

THE LAUGHING OWL *SCELOGLAUX ALBIFACIES* (GRAY, 1844)

A GENERAL SURVEY OF A NEAR-EXTINCT SPECIES

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ABSTRACT

The Laughing Owl (*Sceloglaux albifacies*), one of the two owls native to New Zealand, was once widely-distributed but is now close to extinction — if not already so. It began to disappear in the North Island in the early 19th century or before, and rapidly became scarce in the South Island after about 1880. It has not been “officially” seen since 1914, though persistent reports of its continued presence in parts of the South Island are still received. The species’ appearance, calls, behaviour, food habits and breeding biology are described and speculations made about the reasons for its disappearance.

INTRODUCTION

Two species of owl are native to New Zealand — the Morepork (*Ninox novaeseelandiae*), which also occurs in Australia and belongs to a widely-distributed genus, and the Laughing Owl (*Sceloglaux albifacies*), which is the only representative of an endemic genus. Both were originally fairly widespread — the Morepork predominantly in forest, the Laughing Owl predominantly in open country. The Morepork is still common in most areas of suitable habitat, but the Laughing Owl is close to extinction. Although there have been no confirmed recent sightings, circumstantial evidence is in favour of its continued survival, at least in the South Island.

The European Little Owl (*Athene noctua*), liberated in a number of places in the South Island between 1906 and 1910, is now common in open country in many districts. It has been reported from the southern part of the North Island and from Stewart Island but its continued presence has not been confirmed in either place.

DESCRIPTION

Since there has been no fully-substantiated record of Laughing Owls since 1914 and it was already rare long before then, we have to rely on authors such as Buller (1873, 1883, 1888, 1905), Smith (1884) and Potts (1870) for first-hand accounts of the living bird.

Size: Mounted specimens give the visual impression of being twice as big as those of the Morepork; and a fresh specimen weighs about 21 oz. (0.6 kg) according to Rowley (1876-1878). Falla *et al.* (1966) give the length, apparently “of the flying bird from the tip of the bill to the tip of the tail” (p. 14), as 15 in. (i.e. 37.6 cm),

though this is more likely to be the bill-to-tail measurement of a mounted specimen or study skin. Buller (1905) recorded a female as having a length of 17.5 in. (c. 44 cm) and Potts (1870) gave the following measurements for three specimens, the first of which was fresh and the third Gray's (1844) type specimen:—

	1	2	3
Bill	1.4 in (i.e. 3.6 cm)	—	1.4 (3.6 cm)
Tarsus	2.8 in (7.2 cm)	3 $\frac{3}{8}$ (8.5 cm)	2.5 (6.4 cm)
Wing	13 in (32.5 cm)	10 $\frac{1}{4}$ (25.7 cm)	11.0 (27.7 cm)
Length	17.3 in (43.5 cm)	16 $\frac{3}{8}$ (41.2 cm)	15.5 (38.8 cm)

Gurney (1896) reported a tip-to-tip wing span of 28 in. (c. 70 cm) on a fresh specimen. All the above data refer to South Island birds.

Plumage: Potts (1870), Buller (1873, 1888) and Gurney have described the fresh plumage in considerable detail, and more recent descriptions incorporating these and the examination of a series of skins have appeared in Oliver (1955) and Falla *et al.* (1966). To quote the latter:—

“A large owl with yellowish-brown plumage striped with brown; white stripes on scapulars (sometimes also feathers edged white rather than yellowish-brown on hind-neck and mantle); face white behind and below eyes, greyish towards the centre, the feathers with brown shaft-lines; wings and tail brown with brownish-white bars; tarsus (feathered) yellowish to reddish-buff; toes “fleshy brown” or “pale yellow”.”

Smith (*in* Buller 1883) recorded that there is a very full post-nuptial moult between December and February, during which the birds become almost naked — an observation made on captive birds. Newly-hatched young are sparsely covered with coarse yellowish-white down, the abdomen being bare (Buller 1888).

Other Parts: The eyes are “a very dark brown, large and rather prominent; beak and nostrils [are a] . . . gray horn colour; claws, which are not in the least pectinated, are the same, with dark tips. Its toes have long bristly hairs on the upper surface . . . The eyelid is gray, and the toes and soles of the feet are reddish-brown, the latter covered with numerous small spicules.” (Gurney 1896).

Distinction from Morepork: Although there is, apparently, only a partial overlap of habitat, there is sufficient for confusion to be possible on this ground alone. In addition, the Morepork is the only species with which the Laughing Owl is likely to be confused if more than a fleeting glance is obtained; for the Little Owl, although occupying much the same habitat as the Laughing Owl, is very much smaller (smaller even than a Morepork), paler and more diurnal. (Fig. 1).

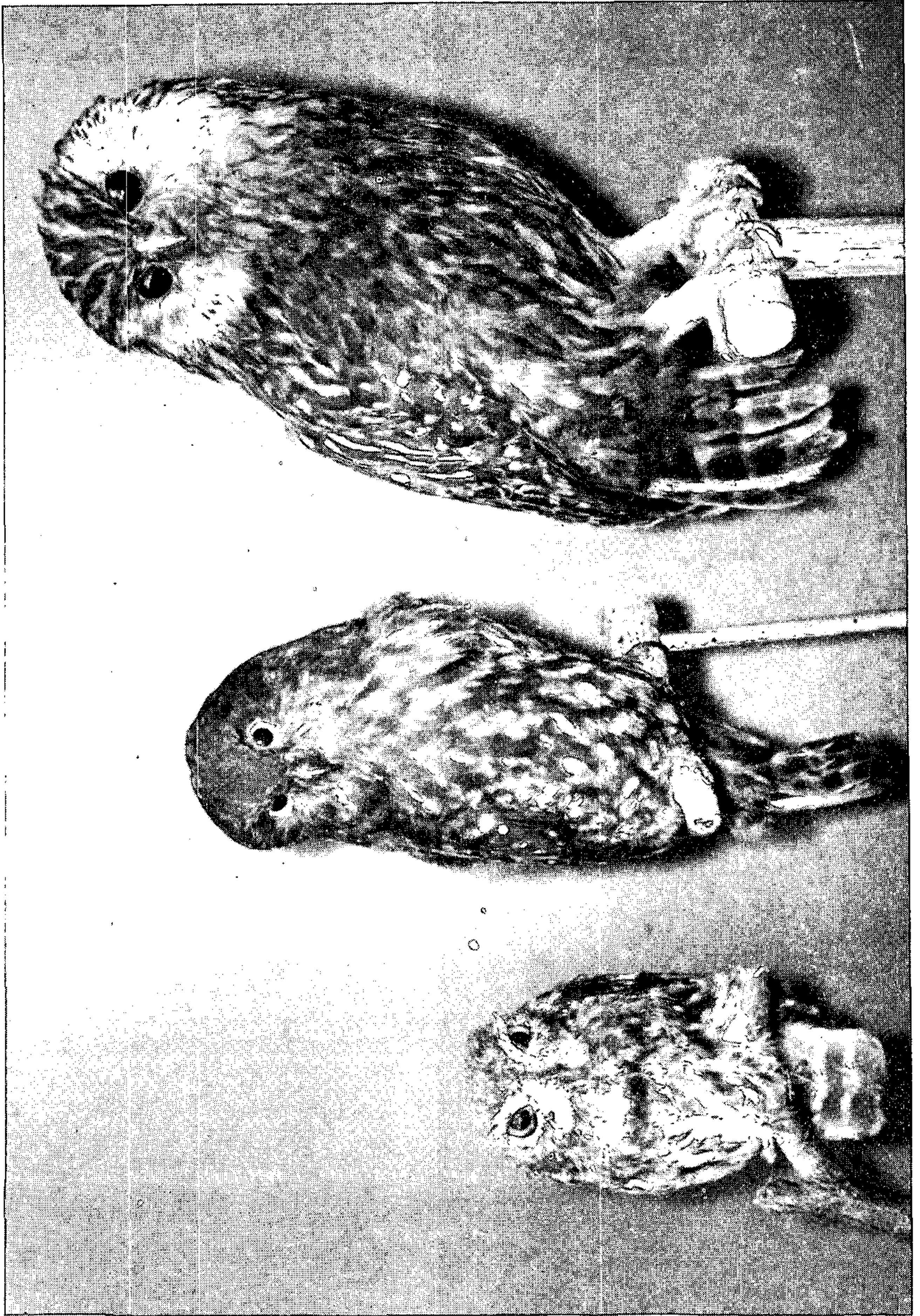


FIGURE 1 — The three New Zealand owls. From left to right: Little Owl, Morepork and Laughing Owl. (Specimens by courtesy of the Dominion Museum).

Apart from its large size, white face and brown (rather than golden) iris, the Laughing Owl is yellower and more clearly streaked and mottled on the back than the Morepork. Its underparts and head are less streaked and mottled and its tail is noticeably proportionately shorter.

Calls: Potts (1870) described a series of "doleful shrieks" similar to, but louder and more strident than, a call of Cook's Petrel. Black (*in litt.* to H. R. McKenzie), who knew the bird well in South Canterbury about 70 years ago, stated that the cry was a "prolonged cack-cack-cack" which could be heard incessantly on rainy nights and which was similar to, but slower and more guttural than, the call of the Mottled Petrel. Smith (*in* Buller 1883) said calls varied seasonally and that the voice of the male was harsher and louder than that of the female. The evening call of a captive pair was "in waking up . . . precisely the same as two men cooeing to each other from a distance." Buller (1888), also remarking on captive birds, described peculiar barking noises "just like the yelping of a young dog" and miscellaneous mewings and chucklings. It is said that, in the wild, the birds' calls are more frequent at dusk, especially before rain or when drizzle is falling. Since none of the calls described seems similar to those made by the other two owls, petrel-like calls heard after dark in suitable habitat (see below) are now the best indication of the possible presence of Laughing Owls.

TAXONOMY

Australia's only genus of the subfamily Striginae, *Ninox*, is obviously a more recent arrival in New Zealand than *Sceloglaux* — the late Pleistocene (approximately 15,000 years B.P.) as against the Neogene (1-25 million years B.P.) according to Fleming (1962).

The genus *Sceloglaux* (Kaup, 1848) is restricted to New Zealand and is provisionally divided into two subspecies — *S. a. albifacies* (Gray, 1844) in South and Stewart Islands and *S. a. rufifacies* Buller, 1904, in the North Island. The origin and affinities of the genus have never been satisfactorily determined.

Although two subspecies are currently accepted (OSNZ Annotated Checklist, 1970) such acceptance rests more on the basis of theory than fact. Only two recent specimens have been taken from the North Island, both of which are now lost, and one of these, the missing type specimen of *S. a. rufifacies*, has been the subject of controversy. It was obtained in the Wairarapa district in 1867 or 1868 and described by Buller (1904). When examined by Rothschild, Hartert and Hellmayr in the Tring Museum the specimen was judged to be immature and to have been fitted with a tail belonging to *Ninox* (Rothschild 1907). Furthermore, Rothschild had specimens of the South Island bird which closely resembled it in colour. However, on account of the rufous face of this single example he was prepared (provisionally no doubt) to accept Buller's claim for a new

subspecies. According to Scarlett (*in litt.* & *in prep.*), Buller's observation that the North Island subspecies was smaller than that of the South Island is not supported by the comparison of measurements of subfossil bones — "North Island bones are often as long as any from the South."

The type of the South Island subspecies was obtained at Waikouaiti by Earle about 1843 (Gray 1844) and is now in the British Museum (Natural History), London.

Since the distance from the New Zealand mainland to the Chatham Islands is about 400 miles it seems reasonable to suppose that the Laughing Owls once found there (Forbes 1893, Dawson 1960) might constitute yet another subspecies; unless, of course, they were only a temporary, vagrant population.

HABITAT

According to Potts (1870) and Smith (1884), who were the most familiar with the living bird, the species was generally found in and around rocky areas, either in open country or at the margins of scrub or forest. It apparently hunted for its food over open ground, perhaps spending an appreciable amount of time on the ground itself, and roosted and nested in fissures in rocks (having an alternative name of rock owl as well as its common Maori name of *whekau*). The maps show the distribution of records of the species and of limestone outcrops. Though there is a considerable overlap, it is obvious that the Laughing Owl did occur in other rocky places as well. In European times the main geographical range appears to have been the eastern foothills of the Southern Alps from about Dunedin northwards to inland Marlborough and Nelson — and especially in the central part of this region; though its relative abundance there may be, at least in part, a reflection of the "abundance" of interested observers. Be that as it may, it is from this central part that many of the unconfirmed reports of the continued presence of Laughing Owls still come.

DISTRIBUTION

General: All records plotted on the maps are those of actual sightings, bones or eggs. We have had to use some discretion in mapping the sight records — only those made by "competent ornithologists" have been accepted, and even here a subjective judgment is required. If the reports have reached us second-hand, we have accepted them providing the interviewer has been an ornithologist willing to vouch for the reliability of the original observer. Only reports citing definite localities have been used — obviously, records such as "Fiordland," "Canterbury," "Nelson" have had to be ignored when mapping. Reports based on calls have been disregarded because of the difficulty of assessing their reliability.

There are no acceptable records of Laughing Owls in the North Island north of a line joining Cape Egmont with East Cape

and very few in the South Island west of the Southern Alps. These gaps cannot be taken as accurately reflecting the true range (there are, even now, unconfirmed reports of Laughing Owls in the rough limestone and forested country west of Mt Pirongia and in the Urewera country). But the North Island gap could at least be taken as an indication that the process of extinction was much in advance of that in the South Island. According to Best (1908), there were Maori recollections of Laughing Owls being present in the Urewera country up to about 1855 but the birds had been getting scarcer since about the time European settlement began. Buller (1905) gave the 1840s as the period at which the diminution in numbers first became apparent.

In the South Island there appears to be nothing in Maori tradition to give any idea of early range or abundance; in European times the main falling-away of the species seems to have occurred, generally, during the last quarter of the nineteenth century. The paucity of records from Stewart Island permits of no speculation on the history of the species there, and all that can be said of its extinction on Chatham Island is that it must have pre-dated any European occupation.

North Island: Of the ten records, only one refers to this century, five refer to the period between about 1850 and 1900 and the rest are subfossil or midden material.

Details are as follows (see Fig. 2):—

1. Waikohu, near Te Karaka, 1889, one seen (Buller 1905)
2. Near Mt Egmont, 1854, specimen taken, later lost (Buller 1905)
3. Near Purangi, Waitara R., about 1930, one seen (OSNZ Recording Scheme)
4. Kaimanawa Range, 1890, sight record assumed (Oliver 1955)
5. Dartmoor, subfossil bones (Scarlett, pers. comm.)
6. Hukanui, subfossil bones (Scarlett, pers. comm.)
7. Wairarapa "about 50 miles from Wellington, 1868-9, adult female," N.I. type specimen, lost (Buller 1904)
8. Martinborough, subfossil bones (Stidolph 1921)
9. Paremata, pre-European, bones in midden (Scarlett, pers. comm.)
10. Near Porirua, before 1892, bird nested in hut (Buller 1892)

We have not accepted the Little Barrier Island record (Hutton 1869, Turbott 1961) because of the vagueness of the description and the possibility of confusion with petrels. However, if Laughing Owls did reach the Chathams there is no reason why they should not have been able to reach Little Barrier, though their occurrence there would be far north of any other of which we have record.

South Island: As was found for Kakapo and Takahē (Williams 1956, 1960) records of all kinds are more numerous for the South Island than the North and the species has apparently survived longer there. Of the 40 records for which there are dates 40% refer to

*Distribution of Laughing Owl
reports*

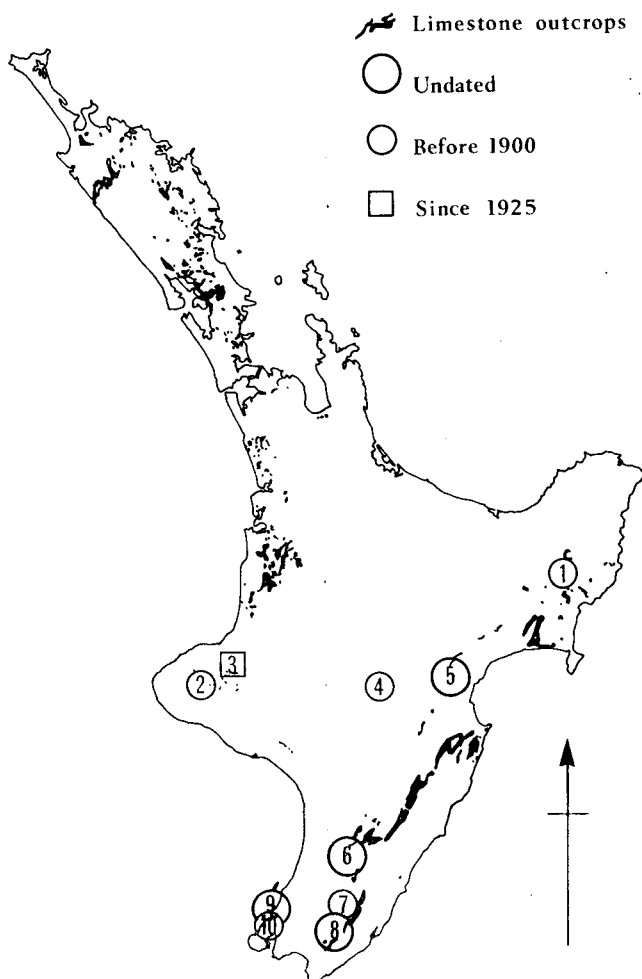


FIGURE 2

the period 1843-1875, 25% to the period 1876-1900, 22% to 1901-1925 and 13% to 1925-1960. Though there have been a few reports since, from North Otago and Fiordland, none of these is acceptable, though there is good reason to hope that some may eventually be confirmed, as the informants seem reliable and most of the reports refer to areas known to lie within the species' range.

The distribution of the records for the various periods, including those undated or subfossil, suggests more of a widespread gradual decline in numbers than a shrinkage in geographical distribution, though there have been no reports from Southland or north- or mid-Canterbury for nearly a century. These former areas of distribution are probably those most generally modified by man.

Stewart Island: Only two records are known, neither of which refers to this century. This could imply near- or complete extinction, a lack of suitable observers, or both. Most of the island's 700 sq. mi. are still little modified, but the area of suitable habitat would not be extensive and is probably limited mainly to the north and north-western sectors. Since Stewart Island's avifauna has suffered proportionately less change than those of North, South or Chatham Islands (Williams 1962) its chance of still supporting Laughing Owls must be fair.

Chatham Islands: Acceptance of the species' occurrence on Chatham Island depends solely upon bones identified by Forbes (1893) and their identity confirmed by Dawson (1960).

(A) **Subfossil, midden and undated material** (Fig. 3)

1. Takaka and Golden Bay, subfossil bones, Canterbury Museum
2. Lake Grassmere (Marfell Beach) subfossil bones, Canterbury Museum
3. Rakautara, subfossil bones, Canterbury Museum
4. Kaikoura, subfossil bones, Canterbury Museum
5. Pyramid Valley, subfossil bones, Canterbury Museum
6. Waipara, subfossil bones, Canterbury Museum
7. Redcliffs (Christchurch), subfossil bones, Canterbury Museum
8. Mt Somers, subfossil bones, Canterbury Museum
9. Mt Peel, egg, no date, Canterbury Museum
10. Mackenzie Country (? Lindis Pass) nest and egg fragments (Buller 1875)
11. Lake Ohau, mounted specimen, no date, Otago Museum (Darby, in litt.)
12. Benmore, subfossil bones, Canterbury Museum (Ambrose 1970)
13. Shepherd's Creek, subfossil bones, Canterbury Museum
14. Timaru area, subfossil bones, Canterbury Museum
15. Waimataitai, midden material, Canterbury Museum (Trotter 1965)
16. Otago, midden material, Canterbury Museum (Trotter 1965)
17. Earnscliffe, subfossil bones, Canterbury Museum
18. Waikaka, egg, no date, Canterbury Museum
19. Castle Rock, subfossil bones (Hamilton 1892)
20. Forest Hill, subfossil bones, Otago Museum (Forster in litt.)
21. Riverton, male specimens, Otago Museum (Forster in litt.)
22. Invercargill area, female specimen, Buller collection, Canterbury Museum
23. Native Island (Stewart Island), midden material, Canterbury Museum
24. Chatham Island, subfossil bones, British Museum (Nat. Hist.) (Forbes 1893, Dawson 1960)

*Distribution of undated
Laughing Owl reports*

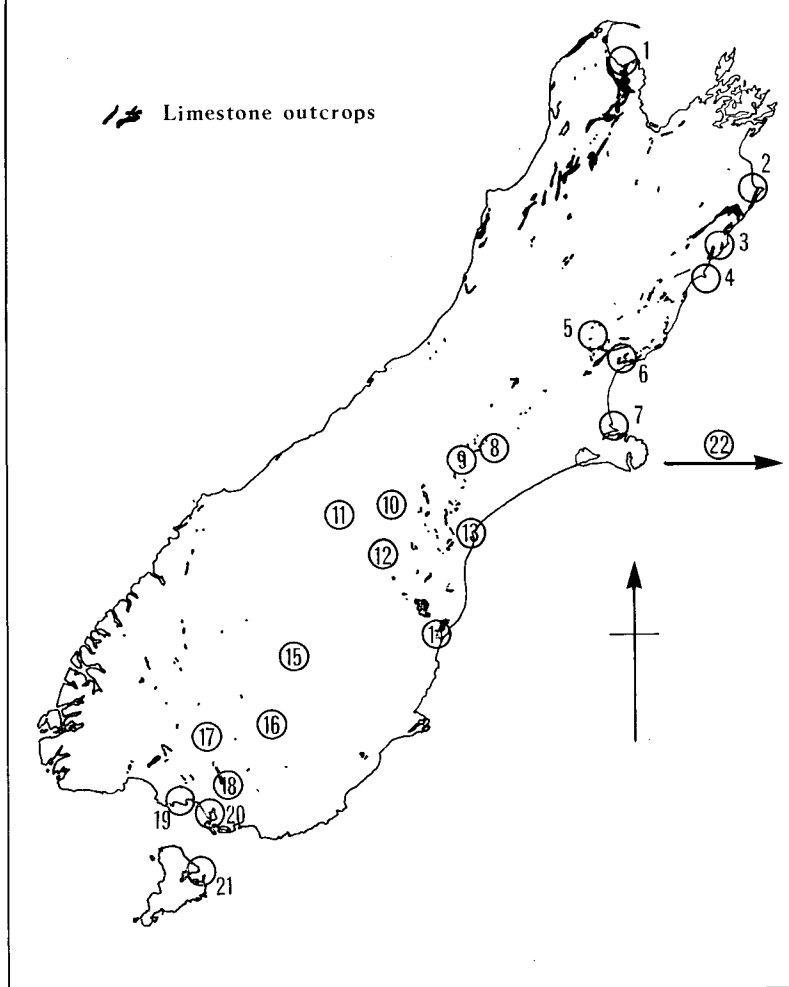


FIGURE 3

(B) Recent, before 1900 (Fig. 4)

1. Tadmor, late 1880s, captured and killed (Kingsley 1890)
2. Bealey, before 1873, sight record (Buller 1873)
3. Cass R., 1868, kept in captivity in Christchurch gardens (Potts 1870)
4. Point Station, 1869, killed (light-coloured specimen) (Potts 1870)
1881, killed (Potts 1882)
5. Mt Hutt, before 1870, sight record (Potts 1870)
6. Rockwood, 1854, captured, killed by dog (Potts 1870)
7. Rangitata R., before 1870, one killed (Potts 1870)
before 1870, sight record (Potts 1870)
8. Geraldine, 1897, 1898 eggs, Canterbury Museum
9. Kakahu Bush, before 1870, one killed, Canterbury Museum (Potts 1870)
Opuha, 1894, egg, Canterbury Museum
10. Albury, about 1881, at least 5 kept in captivity (Smith in Buller 1888)
11. Levels Station, before 1870, one killed, Canterbury Museum (Potts 1870)
12. Timaru area, 1874, specimen in Buller Collection (Buller 1888)
13. Lake Wanaka, 1886, sight record (Junge in litt.)
14. Lindis Pass, 1867, captured and killed (Potts 1870)
15. Kurow, 1895, specimen, Canterbury Museum
16. Shag Valley, before 1870, sight record (Hector in Potts 1870)
17. Waikouaiti, about 1843, type specimen (Gray 1844)
before 1870, sight record (Hector in Potts 1870)
18. Blueskin Bay, 1874, specimen in Buller Collection (Buller 1905)
19. Popotunoa, before 1870, one killed (Hector in Potts 1870)
20. Silverstream, 1884, specimen in Reischek Collection (Rākitansky in litt.)
21. Stewart Island, 1881, kepi in captivity Amsterdam Zoo 1882-86,
Dominion Museum

The Otago Museum has a complete skeleton labelled "Otago, 1883." There are reliable records of calls being heard in the Upper Rangitata (under Mt Potts) in 1861 and in the upper Ashburton Valley in 1857 (Potts 1870); at Kakahu and the Opihi Valley about 1892 (Smith 1893).

(C) Recent, since 1900 (Fig. 5)

1. Goulund Downs, 1918, sight record (Clouston, Dept. Internal Affairs file Sept. 1919)
2. Mt. Maud (Aniseed Valley), 1939, sight record (Jackson 1957)
3. Conway R., about 1907, sight record (Hope 1927)
4. Albury, about 1901, castings, i.e. pellets (Smith in Buller 1905)
5. Hanging Rocks (Pleasant Point), 1903-4, sight record (Black in litt.)
6. Timaru area, 1910, specimen, Canterbury Museum
7. Hazelburn (Castle Rocks), 1904, one killed (Black in litt.)
8. Bluecliffs, 1914, specimen (Woodhouse 1959, Falla et al. 1966)
9. Mt Horrible, 1912-15, sight records (Evans pers. comm.)
10. Waianakarua, 1960, egg fragments (identified J. Kikkawa in litt.)
11. Waitati, 1930s, sight record (Roderick pers. comm.)
12. Dunedin area, 1903, eggs, Canterbury Museum
13. Manapouri - Te Anau area, sight record (Orbell 1950)
14. Lake Thomson, 1930, sight record (Bull & Falla 1951)

*Distribution of Laughing Owl
reports before 1900*

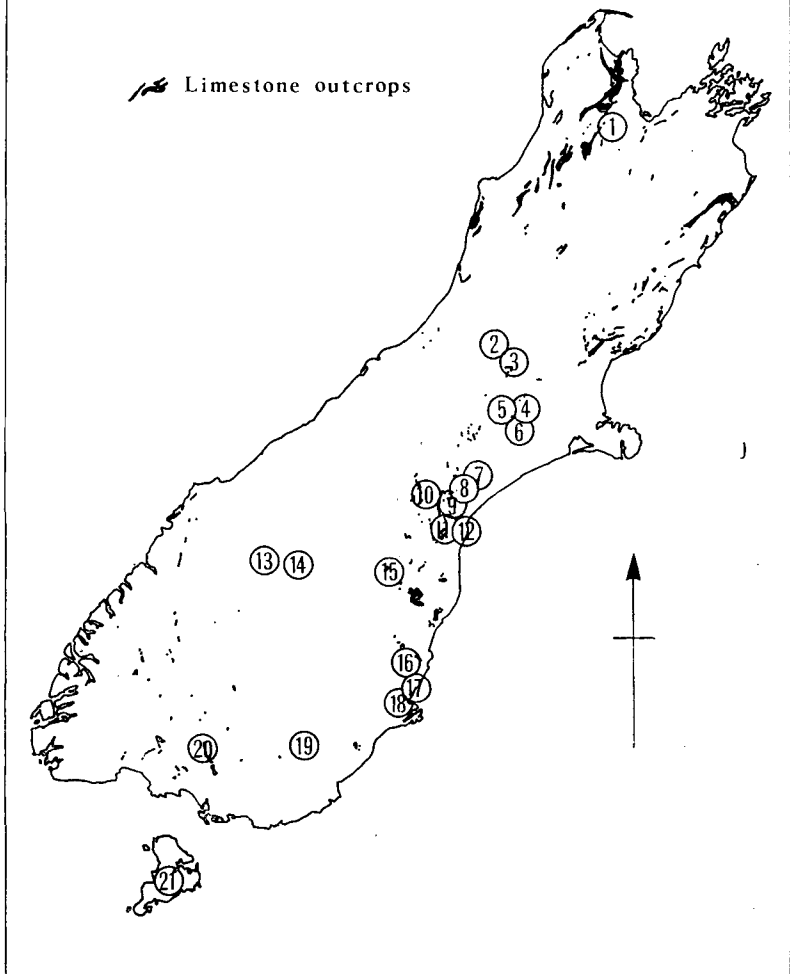





FIGURE 4

*Distribution of Laughing Owl
reports since 1900*

-  Limestone outcrops
 1900-1925
 Since 1925

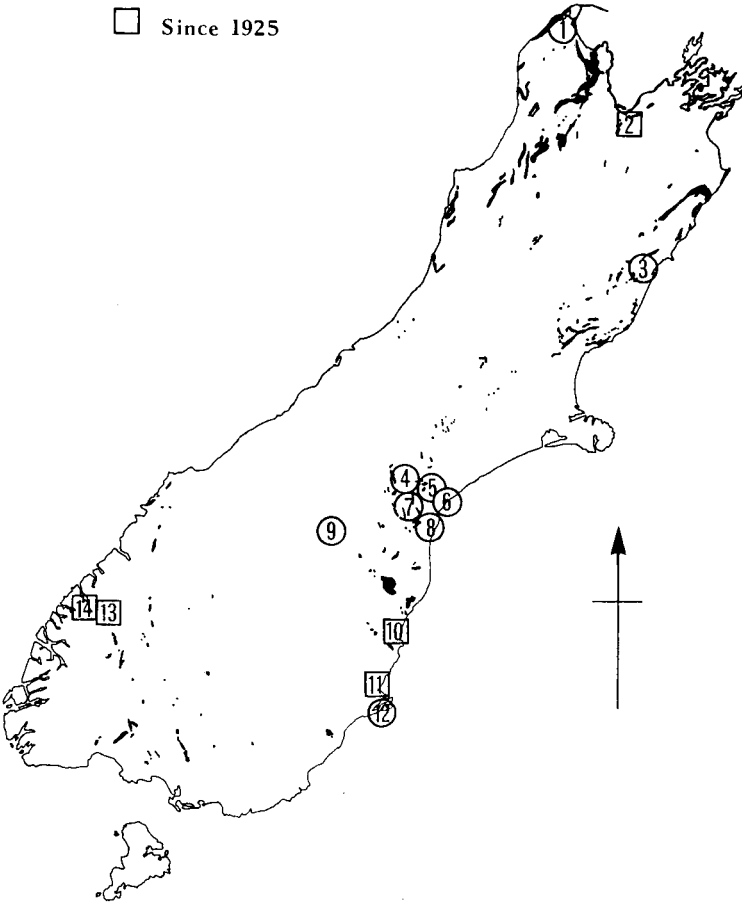


FIGURE 5

BREEDING AND NESTING BEHAVIOUR

Nests are made under boulders or in fissures among rocks and consist of dry grass on bare ground. According to Smith (1884) breeding begins in September-October and young are reared in October-November. There is a record of eggs being laid in late August (Buller 1888), but this was in captivity. Of the eggs in the Canterbury Museum, one, from the wild, is dated 1 August 1894. The rest (apart from one of those laid in captivity in the Christchurch Gardens in August 1886) are dated September and October. The usual clutch is two, though one captive pair laid one of three and a clutch of one has been reported. (As is so obvious with other owls, clutch size may be determined to a considerable extent by food supply before egg formation begins). The incubation period is about 25 days. The female probably does most of the sitting and is fed on the nest by the male.

Smith (*in* Buller 1888) reported, in one instance a gap of a month and, in another, of three weeks between desertion of a clutch and the laying of a second; but, again, this was in captivity.

The dimensions of two eggs measured by Buller (1888) were 1.70 x 1.55 in. (c. 43 x 39 mm) and 1.90 x 1.50 in. (c. 49 x 38 mm). We have measured the eleven eggs in the Canterbury Museum with the following results: mean length 47.4 mm (range 44.5-49.1, mean width 38.5 mm (range 37.2-39.8). The colour is white and the surface bears papillae.

FOOD

Members of the Strigidae regurgitate pellets of undigested material and it is from the rough analysis of deposits of such pellets found in rock crevices that the information on Laughing Owls' diet has been obtained. The items identified (Buller 1888) include remains of earthworms, insects, lizards, small birds and mammals, including fur said to be that of mice (*Mus musculus*) and Polynesian rats (*Rattus exulans*). It was even Buller's opinion (1873) — echoed by others — that the disappearance of the owl was correlated with that of *R. exulans* which had given way before the other two introduced species, *R. rattus* and *R. norvegicus*. The hypothesis is not acceptable for two reasons: (1) It is not clear how precisely the fur was identified in any instance, so native bats may have figured in the owl's diet, and (2) it seems unlikely that an introduced mammal would become an essential item of diet. In any event, how did the owls manage before the arrival of the Polynesian rat about 1,000 years ago? The taking of rats and other small mammals, as is so with many predators, was probably very much a matter of opportunity even if rats were an unfamiliar item. For example, captive Takahe (*Notornis mantelli*), regarded as wholly herbivorous as adults, have caught and eaten pheasant chicks and young white rats which had accidentally strayed into their enclosure, and they will readily accept young mice.

If *Sceloglaux* was primarily a ground feeder in open country it is easy to imagine how serious the consequences of burning and

oversowing of much of its feeding range could be, even if the physical qualities of the habitat were not greatly altered as a result.

Smith (1884) reported that young owls were fed by their parents on large blackish worms obtained from the edges of swamps.

THE NEAR-EXTINCTION OF THE LAUGHING OWL

As discussed in the papers on Kakapo and Takahe referred to earlier, five major factors, severally or collectively, could have played a part in causing the dwindling of the species: (i) predation by introduced mammals, (ii) diseases caused by introduced parasites or micro-organisms; (iii) alteration of habitat — either naturally or by man, (iv) destruction of food supplies — really a special case of (iii), and (v) competition.

If the species' disappearance did begin, in the North Island and Chatham Island at least, before European settlement was fully under way; and if, as seems likely, Maori predation on the species was not important (its remains have, so far, been identified from very few middens), then the most likely causes of the initial decline seem to be reduced to predation by the introduced rats (perhaps, to some extent, *Rattus exulans* but, more likely, *R. rattus* and especially *R. norvegicus*) and, more latterly, by destruction of its food supply, especially in the South Island, where native grasslands were frequently burned and replaced and their faunas at least temporarily obliterated. Though habitat alteration or destruction in itself may have had some influence — especially on Chatham Island — it is probable that it would be less than usually crucial in a predominantly rock-roosting and rock-nesting species hunting over open ground.

Parasites and micro-organisms have apparently not seriously affected the Morepork and there is no good reason to believe that the Laughing Owl was affected either (though this must remain a possibility). Predators, other than those already mentioned, arrived too late to explain the early reductions and the same can be said for potential competitors — if any.

As usual, *a posteriori* speculations on extinction or near-extinction must always remain a largely unproductive exercise.

CONSERVATION

As the species is probably not yet extinct, a determined effort must be made to establish the whereabouts of survivors. Should any be found, everything practical must be done to prevent any further change in their environment (except, perhaps, for the destruction of potential predators) until the species' ecology is more fully understood. Since captive pairs are known to have laid fertile eggs and one bird has lived for as long as 18 years in captivity and at least five others have survived a journey to Europe last century (Rowley 1876-1878, Buller 1888); and since there is no reason to believe that the trend towards extinction has been halted, at least two pairs should be taken into captivity. These, preferably, should be naturally-mated pairs, as some owls will not breed unless they have chosen their own mates — e.g. the Powerful Owl (*Ninox strenua*) (D. Fleay, pers. comm.).

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