealand region. The diagnostic feature of the species is a white under wing with narrow black borders and a small black triangular patch at the base of the leading edge. All subspecies have white chests, bellies and rumps, and dark grey-black tails. The main differences between them are in the head and bill colouration. The New Zealand white-capped mollymawk (*D. c. steadi*), of which there are about 65,000, nests on the Auckland and Antipodes Islands. This subspecies has a white head and neck, a black patch from eye to bill, and grey cheeks. Its bill is bluish-horn with a yellowish tip, especially at the tip. Immatures have darker bills, and the grey of the cheeks extends from the crown to the blackish back. The Salvin's mollymawk (*D. c. salvini*) numbers about 77,000 pairs and nests on the Bounty Islands and at The Snares. Its head, neck and mantle are grey, with a paler forehead. Its bill is green-grey, being paler on the top and bottom, and the lower mandible has a dark tip. Immatures have darker bills than adults, especially at the tip. The Chatham Island mollymawk (*D. c. erriani*) numbers just 4000 pairs and nests only on Pyramid Rock in the



Chatham. This subspecies has a dark grey head, neck and mantle, with a slightly lighter forehead. Its bill differs markedly from those of the other two subspecies, being yellow-orange with a dark spot at the tip of the lower mandible. Immature Chatham Island mollymawks have blackish-grey bills with dark tips. Birds of all three subspecies are seen in New Zealand coastal waters, particularly in winter and spring. The fourth subspecies, the shy mollymawk (*D. c. cauta*), breeds on islands of Tasmantia and occasionally visits New Zealand waters. The diet of the species consists of squid, fish, krill, salps and carrion, fishing boats. (90 cm)

NATIVE

Don Hodder



The birds (continued)

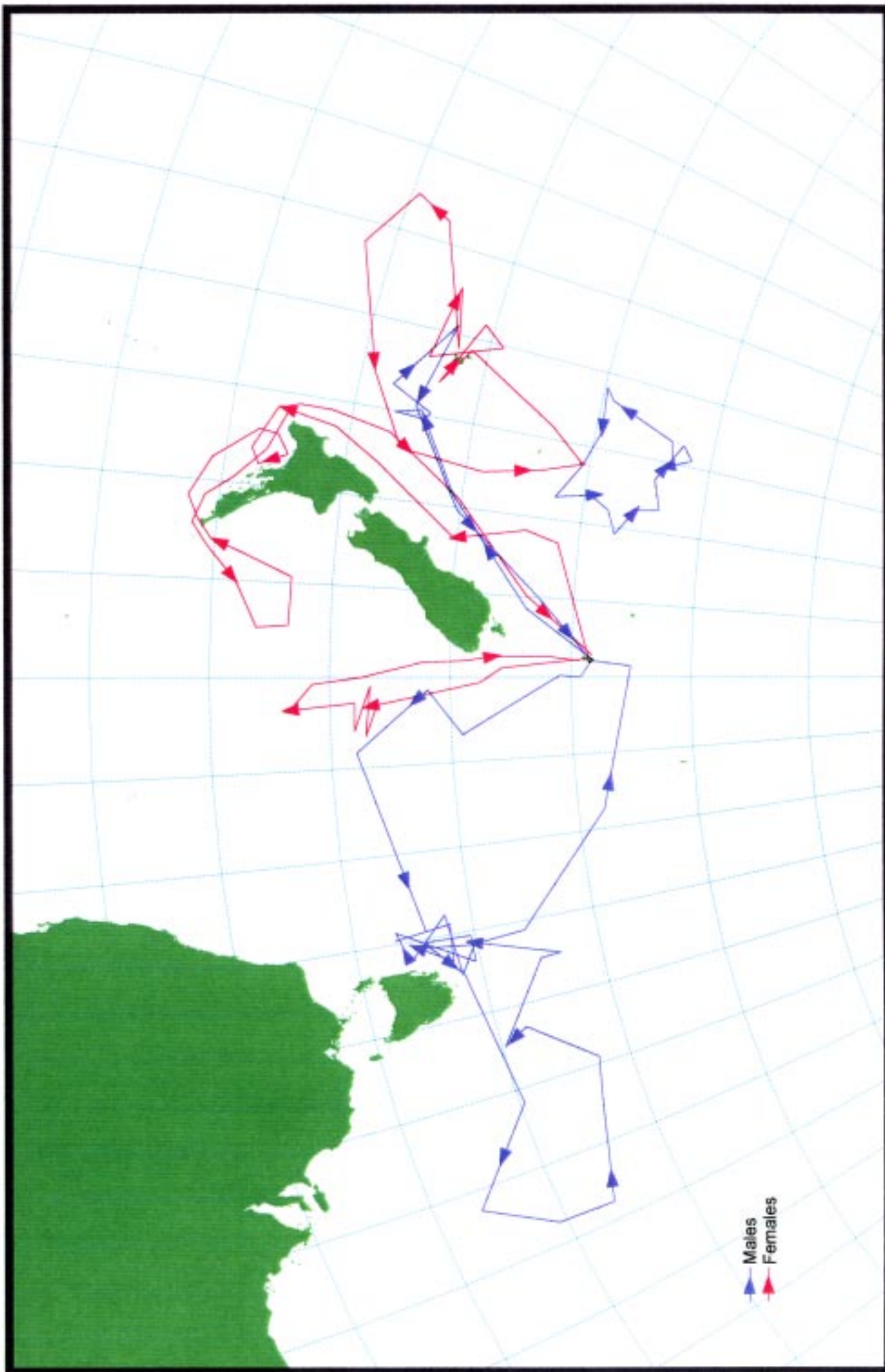
Many seabirds travel huge distances when they are at sea. Satellite tracking on Wandering Albatross has shown that these birds can travel huge distances in a relatively short period of time. A copy of some recent satellite tracking has been provided for interest, see opposite page. Note the track all the way up the East Coast, and then back again, with some extra time thrown in around East Cape and the Bay of Plenty.

As can be seen by these tracks, seabirds such as Wandering Albatross, and even many of the smaller species, such as Black Petrels and Sooty Shearwaters, are not restricted to just New Zealand waters, but can (and often do) travel to many other parts of the world.

Their amazing ability to travel long distances makes it difficult to keep track of our seabirds, and also means that they can be exposed to fisheries where the operators are not as conscientious or under the same obligations as fishers in New Zealand. There is currently an agreement between New Zealand, Australia and Japan, which attempts to address the differences in what is expected of tuna fishers in our shared waters. For example, Japanese vessels are now required to use tori lines at all times during setting on the high seas.

It has been estimated that an **effective** tori line can reduce seabird mortality by up to 75%. Instructions for the construction of an effective tori line are available in many places. This folder includes an article that appeared in seafood magazine, written by a tuna fisher, on how to construct an effective tori line for your vessel. Legislative requirements for tori line construction in New Zealand are also included.

Within this project, the advisory officer hopes to discuss with you in person the best strategy for your vessel and, as a part of this, will construct a tori line tailor made for your vessel.



Foraging flights of incubating Wandering Albatrosses from the Auckland and Antipodes Islands tracked using satellite transmitters. The flights are of 10-30 days duration and are made between incubation shifts. These tracks were recorded in February and March 1999.