

# **OBSERVATIONS ON ALTITUDES REACHED BY SOME BIRDS IN CENTRAL AND NORTHWEST OTAGO**

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The table below lists some rather interesting and unusual sightings of 35 species of native and introduced birds from the main unforested ranges of Central Otago and some western ranges and foothills of the Southern Alps, chiefly in the region of Mount Aspiring National Park. (Actually, many of these are local populations quite typical of some of the species concerned, e.g. Rock Wren and S.I. Pied Oystercatcher, but are seldom reported from such altitudes.)

These are mainly summer/autumn records of birds inhabiting a zone (at least temporarily) and engaged in feeding or breeding activities, and do not include those merely drifting about; for instance, I have occasionally seen Black-backed Gulls over the Southern Alps at altitudes reaching at least 9000', and Keas and Harriers well above their "normal" habitat limits, the latter soaring on mid-summer thermals to 7000' or so. (An exception to this general limitation is the inclusion of a very unusual sighting of Redpoll at c. 5800'.) A few records of species that are more typically found near sea-level (e.g. Royal Spoonbill and Godwit) are also included.

"True forest species" such as the Cuckoos, N.Z. Pigeon, and Yellow-crowned Parakeet, have not been included although their range sometimes includes the upper limits of the beech forests at c. 3500'. A Bellbird is invariably recorded in the highest beech grove on the mountainside, but not above this level. S.I. Rifleman and Brown Creeper are occasionally found in subalpine scrub, but generally not far away from the treeline. Their range includes the narrow ecotone or transition zone between the forest and the scrub rather than the pure scrub above. The Grey Warbler is common throughout subalpine scrub.

Similarly, "lower" records of species which are common enough on main western valley floors (e.g. S.I. Pied Oystercatcher, Paradise

Duck) have not been included, even although some of these reach 2200' or so.

Biotic communities on mountainsides are visually distinct belts corresponding to gradients in climatic and physical factors, and identified by characteristic vegetation climax formations. On a typical "high" range of Central Otago (e.g. Old Man Range, summits 5500'), habitat zonation is as follows:—

1. To c. 2500': Developed farmland with the common hard tussock (*Festuca novae-zealandiae*) locally abundant. Rocky and shrubby gullies dissect the slopes with matagouri (*Discaria toumatou*) fairly common.
2. To c. 4500': The narrow-leaved snow tussock (*Chionochloa macra*) takes over and becomes dominant as the altitude increases.
3. To c. 4800': A narrow zone (200' - 300' wide) of blue tussock (*Poa colensoi*) with small subalpine herbs interspersed.
4. Above c. 4800': Alpine cushion, herbfield and "Central Otago tundra" consisting of ground-hugging herbs, mosses and lichens, with patterned ground and (near and on the broad summits) stoney areas of fellfield and erosion pavement.

Above c. 4000' headwaters of streams, tarns, rocky cirques, and swampy seepage and meltwater basins are characteristic features, with snowbanks persisting in the highest basins most of the summer.

In the west, montane valley floors (usually carrying domestic stock) with braided shingly riverbeds lie above the southern lakes, from c. 900' to 1500', with occasional flats and broad stretches to 2500' between forested valley walls. The southern beech forests characteristic of this region extend from c. 1200' to 3400' or so; sub-alpine scrub of several species occupies a zone varying from a few feet to a thousand feet wide, reaching its limit at c. 4300'; snow tussock and herbfield extend upwards for another thousand feet, with depleted herbfields and screes above that again, until the permanent rock, glaciers and snowfields are reached at c. 6500'.

Headwater cirques, alpine streams, tarns, bogs, fellfields and glacial moraines are typical of these catchments above the treeline.

For some species the high altitude populations are seemingly sufficiently isolated from their lower relatives to develop racial distinctions as, for example, in the Banded Dotterel and S.I. Pied Oystercatcher on Central Otago ranges, separated by up to 5000' of tussock slopes from their riverbed populations in the valleys. In the

western ranges the 2000' or so of beech forest forms an ecological barrier between the subalpine and valley populations of, for example, Yellow Hammer and N.Z. Pipit. (As yet we have no evidence that such evolutionary change has, in fact, occurred here.)

The colonisation of alpine regions in the western ranges by small introduced passerines appears to be a relatively recent phenomenon, at least in the area under discussion, and is one which is likely to continue and expand. It provides an excellent example of the occupation of vacant ecological niches in native habitats, and one is naturally led to speculate on the possible fate of such invaders had the habitats remained unaltered by exotic mammals, and had the former endemics (Bush Wren, Kokako, Laughing Owl, etc.) still been present in goodly number. In the future, it is possible that Greenfinch and Goldfinch might occupy the subalpine scrub/snow-tussock zones, at least in summer. Williams (1969: 445) reported the latter above treeline in Canterbury. Likewise the White-backed Magpie may spread into montane valleys from the Wanaka area (where they are relatively common); they are already present around the lower margins of beech forest at Arthurs Pass.

An exception has been allowed in this article from the requirement that all measurements must follow the metric system and be expressed in SI units since comparison with previously published records (as given in the "References" which follow) will be much easier. However, to convert to metric, note that 1 foot = .305 m, hence 1000' = 305 m.

#### REFERENCES

- CAUGHLEY, G. 1958. How high do birds live in the Southern Alps? *Notornis* 8 (1): 24.
- CAUGHLEY, G. 1966. The Breeding of Black-backed Gulls in the South Island Mountains. *Notornis* 13 (3): 166-7 [Canterbury Records].
- CRESSWELL, R. A. 1958. Notes on the heights reached by some birds in the eastern ranges of the North Island. *Notornis* 8 (2): 54-5.
- SIBSON, R. B. 1958. Notes on the heights reached by some species of birds on the mountains of the North Island. *Notornis* 7 (8): 213-219.
- WILLIAMS, G. R. 1969. Introduced Birds. Pp. 435-451 in KNOX, G. A. (ed.) *The Natural History of Canterbury*. Wellington: A. H. & A. W. Reed.

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SPECIES	DATE	ALTITUDE (ft)	HABITAT	NOTES
1 Black Shag	10/11/73	3400	Sphagnum swamp, creek & tarns in valley floor	One immature near the Black-backed Gull colony, Campbell's Creek, W. Old Man Range
2 White-faced Heron	26/11/67	2200	Open stoney riverbed	2 adults feeding along upper Manuherikia R., above Falls Dam
	9/9/71	1300	Open shingly riverbed	1 adult, Hunter R., several miles above Lake Hawea
	10/3/73	2800	Bouldery river gorge in silver beech forest	2 immatures roosting on a boulder, upper W. Matukituki R.
3 Royal Spoonbill	21/10/72	930	Muddy shallow lake margin	1 adult feeding at the head of Lake Wanaka, Makarora
4 Paradise Duck	12/5/65	2170	Moraine lake, subalpine	24 adults, head of Waiaototo R. (An interesting winter record on the W. side of the Main Divide.)
	21/1/71	4000	Moraine lake, subalpine	6 adults, W. Hunter Valley (Rees).
	13/1/73	5100	Subalpine tarns & seepage herbfield	Pair with 4 young, S. Old Woman Ra. (Also often encountered in subalpine tarns, meltwater basins and cirques elsewhere on the unforested ranges of C. Otago, especially Rock & Pillar, Old Man and Old Woman Ranges, at altitudes from c. 3400' to 4900'.)
5 Blue Duck	18/1/74	3300	Riverbed, at tree-line	1 male above the top gorge, Rockburn (Dart). (The very few other records E. of the Main Divide in Mount Aspiring National Park are between 2000' - 2500'.)
6 N.Z. Scaup	13/1/74	3400	Moraine lake, subalpine	Pair with young, among Paradise Ducks, N. Wilkin.
7 Harrier	31/12/64	4700	Subalpine snow tussock slopes	A nest with 2 fresh eggs (bird flushed) in Fraser Basin, W. Old Man Range. (Also seen at various times quartering subalpine hillsides up to c. 5300' on the Old Man Ra., & Dunstan Mountains & elsewhere but is uncommon above c. 3000'.)
	12/4/74	3800	Subalpine scrub & tussock	A rare sighting (of 1 adult) at this height in western ranges; headwaters Blue Duck Stream (Dart).
8 N.Z. Falcon	21/2/65	6100	Alpine herbfield & rocky outcrops	One swooped down on party on ridge of Black Peak (Matukituki Valley) — possibly nesting in nearby bluffs.
	7/12/68	5200	Alpine herbfield and tundra	One calling and flying around a basin inhabited by Black-backs and S.I.P.O., N. end Old Man Ra.
	21/3/71	6888	Alpine herbfield & rocky summits	One flying about summits of Treble Cone (Matukituki Val.) searching for prey (10 a.m.).
	26/1/72	5800	Alpine tussock & herbfield	One swooped down on us near Lake Alta, Remarkables.
	9/5/72	5500	Alpine bluffs & rough gullies	One in level flight — head of Tiel Val. (Makarora). (Other sightings at high altitudes usually c. 3000' - 5000'.)

SPECIES	DATE	ALTITUDE (ft)	HABITAT	NOTES
9 Chukor	23/1/65	5000	Snow tussock & talus	A pair below French Ridge, W. Matukituki.
	21/2/65	4500	Dense snow tussock gully	4, on slopes of Black Peak, Matukituki Val.
	14/2/70	6000	Alpine herbfield & rocky outcrops	5, on E. ridge, Mt. Aosta, E. Matukituki.
	26/1/72	6000	Alpine herbfield & snow tussock	3 on track to Lake Alta, Remarkables. Others heard among talus slopes above this altitude. 4 more at same altitude between Wye and Doolan's Creek, similar habitat. (Most other records between 2000' - 4500'.)
10 S.I. Pied Oystercatcher	31/1/64	5200	Subalpine swampy cirque	3 adults E. side, Hawkdon Ra.
	11/12/64	6000	Alpine tarns & swamp	3 adults near Lake Alta, Remarkables.
	18/12/67	5200	Subalpine tundra	Nest with 1 egg, near Gordon's Rock, Pisa Ra. (1 adult nearby.)
	20/12/67	4200-5200	Subalpine tundra, tarns, meltwater basins	42 counted, mostly paired, along summits of Old Woman Ra.
	7/12/68	5200	Subalpine tundra	Pair with freshly hatched chick and fragments of another eggshell in nest, N. end Old Man Ra. Black-backs & a Falcon nearby.
	16/2/69	5500	Subalpine tundra	Pair with 2 flying young, near L. Mackay, Pisa Ra.
	15/12/69	5500	Subalpine tundra	Pair with nest containing 2 eggs, beside Lake Mackay, Pisa Ra.
	10/11/71	5300	Subalpine tundra	Pair with nest containing 2 eggs, E. side Old Man Ra.
	7/3/71	5300	Subalpine tundra & swamp	5 wheeling about with 1 Banded Dotterel, W. side Old Man Ra.
	13/11/71	5200	Subalpine tundra	1 banded adult probably with nest; summit Old Woman Ra.
	27/1/72	5800	Subalpine herbfield & tarns	3 adults at head of Wye Creek, Remarkables (probably had chicks). (Plenty of other sightings, 3000' - 5500', on and near summits of the unforested ranges of C. Otago but not above tree-line at these altitudes in western valleys near Main Divide.)
11 Spur-winged Plover	3/9/68	2000	Riverbed and short tussock	6 adults at Cattle Flat, upper Dart. (Also one pair here 12/4/74.)
	19/10/69	2200	Riverbed & river flats	6 adults mid-Nevis Valley; probably had chicks.
	19/1/70	2000	Riverbed & river flats	1 pair on airstrip flats, Wilkin Val.
	10/11/73	3400	Swampy flats & valley floor	1 pair in Campbell's Creek, W. Old Man Ra.
	2/12/73	2500	Short tussock on ridge	1 pair with young near Bridge Huts, Teviot River.

SPECIES	DATE	ALTITUDE (ft)	HABITAT	NOTES
12 Banded Dotterel	20/12/67	5100-5500	Subalpine herbfield & tundra	55 counted along summits of Old Woman Ra.
	16/3/68	5400	Subalpine herbfield & tundra	A flock of 39, including some juveniles, summit Old Man Ra.; rather restless and wheeling flights, perhaps preparatory to migration.
	13/12/68	5400	Subalpine tundra	First high altitude nest found — female sitting — 3 eggs.
	16/2/69	5600	Subalpine tundra	Still about on Pisa Ra. summits near L. Mackay.
	12/12/71	6100	Subalpine tundra & fellfield	A lone male feeding on top of the Hawkduns. Elsewhere in C. Otago regular records in suitable habitats on the unforested ranges, from 3000' - 6200', but not at these altitudes in western ranges.)
13 Eastern Bar-tailed Godwit	22/10/72	930	Swampy lakeside field & mud	4 among S.I.P.O. at West Wanaka — feeding.
	4/11/73	930	Swampy lakeside field & mud	2 in same area.
14 Pied Stilt	26/11/67	2300	Stony riverbed	A pair (probably nesting) — upper Manuherikia R.
	19/10/69	2200	Shingly riverbed & flats	16 along mid-Nevis R.; one nest seen with 3 eggs.
15 Black-backed Gull	Various	to 6000	Subalpine lakes, tarns, cirques, and swampy basins	Common along summit basins of unforested C. Otago ranges from c. 3000'-6000'; and fewer numbers between c. 3500' - 5500' in similar basins above subalpine scrub in valley headwaters and cirques of western ranges, e.g. in Mount Aspiring National Park.
16 Black-billed Gull	5/11/67	2200	Stony riverbed & islands	Colony containing 68 nests; egg-laying started; upper Manuherikia R., above Falls Dam.
	15/12/69	5500	Subalpine lake	47 among Black-backs, swimming on Lake Mackay, N. Pisa Ra. No evidence of nesting here.
	1/1/73	5300-5600	Subalpine streamsidcs & swampy depressions	15 in one gully, 7 in next; flying about and feeding; no evidence of nesting; S. Pisa Ra. near Mt Dotterel.
17 Black-fronted Tern	26/11/67	2200-2300	Stony riverbed & tussocky flats	71 counted along upper Manuherikia R. above Falls Dam. 3 small colonies starting, 3 nests seen with eggs.
	19/10/69	2200	Shingly riverbed & islands	32 counted along mid-Nevis R. No breeding started.
	2/11/69	2500	Streamside and lake	4 adults hawking insects over water, Fraser Dam.
	12/12/71	3500	Tussocky ridges & gullies	Several adults appeared to be hawking moths above the tussock at dusk on a very warm summer's evening, W. slopes Hawkdun Ra.
18 Caspian Tern	25/10/71	1730	Shingly riverbed & islands	2 adults calling & harassing Black-backs; no nest found but a likely habitat; Hopkins R., above L. Ohau.

SPECIES	DATE	ALTITUDE (ft)	HABITAT	NOTES
19 Kea	Various	to 6000	Alpine scrub, bluffs, fellfield	Small numbers in all main valleys of Mount Aspiring National Park; usually below 5000', but occasionally encountered on ridges to 6000' or more.
20 Kingfisher	21/10/72	1000	Riverbed & streamside	One adult at Makarora (near Tourist Centre).
21 Rock Wren	21/2/65	7566	Alpine rock and fellfield	A pair on the summit of Black Peak, Matukituki Valley.
	22/2/69	6600	Alpine rock and fellfield	One on summit rocks of Shark's Tooth, busily foraging in crevices; Matukituki Val.
	17/1/70	7700	Alpine rock and fellfield	A pair on the summit rocks of Mt Aeolus, Wilkin Val.
	20/1/71	to 7500	Alpine rock and fellfield	Pairs up to the col between Mts Head & Moira, Rees Val.
22 Skylark	Various	to 6300	Short tussocky open ground, sub-alpine herbfield & tundra	Common in summer to the summits of unforested ranges of C. Otago. (Not on subalpine tussock slopes of the western ranges.)
	11/12/67	5400	Blue tussock zone	First high altitude nest found — 3 eggs — Old Man Ra.
	1/1/73	5600	Subalpine tundra	Highest nest found so far — 3 eggs — S. Pisa Ra.
23 S.I. Robin	14/4/74	to 2500	Beech forest	Found in valley floor forest as far up as Whitburn Junction, Dart Val.
24 Song Thrush	22/2/74	3300	Subalpine scrub	1 seen near Lake Diana, N. Wilkin; but quite rare in subalpine scrub in Mount Aspiring National Park.
25 Blackbird	Various	3400-4300	Subalpine scrub	Occasional birds above tree-line in most valleys of Mount Aspiring National Park east of Main Divide.
26 Hedge Sparrow	Various	3400-4300	Subalpine scrub	Not uncommon above treeline in most valleys of Mount Aspiring National Park east of Main Divide.
	25/4/74	4900	Subalpine bouldery cirque	A pair among boulders in Gorge Creek cirque, east side Old Man Ra. (no scrub here).
27 N.Z. Pipit	Various	to 6300	Tussocky slopes, subalpine tundra and fellfield	Thinly distributed in most areas at and near the summits of unforested ranges of C. Otago; and to similar altitudes (mainly on ridges) of similar sub-alpine habitats in the Western ranges.

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28 Silvereve	Various	3400-4300	Subalpine scrub	Small flocks not uncommon in subalpine scrub, especially Mountain Totara & Ribbonwood, in most valleys of Mount Aspiring National Park east of Main Divide.
29 Greenfinch	10/3/73	2000	Alpine valley floor grassland	10 feeding on thistles at Shovel Flat, W. Matukituki. (But not yet recorded in subalpine scrub.)
30 Goldfinch	11/3/73	1700	Alpine valley floor grassland	A few feeding on thistles near Aspiring Hut, W. Matukituki. (But not yet recorded in subalpine scrub.)
31 Redpoll	Various	3400-4300	Subalpine scrub	Small flocks not uncommon above treeline, Mount Aspiring National Park.
	9/5/72	5800	Subalpine tussock	A flock of c. 20 flew across from Tiel to Siberia (Makarora).
32 Chaffinch	Various	3400-4300	Subalpine scrub	Not uncommon throughout above treeline in Mount Aspiring National Park east of Main Divide.
33 Yellow Hammer	Various	3400-4800	Subalpine scrub and snow tussock grassland	Rather rare — occasional birds seen in a few places above treeline to above subalpine scrub limits in Mount Aspiring National Park east of Main Divide.
	1/1/73	5100	Subalpine tussock & herbfield	2 males singing from tors, S. Pisa Ra.
34 Starling	27/9/69	4400	Subalpine tundra & herbfield	2 at old ski hut, S. end Rock & Pillar Ra.
	13/1/73	4400	Subalpine bouldery cirque	A pair appeared to be feeding young in a crevice in a huge boulder, S. Old Woman Ra.
35 White-backed Magpie	16/11/68	3800	Subalpine swamp & tussock	4 adults feeding on the ground, N. end Rock & Pillar Ra.