

# THE CHANGED DISTRIBUTION OF STILTS IN NEW ZEALAND

By R. J. PIERCE

Nineteenth century publications, especially those of Buller (1878, 1888), indicate that Pied Stilts (*Himantopus h. leucocephalus*) and Black Stilts (*H. novaezealandiae*) occurred widely from the central and eastern North Island south to Otago. Since then Pied Stilts have greatly increased and expanded their range, while Black Stilts have greatly declined to become rare and in danger of extinction. The aim of this note is to establish, as far as records allow, the early distribution of stilts and where and when major changes in population size occurred.

From early literature and diaries and from data on specimens in museums in New Zealand and overseas, I built up a general knowledge of stilt distribution mainly in the 19th century and early 20th century. I then consulted staff of the Southland, Otago, Waitaki Valley, South Canterbury, Mid Canterbury and North Canterbury Acclimatisation Societies for information on Black Stilts in particular, and for names and addresses of reliable observers whom I later contacted individually. A similar approach was made to many Ornithological Society members throughout the South Island and to a few in the North Island. The information from these people extended from about 1905 to 1981 and is included in Appendix 1. Additional records from 1940 to 1980 came from the Ornithological Society's recording scheme and the Wildlife Service. Because of the possibility of misidentification by observers, I placed little emphasis on isolated locality records unless they were accompanied by accurate descriptions of the birds. I welcome further information on early records or likely diaries.

## HISTORICAL RECORD OF DISTRIBUTION

### *North Island*

The first Black Stilts to be described were two immature birds collected at Wellington (Gould 1841) and one from Otago (Hombron & Jacquinot 1841). The first New Zealand specimen of the Pied Stilt was collected in the Waikato region in 1854 (Buller 1905), but it was not until the 1860s that several were recorded (Buller 1868). During the 1870s and 1880s, Pied and Black Stilts were probably generally spread in the central, eastern and southern North Island. At Lakes Rotorua and Rotomahana Buller (1878) described both

species as being "formerly rare" but now "very plentiful" and he cited breeding records of each. He knew of no Black Stilts from Lake Taupo, where he had seen flocks of up to 40 Pied Stilts. In Hawkes Bay both species were recorded at the Napier Saltmarshes, at Waipukurau (Buller 1888), and both nested on the Petane River (Hamilton 1885), where they were still present at the turn of the century (Hutchinson 1900). Buller (1888) considered that Black Stilts were "much rarer" than Pied Stilts, but "generally found in all the river courses of the Wellington district and further south."

Neither species appeared to occur commonly north of the Waikato River during the 19th century. Buller (1868, 1888) knew of only one record of a Pied Stilt from Auckland and none north of there, but small numbers of Black Stilts occurred as far north as Kaipara and Parengarenga. Pycroft (1898) endorsed Buller's observations in Northland, although two Pied Stilts were collected by A. Reischek near Whangarei in March 1882 and are now in the Vienna Museum (K. E. Westerskov, pers. comm.).

I know of no records of Black Stilts having nested in the North Island in the 20th century, but with the shortage of observers up to 1940, some pairs may have nested unnoticed for many years. Several observers, e.g. Buller (1898), Hutton (1900) and Guthrie-Smith (1969), did not note Black Stilts in various parts of the southern and eastern North Island.

Kawhia Harbour appears to be a traditional wintering ground for Black Stilts with records going back to the 1950s (B. D. Heather, pers. comm.). Regular autumn and winter counts since 1971 (B. Seddon, pers. comm.) have produced 1-7 adult Black Stilts each year, and up to eight mainly black birds. Descriptions of the latter indicate that most are hybrid stilts, although there have been at least two records of probable Black Stilts in their second year. Single Black Stilts are occasionally recorded from several other northern harbours (OSNZ Rec. Scheme) but not in numbers similar to those usually recorded at Kawhia Harbour.

By the 1940s Pied Stilts occurred in large post-breeding flocks in many Northland harbours (OSNZ Rec. Scheme) where they had been rare or unrecorded in the 19th century. Sibson & McKenzie (1944) found flocks of up to 1000 in the Firth of Thames, but since 1960 there has been no detectable increase in numbers wintering in Auckland and Northland. Recent counts by Ornithological Society members indicate a total New Zealand population in the order of 30 000, breeding in mainly lowland areas with a post-breeding dispersal to coastal and northern parts of the country (see seasonal distribution maps in Bull *et al.* 1978).

### *South Island*

During the late 19th century and early 20th century, Pied and Black Stilts occurred throughout the South Island and on both sides

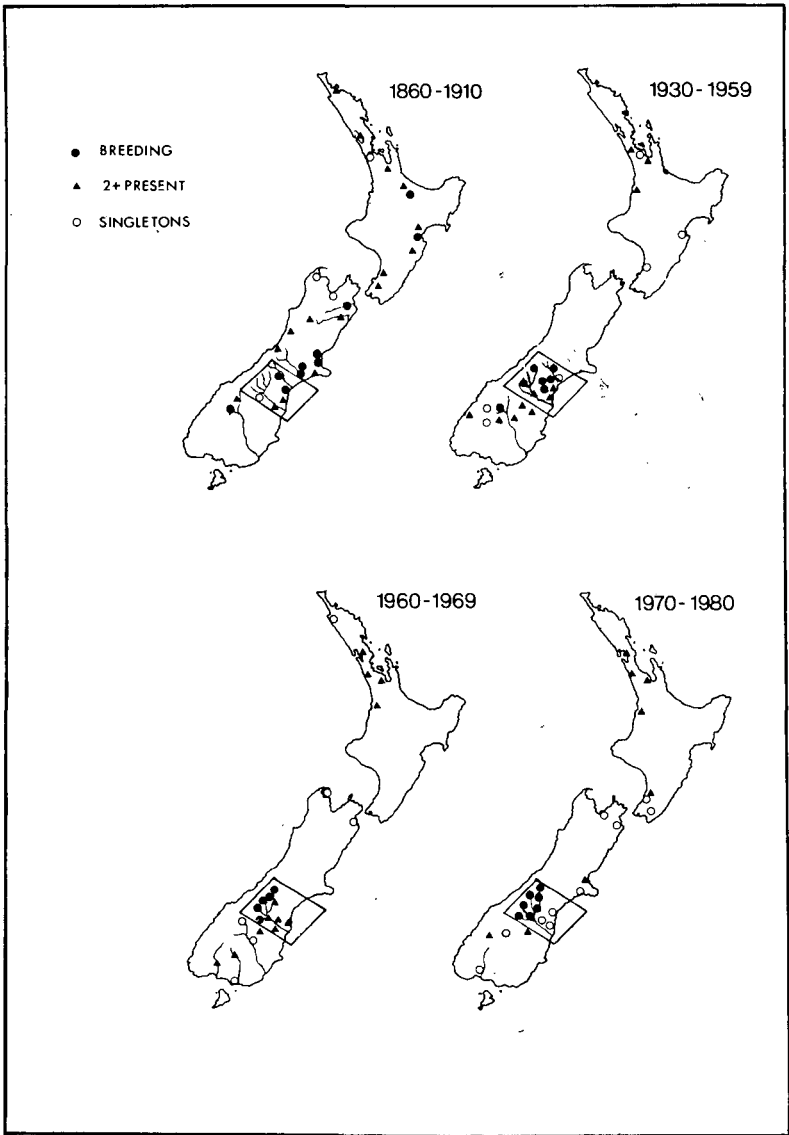


FIGURE 1 — Historical records of Black Stilt distribution. For inset, see Fig. 2

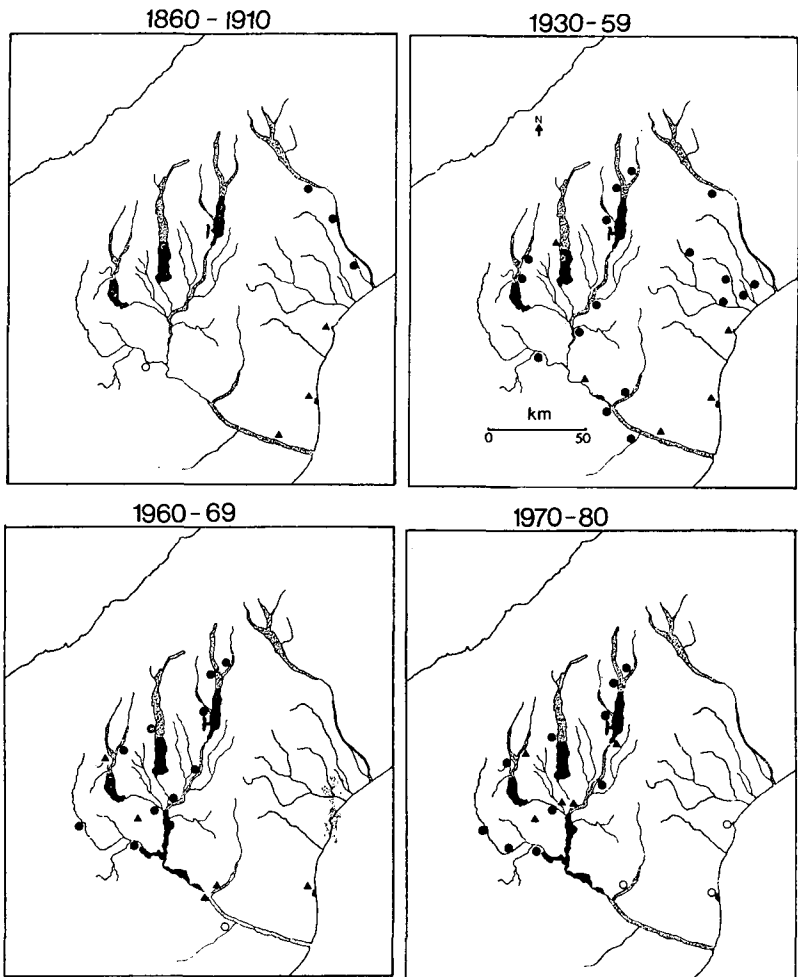


FIGURE 2 — Historical records of Black Stilt distribution in South Canterbury. Symbols as in Fig. 1

of the Southern Alps (Fig. 1, 2). In Westland, Smith (1888) recorded both species on the Ahuna and Crooked Rivers, while Douglas (c. 1899) noted "Black Snipe" (his description confirming that they were Black Stilts) as "a pair trotting about now and again in certain localities represent Black Snipe both now and 30 years ago." In Marlborough, Handly (1895) considered both species to be widely but sparingly distributed, while Black Stilts were collected on the Wairau River (Buller 1875b) and at Collingwood (Hutton 1871) and a "pre-1921" specimen from Nelson is in the Australian Museum. Since 1900 Black Stilts have not been recorded nesting in Marlborough, Nelson and Westland, but Pied Stilts nest there commonly.

The riverbeds of Canterbury and Otago supported large numbers of Black Stilts during the late 19th century and early 20th century, while the lagoons and swamps in particular attracted mainly Pied Stilts (Appendix 1). Both species penetrated far inland, and at least part of each population moved to the coast after breeding and, Pied Stilts especially, dispersed northwards (Potts 1882, Hutton 1900). Stead (1932) noted that between about 1900 and the 1920s Pied Stilts increased in numbers and that so many were at Lake Ellesmere that single flocks could number 2000-3000 birds, and they were plentiful at other coastal lagoons and swamps (Appendix 1). During the early 20th century, Black Stilts were declining in numbers and range in Canterbury. Stead (1932) found reduced numbers of Black Stilts between 1900 and 1910, and Guthrie-Smith (1936) saw many Pied Stilts but no Black Stilts along sections of the Conway, Waiau and Hurunui Rivers in 1924.

In lowland South Canterbury, Black Stilts persisted for much longer than they did in North Canterbury. Between 1920 and 1940 they nested on sections of the upper and lower Rangitata, Waihi, Te Moana, Orari, Opihi, Opuha, lower Waitaki, Marawhenua and Hakataramea Rivers and in the Waimate district (Fig. 2), and they also occurred at coastal lagoons but were outnumbered by Pied Stilts. The diaries of Mr A. B. Curtis of Geraldine indicate that in 1928-30 one pair of Black Stilts may have occurred for every 2 km of lowland riverbed in South Canterbury. By the 1930s or early 1940s all observers recorded a decline in the number of Black Stilts there, although some nesting persisted until the 1950s. The last record of lowland nesting in New Zealand by a Black Stilt pair was on the Orari River, South Canterbury, in 1957 (Child 1959).

In Central Otago during the period 1930 to about 1964, Black Stilts were found nesting at Naseby and Cromwell and on the beds of the Shotover, Nevis, Arrow, Timaru, Dingleburn and Hunter Rivers (Appendix 1). Since then no Black Stilt pairs have been reported nesting there, but ones and twos have occasionally been seen in Central Otago and Southland. Poole (1951) reported that several pairs of

Black and Pied Stilts were known in swamps at the head of Amelia Arm, Charles Sound, Fiordland.

In the Upper Waitaki River Basin, Black Stilts were common during the 1930s and 1940s, nesting from the Waitaki River in the south to the Godley and Macaulay Rivers in the north (Fig. 2). In the Cass River and Godley River Valleys gatherings of up to 20 Black Stilts occurred, but they were "always outnumbered" by Pied Stilts (A. B. Curtis, pers. comm.). The diaries of D. D. Smith of Geraldine indicate that a major decline in the inland population occurred in the early 1950s, about 20 years later than in coastal areas. From December 1947 to 1949, Mr Smith recorded concentrations of 40-50 pairs of Black Stilts in an extensive wetland in the Gray's Creek area near Tekapo River and 20 pairs on flats of the Tekapo River, now flooded by Lake Benmore. In the 1950s — before Lake Benmore was formed — "nearly all the stilts gradually disappeared from these two nesting areas." A third large area of swamp and shingle flats, on the bed of the Dobson River, contained 20-30 pairs of Black Stilts in the 1940s and had been a breeding place since at least the 1930s (Appendix 1).

During the 1960s, the breeding range of Black Stilts became confined to the Upper Waitaki River Basin with only isolated records of birds elsewhere during the breeding season. A breeding season count by the Wildlife Service in 1962 produced a total of 68 adults, while winter counts (including North Island birds) from 1975-79 indicated a total adult population of 50-60 (R. J. Nilsson, pers. comm.). Since 1977 Black Stilts have been found nesting in valleys of the Ahuriri, Hopkins, Dobson, Ohau, Tekapo, Tasman, Cass, Godley and Macaulay Rivers, and at kettleponds near Lakes Ohau and Tekapo. A pair of birds on the Manuherikia River (outside the Waitaki River Basin) in October 1979 and in 1980-81 were probably nesting (M. Wright, pers. comm.). Estimated numbers of adult Pied Stilts in the Upper Waitaki River Basin in the 1980-81 season were 1500-2000, including 1190 at one drying-up pond ("Big Tarn") near Lake Ohau on 6 January 1981.

## DISCUSSION

The scarcity of sightings of Pied Stilts in the North Island during the 1860s may suggest that the species was only a recent colonist from Australia (Fleming 1982). Potts (1869), however, found Pied Stilts to be common and breeding in Canterbury during the 1860s, which shows that they were well established. It is possible that Pied Stilts established in the South Island first and that the apparent increase in the North Island after the 1860s resulted from a northward expansion. Unfortunately, observers were too few for us to be able to state confidently whether statements such as "Formerly rare, both this

[Black Stilt] and the White-headed Stilt are now very plentiful in the Lake District" (Buller 1888) referred to long-term trends or merely seasonal changes. Whether or not Pied Stilt colonisation occurred as late as the early 19th century, it is clear that the Pied Stilt population expanded rapidly in both islands from about the 1870s to the early 20th century at least. This expansion was probably encouraged by, but not necessarily caused by, clearing of forests, which provided seasonal and permanent wetlands suitable for nesting. By the early 20th century, several probably new wintering areas were heavily used, including the harbours around and north of Auckland.

The north to south decline of Black Stilts was opposite to the supposed direction of expansion of Pied Stilts. Black Stilts were still common in South Canterbury up until the 1940s, and two wetlands in the Tekapo River Valley and one in the Dobson River Valley contained a total of about 160-200 adults. Considering the formerly extensive wetlands of the Tasman River Valley as well as suitable habitat in the Ahuriri River Valley, the Lakes Tekapo and Ohau areas and in lowland valleys, the total population in the 1940s may have numbered 500-1000 birds. But within 20 years the adult population plummeted to 50-100 birds and the number of valleys used for nesting dropped from at least 24 to about 12. Since 1960 the decline has progressed more slowly, and in that period only two rivers, the lower Waitaki and Hakataramea, have been abandoned by nesting birds. Predatory mammals, habitat changes and hybridisation with the Pied Stilt (R. J. Pierce, in prep.) continue to threaten the survival of Black Stilts.

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R. J. PIERCE, *Department of Zoology, University of Otago, Dunedin*



APPENDIX 1 — EARLY RECORDS OF STILTS IN SOUTH-EASTERN  
NEW ZEALAND

Br = breeding

A. Canterbury and Waitaki River System

Source	Pied Stilt	Black Stilt
Potts (1869)	Swamps, lagoons (Br)	Rivers including Rakaia (Br)
Travers (1871)	Lake Guyon	Lake Guyon
Buller (1875a)	Rakaia River	Bottle Lake January 1872 adult and juvenile, Orari February 1872, Saltwater Creek April 1873
British Museum	Rakaia (2) and Selwyn Rivers (2) 1872	Selwyn River September 1872, Saltwater Creek May 1873
Canterbury Museum		Selwyn 1872
Otago Museum		Benmore 1875, juvenile
British Museum	Waimakariri River-mouth July 1878	
Vienna Museum	Kaiapoi October 1877, (2)	Malvern Hills September 1877 (Br)
Buller (1882)		Rivers Wellington southward
Potts (1882)	Many nest inland and move to coast in January	
Buller (1888)	Common in middle to southern portions of N.Z. Nesting upper Rangitata	Rivers Wellington southward
Stead (1932)	Waipara River, swamps, lagoons (Br). Lake Ellesmere 2000-3000	Waipara River 1904 (Br) Gone 1907
E.M. Maguire, Dunedin; F. Hern, Timaru		Rangitata River, mainly above Arundel. Large numbers 1910 dwindling to low numbers 1930s. Also Opihi River, c. 1930
Stead (1927)	Now rare on rivers	Now very scarce, usually single birds mating with Pied Stilts

## Canterbury (continued)

Source	Pied Stilt	Black Stilt
Oliver (1930)		Eggs found at Ashburton (Br)
Canterbury Museum	Selwyn c. 1920 (2), Lake Ellesmere November 1915	Lake Ellesmere pre-1935 (3), Waitaki June pre 1935 2 + juvenile, Omarama May 1939
Mr Cameron, Maungati		Dobson Riverbed 1930s. Common (Br)
A.B. Curtis, Geraldine	Washdyke 1927 numerous, Orari, Waihi, Te Moana, Opihi Rivers 1928-30, 1940s	Washdyke 1927 fairly common. Orari, Waihi, Te Moana, Opihi Rivers 1928-30, approx 6-8 birds per 5-7 km (Br). Still present late 1930s and on Te Moana late 1940s but less common
G. Riddel, Timaru		Opuha River (Sherwood Downs) 1931-35 (several pairs, Br)
A.B. Curtis	Lake Tekapo 1931-37, numerous	MaCauley, Godley, Cass Rivers 1931-37. Not as numerous as on lowland riverbeds and lagoons, but up to 20 seen at once
Studholme (1940)	Lake Wainono area, "holding their own"	Lake Wainono, rare and decreasing
F. Cain, Orari		Opihi River 1941 (1)
M. Keioller, Otiake	Marawhenua River, (Br) 1950s - 1960s	Hakataramea and Marawhenua River 1940s - 1950s (Br)
R. Trotter, Dunedin		Waitaki River 1950s from Aviemore upstream
D. O'Connor, Otekaike		Waitaki River at Kurow c. 1950s
Child (1959)		Orari River 1957, 1 pair
D.D. Smith, Geraldine	Gray's Creek area late 1940s, 50+ pairs (Br)	Gray's Creek area late 1940s, 40-50 pairs and odd Black Stilts. Nesting group of Pied Stilts was separate to that of Black Stilts. Holden Station late 1940s, c. 20 pairs with well dispersed nests near small swamp. No Pied Stilts seen there. Nearly all stilts from Gray's Creek and Holden Station gradually disappeared after 1950

## Canterbury (continued)

Source	Pied Stilt	Black Stilt
D.D. Smith (cont).	Dobson River 1950-53, nesting several miles away from Black Stilts	Dobson River 1950-53, 20-30 pairs of Black Stilts nesting on swampy flats and high shingle
G. McLintoch & J. Bull, Temuka	Upper Waitaki 1950s - 60s (present)	Macaulay River 1950s - 1960s (several pairs), Tasman River 1950-1960s several pairs
M.F. Soper, Arrowtown	Upper Waitaki 1960s (present, Br)	Ahuriri River 1960s (<20, Br) Lake Ohau 1960s (<10), Tasman River 1960s (<40, Br)
OSNZ 1940-1980	Many records	Many records, mainly from Upper Waitaki and coastal lagoons
Wildlife Service		68 adults counted in October 1962 on Waitaki, Pukaki, Tekapo, Ohau, Ahuriri, Hakataramea, Hopkins, Tasman, Godley and Cass Rivers
R.J. Pierce		Hakataramea River October 1971, 1 nesting with Pied. Lake Wainono 1979, 1 nesting with Pied
B. Otago and Southland		
Hombron & Jacquinot (1841)		Otago
British Museum	Palmerston 1873 (1) Otago July 1874 (1) November 1874 (4), May 1875 (1)	Dunedin 1870 (1)
Otago Museum		Shag River (1) undated
Stead (1932)		
Canterbury Museum	Wanaka 1912 (1)	
W. Elliot		Shotover River c. 1910 (Br)
Philpott (1914)	Rivers e.g. Waikaia, Mataura; New River Estuary c. 50	

## Otago and Southland (continued)

Source	Pied Stilt	Black Stilt
K. McBride Kaikoura		Naseby 1933, 2 pairs, Arrow River pre 1933, Nevis River pre 1933
M. Macnicol, Roxburgh		Shotover River, odd pairs 1943-48 (Br), none after 1949
D.G. Jardine, Cromwell		Cromwell area c. 1940s
Poole (1951)	Charles Sound, 1940s	Charles Sound, 1940s
Oliver (1955)		Manuherikia River
M. Sargison, Wanaka		Timaru Creek, Dingleburn and Hunter Valley 1940s - 1950s. One September 1966
M.F. Soper		Kingston c. 1957 (1), Route- burn River 1958 (1 nested successfully with Pied Stilt). Arrowtown 1977 (1)
O.S.N.Z. 1940- 1980	Many records	Manuherikia c. 1959 (3), 1964, (1) Waiau River 1963 - two unconfirmed nesting reports. Gorge Rd September 1963 (1), Oreti River January 1968 (1)
M. Wright, Dunedin		Manuherikia October 1979 (2) and 1980-81 (2)
L.R. Beale, Dunedin		Rees River 1979-80 (2)

## C. Outlying Islands

British Museum	Bounty Islands, no date (2)
Forbes (1891)	Unspecified bones found on Chatham Island
Falla et al	Chatham Islands 1961 Stewart Island 1956