



INT 2019/02 IDENTIFICATION OF SEABIRDS CAPTURED IN NEW ZEALAND FISHERIES QUARTERLY REPORT: 1 July 2019 to 31 December 2019.

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Scope of work completed:

New Zealand waters support a diverse range of seabird species, but much of the commercial fishing activity in the region overlaps with their 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 birds caught and returned and/or identifications using photographs or Central Observer Database (“COD”) records from Ministry of Primary Industries from 1 July 2019 to 31 December 2019.

There have been 98 seabirds from 17 taxa necropsied from this period. These seabirds were caught on 38 vessels: 27 trawl vessels (62 seabirds), eight longline vessels (33 seabirds) and three setnet vessels (3 seabirds). 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. Government observers correctly identified 71.4% of the seabirds that were returned for necropsy.

Examination of the Central Observer Database (COD) extract or images provided for this period (1 July 2019 to 31 December 2019) gave a total of 61 birds that were reported captured (i.e. *Interaction*; $n = 42$) or photographed (i.e. *Photo*; $n = 19$) as seabird interactions from 18 fishing vessels (59 seabirds on trawl and two on longline) and 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 (i.e. those specimens damaged by fishing gear and machinery, or by sea lice) it was not possible to collect all data; these 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 are received of an individual bird, the best image is used to match to the corresponding Access database entry, but all images are 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 an Access database.

Table 1 Common and scientific names of seabirds captured and returned or photographed from New Zealand fisheries between 1 July 2019 and 31 December 2019.

COMMON NAME	SCIENTIFIC NAME	TOTAL	NECROPSY	PHOTO	INTERACTION
Albatross (unidentified)		2			2
Broad-billed prion	<i>Pachyptila vittata</i>	1	1		
Buller's and Pacific albatross	<i>Thalassarche bulleri</i>	3			3
Buller's albatross	<i>Thalassarche bulleri bulleri</i>	24	19	5	
Cape petrel	<i>Daption capense</i>	2		2	
Cape petrels	<i>Daption spp.</i>	7			7
Common diving petrel	<i>Pelecanoides urinatrix</i>	1	1		
Fairy prion	<i>Pachyptila turtur</i>	2	1		1
Flesh-footed shearwater	<i>Puffinus carneipes</i>	3	3		
Great albatross (unidentified)	<i>Diomedea spp.</i>	1			1
Great-winged petrel	<i>Pterodroma macroptera</i>	1	1		
Grey petrel	<i>Procellaria cinerea</i>	27	2	5	20
Grey-backed storm petrel	<i>Garrodia nereis</i>	1	1		
Little blue penguin	<i>Eudyptula minor</i>	1	1		
New Zealand white-capped albatross	<i>Thalassarche steadi</i>	15	13	1	1
Northern giant petrel	<i>Macronectes halli</i>	1	1		
Prion (unidentified)	<i>Pachyptila spp.</i>	2		1	1
Salvin's albatross	<i>Thalassarche salvini</i>	21	20		1
Seabird (unidentified)		1			1
Small albatross (unidentified)	<i>Thalassarche spp.</i>	2			2
Sooty shearwater	<i>Puffinus griseus</i>	13	13		
Southern giant petrel	<i>Macronectes giganteus</i>	2	2		
Southern royal albatross	<i>Diomedea epomophora</i>	1		1	
Stewart Island shag	<i>Phalacrocorax chalconotus</i>	1	1		
Storm petrel (unidentified)		1			1
Westland petrel	<i>Procellaria westlandica</i>	10	5	4	1
White-chinned petrel	<i>Procellaria aequinoctialis</i>	13	13		
TOTAL		159	98	19	42

Table 2 Species and numbers of seabirds killed and returned from observed fishing vessels between 1 July 2019 and 31 December 2019, by sex (M = male, F = female, U = unknown) and age (A = adult, BA = breeding adult, N = non-breeding adult, SA = sub-adult, I = immature and J = juvenile, U = unknown).

SPECIES	SEX			AGE							TOTAL	% TOTAL
	M	F	U	A	BA	N	SA	I	J	U		
Broad-billed prion	1			1							1	1.0
Buller's albatross	13	5	1	19	3						19	19.4
Common diving petrel	1			1							1	1.0
Fairy prion		1		1							1	1.0
Flesh-footed shearwater	2	1		3							3	3.1
Great-winged petrel		1		1							1	1.0
Grey petrel	2			2							2	2.0
Grey-backed storm petrel	1			1							1	1.0
Little blue penguin		1		1							1	1.0
NZ white-capped albatross	6	6	1	8		1		3	1	1	13	13.3
Northern giant petrel			1	1							1	1.0
Salvin's albatross	7	11	2	19	3		1				20	20.4
Sooty shearwater	11	2		13							13	13.3
Southern giant petrel		2		2							2	2.0
Stewart Island shag		1		1							1	1.0
Westland petrel	4	1		5							5	5.1
White-chinned petrel	10	3		13							13	13.3
TOTAL	58	35	5	92	6	1	1	3	1	1	98	
% TOTAL	59.2	35.7	5.1	93.9	6.1	1	1	3.1	1	1		

Table 3 Stomach contents of seabirds killed and returned on fishing vessels between 1 July 2019 and 31 December 2019.Note: Birds can have multiple items in the stomachs resulting in higher content figures than the total number of seabirds killed and returned ($n = 98$).

SPECIES	EMPTY	MISSING	BAIT	OFFAL (OR DISCARDS)	NATURAL	BARNACLES OR SEAWEED	PLASTIC	PROVENTRICULAR OIL	WORMS
Broad-billed prion					1				
Buller's albatross	7	2		1	12				
Common diving petrel	1								
Fairy prion	1								
Flesh-footed shearwater	1		1	1					
Great-winged petrel			1						
Grey petrel	1		1						
Grey-backed storm petrel	1								
Little blue penguin					1				
NZ white-capped albatross	7		1	1	5				
Northern giant petrel		1							
Salvin's albatross	5		7	1	12				
Sooty shearwater	3		6	2	4				
Southern giant petrel					2				
Stewart Island shag	1								
Westland petrel	1		2	2	2				
White-chinned petrel	7		3		3				
TOTAL	36	3	22	8	42	0	0	0	0
% TOTAL	36.7	3.1	22.5	8.2	42.6				

Table 4 Gizzard contents of seabirds killed and returned on fishing vessels between 1 July 2019 and 31 December 2019.Note: Birds can have multiple items in the gizzard resulting in higher content figures than the total number of seabirds killed and returned ($n = 98$).

SPECIES	EMPTY	MISSING	SQUID BEAKS	OTOLITHS	EYEBALLS	BONES OR SKIN	PLASTIC	WORMS	STONES, BARNACLES, FEATHERS, SEAWEED
Broad-billed prion	1								
Buller's albatross	8	2	1		1	7			1
Common diving petrel	1								
Fairy prion	1								
Flesh-footed shearwater			3				3		
Great-winged petrel			1						
Grey petrel			2						
Grey-backed storm petrel									1
Little blue penguin	1								
NZ white-capped albatross	7		4	1		2			
Northern giant petrel		1							
Salvin's albatross	7		1	9	4	9			
Sooty shearwater			9	2		1	11		
Southern giant petrel			2				1		1
Stewart Island shag	1								
Westland petrel			5	2					
White-chinned petrel			13	5		2	1		
TOTAL	27	3	41	19	5	21	16	0	3
% TOTAL	27.6	3.1	41.8	19.4	5.1	21.4	16.3		3.1

Table 5 Number of seabirds of each species killed and returned from observed fishing vessels between 1 July 2019 and 31 December 2019, by fisheries type and location of capture.

SPECIES	BOTTOM/MIDWATER TRAWL						SETNET	LONGLINE		TOTAL
	NET	COD-END	LENGTHENER	OTHER	WARP	DECK STRIKE		HOOK	DECK STRIKE	
Broad-billed prion	1									1
Buller's albatross	11	2			1			5		19
Common diving petrel	1									1
Fairy prion						1				1
Flesh-footed shearwater								3		3
Great-winged petrel								1		1
Grey petrel	1					1				2
Grey-backed storm petrel	1									1
Little blue penguin							1			1
NZ white-capped albatross	5				1			7		13
Northern giant petrel	1									1
Salvin's albatross	18				1			1		20
Sooty shearwater	4							9		13
Southern giant petrel	1				1					2
Stewart Island shag							1			1
Westland petrel								5		5
White-chinned petrel	9						1	3		13
TOTAL	53	2	0	0	4	2	3	34	0	98
% TOTAL	54.1	2.0			4.1	2.0	3.1	34.7		

Table 6 Number of seabirds killed and returned from observed fishing vessels between 1 July 2019 and 31 December 2019, by injury.Note: Birds can have multiple injuries resulting in higher figures than the total number of seabirds killed and returned ($n = 98$).

SPECIES	NO INJURIES	HOOK						BROKEN BONES, ETC.	LACERATIONS AND/OR SEVERED BODY PARTS	CRUSHED	GREASED	LICED	WATERLOGGED
		BODY	WING	BILL	THROAT OR SWALLOWED	FOOT	UNKNOWN ¹						
Broad-billed prion	1												
Buller's albatross	4		1	1	1			3	6	4	2		1
Common diving petrel	1												
Fairy prion	1												
Flesh-footed shearwater	1			2									
Great-winged petrel	1			1									
Grey petrel								1	2				
Grey-backed storm petrel	1												
Little blue penguin	1												
NZ white-capped albatross	3			2	1			4	3	1	2		1
Northern giant petrel												1	
Salvin's albatross	5							13	4	2	5		4
Sooty shearwater	2		1					5	3	3			3
Southern giant petrel	1								1				
Stewart Island shag	1												
Westland petrel	5												
White-chinned petrel	8							1	1				4
TOTAL	36	0	2	6	2	0	0	27	20	10	9	1	13
% TOTAL	36.7		2.0	6.1	2.0			27.6	20.4	10.2	9.2	1.0	13.3

¹ An unknown hook location relates to a seabird caught and killed on a longline vessel but with no apparent hook injury anywhere on the body. No additional capture information was provided by the observer. These seabirds may have been tangled in the line rather than hooked.

Table 7 Comparison of fat scores in the returned birds between 1 July 2019 and 31 December 2019 (1= no fat to 5 = extremely fat, U = unknown).

SPECIES	FAT SCORE					
	1	2	3	4	5	U
Broad-billed prion		1				
Buller's albatross	6	8	3			2
Common diving petrel			1			
Fairy prion				1		
Flesh-footed shearwater	1	2				
Great-winged petrel		1				
Grey petrel		1		1		
Grey-backed storm petrel	1					
Little blue penguin		1				
NZ white-capped albatross	2	3	2	1	4	1
Northern giant petrel						1
Salvin's albatross	2	3	6	7	1	1
Sooty shearwater	1	8	3		1	
Southern giant petrel		2				
Stewart Island shag			1			
Westland petrel	2	2	1			
White-chinned petrel	1	6	1	3	1	1
TOTAL	16	38	18	13	7	6
% TOTAL	16.3	38.8	18.4	13.3	7.1	6.1

Table 8 Number of seabird interactions photographed or recorded on fishing vessels between 1 July 2019 and 31 December 2019.

	DEAD	ALIVE	TOTAL
Photographed and listed in MPI COD extract	10	3	13
Photographed but not listed in MPI COD extract to date	5	1	6
Photographed and listed in MPI COD extract, but image not received to date			0
Listed as an interaction only in MPI COD extract, but not photographed	2	12	14
Listed as an interaction in Observer spreadsheet data only (need a COD extract update), but not photographed		28	28
TOTAL	17	44	61
% TOTAL	27.9	72.1	