

THE DISTRIBUTION OF BREEDING COLONIES AND STATUS OF THE RED-BILLED GULL IN NEW ZEALAND AND ITS OUTLYING ISLANDS

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INTRODUCTION

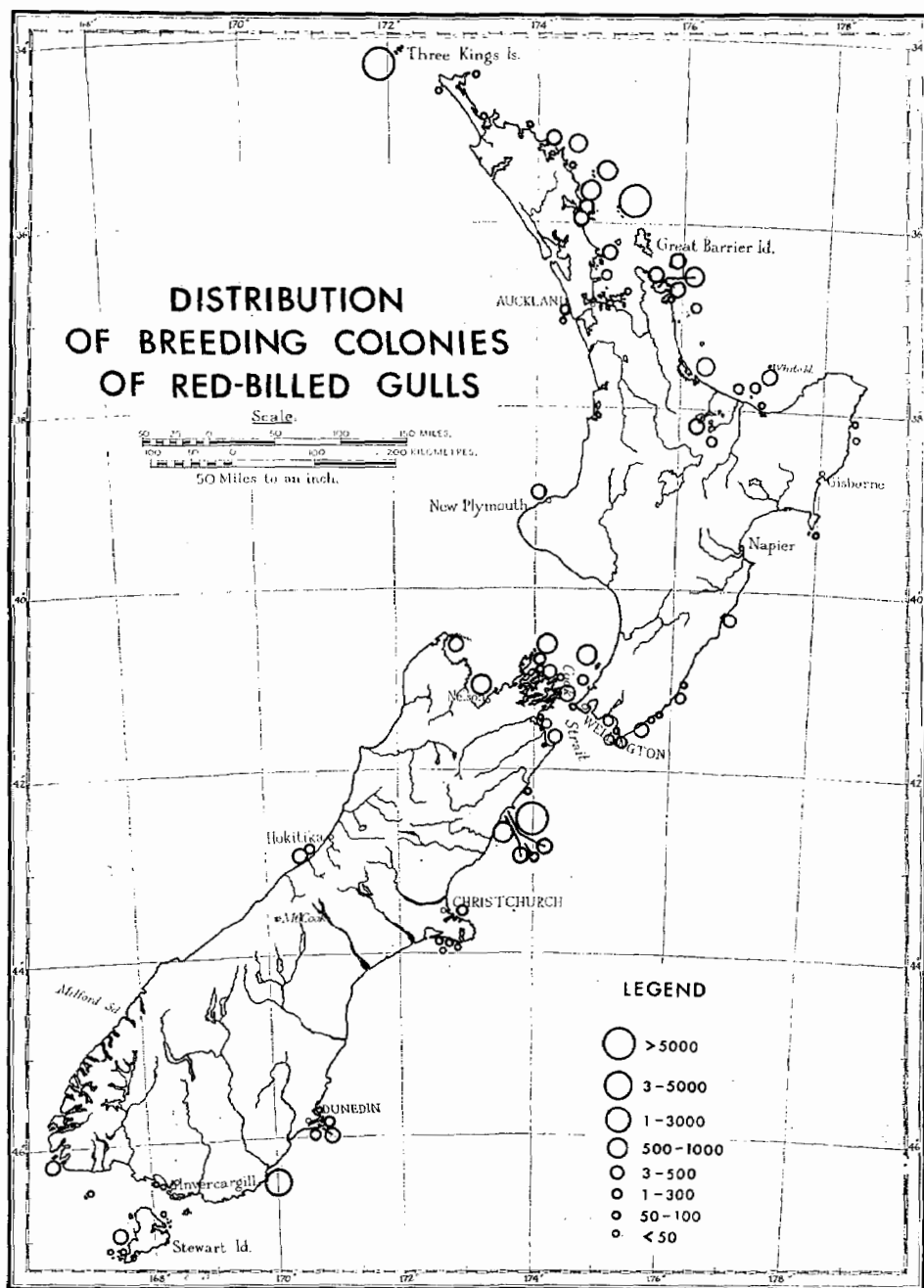
The Red-billed Gull (*Larus novaehollandiae scopulinus*, Forster, 1884) was first recorded by an ornithologist, Forster, in New Zealand during Cook's second voyage in 1773 (Oliver 1955). It is a common bird on the New Zealand coast and many accounts of coastal bird life contain reference to it but probably because it is so common they are usually perfunctory. Specific references to breeding sites are few. In 1940, however, the Ornithological Society of New Zealand started to publish annually in its bulletin, classified summarised notes on New Zealand birds. These contain a number of references to breeding sites and cumulatively have added a great deal to the knowledge of the breeding status of this species.

In 1960, a colour banding scheme, sponsored by the Ornithological Society of New Zealand, was launched to gain information on the dispersal of these gulls from their breeding colonies and as an adjunct to this study, a census of breeding colonies was undertaken and the co-operation of the members of the society was sought. Using the information thus obtained and combining this with the records from the literature, a list of the breeding sites in New Zealand and its outlying islands is here presented as nearly as possible in order from north to south. This plan has been adhered to even with more remote islands, except that Chatham Islands are dealt with last.

DISCUSSION

The pattern that emerges is of concentrations of large numbers of birds into several major colonies. They are occupied annually and have a long tradition of occupancy. Conversely, the smaller colonies are often of an ephemeral nature, and the sites chosen may vary from year to year. In these small colonies the breeding success is low, often they are complete failures.

With the exception of two or three lakeside breeding sites in the Rotorua district, all breeding colonies occur on the sea coast, on off-shore stacks, or on islands. In the North Island the Three Kings Islands colony is by far the largest and Mokohinau Islands colony probably ranks next in size. The largest colony in the South Island is at Kaikoura Peninsula. The mainland birds choose open, bare sites for their colonies and nest close together in compact aggregations. In the sub-Antarctic islands, however, the gulls nest singly and in concealed situations — under overhanging shrubs or ledges, or in clefts or caves. This is made necessary by the presence on these islands of skuas (*Stercorarius skua lonnbergi*) and serves to protect the nesting gulls and their young from the skuas' attacks. They still, however, retain a degree of gregariousness for these isolated nests tend to occur in groups.



DISTRIBUTION OF BREEDING COLONIES OF RED-BILLED GULLS IN NEW ZEALAND AND ITS OUTLYING COLONIES

Locality	Map Reference 1 inch/mile Map. Ref. Map No.		Situation	Substrate	Size of Colony No. of Breeding Pairs	Status	Source of Information		Year of Observa- tion
							Ref. in Literature	Name of Informant	
Three Kings Is. West I.			Rocky slopes and cliffs of islands		"thousands"		1891 Cheeseman, T.F. Trans. N.Z. Inst. 23:408-424		1887
Three Kings Is. Great I.			Especially above South East Bay		"tens of thousands"		1929 Fraser, W.M. N.Z.J.Sci.Tech. 11:148-156		1928
Three Kings Is. Great I.			Above Tasman Bay "east coast"		c. 300 c. 500		1948 Turbott, E. G. Buddle, G. A. Recs.Auck.Inst. and Mus. 3: pts 4 + 5, pp. 319-336		1945
Three Kings Is. South West I.			On lower slopes of the S.E. end of island		"several thousand strong"		1948 Buddle, G. A. Recs.Auck.Inst. and Mus. 3: pts 4 + 5, pp 195-204, also N.Z. Bird Notes 2:129-130		1947
Three Kings Is. Princes I.			Top plateau and down slopes		c. 1000		1948 Buddle, G. A. Recs.Auck.Inst. and Mus. 3: pts 4 + 5, pp 195-204, also N.Z. Bird Notes 2:129-130		1947
Three Kings Is.			All colonies mentioned above		5,000+		1951 Buddle, G. A. Bird Secrets, Wellington		
Three Kings Is. Great I.			Rocky outcrops, cliff ledges and slopes of island	Rock and bare ground	600+	Annual	1954 Turbott, E. G. Bull, P. C. Recs.Auck.Inst. and Mus. 4:245-262		Dec. 1952 Jan. 1953
Three Kings Is.			On whole group of islands		est. 6000÷	Annual	pers. comm.	R. A. Falla	
North Cape	N1 + 2	Between 50+60 North	Rocky coast		Few scattered pairs		1947 Watt, A. H. N.Z. Bird Notes, 2:115-120		1915-1947
Scott Point (Far Nth.)	N3 + 4	190397	On small rock	Rock	12		1949 Michie, R. H., N.Z. Bird Notes, 3:146 + 181		1948
Kaimaumau	N.7	767926	Shelly bank	Shell	c. 20		1959 C.S.N.'s Notornis 8:72.	R. B. Sibson	1958
Cavalli I. Wai-iti Bay	N.8	438832	Island shore		48		1953 Sibson, R. B., Notornis 5:110-114		1951

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Locality	Map Reference 1 inch/mile Map. Ref. Map No.		Situation	Substrate	Size of Colony No. of Breeding Pairs	Status	Source of Information		Year of Observation
							Ref. in Literature	Name of Informant	
Cavalli I. Motukawaiti	N.8	458807	Island shore		a few amongst terns		1953 Sibson, R. B. Notornis 5:110-114		1951
Bay of Islands (Black Rocks)	N.11	620860	Rocky Island		Not stated	Annual	1898 Pycroft, A. T. Trans.Proc.N.Z.Inst. 30:141-146		1895-98
"	N.11	620860	Rocky Island		Not stated	Annual	1961 in litt.	O. M. Cullen	1961
Bay of Islands (Tapeka Pt.)	N.11	628553	Headland		Not stated	Annual	1898 Pycroft, A. T. Trans.Proc.N.Z.Inst. 30:141-146		1895-98 Jan. 1928
Bay of Islands (Urupukapuka I.)	N.12		Rocky pinnacle islets in bay	Rock	c. 150	Probably intermittent	pers. comm.	R. A. Falla	
Cape Brett	N.12	837642	Rocky headland		Not stated	Annual	1949 C.S.N.'s N.Z. Bird Notes, 3:98	J. Shepherd	1948
Cape Brett	N.12	833636	Rocky headland	Tussock or rock	+ 300	Annual	pers. comm.	J. A. Bartle	1962
Whāngaruru Sth.	N.16	848387	Isolated rock	Rock	c. 20		1955 C.S.N.'s Notornis 6:100	F. W. Strumpel	1953
Poor Knights Rocks (Sugar Loaves)	N.17		Cliffs and ledges — both islets		500 +	With gannets and terns — annual	pers. comm.	R. A. Falla	Dec. 1923 Nov. 1933
Tutukaka	N.20	036109	Not stated		Small		1942 Bull, P. C. Bull.Ornith.Soc.N.Z. 1 Year 1941-42.		1941 ?
Taiharuru Rock	N.20	065980	Steep slopes — some vegetation		600 - 700	Annual	pers. comm.	R. A. Falla	Dec. 1923
Pataua I.	N.20	060980	Rocky side of hill and on small islet	Rock	Not stated			O. M. Cullen	
Awarua Rock	N.24	067896	Small off shore rock	Rock	c. 250	Annual		B. D. Bell and A. Wright	Dec. 1964
Parua Bay	N.24	963890	Small rocky island	Rock				O. M. Cullen	
McLeod Bay (Robbs I.)	N.24	001878	Island					O. M. Cullen	
Reotahi (Aubreys I.)	N.24	011843	Island					O. M. Cullen	
Bream Head	N.24	092832	Rocky shore	Rock	c. 250	Annual		B. D. Bell and A. Wright	Dec. 1964
Frenchman I.	N.24	042808	Island					O. M. Cullen	
Hen I.	N.25		Small off shore rock	Rock				O. M. Cullen	
"	N.25		Small corner of mainland		c. 20	Annual		J. A. Bartle	1962
Mokohinau Is.	N.26		On rock		"numbers"	"every second year"	1889 Sandager, F. Trans.Proc.N.Z.Inst. 22:286-294		1880's

Mokohinau Is. (Burgess I.)		N.26	Cliff tops and adjacent slopes	5000 +	Annual and increasing according to lighthouse keepers(1933)	pers comm.	Oct. 1933	R. A. Falla
Mokohinau I.		N.26	Only on Burgess I. on headlands and cliff tops	2,500-5,000	Annually	1946 Fleming, C. A. N.Z. Bird Notes 2:27-29		1944
"		N.26	Around edge of cliffs	20,000 (10,000 pairs?)	Annually	Wilson, R. A. Bird Islands of N.Z. Christchurch		1945
"		N.26	Burgess I. and on off shore rocks	c. 6,500	Annually	1947 Buddle, G. A. N.Z. Bird Notes 2:71-72		1945
"		N.26	Island		Every year	1954 Emmons, C. Notornis 5:253		1950's
Matheson's Bay		N.34	Small off shore islet	c. 150	First year that birds bred here	1961 in litt.	M. Hogg	1961
Cuvier I.		Pt.N.36	Slopes near Lighthouse	250 - 300	Irregular	pers. comm.	R. A. Falla	Oct. 1933
"		Pt.N.36	Island	"hundreds"	Annual	1953 C.S.N.'s Notornis 5:97	R. B. Jenkins	1952
Bird Rock, North Hauraki Gulf			On three rocks	c.100		1954 C.S.N.'s Notornis 5: 229	J. Prickett	1952
Green I. (Mercury Is.)		N.40	On stack to south of I.	"100 + assembled as if preparing to nest"		1947 C.S.N.'s N.Z. Bird Notes, 2:48	C. A. Fleming	1946
Tiritiri I.		N.38	Rocky point N. of lighthouse	50 - 60		pers. comm.	R. A. Falla	Nov. 1923
Tiritiri Matangi I.?)		N.38	On outlying rock	c. 6		1947 C.S.N.'s N.Z. Bird Notes, 2:47	R. B. Sibson	1946
Kuaotunu		N.40	On shoreline stack	c. 500	Sporadic	pers. comm.	J. Peart	1957
"		N.40	On coast 1 mile N. of township	c. 500		1962 in litt.	N. Gleeson	1962 ?
"		N.40	Small rocky islands off shore	c. 200	Annual	1965 in litt.	B. D. Bell and A. Wright	Dec. 1964
"		N.40	Small rocky peninsula	c. 50	Annual?	1965 in litt.	B. D. Bell and A. Wright	Dec. 1964
Te Rehutae		N.40	Small rocky off shore island	c. 200	Annual	1965 in litt.	B. D. Bell and A. Wright	Dec. 1964
Waiheke I. (Nani I.)		N.39	Rocky island	c.20		1961 in litt.	D. F. Booth	1960
Waiheke I. (Putiki Bay)		N.42				1949 C.S.N.'s N.Z. Bird Notes, 3:98	Reported P. H. Basley	Prior to 1948

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Locality	Map Reference 1 inch/mile Map. Ref. Map No.		Situation	Substrate	Size of Colony No. of Breeding Pairs	Status	Source of Information		Year of Observa- tion
							Ref. in Literature	Name of Informant	
Waiheke I. (Koi I.)	N.43	568638	Rocky island		6	1st season at this situation	1949 C.S.N.'s N.Z. Bird Notes, 3:98	G. K. McKenzie	1948
Waiheke I. (Three Sisters)	N.43	?			Several	Transient	1957 C.S.N.'s Notornis 7:83	M. J. Blundell	1956
Muriwai Pt.	N.41	953626	Rocky pinnacle off shore		c. 50		1960 C.S.N.'s Notornis 9:77	M. J. Hogg	1959
"	N.41	"	Rocky pinnacle off shore				1961 C.S.N.'s Notornis 9:249	P. D. G. Skegg	1960
Oaia I. (Motutara)	N.41	938616	Lower ledges of rocky islet		30 - 40	Permanent parasitic on gannet and shag colony	pers. comm.	R. A. Falla	1916-36
Motuihe I. (Rock I.)	N.42	447669	Rocky island	Among mesembryan- themum	20		1949 C.S.N.'s N.Z. Bird Notes, 3:99	O. Cheesman	1948
"	N.42	447669	Rocky island		c. 2		1950 C.S.N.'s N.Z. Bird Notes, 3:212	R. B. Sibson	1949
"	N.42	447669	Rocky island		c. 38	Annual	1954 C.S.N.'s Notornis 5:229	S. Chambers	1953
Whitianga	N.44	207627	Rocks at river mouth		c. 40	First nesting here	1953 C.S.N.'s Notornis 5:97	G. W. Gummer	1952
"	N.44	207627	On high rocks		"small colonies"		1959 C.S.N.'s Notornis 8:72	R. V. McClintock	1958
Alderman Is. (Ruamhua-iti Sugarloaf Rks.)			On steep off shore rock along northern shoreline			Annual	1927 Sladden, B. Falla, R. A. N.Z.J.Sci.Tech. 9:193-205, 282-290		Jan. 1925
Alderman Is. (Ruamhua-iti			Pinnacle rock at east end of island		50 - 100	1925 but not in 1926	pers. comm.	R. A. Falla	Jan. 1925
Mt. Maunganui	N.58	650660	Rocky cliffs	Rock ledges	"fair sized party"	"one season only"	1949 Hodgkins, M. N.Z. Bird notes, 3:116-125		c. 1945
"	N.58	645663	Rocky cliffs		"small"	"again after some years"	1956 C.S.N.'s Notornis 6:206	M. Hodgkins	1955
Motuotau I.	N.58	671659	Vegetation covered island				1960 C.S.N.'s Notornis 7:206	R. V. McClintock	1958
"	N.58	670663	On off shore rock				1960 C.S.N.'s Notornis 7:206	R. V. McClintock	1958
Plate I. (Motunau)			Slopes of main island	Rock and stunted vegetation	350 - 400	Probably annual	pers. comm.	R. A. Falla	Dec. 1924 Jan. 1925

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White I. (East point and North Coast)	Shore line and on tussock slopes	Rock and tussock	1913 Oliver, W. R. B. Emu, 13:86-90	1912
White I. (Te Awapuia)	Boulder bank	c. 70 - 80	1959 Hamilton, W. M. Baumgart, J. L. Dept.Sci.Industr.Res. Bull. 127, 84 pp.	1947
" (Troup Head)		"few score"		
" (Volkner Rocks)		"few hundred"		
" (Te Awapuia)	Boulder bank	141	1964 in litt.	1962
" (Te Awapuia)		130	1964 in litt.	1964
" (N.E. Point)		30	"	"
" (Club Rocks)		15	"	"
" (Volkner Rocks)		c. 30 - 40	"	"
Rurima Rocks		c. 50	1960 C.S.N.'s Notornis 8:206	1958
" (Lizard I.)	"On cliff face	Small colony	1960 C.S.N.'s Notornis 9:77	1959
Whale I. (N.W. Point)		60	1964 in litt.	1964
Whakatane	On steep rock west of harbour	"Large colony"	1958 C.S.N.'s Notornis 7:197	1956
Whakatane Heads		"Colony abandoned"	1960 C.S.N.'s Notornis 8:206	1953
Kohi Point (between Ohope Beach and Whakatane)		c. 30 - 40	1964 in litt.	1964
Whanarua Bay	Off shore rocks		1960 C.S.N.'s Notornis 8:206	1959
Rotorua	Rocky lake shore & islets	Rock and sand	1947 C.S.N.'s N.Z. Bird Notes, 2:47	1945
"	Rocky lake shore & islets	c. 20	1949 ed. Cunningham, J.M. N.Z. Bird Notes, 3:125	1947
"	Rocky lake shore & islets	c. 70	1955 Black, M. S. Notornis 6:167-170	1951
"	Rocky lake shore & islets	c. 100	1955 C.S.N.'s Notornis 6:100	1954
"	Rocky lake shore & islets	c. 150	1958 C.S.N.'s Notornis 7:197	1957
"	On lake shore and islets	430	Unpublished Mss.	1961-62
Rotorua (Sulphur Point)	Mud flat		1961 C.S.N.'s Notornis 7:249	1959
Rotorua (Arikikapakapa golf links)	On scrub covered island in middle of thermal lakelet	c. 20	in litt.	Nov. 1964
Rotorua (Sulphur Point)	On lake shore	Rock and sand	pers. observation	Nov. 1964

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Locality	Map Reference 1 inch/mile Map No.	Situation	Substrate	Size of Colony No. of Breeding Pairs	Status	Ref. in Literature	Source of Information Name of Informant	Year of Observation
Rotomahana	N.86					1955 Black, M. S. Notornis 6:167-170		
Waioatapu	N.85	Near hot pools		c. 75	One year only	1947 Phillipps, W. J., and Lindsay, C. J. N.Z. Bird Notes, 2:73-74		1944
Motuoroa I.	N.90	Seaward side of island				1957 C.S.N.'s Notornis 7: 83	A. Blackburn	1956
Moutara Pt.	N.90					1957 C.S.N.'s Notornis 7: 83	A. Blackburn	1956
New Plymouth (Sugar Loaf Is.) (Pararaki Rk.)	N.108	Off shore rock	Rock			1957 Sedgwick, E. H. N.Z. Bird Notes, 3:42		1948
New Plymouth (Sugar Loaf Is.) Pararaki	N.108	Off shore rock	Rock	c. 200		1957 C.S.N.'s Notornis 7: 83	D. Medway	1955 1956
Moto-a-tamatea	N.108	Off shore rock	Rock	42				
New Plymouth Paratutu	N.108	Rocky shore line		60		in litt.	C. N. Challies	Dec. 1958
New Plymouth Seagull Rock	N.108	Off shore rock	Rock	c. 125	Annual	in litt.	M. Williams	Dec. 1961
Schnapper Rock	N.108	Off shore rock	Rock	c. 100				
Portland I.	N.127	On beach		41		in litt.	A. Wright	Nov. 1960
Porangahau	N.151	On beach	Sand	"several score"		1925 Guthrie-Smith, H. Bird Life on Island and Shore. Edinburgh & London		1910
"	N.151	On sandspit	Sand	c. 45	Annual	1948 Cunningham, J. M. Wodzicki, K. A. Emu 47: 177-198		1945
"	N.151	On sandspit	Sand	c. 20		1952 C.S.N.'s Notornis 4:187	K. A. Wodzicki	1950
"	N.151	On sandspit	Sand	c. 100		pers. comm.	J. M. Cunningham	1951-52
"	N.151	On sandspit	Sand	c. 50	Annual	1953 C.S.N.'s Notornis 5:97	R. H. D. Stidolph J. M. Cunningham	1952
"	N.151	On sandspit	Sand	5 nests (65 birds) 3/1/55		pers. comm.	J. M. Cunningham	1954-55
Mataikona	N.159			"small colony"	Sporadic	1952 C.S.N.'s Notornis 4:187	J. M. Cunningham	1950
"	N.159			c.40 (1/1/53)	Sporadic	pers. comm.		1952-53

Castlepoint		N.159		673688	Rocky shore		Rock	c. 55 (47-48)	Nested here first time 1946-47	1949 C.S.N.'s N.Z. Bird Notes, 3:98	J. M. Cunningham	1947
"	"	N.159	673688	Rocky shore	Rock	c. 40				1950 C.S.N.'s N.Z. Bird Notes, 3:212	J. M. Cunningham	1948-49
Castlepoint		N.159	673688	Rocky shore	Rock	c. 64				1951 C.S.N.'s Notornis 4:50	J. M. Cunningham	1949-50
"	"	N.159	673688	Rocky shore	Rock	c. 30			Successful 1951-52	pers. comm.	J. M. Cunningham	1951-52
"	"	N.159	673688	Rocky shore	Rock	c. 30				1953 C.S.N.'s Notornis 5:97	J. M. Cunningham	1952-53
"	"	N.159	673688	Pocky shore	Rock	c. 60			Annual	pers. comm.	J. M. Cunningham	1954-55
"	"	N.159	673688	Rocky shore	Rock	c. 40				pers. comm.	J. M. Cunningham	1957-58
"	"	N.159	673688	Rocky shore	Rock	c. 60			Annual	in litt. also —	C. N. Challies	1960
										1961 C.S.N.'s Notornis 7:249	C. N. Challies	1960
Kapiti I. (Tokomapuna I.)					Rock	23				1927 Wilkinson, A. S. Emu 26: 237-58		
Kapiti I.				On rock near caretaker's house	Rock	c. 100				1947 Stidolph, R. H. D. N.Z. Bird Notes, 2:121-122		1941
"				On raised beach ½ mile east of Tokohaki Trig	Rock and shingle	73				personal observation	F. C. Kinsky	1960-61
"				On raised beach due east of caretaker's residence	Rock and shingle	400				"	"	1960-61
"				On rocky shoreland 30 chains north of Maraetakaroro Stream	Rock	50				"	"	1960-61
"				On raised beach ½ mile east of Tokohaki Trig	Rock and shingle	300				"	"	1961-62
"				On raised beach ½ mile east of Tiwhapaua Trig	Shingle	8				"	"	1961-62
"				On raised beach due east of caretaker's residence	Shingle	500				"	"	1961-62
"				Tahoramaurea Island	Rocky island	12				"	"	1961-62
"				On stack 10 chains N.W. of Tokohaki Trig	Rock	90				"	"	1962-63
"				On raised beach ½ mile east of Tokohaki Trig	Rock and shingle	250				"	"	1962-63
"				On rocky shore line 15 chains N.E. of Katihe Trig	Rock	7				"	"	1962-63
"				On raised beach ½ mile ESE of Tiwhapaua Trig	Shingle	550				pers. comm.	B. D. Bell Y. A. Bartle	1963-64

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Year of
Observa-
tion

Source of Information
Name of Informant

Status

Size of Colony
No. of Breeding
Pairs

Substrate

Situation

Map Reference
1 inch/mile Map. Ref.
Map No.

Locality

Mana I.	N.160	330475	Ledges of cliffs	c. 70 - 100	1944 C.S.N.'s N.Z. Bird Notes, 1:71 also 1944 Wodzicki, K. A. Oliver, W. R. B. N.Z. Science Rev. 2:10 and 14	K. A. Wodzicki	1943
Cape Terawhiti	N.164		On cliffs	"Large colony"	1946 C.S.N.'s N.Z. Bird Notes, 1:131	J. M. Cunningham	1945
Glenburn Station	N.166		Shore line rock	c. 10	in litt.	R. H. Broughton	1961
Pahaoa	N.166	203087	On rock at river mouth	c. 50	in litt.	K. Clark	1962
Te Awaīti	N.168/9	030963	Rock on shore line	c. 125	1946 Cunningham, J. M. N.Z. Bird Notes, 2:12		Dec. 1945
"	N.168/9	029956	Off shore rock	c. 200	1946 Cunningham, J. M. N.Z. Bird Notes, 2:12		1945
"	N.168/9	030963	Rock on shore line	c. 75	1948 C.S.N.'s N.Z. Bird Notes, 2:168	J. M. Cunningham	1946
"	N.168/9	030963	Rock on shore line	Not nesting	pers. comm.	J. M. Cunningham	1952-53
Palliser Spit	N.165	663092	On shore line	c. 100	1949 C.S.N.'s N.Z. Bird Notes, 3:98	J. M. Cunningham	1947-48
"	"	"	"	"few" c. 40 (pers. comm. subsequently colony unsuccessful, washed out)	1950 C.S.N.'s N.Z. Bird Notes 3:212	J. M. Cunningham	1948-49
"	"	"	"	c. 15 unsuccessful	1953 C.S.N.'s Notornis 5:97		1951-52
"	"	"	"	No nesting	pers. comm.		1952-53
"	"	"	"	"	"		1954-56
"	"	"	"	"	"		1955-56
"	"	"	"	c. 1	"		1956-57
"	"	"	"	c. 8 unsuccessful	1961 C.S.N.'s Notornis 9:249	C. N. Challies	Dec. 1960

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	1 inch/mile Map No.	1 inch/mile Map. Ref.					Ref. in Literature	Name of Informant	
Nelson (Boulder Bank)	S.14		On boulder bank south of lighthouse	Boulders and shingle	c. 200	Annual	personal observation	L. Gurr	1950-51
"	S.14		On boulder bank opposite Atawhai Church	"	840	"			1964-65
Wairau Bar	S.29		Shore of lagoon	Sand	5-6	Annual (in association with Hydroprogne caspia)	pers. comm.	B. D. Bell	1962
Moerepo I.	S.29	345980	Island in lagoon		20	Annual	1965 in litt.	S. Kennington	1962-63
"	"	"	"		50	"	"	"	1963-64
"	"	"	"		60	"	"	"	1964-65
Awatere River	S.29	432872	Sand spit at mouth of river	Sand	"small" usually unsuccessful	Sporadic	pers. comm.	B. D. Bell	1950's
Lake Grassmere	S.29	420740	On island in lake	"	c. 100	Annual	1960 C.S.N.'s Notornis 7:206	D. Merton	1958-59
"	"	"	"	"	c. 250	"	pers. observation	L. Gurr	1959-60
"	"	424735	On road near last year's nesting site	"	250	"	1965 in litt.	S. Kennington	1960-61
"	"	"	"	"	300	"	"	"	1961-62
"	"	425735	On island in lake, near road	"	300	"	"	"	1962-63
"	"	"	"	"	350	"	"	"	1963-64
"	"	"	"	"	240 unsuccessful 40 pairs renested and reared 25 young	"	"	"	1964-65
Irongate Stream (Kaikoura Coast)	S.49	055065	On shore line rock	Rock	c. 20 nesting just starting, numbers may increase later	Associated with Sterna striata	pers. observation	L. Gurr	Nov. 1964
Kaikoura Peninsula	S.49	984880	On rocky reef	Rock	c. 250	Annual	1955 C.S.N.'s Notornis 6:100	B. D. Bell	1953
"	S.49		"	"	c. 800	"	1960 C.S.N.'s Notornis 8:206	D.M.	1958
"	(a) S.49 (b) S.49 (c) S.49 (d) S.49	001890 985883 984880 975878	" " " "	" " " "	c. 2000 c. 60 c. 1000 c. 100	" " " "	pers. observation	L. Gurr	1961
"	"	"	"	"	"	"	pers. comm.	J. Cowie S. Kennington	1961

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		Gurr & Kinsky		BREEDING COLONIES OF RED-BILLED GULL		235			
	S.49	a. b. c. d. above			c. 6000		pers. comm.	J. Cowie	Nov. 1964
Pinnacle Rock	S.49	875864	Off shore rock	Rock	50 +	Annual	pers. observation	L. Gurr	1961
"	"	"	"	"	c. 200	Annual (associated with <i>Sterna striata</i> and <i>Larus dominicanus</i>)	pers. observation	L. Gurr	Nov. 1964
Rileys Lookout	S.49	850848	Off shore rock	Rock	200 +		pers. observation	L. Gurr	1961
Raramai Tunnel	S.49	848851	On rocky shore line	Rock	131	Associated with <i>Sterna striata</i>	pers. observation	L. Gurr	Nov. 1964
"Gull Rock" Goose Bay	S.49	825823	Rocky shore line and stack	Rock	500 +	Annual	pers. observation	F. C. Kinsky	Nov. 1964
"	"	"	"	"	700 +	"	pers. observation	L. Gurr	Jan. 1961
Waitangitoana River	S.63	885055	River mouth shingle bank, south head	Shingle	50 +	Sporadic (with <i>Sterna striata</i> and <i>Hydroprogne caspia</i>)	pers. comm.	R. A. Falla	Nov. 1949
Okarito	S.63		Ocean beach south of river mouth		c. 200	Annual	pers. comm.	R. A. Falla	1949
"	S.63				6		1957 C.S.N.'s Notornis 7:83	J. R. Jackson	1956
"	S.63				c. 10		1961 C.S.N.'s Notornis 9:249	H. R. McKenzie	1961
Sumner	S.84	128512	Rocky headland				1948 C.S.N.'s N.Z. Bird Notes, 2:168	G. Guy	1945
Sumner Head	S.84	128507	Rocky headland and cliff		c. 200 (1962-63)	Annual	pers. observation	F. C. Kinsky and E. G. Turbott	Nov. 1962
Port Levy	S.84				c. 50		1948 Lindsay, C. N.Z. Bird Notes, 3:26-27		1947
Wainui (Akaroa Harbour)	S.94		Rocky coves				1950 C.S.N.'s N.Z. Bird Notes, 3:212	E. W. Dawson	1949
Birdlings Flat	S.94		Rocky shore line		c. 20-30		in litt.	J. R. Jackson	
Tokoroa Bay	S.94		"		"		"	"	
Murrays Mistake	S.94		"		"		"	"	1957
Tumbledown Bay	S.94		"		"		"	"	
Rakaia River	S.93		Near river mouth		"		"	"	
							1932 Stead, E. F. The Life Histories of New Zealand Birds, London	Potts	1860's

DISTRIBUTION OF BREEDING COLONIES OF RED-BILLED GULLS IN NEW ZEALAND AND ITS OUTLYING COLONIES — Continued

Locality	Map Reference 1 inch/mile Map No.		Situation	Substrate	Size of Colony No. of Breeding Pairs	Status	Source of Information		Year of Observa- tion
							Ref. in Literature	Name of Informant	
Whakapohai River	S.87		On rock just off shore from river mouth				in litt.	P. Grant	1962
Potato Point	S.164	262882	On small stacks	Rock	c. 40		in litt.	J. Allan	1963
Otago Peninsula Tairoa Head	S.164	342848	Rocky shore	Rock	c.80		in litt.	J. Allan	1963
Otago Peninsula	S.164	355833	Top and bottom of cliff		c. 120		in litt.	J. Allan	1963
Otago Peninsula Rerewahine	S.164	356825	Rocky shore		220	Annual	in litt.	Anonymous	1959
"	S.164	356825	Rocky shore		c. 200	Annual	1961 C.S.N.'s Notornis 9:249	W. T. Popplewell	1960
"	S.164	356825	Rocky shore		c. 50	Annual	in litt.	J. Allan	1963
"	S.164	356822	"		c. 100				
Wharekakahu	S.164	333711	Rocky stack		c. 77		1961 C.S.N.'s	W. T. Popplewell	1960
Otago Peninsula Telfers Bay	S.164	285695	Rocky shore		"a few"		in litt.	J. Allan	1962
Otago Peninsula Sandymount	S.164	307698	Rocky coastline		"Large numbers"		in litt.	J. Allan	1962
Otago Peninsula Sandfly Bay	S.164	300689	On cliffs		"Hundreds"		1951 C.S.N.'s Notornis 4:50	L. E. Walker	1950
Blanket Bay (Fiordland)							1957 C.S.N.'s Notornis 7:83		
Preservation Inlet			Rocky islet near Kisbee		100	(with <i>Sterna striata</i>)	pers. comm.	R. A. Falla	Dec. 1947
Preservation Inlet			Islet in Otago's Retreat		c. 60	Annual	pers. comm.	R. A. Falla	1950
Nugget Point	S.179		Rocky shore		c. 1000	Annual	pers. comm.	R. A. Falla	1941
Nugget Point	S.179		Rocky shore		c. 2000	Annual	in litt.	A. R. Harris	
Bluff Harbour (Rabbit I.)	S.181 and S.182	330810	Low island				1954 C.S.N.'s Notornis 5:229	O. Wiig	1952
Bluff Harbour	S.181 and S.182	330810	Low island				pers. comm.	F. C. Kinsky	1962
Pourakino R.	S.176	035092	River mouth		c. 30		pers. comm.	F. C. Kinsky	1962
Kawakaputa Bay	S.176	933036			c. 25		pers. comm.	F. C. Kinsky	1962
Pig I.	S.176	050008	Small off shore island				pers. comm.	F. C. Kinsky (W. T. Popplewell)	1962
Centre I. Foveaux Strait			Not located, but birds present in breeding season				pers. comm.	R. A. Falla	Nov. 1934
Solander I.			Between and below large boulders		10 - 15	(associated with fur seal rookery)	1948 Falla, R. A. N.Z. Bird Notes, 3:52-55		Dec. 1947

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Codfish I.	On small stack in the N.W. corner of the island	"small"	1950 Dell, R. K. N.Z. Bird Notes, 3:231-235	1948
Hazelburg Group				
Stewart Island (Halfmoon Bay)	•	c. 50	Annual	1962
Stewart Island (Doughboy Bay)		c. 200	Annual	1964
Solomon I. (South Cape Group)	On high rocky reef, all nests seen were under shelter	15 - 20	In association with Sterna striata and Sterna vittata	Jan. 1955
Big South Cape I.	On rocky point	18	All eggs eaten by Larus dominicanus	1931
			1932 Stead, E. F. The Life Histories of N.Z. Birds, London	
			See also	
			1959 Wilson, R. A. Bird Islands of N.Z., Christchurch	
			Editor's note:— Wilson gives Solomon Island as the locality of this colony.	
Moggy I. (Mokinui I.)	On high rocky reef, all nests seen were under shelter	20 - 30	In association with Sterna striata and Sterna vittata	Jan. 1955
Snares I.	On coastline	Several small colonies	1943 Fleming, C. A. N.Z. Bird Notes,	1947
"	"Underneath veronicas"		1943 Stead, E. F. N.Z. Bird Notes, 3:69-80	1947
"		c. 100	Annual (associated with Sterna vittata)	Jan. 1948
Auckland Is. Webbing Bay Ocean I. Ewing I.	All small colonies, all under rocks or in caves	15 - 20 15 - 20 15 - 20	Annual	1942-44 Nov. 1954 Dec. 1962
			Richdale, L. E. Wildlife on an Island Outpost, Dunedin	
			pers. comm.	
			R. A. Falla	
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DISTRIBUTION OF BREEDING COLONIES OF RED-BILLED GULLS IN NEW ZEALAND AND ITS OUTLYING COLONIES — Continued

Locality	Map Reference 1 inch/mile Map No.	Situation	Substrate	Size of Colony No. of Breeding Pairs	Status	Ref. in Literature	Source of Information Names of Informant	Year of tion Observa-
Campbell I. Windlass Bay Northwest Beach		On coastline in clefts of rocks		Various solitary pairs and small groups		1962 Bailey, A. M. Sorenson, J. H. Subantarctic Campbell Island, Proceedings No. 10, Denver Museum of Natural History	J. H. Sorenson	1942 and 1943
Campbell I.		Middle and Northwest Bays in clefts of rocks		Various solitary pairs		1963 Wright, A. Notornis 10:240		1962
Chatham Is.		On rocks well out from shore				1924 Archey, G. Lindsay, C. Rec.Cant.Mus., 2:187-201		1924
"		At many points around the coast				1939 Fleming, C. A. Emu 38:492-509		1937-38
"	(Nga-toka-turua)	On ledges of off shore stack Rock Between Cape Young and Cape Pattison		c. 50		pers. comm	B. D. Bell	1961
"	(Kaingaroa)	Rocky shore line		c. 40		"	"	"
"	(Okawa Pt.)			c. 500		"	"	Sept. 1961
"	(Weeding Pt.)			c. 20		"	"	"
"	(Cape Fournier)	Rocky cliff faces		c. 50 preparing to nest		"	"	Oct. 1961
"	(Mangere Is.)					1924 Archey, G. Lindsay, C. Rec.Cant.Mus. 2:187-201		1924
"	"			c. 12		pers. comm.	B. D. Bell	1961
"	(South East I.)			c. 50		"	"	"

Sometimes others species of birds nest in association with Red-billed gulls. Black-backed gulls (*Larus dominicanus*) and Black-billed gulls (*Larus bulleri*) in small numbers occasionally attach themselves to Red-billed gull colonies. At Rotorua Red-billed and Black-billed gulls in almost equal numbers, some 400 pairs of each species, breed annually in close proximity. This however is exceptional and atypical. White-fronted Terns (*Sterna striata*), however, are frequently found breeding in association with Red-billed Gulls. Apparently they are attracted by the aggregation of the breeding gulls for they almost invariably establish their colonies later than the gulls. This association often leads to a loss of a proportion of the terns' eggs through gull predation. Sometimes small groups of Caspian Terns (*Hydroprogne caspia*) breed near or amongst Red-billed gull colonies and on the sub-Antarctic islands the Antarctic Tern (*Sterna vittata bethumei*) breeds alongside these gulls. Red-billed Gulls sometimes nest with shags (*Phalacrocorax* spp.) or gannets (*Sula bassana serrata*), the gulls supplementing their food supply by scavenging around the colonies of their associates.

The distribution of the colonies is predominantly on the east coast. The exceptions are New Plymouth, Kapiti Island, Mana Island, Fiordland, and the small colonies at Muriwai and Okarito. There are long stretches of uninhabited coast on the west of the South Island and consequently the records may not be as complete for this coast as is the case for the eastern seaboard. It is considered however that this paucity of colonies on the west coast is as real as it is apparent and that it is linked with availability of food.

A constant, abundant, and readily available food supply is necessary to support such concentrations of adults and to feed the nestlings when they hatch. At Grassmere, at Kaikoura, and at Kapiti the young are fed extensively on small crustacea. At Nelson, although the colony is close to the city where a ready supply of scraps and offal is available, the nestlings are mainly fed on small fish. It appears therefore that large colonies can only occur where a reliable pelagic food supply is available. This means that this type of food not only must occur within foraging range but that it should also be available reasonably continuously. A surface feeding bird like the Red-billed Gull requires relatively calm conditions to obtain its food at sea, thus feeding is restricted to lee-shores. On the otherwise open and exposed west coast only in the vicinity of New Plymouth, Kapiti and Mana Islands, and in Fiordland are extensive areas of sheltered waters available for the gulls to forage in, and thus large colonies are restricted to these areas. Carrick and Murray (1964) have shown that food supply determines the location of nesting colonies in Australia.

Information in colony size from year to year is available in a few cases. Most of these show that numbers are increasing, especially in the large colonies, i.e. Nelson and Kaikoura. The numbers given, however, are in most cases estimates so no more than broad tendencies can be inferred. A conservative estimate of the total breeding population based on the information herein would be something in the order of 40,000 breeding pairs and it is shown that these birds breed, or have been known to do so, at some 166 different localities in the New Zealand region.

The Red-billed Gull is, therefore, obviously well adjusted to European settlement in New Zealand, is numerous and apparently is increasing.

ACKNOWLEDGEMENTS

The authors wish to acknowledge their gratitude to all who have responded to their request for information (they are named beside their contributions in the list) and to Dr. R. A. Falla for helpful discussion and comments.

GENERAL REFERENCES

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SHORT NOTE

WHITE-CAPPED NODDY AT SPIRITS BAY

On the afternoon of 10/1/65 I was able to watch a White-capped Noddy (*Anous minutus*) for about two hours at Spirits Bay.

The bird was first noticed on the edge of a group of c.100 White-fronted Terns (*S. striata*) which were resting on the beach at the eastern end of the bay. My first impression was of a bird about the size and shape of a White-fronted Tern but with the colours reversed. It was uniformly coloured a dark greyish brown except for the crown and nape, which were white shading to greyish white at the back of the head. Prominent features were a white line under and extending back slightly from the eye, and a jet black line running forward from the eye over the lower forehead. There was also a small area of jet black directly behind the eye. The bill and legs were black and the feet large and webbed.

When the flock was disturbed, the noddy separated from the terns and flew over the brackish pool formed by the Kapowairua Stream just behind the beach. Here it hovered for some time just above the water apparently feeding. Eventually it settled down near the far bank almost up to its thighs in the water; and, in the company of five Red-billed Gulls (*L. scopulinus*), which dwarfed it, it proceeded to preen itself for some time. At this point, the stream is about a chain wide, and the noddy was not at all disturbed at my moving about on the opposite bank photographing it, using a 135mm. telephoto lens.

The bird flew off once again, but I located it back on the beach, on the edge of the group of terns. Here I attempted a careful approach and although the terns moved gradually further away, the noddy stood its ground, and, to my surprise, I came as close as only five yards from it before it flew off again. With the terns, it moved a considerable distance along the beach. The weather at the time was fine and sunny, but the preceding few days had been dull and unsettled in the Kaitia area.

The photographs confirm the identification of the bird as a White-capped Noddy. Also, shortly after observing the bird, I was able, by the courtesy of Mr. G. Turbott, to examine the specimens held in the Auckland War Memorial Museum.

— M. G. MACDONALD