

# Presence and Distribution of the 'southern' New Zealand falcon (*Falco novaeseelandiae* "southern")

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Traditionally the New Zealand falcon (*Falco novaeseelandiae*) has been treated as one variable species, with 3 forms recognised that vary in size, colour and habitat. The 'bush falcon' found in forests of the North Island and north-western South Island, the 'eastern falcon' occurs in the open country of the eastern South Island, whilst the 'southern falcon' is restricted to Fiordland, Stewart Island and the Auckland Islands (Fox 1977, Heather & Robertson 2015). However recent research (Trewick & Olley 2016) has shown a genetic divide aligned with the Cook Strait, between the North and South islands and it has been proposed (Trewick & Olley 2016) that there be recognised a South Island subspecies (*Falco novaeseelandiae novaeseelandiae*) and a smaller North Island subspecies (*Falco novaeseelandiae ferox*).

The threat classification for New Zealand birds has recently been updated (Robertson *et al.* 2017), that reduced the threat classification for 2 of the forms/subspecies of the New Zealand falcon. The Bush falcon (*Falco novaeseelandiae ferox*) and the Eastern falcon (*Falco novaeseelandiae novaeseelandiae*) being re-classified as 'Taxonomically Determinate' 'At Risk – Recovering' although both remain as 'Data Poor'. But the Southern falcon (*Falco novaeseelandiae* "southern") remained as 'Taxonomically Indeterminate' 'Nationally Vulnerable' and also 'Data Poor'. The reason given for this was that since the southern falcon "- was not distinguished by Trewick & Olley (2016)" and "their sampling included few birds from within the range of this form" this ranking remained "as a precaution" (Robertson *et al.* 2017 p. 4).

For the 11 years and 2 months (1 June 2006 – 31 July 2017) of the New Zealand Falcon Survey a total of 15,444 records were obtained, dating back to 1942. Of these 659 were from within the range of the southern New Zealand falcon, 625 for Fiordland, 9 for Stewart I and 25 for the Auckland Is. Additional historical records have also been sourced following research of applicable publications, that provided a perspective on the long-term presence of the New Zealand falcon in several areas but also now the subsequent apparent absence.

Of the 625 falcon records for Fiordland, 256 were for the last ten years (1 August 2007 – 31 July 2017) and of these 9 (3.5%) were for confirmed breeding, taken as a nest being reported and/or observers being dive-bombed. Suspected breeding was taken as two or more falcons seen together, with 45 (17.5%) records for suspected breeding. The remaining 202 (79%) records were for single falcons and recorded as

non-breeding observations. These percentages for breeding records are compatible with known national figures (Bell 2017).

The 256 observation records for Fiordland (Fig. 1) display obvious concentrations along the Kepler Track by the Waiau River, at Te Anau and in the Eglinton Valley, all areas of high human activity, especially during the tourist season. But there are also several records from more remote areas, including from a few of the Sounds, and in particular Dusky Sound.

Dusky Sound has the oldest known record for Fiordland, from 3 April 1773 during Cook's 2<sup>nd</sup> voyage to New Zealand (Medway 1976). Richard Henry from his time on Resolution Island from 1894 to 1908 noted "There are a good many sparrow-hawks about these islands and in the bush," (Henry 1903, p. 62). Whereas the most recent observation was recorded for April 2017.

Of possibly more value are the five observations recorded by Graham McBride and hunting companions, on trips to Dusky Sound. During three of these observations (Cascade Cove 11 April 2011, Herrick Creek 28 March 2014 and Wet Jacket Arm 12 April 2015) video film was obtained that showed that all were juvenile falcons, thereby confirming breeding in the area. Two of these video clips can be viewed at: <http://www.nzfalcon.org.nz/nz-falcon/resources-on-nz-falcon/film-footage>. The fourth observation on 10 April 2016 was from Fanny Bay and involved 2 falcons seen together, a suspected breeding record. Whilst the fifth observation for April 2017 was again back at Herrick Creek a single falcon seen flying above Moose Lake.

Also on the website is an additional video clip taken by a group of hunters at Worsley Hut, on the western shores of Lake Te Anau during April 2014 of a juvenile falcon, that again shows breeding in that area.

There have been several other locations from where long-term observations records have been recorded and a selection of these are provided (Table 1). Though some are from popular locations there are a number from more remote areas, that provide valuable information on the continual survival of the New Zealand falcon in Fiordland.

There were only nine falcon observations records received for Stewart Island during the New Zealand Falcon Survey and only one of these was for confirmed breeding, when a tramping party on the Paterson Inlet to Mason Bay track were dive-bombed by two falcons on 28 December 1970. The last report received was from the North Arm of Port Pegasus, a single falcon seen on 17 October 2008.

Surprisingly all the historical records found are for Codfish Island, off the north-western coast of Stewart Island. Two nests both with young were found during an expedition to the island from 20 December 1934 to 7 January 1935 by Edgar Stead, Percy Elworthy and Robert A. Wilson (Wilson 1959).

In November 1948, a six-member party spent eight days on Codfish Island and R.H. Traill heard a New Zealand falcon but none were seen (Dell 1950). Falcon were also noted as present but no numbers recorded during August 1964 by B.D. Bell and party (Blackburn 1965). No falcons were recorded on Codfish Island during a subsequent seven-member expedition for 11 days in December 1966 (Blackburn 1968).

A recent paper on the declines and extinctions of native birds on Stewart Island (Harper 2009), that also contains several additional falcon records, concluded that the New Zealand falcon was now extinct on the island and only a visitor or straggler from the South Island. A possible cause for this could have been cats (*Felis catus*), that are known to prey on falcon chicks in nests on the ground. Predation by feral cats was a major issue with the remnant Kakapo (*Strigops habroptilus*) in southern Stewart Island in the 1980's (Ballance 2010).

Of the 25 NZ falcon records for the Auckland Islands, 15 were for Enderby Island, 4 for Carnley Harbour, for a pair seen on Adams Island and five for where the exact locations were unknown. The large number from Enderby Island is due to the regular visits there by cruise boats on sub-antarctic islands eco-tours. The earliest of these was for 15 November 1995 and the most recent for 6 January 2017, a total span of over 21 years.

There are surprisingly good historical records for the New Zealand falcon on the Auckland Islands (Table 2), owing mainly to the number of research expeditions and visits to the islands over the years, together with wartime coastwatching activities during WW2. As with most of the recent records they are mostly for the northern (Enderby Island and Port Ross) and the southern (Carnley Harbour and Adams Island) areas of the Auckland Islands.

Only three known reports for New Zealand falcon seen on Campbell Island, by Alfred Austin in his diary when a musterer on the island, for 3 April 1921 "Paul saw three sparrow hawks to-day" (Dingwall & Gregory 2004, p. 79). Also for 21 November 1946 and early May 1952 (Bailey & Sorensen 1962) both for Perseverance Harbour. Otherwise regarded as a straggler (Oliver 1955; Moore & Moffat 1990) or described as not present (Westerskov 1960) or not mentioned (Kinsky 1969; Robertson 1980) for the island.

Except for Stewart Island, the southern falcon (*Falco novaeseelandiae* "southern") continues to be present and breeding over most of its range in Fiordland and on the Auckland Islands. It's distribution and presence is shown to be no different to the other two sub-species and therefore it is considered that the threat classification allocated should be re-assessed.

## Acknowledgements

Grateful acknowledgement and appreciation to the numerous individuals that reported their falcon observations and to the groups and organisations that shared their records, without whom this material would not have been available. Much appreciation to Roger Smith from Geographx Ltd for the generous provision of the Fiordland base map and to Elise Smith from M.A.I.N. Trust NZ for expert and patience tutoring in the use of QGIS to produce the map. Many thanks also to Dr Chris Challies for guidance and leads to material especially for the Auckland Islands, to Jane Hart for editorial assistance.

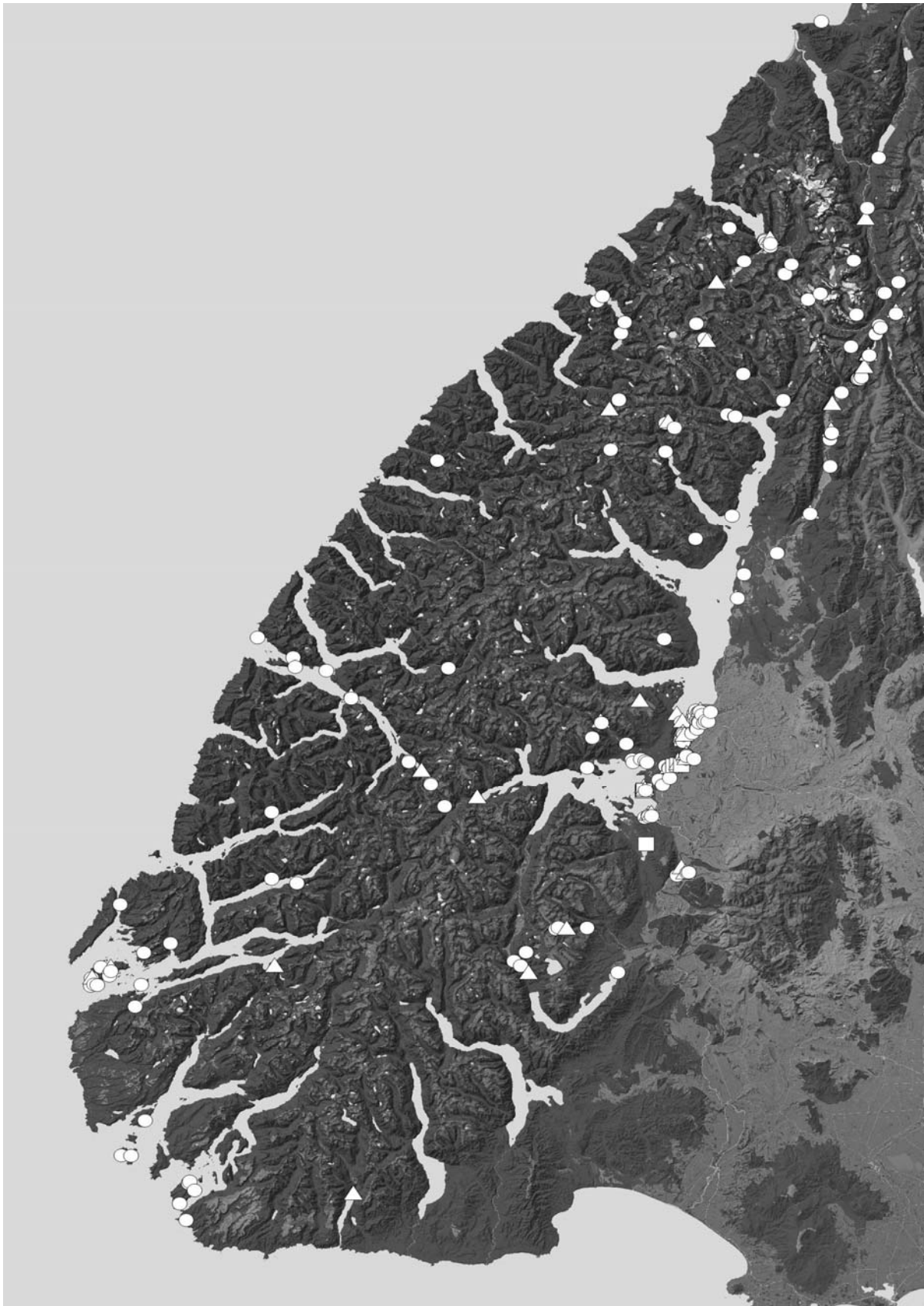
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**Fig. 1.** Distribution of southern New Zealand falcon in Fiordland. ○ Indicates a non-breeding record, △ indicates a suspected breeding record, and □ indicates a confirmed breeding record.

**Table 1** Long-term observation records for New Zealand falcon (*Falco novaeseelandiae*) from the same location within Fiordland.

| Location                     | Date for Oldest Record | Date for Most Recent Record | Years Apart |
|------------------------------|------------------------|-----------------------------|-------------|
| Lake Gunn/Cascade Creek      | 15 Jan 42              | 6 Jun 17                    | 75          |
| Lake Orbell                  | 20 Nov 48              | 5 June 17                   | 68          |
| Borland River                | 15 May 49              | 10 Nov 15                   | 66          |
| Hollyford Valley             | 21 Dec 70              | 27 Apr 15                   | 44          |
| Homer Tunnel                 | 15 Dec 73              | 19 Oct 08                   | 34          |
| Light River Sutherland Sound | 6 Apr 93               | 28 May 17                   | 24          |
| Gair Loch Dusky Track        | 8 Feb 89               | 15 Mar 99                   | 10          |



**Table 2.** Historical records of New Zealand falcon (*Falco novaeseelandiae*) on the Auckland Islands.

| Date/Dates                         | Number of falcon | Description  | Location  | Reference                     |
|------------------------------------|------------------|--|---|-------------------------------|
| 15 – 29 March 1904                 | 3                | Two juvenile females and one adult male                              | Port Ross Auckland Island                                   | Wilson 1904                   |
| 25 November 1944                   | 1                | Dive-bombed by male – drew blood                                     | Figure of Eight Island<br>Carnley Harbour                   | Turbott 2002                  |
| 28 November 1972 –<br>5 March 1973 | 14               | Two nests<br>One nest<br>8 single falcon sightings                   | Adams Island<br>Western Harbour<br>Adams & Auckland Islands | Yaldwyn 1975                  |
| 14 March 1977                      | 1                | Reported as observed   | Enderby Island  | Penniket <i>et al.</i> 1986   |
| 1 April 1980                       | 1                | Reported as seen   | Fairchilds Garden<br>Adams Island                           | Penniket <i>et al.</i> 1986   |
| April 1980                         | 1                | Seen   | Ranui Cove Auckland Island                                  | Penniket <i>et al.</i> 1986   |
| 8 – 13 May 1981                    | 1                | Seen at sea level  | Trinity Cove Auckland Island                                | Penniket <i>et al.</i> 1986   |
|                                    | 1                | Seen at 1701 feet  | Southwest Adams Trig<br>Adams Island                        | Penniket <i>et al.</i> 1986   |
|                                    | 1                | Seen   | Embrasure Point Adams Island                                | Penniket <i>et al.</i> 1986   |
| 24 February –<br>20 March 1982     | 1                | Occasional visitor to the camp site                                  | Camp Cove<br>Auckland Island                                | Penniket <i>et al.</i> 1986   |
| 2 November –<br>7 December 1989    | 12 – 15          | Five nests found and various feeding and hunting activities observed | Adams Island  | Buckingham <i>et al.</i> 1991 |
| 19 February 1992                   | 1                | Seen perched in large rata tree                                      | Camp Cove Carnley Harbour                                   | Chance 1992                   |
| 20 February 1992                   | 1                | Seen   | Breaksea Point<br>Western Harbour                           | Chance 1992                   |
| 1–11 November 1993                 | 2                | Nest with two eggs   | Maclaren Bay Adams Island                                   | Hyde & Worthy 2009            |