



INT 2019/02 IDENTIFICATION OF SEABIRDS CAPTURED IN NEW ZEALAND FISHERIES QUARTERLY REPORT: 1 July 2020 to 31 December 2020.

Elizabeth Bell ¹

1. Wildlife Management International Ltd, PO Box 607, Blenheim 7240, biz@wmil.co.nz

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 2020 to 31 December 2020.

There were a total of 116 seabirds captured and returned, photographed, or listed as interactions from New Zealand commercial fisheries, primarily trawl vessels, between 1 July 2020 and 31 December 2020.

There have been 43 seabirds from 11 taxa necropsied from this period. These seabirds were caught on 22 vessels: 20 trawl vessels (30 seabirds), 5 longline vessels (12 seabirds) and 1 setnet vessel (1 seabird). 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 80% of the seabirds that were returned for necropsy.

Examination of the Central Observer Database (COD) extract or images provided for this period gave a total of 73 birds that were reported captured (i.e. *Interaction*; $n = 51$) or photographed (i.e. *Photo*; $n = 22$) as seabird interactions from 24 fishing vessels: 19 trawl vessels (65 seabirds), 1 setnet vessel (2 seabirds) and 4 longline vessels (6 seabirds) 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 2020 and 31 December 2020.

COMMON NAME	SCIENTIFIC NAME	NECROPSY	PHOTO	INTERACTION	TOTAL
Albatross (unidentified)				2	2
Black-browed albatross (unidentified)	<i>Thalassarche</i> spp.			1	1
Black (Parkinson's) petrel	<i>Procellaria parkinsoni</i>			2	2
Buller's and Pacific albatross	<i>Thalassarche bulleri</i>			3	3
Buller's albatross	<i>Thalassarche bulleri bulleri</i>	3	3	2	8
Cape petrels	<i>Daption</i> spp.			2	2
Common diving petrel	<i>Pelecanoides urinatrix</i>	1	1	5	7
Fairy prion	<i>Pachyptila turtur</i>			1	1
Flesh-footed shearwater	<i>Puffinus carneipes</i>		2	1	3
Foveaux shag	<i>Phalacrocorax stewarti</i>	1			1
Grey petrel	<i>Procellaria cinerea</i>	4	1		5
Grey-backed storm petrel	<i>Garrodia nereis</i>	2			2
New Zealand white-capped albatross	<i>Thalassarche steadi</i>	6	3	7	16
Northern giant petrel	<i>Macronectes halli</i>	1		1	2
Otago shag	<i>Phalacrocorax chalconotus</i>		2		2
Petrel (unidentified)				1	1
Petrels, prion, and shearwaters (unidentified)				2	2
Prion (unidentified)				2	2
Red-billed gull	<i>Larus scopulinus</i>			1	1
Salvin's albatross	<i>Thalassarche salvini</i>	13	7	12	32
Seabird (unidentified)				2	2
Shearwater (unidentified)	<i>Puffinus</i> spp.			1	1
Small albatross (unidentified)	<i>Thalassarche</i> spp.		1		1
Sooty shearwater	<i>Puffinus griseus</i>	1	1	1	3
Storm petrel (unidentified)				1	1
Westland petrel	<i>Procellaria westlandica</i>	9		1	10
White-chinned petrel	<i>Procellaria cinerea</i>	2	1		3
Total		43	22	51	116

Table 2 Species and numbers of seabirds killed and returned from observed fishing vessels between 1 July 2020 and 31 December 2020, 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
Buller's albatross	2	1		2	2		1				3	7.0%
Common diving petrel	1			1							1	2.3%
Foveaux shag	1			1							1	2.3%
Grey petrel	3		1	4							4	9.3%
Grey-backed storm petrel	1	1		2							2	4.7%
New Zealand white-capped albatross	3	3		5		1		1			6	14.0%
Northern giant petrel	1			1							1	2.3%
Salvin's albatross	6	3	4	11	6					2	13	30.2%
Sooty shearwater		1					1				1	2.3%
Westland petrel	7	1	1	9							9	20.9%
White-chinned petrel		2		2	1						2	4.7%
TOTAL	25	12	6	38	9	1	2	1	0	2	43	
% TOTAL	58.1%	27.9%	14.0%	88.4%	20.9%	2.3%	4.7%	2.3%	0.0%	4.7%		

Table 3 Stomach contents of seabirds killed and returned on fishing vessels between 1 July 2020 and 31 December 2020.Note: Birds can have multiple items in the stomachs resulting in higher content figures than the total number of seabirds killed and returned ($n = 43$).

SPECIES	EMPTY	MISSING	BAIT	OFFAL (OR DISCARDS)	NATURAL	BARNACLES OR SEAWEED	PLASTIC	PROVENTRICULAR OIL	WORMS
Buller's albatross	2			1					
Common diving petrel	1								
Foveaux shag									1
Grey petrel	2	1		1	1				
Grey-backed storm petrel	1							1	
NZ white-capped albatross	4			3	1				
Northern giant petrel	1								
Salvin's albatross	1	2	1	7	2		1		
Sooty shearwater	1								
Westland petrel	2		5	1	1				
White-chinned petrel				2					
TOTAL	15	3	6	15	5	0	1	1	1
% TOTAL	34.9%	7.0%	14.0%	34.9%	11.6%	0.0%	2.3%	2.3%	2.3%

Table 4 Gizzard contents of seabirds killed and returned on fishing vessels between 1 July 2020 and 31 December 2020.Note: Birds can have multiple items in the gizzard resulting in higher content figures than the total number of seabirds killed and returned ($n = 43$).

SPECIES	EMPTY	MISSING	SQUID BEAKS	OTOLITHS	EYEBALLS	BONES OR SKIN	PLASTIC	WORMS	STONES, BARNACLES, FEATHERS, SEAWEED
Buller's albatross	1		2						
Common diving petrel	1								
Foveaux shag								1	
Grey petrel			4	2		1		3	
Grey-backed storm petrel						2			
NZ white-capped albatross	3	1	2			1			
Northern giant petrel				1					1
Salvin's albatross		2	3	4	2	10			
Sooty shearwater							1		
Westland petrel			8	6	3	4		2	
White-chinned petrel			2	1			1	2	1
TOTAL	5	3	21	14	5	18	2	8	2
% TOTAL	11.6%	7.0%	48.8%	32.6%	11.6%	41.9%	4.7%	18.6%	4.7%

Table 5 Number of seabirds of each species killed and returned from observed fishing vessels between 1 July 2020 and 31 December 2020, 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	
Buller's albatross				1	1			1		3
Common diving petrel	1									1
Foveaux shag							1			1
Grey petrel	2			1				1		4
Grey-backed storm petrel						1			1	2
NZ white-capped albatross	3				2			1		6
Northern giant petrel	1									1
Salvin's albatross	2	2		4	5					13
Sooty shearwater						1				1
Westland petrel				1				8		9
White-chinned petrel	2									2
Total	11	2	0	7	8	2	1	11	1	43
% Total	25.6%	4.7%		16.3%	18.6%	4.7%	2.3%	25.6%	2.3%	

Table 6 Number of seabirds killed and returned from observed fishing vessels between 1 July 2020 and 31 December 2020, by injury.Note: Birds can have multiple injuries resulting in higher figures than the total number of seabirds killed and returned ($n = 43$).

SPECIES	NO INJURIES	HOOK						BROKEN BONES, ETC.	LACERATIONS AND/OR SEVERED BODY PARTS	CRUSHED	GREASED	LICED	WATERLOGGED
		BODY	WING	BILL	THROAT	FOOT	UNKNOWN ¹						
Buller's albatross								2	1	1	1	1	1
Common diving petrel	1												
Foveaux shag										1			
Grey petrel	2								1	1	1		3
Grey-backed storm petrel	1							1					
NZ white-capped albatross			1					3	4	2	2		
Northern giant petrel	1												1
Salvin's albatross	3							6	5		2	1	4
Sooty shearwater											1		
Westland petrel	2		5	1				1	1			1	
White-chinned petrel													1
Total	10	0	6	1	0	0	0	13	12	5	7	3	10
% Total	23.3%		14.0%	2.3%				30.2%	27.9%	11.6%	16.3%	7.0%	23.3%

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 2020 and 31 December 2020 (1= no fat to 5 = extremely fat, U = unknown).

SPECIES	FAT SCORE					
	1	2	3	4	5	U
Buller's albatross		1	1			1
Common diving petrel		1				
Foveaux shag		1				
Grey petrel	1	2				1
Grey-backed storm petrel			1	1		
NZ white-capped albatross	3	1	1	1		
Northern giant petrel	1					
Salvin's albatross	2	4	1	1	1	3
Sooty shearwater		1				
Westland petrel		7	1			1
White-chinned petrel	1		1			
TOTAL	8	18	6	3	1	6
% TOTAL	18.6%	41.9%	14.0%	7.0%	2.3%	14.0%

Table 8 Number of seabird interactions photographed or recorded on fishing vessels between 1 July 2020 and 31 December 2020.

	DEAD	ALIVE	TOTAL
Photographed and listed in MPI COD extract	8	4	12
Photographed but not listed in MPI COD extract to date	7	3	10
Photographed and listed in MPI COD extract, but image not received to date	0	0	0
Sub-total (Photographed seabirds)	15	7	22
% Sub-total (Photographed seabirds)	68.2%	31.8%	
Listed as an interaction only in MPI COD extract, but not photographed	8	43	51
Sub-total (Interaction seabird)	8	43	51
% Sub-total (Interaction seabirds)	15.7%	84.3%	
TOTAL (Photograph and Interaction seabird combined)	23	50	73
% TOTAL	31.5%	68.5%	