



INT 2022/02 IDENTIFICATION OF SEABIRDS CAPTURED IN NEW ZEALAND FISHERIES

QUARTERLY REPORT: 1 July 2022 to 31 March 2023.

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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 March 2023 fishing period.

There was a total of 297 seabirds captured and returned, photographed, or recorded as interactions from New Zealand commercial fisheries, primarily trawl vessels, between 1 July 2022 and 31 March 2023.

There have been 96 seabirds from 16 taxa necropsied from this period. These seabirds were caught on 30 vessels (71 seabirds caught on trawl vessels, 11 seabirds caught on longline vessels, and five seabirds caught on set net vessels). Nine necropsy records are 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 to WMIL storage facilities in Blenheim 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 three 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. Three yellow-eyed penguins were chipped; an adult male in Fuschia Gully on Otago Peninsula on 16 February 2017 (982H0000405532888), a male chick at Papanui on Otago Peninsula on 4 January 2021 (982H000210212530) and a female chick at Highcliff on Otago Peninsula in the 2020/21 season (982H000210211495).

Government observers correctly identified 70.8% of the seabirds to species level of those that were returned for necropsy, and identified a further 15.6% into the correct group (e.g., *Procellaria* petrel for white-chinned petrel). Twelve seabirds (12.5%) were incorrectly identified, 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 201 seabird records that were reported as interacting with fishing vessels but not carcasses not retained. These incidents were categorised as photographed (*photo*, $n = 71$) or not photographed (*interaction*; $n = 130$). These interactions were from 30 fishing vessels (186 seabirds caught on trawl vessels, 13 seabirds caught on longline vessels, and ten seabirds caught on set-net vessels). These figures may include some non-capture interactions such as vessel impacts. Due to a lag between observer data and images being entered into the 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 for 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 March 2023.

COMMON NAME	SCIENTIFIC NAME	NECROPSY	PHOTO	INTERACTION	TOTAL
Albatross (unidentified)			1	6	7
Black (Parkinson's) petrel	<i>Procellaria parkinsoni</i>			2	2
Black-bellied storm petrel	<i>Fregetta tropica</i>			1	1
Black-browed albatross (unidentified)				1	1
Buller's albatross	<i>Thalassarche bulleri bulleri</i>	10	1		11
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	7	8
Fluttering shearwater	<i>Puffinus gavia</i>			2	2
Giant petrel (unidentified)	<i>Macronectes spp.</i>			2	2
Great albatross (unidentified)	<i>Diomedea spp.</i>			1	1
Great-winged (grey-faced) petrel	<i>Pterodroma macroptera gouldi</i>	1			1
Grey petrel	<i>Procellaria cinerea</i>	1			1
Grey-backed storm petrel	<i>Garrodia nereis</i>	1			1
New Zealand white-capped albatross	<i>Thalassarche steadi</i>	14	11	20	45
Northern giant petrel	<i>Macronectes halli</i>			1	1
Pacific albatross	<i>Thalassarche bulleri platei</i>	1			1
Petrel (unidentified)				2	2
Petrel, prion, and shearwater (unidentified)				5	5
Procellaria petrel (unidentified)	<i>Procellaria spp.</i>			3	3
Prion (unidentified)	<i>Pachyptila spp.</i>			40	40
Royal albatross (unidentified)	<i>Diomedea spp.</i>			1	1
Salvin's albatross	<i>Thalassarche salvini</i>	27	10	6	43
Seabird (large)			1	1	2
Shearwater (unidentified)	<i>Puffinus spp.</i>			1	1
Small albatross (unidentified)	<i>Thalassarche spp.</i>		1	1	2
Sooty shearwater	<i>Puffinus griseus</i>	7	12	7	26
Southern royal albatross	<i>Diomedea epomophora</i>	1	1		2

COMMON NAME	SCIENTIFIC NAME	NECROPSY	PHOTO	INTERACTION	TOTAL
Spotted shag	<i>Phalacrocorax punctatus</i>	1			1
Stewart Island shag	<i>Phalacrocorax chalconotus</i>	1			1
Storm petrel (unidentified)				1	1
Westland petrel	<i>Procellaria westlandica</i>	7		2	9
White-chinned petrel	<i>Procellaria aequinoctialis</i>	18	31	10	59
Yellow-eyed penguin	<i>Megadytes antipodes</i>	4			4
Total		96	71	130	297

Table 2: Numbers of seabirds returned from observed fishing vessels between 1 July 2022 and 31 March 2023, 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	J	U		
Buller's albatross	3	5	2	9			1	10	10.4
Campbell albatross	1			1				1	1.0
Chatham Island albatross		1		1				1	1.0
Great-winged petrel		1		1				1	1.0
Grey petrel		1		1				1	1.0
Grey-backed storm petrel	1				1			1	1.0
NZ white-capped albatross	11	3		13	1			14	14.6
Pacific albatross	1			1				1	1.0
Salvin's albatross	13	12	2	24	2	1		27	28.1
Sooty shearwater	7			7				7	7.3
Southern royal albatross	1			1				1	1.0
Spotted shag		1		1				1	1.0
Stewart Island shag	1			1				1	1.0
Westland petrel	5	2		7				7	7.3
White-chinned petrel	14	4		18				18	18.8
Yellow-eyed penguin	3	1		3		1		4	4.2
TOTAL	61	31	4	92	4	1	1	96	
% TOTAL	63.5	32.3	4.2	95.8	4.2	1.0	1.0		

Table 3: Numbers of adult seabirds returned from observed fishing vessels between 1 July 2022 and 31 March 2023, 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	6	1	
Campbell albatross	1		
Chatham Island albatross	1		
Great-winged petrel	1		
Grey petrel			
Grey-backed storm petrel			
NZ white-capped albatross	10	1	
Pacific albatross	1		
Salvin’s albatross	17	3	
Sooty shearwater	3		
Southern royal albatross			
Spotted shag	1		
Stewart Island shag			
Westland petrel	1	2	
White-chinned petrel	10	3	
Yellow-eyed penguin		1	
TOTAL	52	11	0
% TOTAL	56.5	12.0	

Table 4: Stomach contents of seabirds killed and returned on fishing vessels between 1 July 2022 and 31 March 2023. Note: Seabirds can have multiple items in their stomachs resulting in higher content figures than the total number of seabirds killed and returned (n = 96).

Contents	Buller’s albatross	Campbell albatross	Chatham Island albatross	Great-winged petrel	Grey petrel	Grey—backed storm petrel	NZ white-capped albatross	Pacific albatross	Salvin’s albatross	Sooty shearwater	Southern royal albatross	Spotted shag	Stewart Island shag	Westland petrel	White-chinned petrel	Yellow-eyed penguin	TOTAL	TOTAL (%)
Empty	1				1		3		5	2					4		16	16.7
Missing	2								1								3	3.1
Bait	1						1		4	1				3	5	1	16	16.7
Offal (or Discards)	9	2	1			1	15	1	27	2	1	1	1	8	9	2	80	83.3
Natural	1						1	1	2	1					3	2	11	11.5
Proventricular oil	1								1					1			3	3.1
Rocks										1						2	3	3.1
Worms							1		1		1					1	4	4.2

Table 5: Gizzard contents of seabirds killed and returned on fishing vessels between 1 July 2022 and 31 March 2023. Note: Seabirds can have multiple items in their gizzards resulting in higher content figures than the total number of seabirds killed and returned (n = 96).

Contents	Buller's albatross	Campbell albatross	Chatham Island albatross	Great-winged petrel	Grey petrel	Grey-backed storm petrel	NZ white-capped albatross	Pacific albatross	Salvin's albatross	Sooty shearwater	Southern royal albatross	Westland petrel	White-chinned petrel	Westland petrel	White-chinned petrel	Total	Total (%)
Empty	1						6		5						1	13	13.5
Missing	2					1			1							4	4.2
Squid beaks	4			1	1		2		3	3			7	17		38	39.6
Otoliths	2						3		5	2			2	4		18	18.8
Eyeballs	2		1				2		5	1	1			5		17	17.7
Bones or skin	3	1					3		13	1	1	1	1	2		26	27.1
Stones, barnacles, feathers, or seaweed									2	2				1		5	5.2
Plastic							1		1	3				2		7	7.3
Krill	1							1	2					1		5	5.2
Worms	1											1	2	8		12	12.5
Proventricular oil										1						1	1.0

Table 6: Number of seabirds (n=96) returned from observed fishing vessels between 1 July 2022 and 31 March 2023, 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	6	1	2			1		
Campbell albatross	1							
Chatham Island albatross	1							
Great-winged petrel				1				
Grey petrel				1				
Grey-backed storm petrel				1				
NZ white-capped albatross	5		7	2				
Pacific albatross	1							
Salvin's albatross	15	1	7		3	1		
Sooty shearwater	6					1		
Southern royal albatross			1					
Spotted shag	1							
Stewart Island shag							1	
Westland petrel					6	1		
White-chinned petrel	16	1				1		
Yellow-eyed penguin	2						2	
TOTAL	54	3	17	5	9	5	3	0
TOTAL (%)	56.3	3.1	17.7	5.2	9.4	5.2	3.1	

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 March 2023, by species and injury type. Note: Seabirds can have multiple injuries resulting in higher figures than the total number of seabirds killed and returned ($n = 96$).

SPECIES	NO VISIBLE INJURIES	HOOK IN WING	HOOK IN THROAT	BROKEN WING	BROKEN LEG	BROKEN BILL	LACERATIONS, SEVERED BODY PARTS	CRUSHED	GREASED	LICED	WATERLOGGED
Buller's albatross	1			6	4	2			1	2	2
Campbell albatross				1							
Chatham Island albatross	1										1
Great-winged petrel	1										
Grey petrel								1			
Grey-backed storm petrel									1		
NZ white-capped albatross	4			8	3		2	1	1		2
Pacific albatross											1
Salvin's albatross	3	2		7	5		2	3	2	2	8
Sooty shearwater	2			1	1						6
Southern royal albatross							1				
Spotted shag						1	1				
Stewart Island shag					1						1
Westland petrel	2	2	4		1						5
White-chinned petrel	2			2	3	2	2				12
Yellow-eyed penguin	2				1						2
TOTAL	18	4	4	25	19	5	8	5	5	4	40
TOTAL (%)	18.8	4.2	4.2	26.0	19.8	5.2	8.3	5.2	5.2	4.2	41.7

Table 8: Comparison of fat scores in seabirds returned between 1 July 2021 and 31 March 2023 (1= no fat to 5 = extremely fat, U = unknown) by species.

SPECIES	FAT SCORE					
	1	2	3	4	5	U
Buller's albatross	6	1		1		2
Campbell albatross				1		
Chatham Island albatross				1		
Great-winged petrel	1					
Grey petrel	1					
Grey-backed storm petrel			1			
NZ white-capped albatross	5	4	4			1
Pacific albatross		1				
Salvin's albatross	11	5	7	2		2
Sooty shearwater	3	2	2			
Southern royal albatross	1					
Spotted shag	1					
Stewart Island shag	1					
Westland petrel	3	4				
White-chinned petrel	6	7	4	1		
Yellow-eyed penguin	1	1	1	1		
TOTAL	40	25	19	7	0	5
TOTAL (%)	41.7	26.0	19.8	7.3		5.2