



INT 2022/02 IDENTIFICATION OF SEABIRDS CAPTURED IN NEW ZEALAND FISHERIES QUARTERLY REPORT: 1 July 2022 to 31 December 2022.

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Scope of work completed:

New Zealand waters support a diverse assortment of seabird species, and much of the commercial fishing activity in the region overlaps with seabird foraging ranges. The accurate identification of seabirds captured in New Zealand fisheries is vital for determining the potential impact of fisheries on these populations.

This report summarises identification work completed on dead seabirds caught and returned from commercial fishing vessels, and identification work using photographs or Central Observer Database (COD) records from the Ministry of Primary Industries, across the 1 July 2022 to 31 December 2022 fishing period.

There were a total of 110 seabirds captured and returned, photographed, or recorded as interactions from New Zealand commercial fisheries, primarily trawl vessels, between 1 July 2022 and 31 December 2022.

There have been 53 seabirds from 14 taxa necropsied from this period. These seabirds were caught on 22 vessels: 17 trawl vessels (34 seabirds), and three longline vessels (eleven seabirds), two set net vessels (three birds). Four necropsy record is yet to have the associated fishing method confirmed (this will be obtained from the next COD extract). Due to the length of some fishing trips and subsequent transport it is possible some birds captured in this period may not have been received at the time of writing. Any further specimens received will be reported at a later date.

One banded seabird and two RFID chipped penguins were retained for necropsy during this period. The banded bird was a Salvin's albatross (O-29191) banded by Paul Sagar on Toru Islet in the Snares Western Chain on 7/10/2010 as a breeding adult. Two yellow-eyed penguins were chipped; an adult male in Fuschia Gully on Otago Peninsula on 16 February 2017 (982H0000405532888 by Trudi Webster) and a male chick at Papanui on Otago Peninsula on 4 January 2021 (982H000210212530 by Thor Elley).

Government observers correctly identified 67.9% of the seabirds that were returned for necropsy to species level, and identified a further 17% into the correct group (e.g. *Procellaria* petrel for white-chinned petrel). Seven returned seabirds (13.2%) were identified incorrectly, and one was labelled with a species code which did not exist, most likely a mis-spelling.

Examination of the Central Observer Database (COD) extract and images provided for this period gave a total of 57 records of seabirds that were reported as interacting with fishing vessels but not retained. These incidents were categorized as photographed (*photo*, $n = 14$) or not photographed (*interaction*; $n = 43$) interactions from 19 fishing vessels: 13 trawl vessels (28 seabirds), four longline vessels (seven seabirds) and two set nets (two seabirds). These figures may include some non-capture interactions such as vessel impacts. Due to a lag between Observer data and images being entered into COD, it is possible some interactions within this period may not have been received at the time of writing. Any further specimens will be reported at a later date.

Details relating to each specimen are available on request from the Manager, Conservation Services Programme, DOC (email: csp@doc.govt.nz).

In some necropsy cases (e.g. specimens damaged by fishing gear and machinery, or by sea lice) it was not possible to collect all data; these categories are reported as 'unknown' and appear as such in the relevant tables.

Individual seabirds (i.e. necropsy, photo, or interaction birds) were allocated a unique necropsy number. If multiple photographs were received of an individual bird, the best image was used to match to the corresponding Microsoft Access database entry, but all images were used to confirm species identification. All data and associated information (such as vessel name, position, date of capture, time of capture, possible identification, etc.) for each seabird specimen, photograph or interaction was entered into a Microsoft Access database.

Table 1: Common and scientific names of seabirds captured and returned (necropsy), photographed (photo), or listed as an interaction (interaction) from New Zealand fisheries between 1 July 2022 and 31 December 2022.

COMMON NAME	SCIENTIFIC NAME	NECROPSY	PHOTO	INTERACTION	TOTAL
Albatross (unidentified)				2	2
Black (Parkinson's) petrel	<i>Procellaria parkinsoni</i>			2	2
Buller's albatross	<i>Thalassarche bulleri bulleri</i>	8	1		9
Buller's and Pacific albatross	<i>Thalassarche bulleri</i>			6	6
Campbell albatross	<i>Thalassarche impavida</i>	1			1
Cape petrels	<i>Daption spp.</i>			1	1
Chatham Island albatross	<i>Thalassarche eremita</i>	1			1
Fairy prion	<i>Pachyptila turtur</i>		1		1
Flesh-footed shearwater	<i>Puffinus carneipes</i>		1	5	6
Fluttering shearwater	<i>Puffinus gavia</i>			2	2
Giant petrel (unidentified)	<i>Macronectes spp.</i>			1	1
Great-winged (grey-faced) petrel	<i>Pterodroma macroptera gouldi</i>	1			1
Grey petrel	<i>Procellaria cinerea</i>	1			1
New Zealand white-capped albatross	<i>Thalassarche steadi</i>	4	4	7	15
Northern giant petrel	<i>Macronectes halli</i>			1	1
Pacific albatross	<i>Thalassarche bulleri platei</i>	1			1
Petrel (unidentified)				1	1
Petrel, prions, and shearwaters (unidentified)				4	4
Royal albatross (unidentified)	<i>Diomedea spp.</i>			1	1
Salvin's albatross	<i>Thalassarche salvini</i>	16	3	3	22
Seabird (large)			1	1	2
Sooty shearwater	<i>Puffinus griseus</i>	3	1	2	6
Southern royal albatross	<i>Diomedea epomophora</i>	1			1
Stewart Island shag	<i>Phalacrocorax chalconotus</i>	1			1
Westland petrel	<i>Procellaria westlandica</i>	7		2	9
White-chinned petrel	<i>Procellaria aequinoctialis</i>	6	2	1	9
Yellow-eyed penguin	<i>Megadytes antipodes</i>	2			2
Total		53	14	43	110

Table 2: Numbers of seabirds returned from observed fishing vessels between 1 July 2022 and 31 December 2022, by species, sex (M = male, F = female, U = unknown), and age class (A = adult, SA = sub-adult, U = unknown).

SPECIES	SEX			AGE			TOTAL	% TOTAL
	M	F	U	A	SA	U		
Buller's albatross	3	3	2	7		1	8	15.1
Campbell albatross	1			1			1	1.9
Chatham Island albatross		1		1			1	1.9
Great-winged (grey-faced) petrel		1		1			1	1.9
Grey petrel		1		1			1	1.9
NZ white-capped albatross	4			4			4	7.5
Pacific albatross	1			1			1	1.9
Salvin's albatross	7	7	2	14	2		16	30.2
Sooty shearwater	3			3			3	5.7
Southern royal albatross	1			1			1	1.9
Stewart Island shag	1			1			1	1.9
Westland petrel	5	2		7			7	13.2
White-chinned petrel	4	2		6			6	11.3
Yellow-eyed penguin	2			2			2	3.8
TOTAL	32	17	4	50	2	1	53	
% TOTAL	60.4	32.1	7.5	94.3	3.8	1.9		

Table 3: Numbers of adult seabirds returned from observed fishing vessels between 1 July 2022 and 31 December 2022, by species and breeding status (BA = breeding adult, NB = non-breeding adult, U = adult of unknown breeding status).

SPECIES	BREEDING STATUS		
	BA	NB	U
Buller's albatross	4	1	
Campbell albatross	1		
Chatham Island albatross	1		
Great-winged (grey-faced) petrel	1		
Grey petrel			
NZ white-capped albatross	2		
Pacific albatross	1		
Salvin's albatross	11	1	
Sooty shearwater	2		
Southern royal albatross			
Stewart Island shag			
Westland petrel	1	2	
White-chinned petrel	3		
Yellow-eyed penguin			
TOTAL	46	4	
% TOTAL	92.0	8.0	

Table 4: Stomach contents of seabirds killed and returned on fishing vessels between 1 July 2022 and 31 December 2022. Note: Seabirds can have multiple items in their stomachs resulting in higher content figures than the total number of seabirds killed and returned (n = 53).

Contents	Buller's albatross	Campbell albatross	Chatham Island albatross	Grey petrel	NZ white-capped albatross	Pacific albatross	Salvin's albatross	Sooty shearwater	Southern royal albatross	Stewart Island shag	Westland petrel	White-chinned petrel	Yellow-eyed penguin	TOTAL	% TOTAL
Empty	1			1	1		2	1				2		8	15.1
Missing	3						1							4	7.5
Bait	1						3				3		1	8	15.1
Offal (or Discards)	5	2	1		4	1	16			1	8	3	2	43	81.1
Natural	3					1	2	2	1			2	1	12	22.6
Proventricular oil	1						1				1			3	5.7
Worms							1		1					2	3.8

Table 5: Gizzard contents of seabirds killed and returned on fishing vessels between 1 July 2022 and 31 December 2022. Note: Seabirds can have multiple items in their gizzards resulting in higher content figures than the total number of seabirds killed and returned (n = 53).

Contents	Buller's albatross	Campbell albatross	Chatham Island albatross	Great-winged (Grey-faced) petrel	Grey petrel	NZ white-capped albatross	Pacific albatross	Salvin's albatross	Sooty shearwater	Southern royal albatross	Westland petrel	White-chinned petrel	Total	% Total
Empty						3		1	1				5	9.4
Missing	2							1	1				3	5.7
Squid beaks	4			1	1				2		7	5	20	37.7
Otoliths	3							3	2		2	1	11	20.8
Eyeballs	3		1					3		1		1	9	17.0
Bones or Skin	3	1						12		1	1		18	34.0
Stones, Barnacles, Feathers, or Seaweed									1			1	2	3.8
Plastic						1			1			1	3	5.7
Krill	1						1	2				1	5	9.4
Worms											2	2	4	7.5

Table 6: Number of seabirds returned from observed fishing vessels between 1 July 2021 and 31 December 2022, by species, fishery type (Bottom/Midwater Trawl or Longline), and location of capture.

SPECIES	BOTTOM/MIDWATER TRAWL				LONGLINE		SET NET	UNCONFIRMED ¹
	NET	COD-END	WARP	DECK STRIKE	HOOK	DECK STRIKE		
Buller's albatross	5	1	2					
Campbell albatross	1							
Chatham Island albatross	1							
Grey-faced petrel				1				
Grey petrel				1				
NZ white-capped albatross			3					1
Pacific albatross	1							
Salvin's albatross	8	1	4		3			
Sooty shearwater	3							
Southern royal albatross			1					
Stewart Island shag							1	
Westland petrel					6	1		
White-chinned petrel	6							
Yellow-eyed penguin							2	
TOTAL	25	2	10	2	9	1	3	1
% TOTAL	47.2	3.8	18.9	3.8	17.0	1.9	5.7	1.9

¹ Fishing type to be confirmed using the next COD extract for the latest information.

Table 7: Number of seabirds returned from observed fishing vessels between 1 July 2021 and 31 December 2022, by species and injury type. Note: Seabirds can have multiple injuries resulting in higher figures than the total number of seabirds killed and returned ($n = 53$).

SPECIES	NO VISIBLE INJURIES	HOOK IN WING	HOOK IN THROAT	BROKEN WING	BROKEN LEG	LACERATIONS, SEVERED BODY PARTS	GREASED	LICED	WATERLOGGED
Buller's albatross	1			4	4	2	1	2	
Campbell albatross				1					
Chatham Island albatross	1								1
Grey-faced petrel	1								
Grey petrel						1			
NZ white-capped albatross				3	1	1	1		
Pacific albatross									1
Salvin's albatross	1	2		7	1	1		2	5
Sooty shearwater					1				3
Southern royal albatross						1			
Stewart Island shag					1				1
Westland petrel	2	2	4		1				5
White-chinned petrel					1		1		4
Yellow-eyed penguin					1				1
TOTAL	6	4	4	15	11	6	3	4	21
% TOTAL	11.3	7.5	7.5	28.3	20.8	11.3	5.7	7.5	39.6

Table 8: Comparison of fat scores in seabirds returned between 1 July 2021 and 31 December 2022 (1= no fat to 5 = extremely fat, U = unknown) by species.

SPECIES	FAT SCORE					
	1	2	3	4	5	U
Buller's albatross	5	1				2
Campbell albatross				1		
Chatham Island albatross				1		
Great-winged (grey-faced) petrel	1					
Grey petrel	1					
NZ white-capped albatross	1	2				1
Pacific albatross		1				
Salvin's albatross	6	1	5	2		2
Sooty shearwater	2	1				
Southern royal albatross	1					
Stewart Island shag	1					
Westland petrel	3	4				
White-chinned petrel	3	2	1			
Yellow-eyed penguin	1	1				
TOTAL	25	13	6	4	0	5
% TOTAL	47.2	24.5	11.3	7.5		9.4