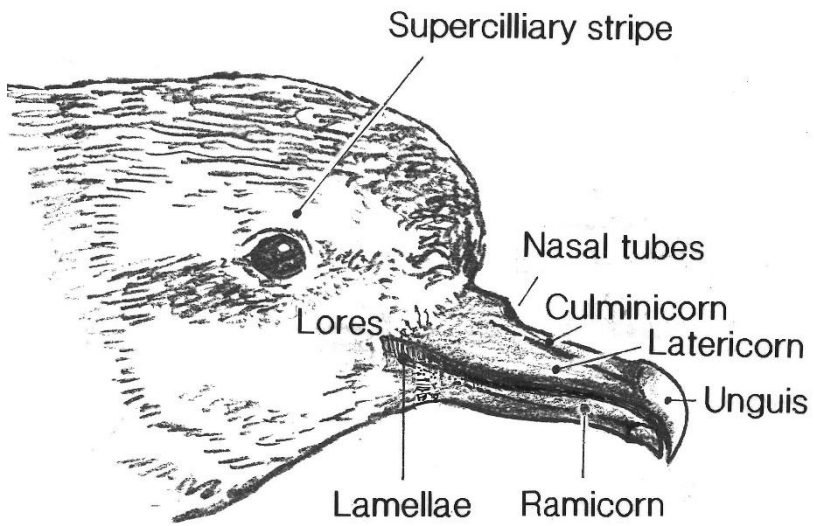


**BEACH PATROLLERS' GUIDE TO
STORMCAST SEABIRDS
(*PROCELLARIIFORMES*)
FOUND IN
NEW ZEALAND
REVISED AND UPDATED**

**STELLA ROWE
ADRIAN PLANT**

**MAP AND DRAWINGS BY
FRANK BAILEY
(unless otherwise indicated)**



Headparts of Salvin's Prion

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AUTHOR'S NOTE

This guide is intended as a helpful starting point for beach patrollers. It is not a definitive statement but answers some of the questions that I found myself asking when I picked up a dead bird on the beach. It is expected that some data will be updated from time to time as new information comes to hand.

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INTRODUCTION

The Beach Patrol Scheme was established by the Ornithological Society of New Zealand (OSNZ)* in 1951 to provide information on seabird species washed up on New Zealand shores. In 1988 Jehl [1] commented that the OSNZ “has co-ordinated what must be the most comprehensive beached-bird study in the world”. He added that work based on this type of data such as Powlesland’s synopsis of mortality among species of *Pterodroma* from 1960 to 1984 [17] “illustrates the value of beached-bird studies, long term research and the contribution that amateurs can make to field biology”. Now, with more than 60 years of documentation, the scheme is becoming an ever more valuable resource.

Patrollers walk along a beach searching the high tide lines to identify and record all birds found before removing or burying them well away from the beach to prevent duplication of records. Not all birds found are complete and identifying a bundle of bones or a headless corpse can be difficult. The specimen can be wrapped and taken home for a more thorough investigation or shown to a more experienced beach patroller to help with the identification. If the bird is a large albatross, at least the head and a leg should be taken. A Swiss army knife is handy here and photographs can be useful too.

All details are then entered onto data sheets or record forms which can be downloaded from the OSNZ website as a word file (return by email) or as PDF file (print and return by fax or post). Any leg bands should be noted under general remarks and also any obvious cause of death. Full instructions are printed on the data sheets.

To improve analysis and reporting a new internet-based data management system is being designed. It will provide open-access data to students, scientists and others, and is expected to be fully operational by 2018.

The Scheme is mainly concerned with seabirds – penguins, albatrosses, petrels, prions, shearwaters, storm petrels, diving petrels, frigate birds, gannets, shags, tropic birds, skuas, gulls, terns, etc, but land-based birds can also be washed ashore, e.g. game birds, ducks, egrets, herons, finches, etc, and these should also be recorded. However, it is the *Procellariiformes* which pose the greatest problems in identification and this guide is concerned only with these.

For further information on the Beach Patrol Scheme go to www.osnz.org.nz.

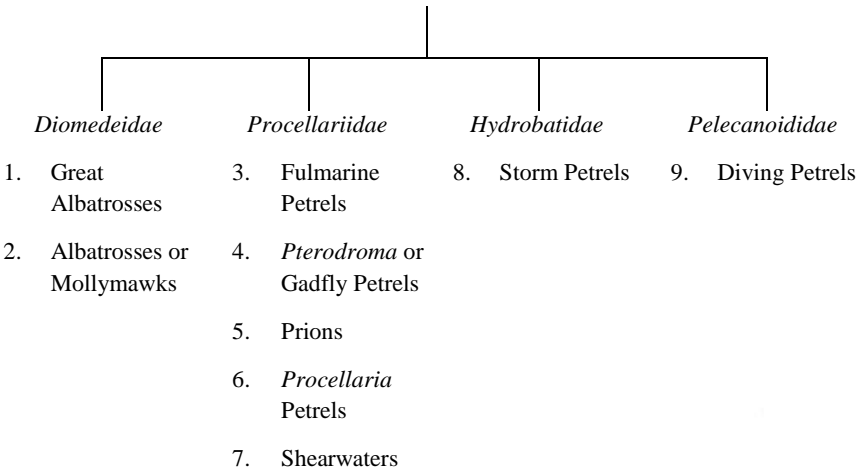
* Also known as Birds New Zealand

Procellariiformes

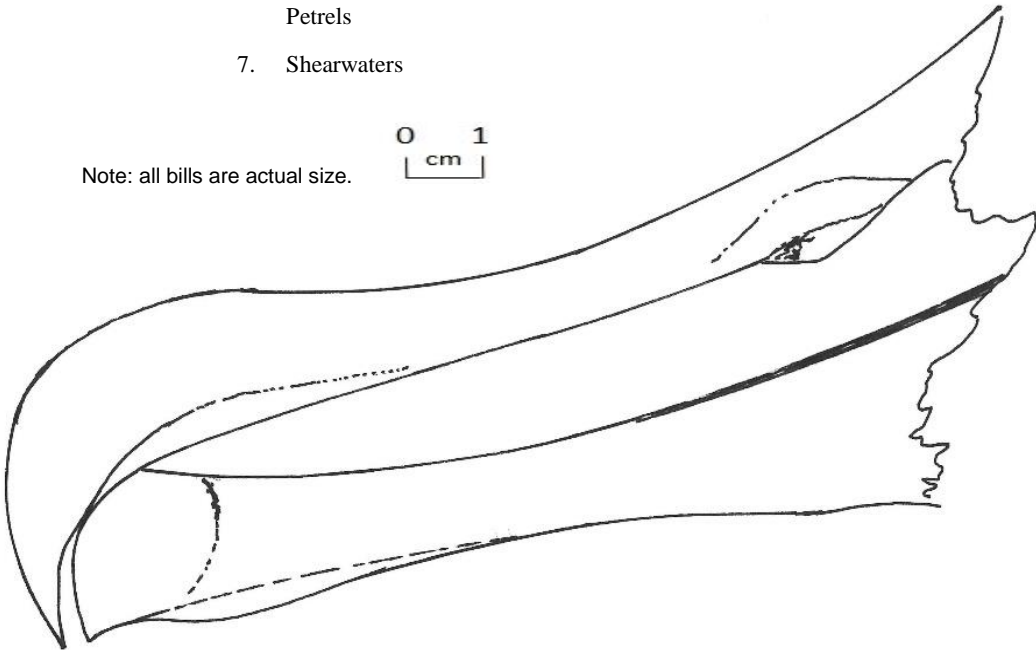
This order of seabirds is divided into four families. All species in the order have bills with separate horny plates, though it is their prominent external nostrils which distinguish them from other birds, giving rise to the name “tubenoses”. They are almost exclusively marine coming ashore only to breed.

Procellariiformes

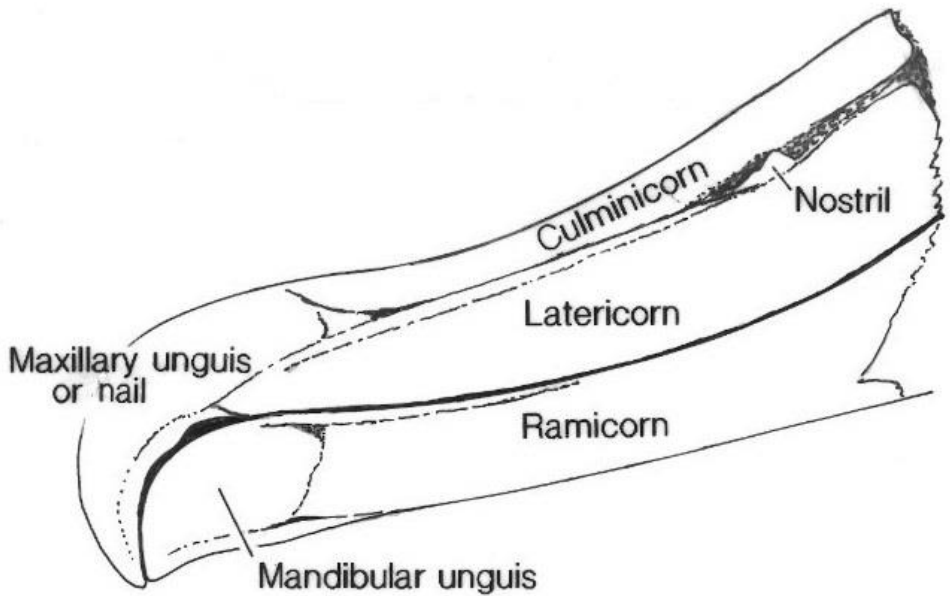
Petrels or tubenoses



Note: all bills are actual size.



Wandering Albatross



Grey-headed Mollymawk

1. The Great Albatrosses have an average wing span of over three metres.
2. The slightly smaller Albatrosses or Mollymawks average just over two metres across. Both differ from other petrels in having the two nasal tubes separated, one each side of the top bill plate or culminicorn.

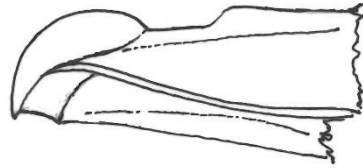
The pattern and colour of the underwing plumage, of the head and of the bill plates are important features in aiding identification, e.g. a thin black line on the cutting edge of the bill of the Royal Albatrosses distinguishes them from other albatross species. White-capped, Chatham Island and Salvin's Albatrosses have a small dark patch at the base of the leading edge of the underwing.

3. The Fulmarine Petrels are a distinctive and variable group, from the medium sized Kerguelen and Snow Petrels to the Giant Petrels with a wingspan equal to that of the Mollymawks.

The compressed black bill of the Kerguelen Petrel is very narrow with a ridged nasal tube while that of the Cape Petrel is broad and flattish. The bills of both the Antarctic Fulmar and Giant Petrel are heavy and robust, especially the latter which has a nasal tube approximately two thirds of the total bill length. The nail on the bill of the Southern Giant Petrel is greenish while the Northern Giant Petrel's is a pinkish colour.

4. Pterodroma or Gadfly Petrels are a diverse group of small to medium-sized birds with chunky black bills, the smallest often being referred to as the Cookilaria Petrels. Variation in plumage colour and pattern, especially detail on head and underwings, are the chief keys to identification. White feathers dark-tipped or dark feathers edged with white give many of these birds a scalloped or mottled appearance on the forehead.

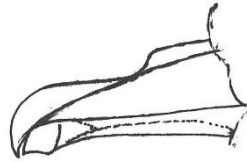
5. Prions are smallish birds characterised by plumage which is white below and a soft blue-grey above with a darker open-M marking across the wings and body and a black-tipped tail. The shape, size and proportion of the bill and the distribution of dark markings on head, neck and tail are critical in distinguishing between the six species of Prion.



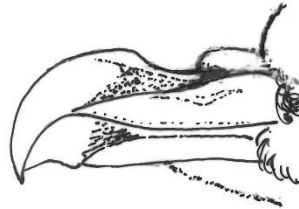
Antarctic Fulmar



Kerguelen Petrel



Cape Petrel



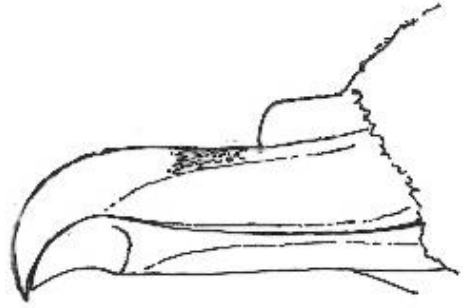
Grey-faced Petrel



Fairy Prion

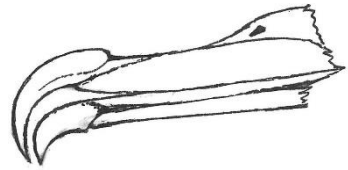
The Blue Petrel with plumage similar in colour to the Prions, is the only petrel to have a white terminal band on the tail.

6. The four species of Procellaria petrels are all large robust birds with conspicuous pale heavy bills. The nasal tubes are prominent with the apertures directed forward. Look carefully at the “chin” of the White-chinned Petrel; there may be as few as two white feathers or even none at all.



White-chinned Petrel

7. Shearwaters, though varying in size and plumage, are characterised by their relatively long, slender bills with the nasal tubes opening obliquely upward. The tarsus is flattened, not round as in other seabirds.



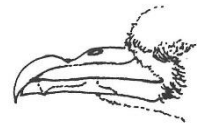
Buller's Shearwater

Hutton's Shearwater can generally be distinguished from similar Fluttering Shearwater by dark brown smudges near the base of the white underwing and on the outer feathers of the undertail coverts.



White-faced Storm Petrel

8. Storm Petrels are the smallest and most delicate-looking of all petrels with relatively long legs and slender bills. The shape of the tail, whether forked or square, and the presence or absence of white on the rump are useful identification features.



Common Diving Petrel

9. Diving Petrels are small and chunky with rather short wings and tail and a short black bill.

Field Identification

When identifying beachcast birds we suggest using this booklet in conjunction with an illustrated field guide such as Heather and Robertson (2015), Onley and Scofield (2007) or Harper and Kinskey (1978)*. However, confusion can arise when descriptions of live birds are used to identify beachcast birds. The colour of skin parts especially can fade rapidly after death. For example, the violet blue feet of a Little Shearwater may look dull and grey or the delicate pink and blue on an Antarctic Fulmar bill may appear horn-coloured when dried. Feathers are often wet or covered with sand and may need to be dried out to determine their true colour and pattern.

Rare Birds

Rare birds and sometimes more common species are often wanted by museums; patrollers can be of great assistance in finding suitable specimens. If an unusual bird is found, collect the whole bird or skeleton or even fragmentary parts. Carefully wrap the specimen, freeze it and contact your nearest main museum or the Curator of Birds at Te Papa Tongarewa in Wellington. If it is wanted the museum will arrange for it to be collected or will give directions for sending it. Make sure it is labelled with details of date, place where found, species name if known and your name and address.

Banded Birds

When a dead bird is found with a band on its leg, contact the Banding Office (bandingoffice@doc.govt.nz). The Banding Officer will tell you if they want the whole bird (if rare), the band itself or just the number inscribed on the band. Send with details of date, place where found, species if known, and your name and address. All bands sent are acknowledged.

Bird Collection

If you are interested in assembling a reference collection of seabirds or bills, a permit obtainable from one of the main museums is required as all seabirds except Black-backed gulls (*Larus dominicanus*) are protected. However, you do not need a permit to collect corpses for identification purposes provided you do not keep them long term.

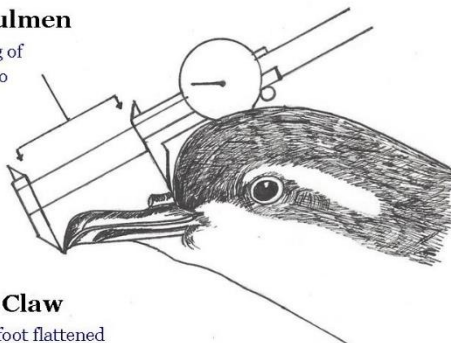
* This useful guide is now sadly out of print but second hand copies are still about.

HOW TO MEASURE A BIRD

All that is needed is a ruler marked in millimetres, a simple pair of dividers, a pencil and notebook. Alternatively a pair of vernier callipers can be used for measuring.

Culmen

Measure from beginning of feathering on forehead to tip of bill



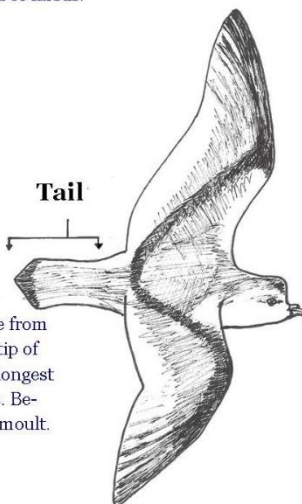
Middle Toe & Claw

Measure with foot flattened from centre of tarsus joint to tip of middle claw



Tarsus

Measure with toes bent hard downwards from notch at rear of upper joint to end of tarsus.



Tail

Measure from base to tip of central longest feathers. Beware of moult.

Wing

Flatten wing in closed position along ruler. Measure from carpal joint to end of first or longest primary feather. Beware of birds in moult or with loose or missing feathers.



Illustrated by Ann Buckmaster

SEABIRD MEASUREMENTS

Species		Wing		Tail		Culmen		Tarsus		Middle toe & claw	
Wandering Albatross	M	644	590/674	195	186/202	168	156/173	121	115/128	170	163/176
	F	601	585/611	187	177/200	161	157/167	114	111/119	161	
Southern Royal Albatross	M	655	638/671	195	186/204	177	172/186	125	120/129	171	162/179
	F	624	600/658	190	182/200	169	156/177	118	109/126	157	150/167
Northern Royal Albatross	M	615	590/630	191	186/195	163	156/168	117	112/120	157	151/162
	F	616	593/639	189	175/197	161	151/170	114	111/120	151	146/158
Yellow –nosed Albatross		470	453/498	188	172/199	114	109/121	78	74/83	110	107/113
Grey-headed Albatross	M	510	480/555	195	175/205	114	106/122	86	79/91	126	117/138
	F	504	473/523	189	175/199	115	108/119	85	79/89	122	111/131
Black-browed Albatross		511	480/525	196	170/215	113	90/124	83	75/88	124	118/130
Buller's Albatross		500	462/526	189	175/199	120	115/126	81	78/85	117	110/124
White-capped (Shy) Albatross		556	523/585	205	188/220	128	117/135	88	80/95	131	121/139
Chatham Island Albatross			545/546		209/215		125/126		85/86		125/-
Salvin's Albatross			523/585		188/228		117/135		70/93		120/139
Sooty Albatross	M	502	481/516	255	241/265	113	111/116	81	76/85	120	119/125
	F	503	497/515	245	237/253	112	110/114	80	76/83	117	112/120
Light-mantled Sooty Albatross	M	524	503/552	271	249/294	111	103/117	83	80/87	124	120/128
	F	511	490/526	267	236/276	109	98/117	81	78/84	121	116/125
Southern Giant Petrel	M	527	500/565	180	166/189	99	90/105	96	92/103	130	109/143
	F	498	462/526	171	162/184	92	78/101	88	80/100	125	113/147
Northern Giant Petrel	M	505	498/550	180	170/190	101	93/106	96	89/103	141	131/152
	F	489	430/517	175	167/185	95	87/108	94	92/97	140	134/152
Antarctic Fulmar	M	339	331/348	132	127/137	47	46/48	55	52/57	71	66/74
	F	325	315/332	124	116/129	44	42/47	52	50/54	66	65/70
Antarctic Petrel	M	318	300/330	119	105/130	39	36/40	43	38/46	62	59/65
	F	310	292/325	117	108/122	35	33/37	43	38/48	58	53/64
Cape Petrel		258	225/275	94	90/107	30	28/33	45	38/47	57	52/60
Kerguelen Petrel		254	242/265	108	101/114	27	25/28	38	34/40	49	46/52
Grey-faced Petrel		317	303/328	124	120/131	36	34/40	43	41/44		
White-headed Petrel		306	292/317	134	125/140	38	35/40	43	38/48	63	60/69
Providence Petrel		304	284/317	127	120/135	34	30/37	43	39/45	57	51/61
Chatham Island Taiko		306	302/312	130	126/139	33	30/35	42	40/44	56	53/61
Kermadec Petrel		290	274/307	101	92/107	30	28/33	38	33/41	52	46/55
Phoenix Petrel		277	265/291	113	106/120	28	25/30	34	32/36	45	41/48
Soft-plumaged Petrel		252	240/260	111	102/120	28	27/30	35	33/37	50	49/52
Mottled Petrel		255	248/262	102	97/107	26	25/27	34	32/35	43	40/45
Juan Fernandez Petrel		320	315/324	146	144/148	36	34/41	44	42/47	55	53/56
White-naped Petrel		312	301/323	136	132/142	36	34/38	42	40/46	52	50/55
Black-winged Petrel		226	217/237	98	92/102	24	22/25	30	28/32	37	34/40
Chatham Island Petrel		217	211/223	91	88/94	24	23/26	30	29/31	37	36/38
Cook's Petrel		235	230/240	89	85/92	28	26/29	31	29/32	38	37/40
Stejneger's Petrel		221	216/230	100	97/105	25	24/26	28	27/30	36	34/37
Pycroft's Petrel		220	204/229	-	86/89	25	23/26	30	28/31	37	35/39
Gould's Petrel		225	213/238	93	82/105	25	23/26	29	25/33	37	-/-
New Caledonian Petrel		229	219/235	95	89/98	25	23/27	30	28/31	38	35/41

Species		Wing	Tail	Culmen	Tarsus	Middle toe & claw
Blue Petrel		215 200/224	89 83/95	26 24/28	32 28/36	41 38/42
Broad-billed Prion		206 197/214	98 95/100	34 31/38	35 33/36	42 41/42
Salvin's Prion		189 182/199	89 83/100	31 27/33	32 30/34	39 36/42
Antarctic Prion		171/201	72/104	24/30	28/35	29/39
Thin-billed Prion		187 180/191	92 86/97	26 23/28	33 31/34	40 38/42
Fairy Prion		174 165/186	85 80/93	23 20/25	31 28/32	40 38/41
Fulmar Prion		182 180/187	91 87/100	23 21/25	31 30/33	41 38/42
White-chinned Petrel		372 339/409	124 113/140	52 48/56	63 56/72	83 79/90
Westland Petrel		377 366/390	117 112/120	49 47/51	64 63/68	84 81/87
Black Petrel		342 326/359	101 93/106	41 39/44	53 49/55	68 62/71
Grey Petrel		346 340/355	116 110/124	47 45/49	59 58/61	74 72/76
Tahiti Petrel		296 278/308	115 107/122	37 34/39	48 45/50	59 56/54
Wedge-Tailed Shearwater		290 280/308	126 119/138	38 36/41	46 42/48	58 57/59
Buller's Shearwater		285 278/294	127 115/137	41 38/45	50 48/33	65 60/70
Flesh-footed Shearwater		316 296/330	108 100/114	42 37/45	54 51/57	68 62/73
Sooty Shearwater		296 283/304	88 80/94	42 41/44	55 53/57	66 62/70
Short-tailed Shearwater		275 262/290	81 75/86	32 29/34	51 48/54	63 59/67
Manx Shearwater		237 226/243	74 70/79	34 31/38	45 43/48	48 44/52
Fluttering Shearwater		204 180/221	62 58/68	33 30/35	42 36/46	43/51
Hutton's Shearwater		222 215/229	65 61/70	37 36/38	42 40/44	48 45/50
Little Shearwater		183 174/186	69 66/71	23 22/24	36 35/37	43 42/44
Wilson's Storm Petrel		145 139/150	59 57/62	12 11/13	35 32/38	27 26/29
Grey-backed Storm Petrel		129 116/139	59 55/62	13 12/14	32 28/35	27 26/27
White-faced Storm Petrel		158 152/164	74 69/83	17 15/18	42 39/45	38 36/42
Black-bellied Storm Petrel		161 154/167	74 72/77	15 14/16	42 40/44	29 28/30
White-bellied Storm Petrel		156 146/163	74 71/77	13 12/14	35 33/37	22 20/23
Leach's Storm Petrel		156 152/160	80 76/87	15 13/16	24 22/24	- -/-
Common Diving Petrel		120 116/125	37 37/38	16 14/18	26 24/27	31 28/33
South Georgian Diving Petrel		113 104/122	38 34/43	15 14/16	24 21/26	30 26/32

Based on references 2-10.

Notes: The first figure quoted is the average or mean, followed by the range.

All measurements are in millimetres.

These measurements should be used as a guide only as some of the samples from which they are taken are quite small. There can be substantial variation in measurements taken by individuals and specimens can shrink on drying out. When measuring wings and tails beware of birds in moult or damaged birds with loose or missing feathers.

NOTES ON THE IDENTIFICATION OF STORMCAST PRIONS

	BROAD-BILLED PRION		SALVIN'S PRION		ANTARCTIC PRION	
	Adult	Immature	Adult	Immature	Adult	Immature
BILL	very broad & deep	weak	longer, wider than Antarctic Prion	weak	medium width	weak
Length	31-38 mm		28-33 mm		24-31 mm	
Width	17-23 mm		12-20mm		12-16mm	
Unguis	small, ridged	narrow	small, less rounded		rounded, strong	
Unguis to nasal tube	15 mm		15mm		10-11 mm	
Unguis width						
Lamellae	clearly visible when bill closed		visible to the gape when bill closed		generally concealed though sometimes visible in feathered area only	
Culminicorn	broad	ridged prominent		ridged high		ridged high
Latericorn plates	broad and bowed		slightly bowed	thin	straight sided, bows only near base except birds from Auckland Islands	soft
Colour	upper plates dark, glossy, iron grey	upper plates dry to dull brown	blue		blue	
PLUMAGE	rich blue	pale smoky blue	rich blue	most paler than adult	rich blue	pale smoky blue
Crown	dark, especially when worn		blue, but darkens towards moult with wear		dark	
Superciliary stripe	small, white		small, white		small, white	
Neck collar	dark, prominent, incomplete		conspicuous, dark blue, incomplete		conspicuous blue grey, incomplete	
M-marking	broad, dark, well defined		well defined, dark		moderately broad, dark	
Wing		white edge to inner primaries		white edge to inner primaries		
Tail	dark terminal band on central feathers 28-33 mm		dark terminal band on central feathers 23-30 mm		dark terminal band on central feathers	

NOTES ON THE IDENTIFICATION OF STORMCAST PRIONS

THIN-BILLED PRION		FAIRY PRION		FULMAR PRION	
Adult	Immature	Adult	Immature	Adult	Immature
long, slender		short, robust	weaker	short, robust more robust, sexually dimorphic, male > female	
23-28 mm		20-25 mm		21-25 mm	
10-11 mm		10-12 mm		up to 14 mm	
weak		flat sided		strong and bulbous	
8.3-12.0 mm		4.2-6 mm		2-4 mm	
		3.3-4.4 mm		4.6-5.7 mm	
absent		absent		absent	
					plates do not shrink on drying as much as other Prions
straight sided		usually straight sided			
blue		blue		blue	
blue, paler than other prions	paler than adult	sometimes a pale blue wash on ventral surface	paler than adult	blue-grey wash on ventral surface	
pale blue-grey		pale uniform blue grey, no head pattern		pale, least distinct of all Prions, no head pattern	
with the lores, white conspicuous		small, often shaded with grey		small, indistinct	
absent		absent		absent	
narrow, ill-defined		distinct, broad and dark		especially well-defined, dusky black	
narrow incomplete tail band, only on central 6 feathers		dark broad terminal band 35-45 mm, upper coverts smudged with black		as for Fairy Prion but has broadest band of any Prion	

PRION IDENTIFICATION KEY

1A	Lamellae present	Go to 2
1B	Lamellae absent	Go to 4
2A	Latericorns bowed	Go to 3
2B	Latericorns straight	ANTARCTIC PRION
3A	Upper mandible lead grey	BROAD-BILLED PRION
3B	Upper mandible not lead grey	SALVIN'S PRION
4A	Culminicorn >8.3 mm	THIN-BILLED PRION
4B	Culminicorn <6.0 mm	Go to 5
5A	Unguis width 3.3-4.4 mm	FAIRY PRION
5B	Unguis width 4.6-5.7 mm	FULMAR PRION

Key by Ray Buckmaster.

Refer to p.2 for an illustration of Prion head and bill parts.

Prion Notes: Dark terminal tail band pigmentation is complete in all but one species, but of varied depth. Only the central six tail feathers are pigmented in Thin-billed Prion. (If the terminal tail band is white, not dark, you have found a Blue Petrel.)

Thin-billed Prions also differ in having white lores and supercilliary stripe giving a distinctly white-faced appearance.

Often the only prion remains are pairs of wings which are impossible to identify to species level.

Immature birds: young Salvin's Prions can be confused with adult Antarctic Prions. Young Antarctic Prions, when compared with adult Thin-Billed Prions, have a high columnar ridge and, when dry and shrivelled, have a greater depth of bill and soft latericorns. Look for conspicuous bill shrinkage, lack of cranial ossification and shrivelling of the foot tissue when dried.

MONTHLY DISTRIBUTION OF SEABIRDS FOUND DEAD ON NEW ZEALAND BEACHES

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Wandering Albatross	●	○	○	○	○	●	○	○	○	○	○	●
Royal Albatross	●	○	○	○	●	○	○	○	○	○	●	●
Yellow-nosed Albatross				○	○	○	○	○			○	
Grey-headed Albatross	○	○	○	○	○	●	●	●	●	●	○	○
Black-browed Albatross	●	○	○	●	●	●	●	●	●	○	○	●
Buller's Albatross	○	●	○	○	●	●	●	○	○	○		
White-capped Albatross	○	●	○	○	●	●	●	○	○	●	●	●
Salvin's Albatross	○	○	●	○	○			○	●	●	●	●
Light-mantled Sooty Albatross	●	○			○	○	●	●	●	●	○	●
Giant Petrel	○	○	○	○	○	●	●	○	●	○	○	○
Antarctic Fulmar	○				○	○	○	○	●	●	○	○
Cape Petrel	○	○	○	○	○	○	●	●	●	●	○	○
Kerguelen Petrel	○	○	○	○		○	○	●	●	●	○	○
Grey-faced Petrel	●	○	○	○	○	○	○	●	○	○	○	○
White-headed Petrel	●	○	○	○	○	○	○	●	●	●	●	●
Providence Petrel									○			
Kermadec Petrel				○								
Soft-plumaged Petrel						○					○	○
Mottled Petrel	●	●	○	○	○	○	○	○	○	○	●	●
Black-winged Petrel	●	○	○	○	○						○	●
Cook's Petrel	●	●	●	●	○			○	○	○	●	●
Stegener's Petrel												○
Pycroft's Petrel	○		○	○		○		○			○	○
New Caledonian Petrel	○			○	○	○					○	○
Blue Petrel	○	○		○		○	○	●	●	●	○	○
Broad-billed Prion	●	○	○	○	●	●	●	●	○	○	○	●
Salvin's Prion	○	○		○	●	●	●	●	●	○	○	○
Antarctic Prion	○	○		○	●	●	●	●	●	○	○	○
Thin-billed Prion	○	○		○	○	○	●	●	●	○	○	○
Fairy Prion	●	●	○	○	○	○	○	●	●	●	●	●
Fulmar Prion	○				○		○	○	○			
White-chinned Petrel	●	○	○						○	○	○	○
Westland Petrel	○				○			○	○	○	○	○
Black Petrel	○	○	○	○	○	○		○			○	○
Grey Petrel	○	○	○		○		○	○	○		○	○
Wedge-tailed Shearwater	○	○							○			○
Buller's Shearwater	●	●	●	●	●	○	○	○	○	●	●	●
Flesh-footed Shearwater	●	●	●	●	●	○	○	○		○	●	●
Sooty Shearwater	●	○	○	●	●	○	○	○	○	○	●	●
Short-tailed Shearwater	●	○	○	○	●	●	○	○	○	○	●	●
Fluttering Shearwater	●	●	○	○	○	○	○	●	●	●	●	●
Hutton's Shearwater	●	○	○	○	○	○	○	○	○	●	●	●
Little Shearwater	●	○	○	○	○	○	●	●	○	○	●	●
Wilson's Storm Petrel	○				○	○						
Grey-backed Storm Petrel							○					○
White-faced Storm Petrel	●	○	○	○	○	○	○	○	●	●	●	●
Black-bellied Storm Petrel	○											
Common Diving Petrel	●	○	○	○	○	○	●	●	●	○	○	●

Key:

●
○

 Birds found in peak numbers.

○

 Birds found in relatively low numbers.

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 No birds found.

This summary is based on 1980-85 figures published in Notornis and in references 15-17.

COMPARATIVE FREQUENCY OF SEABIRDS RECOVERED ON BEACH PATROLS IN NEW ZEALAND BETWEEN 2009-2013

Species	2009	2010	2011	2012	2013
Wandering Albatross	6	5	3	3	5
Royal Albatross	5	2	1	1	2
Yellow-nosed Albatross	1	0	0	0	0
Grey-headed Albatross	8	8	4	1	0
Black-browed/Campbell Albatross	5	1	3	1	0
Buller's Albatross	16	27	74	14	6
White-capped/Shy Albatross	40	29	25	17	18
Chatham Island Albatross	0	0	1	0	0
Salvin's Albatross	4	2	2	1	3
Light-mantled Sooty Albatross	2	3	1	4	0
Albatross sp.	10	16	7	9	11
Southern Giant Petrel	8	17	0	3	3
Northern Giant Petrel	6	7	6	2	1
Giant Petrel sp.	6	7	6	7	0
Antarctic Fulmar	3	59	1	6	0
Cape Petrel	36	41	25	13	2
Kerguelen Petrel	0	0	2	2	1
Grey-faced Petrel	13	17	15	7	3
White-headed Petrel	7	33	9	11	8
Mottled Petrel	44	27	40	46	16
White-naped Petrel	0	1	0	0	0
Black-winged Petrel	2	2	0	0	0
Cook's Petrel	11	19	9	2	5
Pycroft's Petrel	1	0	0	0	1
Gould's/New Caledonian Petrel	0	0	1	0	0
Blue Petrel	6	9	28	1	1
Broad-billed Prion	43	47	34,630	224	36
Salvin's Prion	3	3	2,257	8	3
Antarctic Prion	7	4	1,265	8	1
Thin-billed Prion	22	14	1,153	4	4
Fairy Prion	226	192	2,304	113	117
Fulmar Prion	0	2	55	1	0
Prion sp.	109	166	12,169	123	47
White-chinned Petrel	2	6	5	3	2
Westland Petrel	1	0	2	1	3
Black Petrel	2	1	3	3	1
Grey Petrel	0	1	0	0	1
Wedge-tailed Shearwater	1	1	0	1	0
Buller's Shearwater	456	107	282	43	65
Flesh-footed Shearwater	24	22	119	25	8
Sooty Shearwater	417	1,983	650	253	2,102
Short-tailed Shearwater	116	157	8	50	944
Fluttering Shearwater	402	250	471	169	184
Hutton's Shearwater	127	59	63	61	35
Little Shearwater	12	14	35	1	7
Grey-backed Storm Petrel	1	0	0	0	0
White-faced Storm Petrel	19	6	86	5	11
Black-bellied Storm Petrel	1	0	0	0	0
Storm Petrel sp.	0	1	5	0	1
Common Diving Petrel	111	86	1,146	57	86

Data from reference 26.

 Birds commonly found.

DISTRIBUTION OF LIVE SEABIRDS FOUND IN NEW ZEALAND SEAS

Species	Breeding Areas	Egg*	Fledg*	Dispersal/Migration
Wandering Albatross <i>Diomedea exulans</i>	South Georgia, Prince Edward, Marion, Crozet, Kerguelen, Heard and Macquarie Is.	Dec-Feb	Jan-Mar	Circumpolar range. Breeds/disperses in alternate years.
Antipodean Albatross <i>Diomedea antipodensis antipodensis</i>	Antipodes, Campbell, Auckland, Chatham and Pitt Is.	Jan-Mar	Dec-Feb	Ranges South Pacific Ocean from S. Australia to Western S. America. Breeds/disperses in alternate years.
Gibson's Albatross <i>Diomedea antipodensis gibsoni</i>	Auckland Is.	Jan-Mar	Dec-Feb	Range similar to above. Breeds/disperses in alternate years.
Southern Royal Albatross <i>Diomedea epomophora</i>	Campbell, Enderby, Adams and Auckland Is.	No-Dec	Oct-Nov	Ranges from subantarctic to New Zealand and Australian seas. Breeds/disperses in alternate years.
Northern Royal Albatross <i>Diomedea sanfordi</i>	Taiaroa Head, New Zealand, the Sisters and the Forty-fours (Chatham Is.)	Oct-Dec	Sept-Nov	Ranges Southern Oceans and New Zealand seas. Breeds/disperses in alternate years.
Laysan Albatross <i>Phoebastria immutabilis</i>	Hawaiian Is.			Ranges in N. Pacific, rarely to New Zealand seas.
Atlantic Yellow-nosed Albatross <i>Thalassarche chlororynchos</i>	Gough, Tristan da Cunha Is.	Sept	May	Ranges S. Atlantic and Indian Oceans, rarely to New Zealand seas.
Indian Ocean Yellow-nosed Albatross <i>Thalassarche carteri</i>	Prince Edward, Crozet, Kerguelen, Amsterdam and St Paul Is.	Sept	May	Ranges Indian Ocean and Australian seas. Regular visitor to New Zealand waters especially in winter.
Grey-headed Albatross <i>Thalassarche chrysostoma</i>	Ildefonso and Diego Ramirez, South Georgia, Marion and Prince Edward Is., Crozet, Kerguelen, Macquarie and Campbell Is.	Sept	Apr	Circumpolar subantarctic range. Regularly beachcast, especially in winter.
Black-browed Albatross <i>Thalassarche melanophris</i>	Mainly on islands off S. Chile, Falklands, S. Georgia, Crozet, Kerguelen and Heard Is. In New Zealand region Snares, Antipodes, Campbell and Macquarie Is.	Sept	Apr	Circumpolar in the Southern Oceans.
Campbell Black-browed Albatross <i>Thalassarche impavida</i>	Campbell Is.	Sept	Apr	Ranges widely in New Zealand seas. Moves northward from Ross Sea to seas off New Caledonia and the Marquesas.

*Egg = egg-laying date

Fledg = fledging date

I = Island

Is = Islands

Species	Breeding Areas	Egg	Fledg	Dispersal/Migration
Southern Buller's Albatross <i>Thalassarche bulleri bulleri</i>	The Snares and Solander Is.	Dec	Oct	Ranges in New Zealand and south-eastern Australian waters. Migrates to seas off Chile and Peru.
Northern Buller's Albatross <i>Thalassarche bulleri platei</i>	The Sisters and the Forty-Fours (Chatham Is). Manawatahi, Three Kings Is.	Oct	Jun	Migrates to eastern Pacific.
White-capped (Shy) Albatross <i>Thalassarche cauta</i>	Tasmania, Auckland and Antipodes Is.	Nov	Aug	Ranges widely through southern oceans.
Chatham Island Albatross <i>Thalassarche eremita</i>	The Pyramid (Chatham Is).	Aug	Mar	Ranges in New Zealand waters. Migrates to S. America in winter.
Salvin's Albatross <i>Thalassarche salvini</i>	Bounty, Snares and Crozet Is.	Aug	Apr	Ranges in New Zealand and south-east Australian seas. Migrates to seas off Peru and Chile.
Sooty Albatross <i>Phoebastria fusca</i>	Subantarctic and subtropical islands in Atlantic and Indian Oceans.	Sept	May	Ranges subantarctic and subtropical seas. Seldom reaches New Zealand waters.
Light-mantled Sooty Albatross <i>Phoebastria palpebrata</i>	South Georgia, Marion, Prince Edward, Crozet, Kerguelen, Heard, Macquarie, Campbell, Auckland, Antipodes Is.	Sept	May	Circumpolar, ranging through subantarctic and Antarctic waters as far south as heavy pack ice.
Southern Giant Petrel <i>Macronectes giganteus</i>	Circumpolar on Antarctic mainland and subantarctic Is.	Oct	Apr	Ranges widely. Juveniles especially visit New Zealand waters in winter.
Northern Giant Petrel <i>Macronectes halli</i>	Circumpolar subantarctic; Chatham, Stewart, Antipodes, Auckland, Campbell Is.	Aug	Feb	Ranges widely over Southern Hemisphere seas and seen in New Zealand coastal waters.
Antarctic Fulmar <i>Fulmarus glacialisoides</i>	Antarctic continent, S Sandwich, S. Orkney, S. Shetland, Peter, Balleny and Bouvetoya Is.	Dec	Mar	Circumpolar, ranging widely. Small numbers beachcast in some years.
Antarctic Petrel <i>Thalassoica antarctica</i>	Circumpolar Antarctica.	Nov	Mar	A straggler to New Zealand waters where beachcast in some years.
Cape Petrel <i>Daption capense capense</i>	Antarctic mainland and many antarctic and subantarctic islands.	Nov	Mar	Ranges around southern seas to as far north as Tropic of Capricorn in winter.
Snares Cape Petrel <i>Daption capense australe</i>	The Snares, Antipodes, Bounty, Auckland, Campbell and Chatham Is.	Nov	Mar	Regularly beachcast. Ranges in New Zealand coastal waters and Tasman Sea.
Snow Petrel <i>Pagodroma nivea</i>	Antarctic continent. S. Georgia, S. Shetland, S. Sandwich, S. Orkney, Bouvet, Scott and Balleny Is.	Nov	Mar	Dispersal to pack ice and adjacent antarctic seas. Not confirmed as far north as New Zealand mainland.

Species	Breeding Areas	Egg	Fledg	Dispersal/Migration
Kerguelen Petrel <i>Lugensa brevirostris</i>	Subantarctic islands in Atlantic and Indian Oceans	Oct	Feb	Uncommon in S. Pacific. Occurs in New Zealand seas only when wind-drifted, especially non-breeders in August and September.
Grey-faced Petrel <i>Pterodroma macroptera</i>	Circumpolar, southern temperate and subantarctic islands. North Island: many off-shore islands and mainland cliffs.	Jun	Jan	Ranges throughout the year in S. Pacific Ocean and Tasman Sea.
White-headed Petrel <i>Pterodroma lessonii</i>	Crozet, Kerguelen, Macquarie, Auckland and Antipodes Is.	Nov	May	Ranges around subantarctic with a seasonal northward movement in winter and spring.
Providence Petrel <i>Pterodroma solandri</i>	Lord Howe and Philip Is.	Winter		Ranges N. Tasman Sea and migrates to N. Pacific Ocean.
Chatham Island Taiko <i>Pterodroma magnetae</i>	Chatham Is	Nov	May	Disperses mainly east of Chatham Island.
Kermadec Petrel <i>Pterodroma neglecta</i>	Ball's Pyramid, Philip, Kermadec, Austral, Tuamotu, Pitcairn and Easter Is.	Oct	May	Ranges mainly in subtropical S. Pacific. Six beachcast on northern west coast beaches, one on East Clive beach between 1932 and 1995.
Phoenix Petrel <i>Pterodroma alba</i>	Pacific Ocean Is; Phoenix, Line, Macquesas, Pitcairn and Tuamotu Is.			Ranges in central Pacific Ocean.
Soft-plumaged Petrel <i>Pterodroma mollis</i>	Tristan du Cunha, Inaccessible, Nightingale, Gough, Marion, Prince Edward, Crozet, Kerguelen, Amsterdam, Antipodes Is and Maatsuyker I. off Tasmania.	Dec	May	Ranges in S. Atlantic and Indian Oceans. A few beachcast around New Zealand mainland.
Mottled Petrel <i>Pterodroma inexpectata</i>	Breeds only in southern New Zealand, in Fiordland, islands around Stewart Is and The Snares	Dec	Jun	Ranges in subantarctic seas south to the pack ice. Migrates to N. Pacific.
Juan Fernandez Petrel	Isla Alejandro Selkirk and Juan Fernandez Is.	Nov	Jun	Ranges S.E. Pacific, migrate N. Pacific Ocean. Vagrants reach New Zealand.
White-naped Petrel <i>Pterodroma cervicalis</i>	Kermadec and Philip Is.	Dec	Jun	Ranges in adjacent seas. Migrates to N. Pacific Ocean. Vagrants reach northern New Zealand.
Black-winged Petrel <i>Pterodroma nigripennis</i>	Philip I, Kermadec Is, Islands around northern New Zealand; East, Portland and Chatham Is, Lord Howe I, Ball's Pyramid, islets off New Caledonia	Dec	Jun	Ranges N. Tasman Sea, subtropical south-west and central Pacific Ocean. Migrates N. Pacific ocean.
Chatham Islands Petrel <i>Pterodroma axillaris</i>	South East, Pitt and Chatham Is.	Dec	Jul	Ranges mainly south and s-e of Chatham Is. Migrates to seas off western S. America.

Species	Breeding Areas	Egg	Fledg	Dispersal/Migration
Cook's Petrel <i>Pterodroma cookii</i>	Little Barrier, Great Barrier and Codfish Is.	Oct	May	Ranges Tasman Sea and east of New Zealand. Migrates to eastern Pacific seas off N. and S. America.
Stejneger's Petrel <i>Pterodroma longirostris</i>	Isla Alejandro Selkirk, Juan Fernandez Archipelago	Dec	Jun	Migrates to N-W Pacific Ocean. Vagrant to North Island, Nov to Jan.
Pycroft's Petrel <i>Pterodroma pycrofti</i>	Islands off northern New Zealand: Mercury, Hen and Chickens, Poor Knights, Cuvier Is.	Nov	Apr	Range poorly known. Migrates to N. Pacific Ocean.
Gould's Petrel <i>Pterodroma leucoptera leucoptera</i>	Cabbage Tree and Boondelbah Is (NSW)	Nov	May	Ranges S-W Pacific and Tasman Sea.
New Caledonian Petrel <i>Pterodroma leucoptera caledonica</i>	New Caledonia	Dec	May	Ranges Tasman Sea and waters off Tasmania and New Zealand. Migrates eastern tropical Pacific. 38 New Zealand records, mainly beachcast.
Blue Petrel <i>Halobaena caerulea</i>	Cape Horn and adjacent islands. S. Georgia, Marion, Prince Edward, Crozet, Kerguelen and Macquarie Is.	Oct	Feb	Ranges from Antarctica to subtropical convergence. Visits New Zealand seas in winter and spring.
Broad-Billed Prion <i>Pachyptila vittata</i>	Tristan da Cunha, Gough, Nightingale, Inaccessible Is. Islands off Fiordland, Foveaux Strait, Stewart, The Snares, Chatham Is.	Aug	Jan	Ranges S. Atlantic and Tasman Sea. Abundant in New Zealand waters.
Salvin's Prion <i>Pachyptila salvini</i>	Prince Edward, Crozet, St Paul and Amsterdam Is.	Nov	Apr	Visits New Zealand waters in winter and spring.
Antarctic Prion <i>Pachyptila desolata</i>	S. Georgia, S. Sandwich, S. Orkney, S. Shetland, Crozet, Kerguelen, Heard, Macquarie, Auckland and Scott Is.	Dec	Mar	Regular visitor to New Zealand seas mainly in winter.
Thin-billed Prion <i>Pachyptila belcheri</i>	Islands off Chile, Falkland, Crozet and Kerguelen Is.	Oct	Mar	Ranges widely in antarctic and subantarctic seas. Visits New Zealand waters mainly in winter.
Fairy Prion <i>Pachyptila turtur</i>	Falklands, S. Georgia, Marion, Prince Edward, Crozet, Kerguelen, St Paul Is. Islands off Victoria and Tasmania. Many islands off New Zealand from Poor Knights to Stewart Is., Snares, Chatham, Antipodes and Macquarie Is. Mainland cliffs Dunedin (South Island).	Oct	Mar	Ranges in subantarctic and tropical seas including Tasman Sea and through New Zealand region. The most common beach-wrecked bird.
Fulmar Prion <i>Pachyptila crassirostris</i>	Heard, Bounty, Chathams, The Snares and Auckland Is.	Oct	Feb	Birds remain close to breeding grounds, straggle to mainland New Zealand.

Species	Breeding Areas	Egg	Fledg	Dispersal/Migration
Bulwer's Petrel <i>Bulweria bulwerii</i>	Islands in N-E Atlantic and N-W and Central Pacific Ocean.			Range of Pacific birds poorly known. Two recorded beachcast: Te Horo Beach Jan 1998, New Brighton Beach 2014.
White-chinned Petrel <i>Procellaria aequinoctialis</i>	S. Georgia, Falkland, Marion, Prince Edward, Crozet, Kerguelen, Antipodes, Auckland and Campbell Is.	Nov	May	Circumpolar range extending in New Zealand waters north to Cook Strait in summer and Far North in winter. New Zealand birds migrate to west coast of S. America.
Westland Petrel <i>Procellaria westlandica</i>	Breeds only in the Paparoa Range, Westland, New Zealand	May	Dec	Ranges mainly in New Zealand seas between Taranaki and Stewart I. Migrates to central or eastern S. Pacific.
Black Petrel <i>Procellaria parkinsoni</i>	Breeds only on Great Barrier and Little Barrier Is.	Dec	Jul	Present in off-shore North Island waters during breeding season. Winters in eastern tropical Pacific.
Grey Petrel <i>Procellaria cinerea</i>	Campbell, Antipodes, Tristan da Cunha, Gough, Prince Edward, Crozet, Kerguelen, Amsterdam and Macquarie Is.	Apr	Dec	Ranges around subantarctic seas. Few sightings around New Zealand mainland and beachcast birds uncommon.
Tahiti Petrel <i>Pseudobulweria rostrata</i>	Tropical and subtropical S. Pacific islands including New Caledonia.			Very rare vagrant to northern New Zealand. One beachcast near Dargaville, June 1998.
Cory's Shearwater <i>Calonectris borealis</i>	Eastern North Atlantic Is.			Migrates to S. Atlantic and S. Indian Oceans. One beachcast Foxton Beach, January 1934.
Streaked Shearwater <i>Calonectris leucomelas</i>	Islands in N-W Pacific.			Migrates to tropical west Pacific. One beachcast Kawhia, February 2006.
Wedge-tailed Shearwater <i>Puffinus pacificus</i>	Subtropical Pacific and Indian Oceans, Kermadec and Norfolk Is.	Dec	Jun	Migrates S-E North Pacific Ocean rarely reaching New Zealand.
Buller's Shearwater <i>Puffinus bulleri</i>	Poor Knights Is.	Nov	May	Ranges widely around New Zealand coast. Migrates to subtropical North Pacific.
Flesh-footed Shearwater <i>Puffinus carneipes</i>	St Paul I., islands off S-W Australia, Lord Howe I., many islands off North I. and Cook Strait, New Zealand.	Nov	May	Ranges around North Island and as far south as Foveaux Strait and Chatham Is. during breeding season. New Zealand and Lord Howe birds migrate to N. Pacific.
Pink-footed Shearwater <i>Puffinus creatopus</i>	Mocha and Juan Fernandez Is.			Migrates to eastern N. Pacific Ocean.
Great Shearwater <i>Puffinus gravis</i>	South Atlantic islands			Migrates to N. Atlantic. Vagrants have reached seas off Chatham Is.

Species	Breeding Areas	Egg	Fledg	Dispersal/Migration
Sooty Shearwater <i>Puffinus griseus</i>	Islands around New Zealand, especially in the south and off Stewart I. Solander, Snares, Antipodes, Auckland, Campbell, Macquarie and Chatham Is. Islands off southern Australia and S. America.	Nov	May	Ranges south to the Antarctic. New Zealand birds migrate to the N. Pacific, mainly becoming beach-wrecked leaving and returning to colonies.
Short-tailed Shearwater <i>Puffinus tenuirostris</i>	Islands around southern Australia, Tasmania and Bass Strait.	Nov	May	Sometimes many are found on New Zealand beaches when migrating to and returning from the North Pacific.
Christmas Island Shearwater <i>Puffinus nativitatis</i>	Tropical and subtropical mid-Pacific Ocean including Hawaiian, Line, Phoenix, Tuamotu, Austral, Ducie, Henderson, Easter and other islands.			Not known to migrate but one found beachcast on Dargaville beach, February 1976.
Newell's Shearwater <i>Puffinus newelli</i>	Hawaiian Group.			Winters in eastern tropical Pacific. One beachcast near Dargaville, November 1994.
Manx Shearwater <i>Puffinus puffinus</i>	North Atlantic islands.	Apr	Oct	Migrates mainly to seas off Brazil and Argentina. Three beachcast on Wellington's west coast: June 1972, Jan 1985 and July 2002.
Fluttering Shearwater <i>Puffinus gavia</i>	Many islands around North Island, New Zealand from Three Kings to Cook Strait and Marlborough Sounds.	Sep	Feb	Commonly seen in coastal waters. Stragglers reach Southland, the Chathams, Lord Howe, New Caledonia and Vanuatu.
Hutton's Shearwater <i>Puffinus huttoni</i>	Seaward Kaikoura Range, South Island.	Oct	Apr	Abundant in coastal waters from Otago Peninsula to Cook Strait. Many migrate to Australian seas.
Little Shearwater <i>Puffinus assimilis</i>	Norfolk, Lord Howe, Kermadec Is. Islands in the S. Indian Ocean, Tasman Sea and off the east coast of North Island, New Zealand including Mokohinau, Mercury and Aldermen Is.	Jun	Dec	Mainly sedentary around breeding islands. In New Zealand ranges from North Cape to Bay of Plenty, straggling to Wellington.
Subantarctic Little Shearwater <i>Puffinus elegans</i>	South Atlantic islands, Chatham and Antipodes Is.			Ranges in subantarctic seas reaching southern South Island.
Wilson's Storm Petrel <i>Oceanites oceanicus</i>	Antarctic coasts and islands and subantarctic archipelagos as far north as Crozet Is.	Dec	Apr	Migrates north of the equator. Occasionally beachcast when passing through New Zealand waters.
Grey-backed Storm Petrel <i>Garrodia nereis</i>	Auckland, Campbell, Antipodes and Chatham Is. Subantarctic islands in S. Atlantic and Indian Oceans.	Sep	Mar	Mainly sedentary around breeding islands.

Species	Breeding Areas	Egg	Fledg	Dispersal/Migration
White-faced Storm Petrel <i>Pelagodroma marina</i>	Widespread on temperate and subtropical Southern Hemisphere islands. In New Zealand islands off North, South, Stewart, Chatham and Auckland Is.	Oct	Mar	Migrates to tropical and subtropical waters. New Zealand birds migrate to eastern tropical Pacific Ocean.
Kermadec Storm Petrel <i>Pelagodroma albiclunis</i>	Hazard I.	Aug	Jan	Little known.
New Zealand Storm Petrel <i>Pealeornis maoriana</i>	Little Barrier I.	Feb	Jun	Ranges off the coast of north-eastern North Island.
Black-bellied Storm Petrel <i>Fregetta tropica</i>	S. Atlantic and S. Indian Ocean islands. Auckland and Antipodes Is.	Dec	May	Circumpolar range. Migrates into the tropics in all oceans.
White-bellied Storm Petrel <i>Fregetta grallaria</i>	Subtropical islands in Atlantic, Indian and Pacific Oceans including Lord Howe and Kermadec Is.	Mar	Aug	Thought to disperse northwards into the tropics after breeding. Very few New Zealand records.
Leach's Storm Petrel <i>Oceanodroma leucorhoa</i>	N. Pacific and N. Atlantic Oceans.			A few reach New Zealand. Three beachcast records: Muriwai Beach, August 1922; Dargaville Beach, Aug 1978; Ninety-mile Beach, October 1998.
Common Diving Petrel <i>Pelecanoides urinatrix</i>	Circumpolar, subantarctic. In New Zealand off eastern North Island, Taranaki, Cook Strait, Marlborough Sounds and Foveaux Strait. Chathams, Snares, Antipodes and Auckland Is.	Aug	Feb	Abundant in New Zealand coastal waters. Found stormcast in all months of the year, especially July-Sept and Dec-Jan.
South Georgian Diving Petrel <i>Pelecanoides georgicus</i>	Circumpolar subantarctic. In New Zealand region Codfish, Bishop and Clerk Is. S. Georgia, Marion, Prince Edward, Crozet, Kerguelen and Heard Is.	Nov	Mar	Ranges at sea near breeding areas.

Adapted from references 18-23.

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