

## **Waimakariri River Bird Survey Summary 2018**



**Black-billed gull chicks – Photo: Nick Ledgard**

## The 2018 Waimakariri Bird Survey

The Waimakariri River is known to be a habitat of outstanding significance for threatened native birds. It has been shown to support a large breeding population of Wrybill (*Anarhynchus frontalis*), Banded Dotterel (*Charadrius bicinctus*), Black-fronted Terns (*Chlidonias albosriatus*) and Black-billed gulls (*Larus bulleri*).

You can read more (and watch a short video) about this mighty river and its birds on the BRaid website at this [link](#).

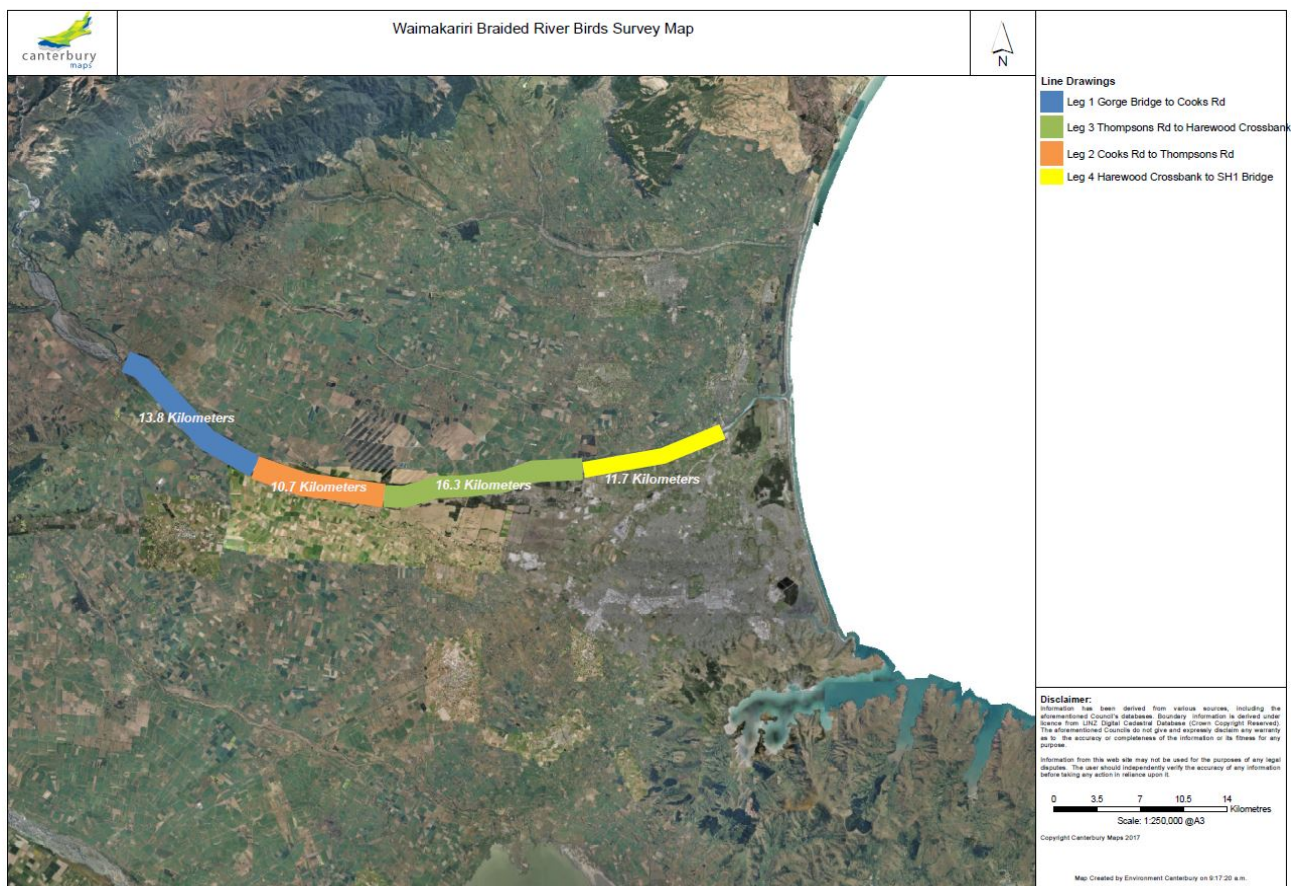
This is the ninth year of surveying of what is referred to as the Mid-Waimakariri River survey. Past surveys have occurred in 1980, 1999, 2001, 2006, 2007, 2008, 2009 & 2017. This survey incorporates four sections from the Gorge Bridge down to the South Highway 1 Bridge (Figure 1). The upper river survey is undertaken separately, covering ground between the Bealey Road Bridge and the Esk River confluence at the top of the Waimakariri Gorge (reports available on the BRaid website). Birds below the South Highway 1 Bridge are surveyed by the Christchurch City Council.

The 2018 survey ran over four days from October 30<sup>th</sup> to November 2<sup>nd</sup>. Twenty-five participants took part in the survey, covering a total of just over 50KM of riverbed. The survey began with an ominous forecast which unfortunately did deliver on its predicted rain and wind. After 5km the valiant participants became wet and cold, and jetboating conditions tenuous. The correct call was made to retreat for the day. Ultimately this meant 10km of the river did not get surveyed as the high flows which followed Day 4 made returning to survey this stretch unwarranted. The high flows would have caused most birds to move off the river, eventually resettling in different locations (see Figure 2). The remaining three survey days were largely fine, though the odd shower and southerly change reiterated the highly changeable nature of the braided river environment which the river nesting birds must contend with during their spring breeding season.

Unfortunately, most of the observed nesting birds would have lost eggs and chicks shortly following the survey after heavy rains in the catchment headwaters resulted two high flow / flood events. Given these high flows occurred early in the nesting season, the birds were expected to re-nest.

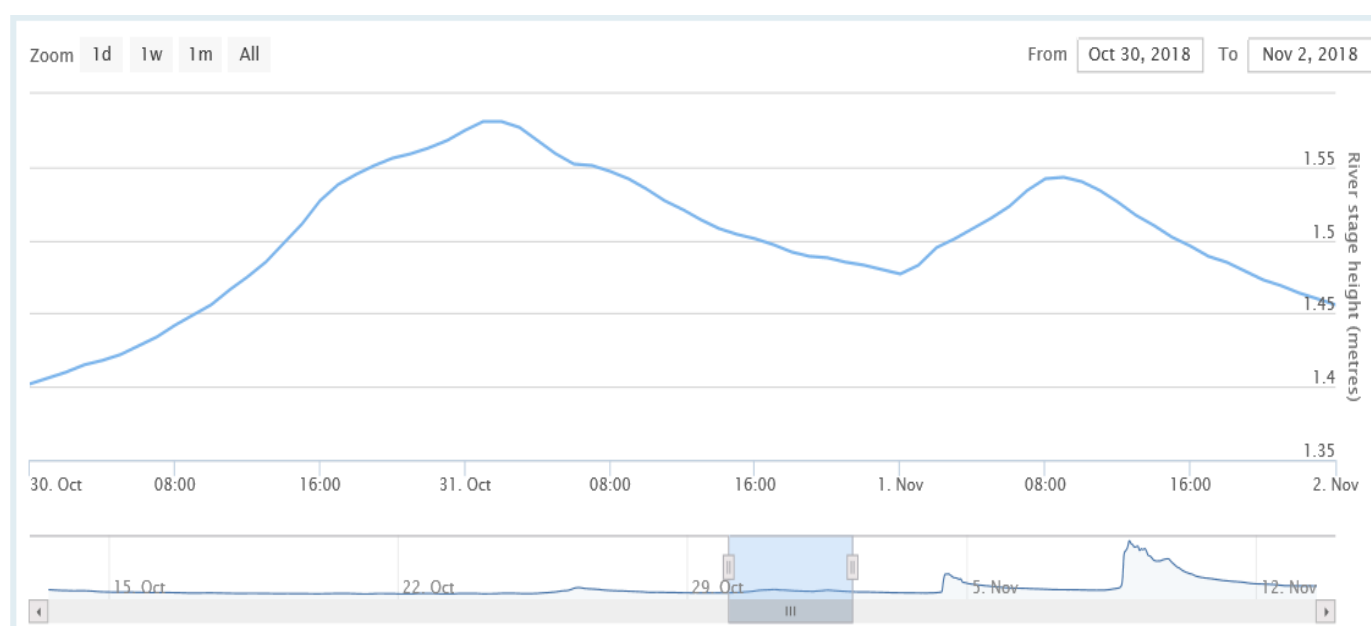
Survey data is shared with the local braided river bird advocacy group BRaid (<http://braid.org.nz/>) and the Department of Conservation, who collates all braided river bird count datasets. These datasets provide important information on the use of the river by the bird species, informing river management decisions, use and agency resourcing of conservation activities.

For the next month photographs shared by participants from the 2018 survey may be viewed (and added to) [here](#).



Day	Start Point	End Point	Distance to survey (as the crow flies)
Day 1	Gorge bridge	Cooks Road	15.2KM
Day 2	Cooks Road	Thompsons Road	11.4KM
Day 3	Thompsons Road	Herewood Crossbank	14.8KM
Day 4	Herewood Crossbank	SH1 Bridge	11.6KM

**Figure 1:** Map showing the four main sections of the river covered by the survey. In 2018 these sections were broken down into 1km units to allow for more accurate spatial reporting of the bird counts.



**Figure 2:** River flow data recorded at Waimakariri Gorge during the survey (main graph area) with the longer pre and post-survey flow context shown below. The blue highlighted section shows the survey period (Oct 30<sup>th</sup> – 2<sup>nd</sup> Nov).



## Key observations from 2018

### General observations

Total bird numbers were generally higher than the pre-2018 survey average. Notably numbers of Black-fronted Tern, Black-billed gull, Wrybill, Pied Stilt and White-fronted Tern were high (Figure 3).

### Species specific observations<sup>1</sup>

See Table 1, 2 & Figure 4 for recorded yearly counts. Table 3 provides counts by the 1km units adopted during the 2018 survey.

*Ngutuparore – Wrybill - Anarhynchus frontalis* (Nationally Vulnerable; Population estimate: 5,000- 5,500)

A record number of Wrybill (n=252) were counted within the four sections this year; the highest count recorded during this survey to date (pre-2018 average = 82). Numerous KM units had more than ten Wrybill recorded, with the greatest density occurring within Section 3.

*Tūturiwhatu - Banded Dotterel - Charadrius bicinctus* (Nationally Vulnerable; Population estimate: 50,000)

A total of 494 Banded Dotterel were counted. This is slightly higher than last year's count of 439 and would have been higher had the 10km missed within Section 1 been surveyed. Dotterel were observed in all 1km units surveyed, with highest numbers occurring within Section 3 including a count of 27 individuals within KM unit 40.

*Tarapirohe - Black-fronted Terns - Chlidonias albobriatus* (Nationally Endangered)

A record 763 Tarapirohe were counted this year compared to 312 last year and a pre-2018 average count of 299 gulls. The two largest colonies were located within Section 3 with count estimates of 200 and 100 individuals.

*Tarāpuka – Black-billed Gulls - Larus bulleri* (Nationally Critical)

Almost 3,000 Tarāpuka gulls were counted on the river this year, with a colony of approximately 2,000 birds recorded within Section 4 (NZTM 1564550, 5190960). This is the largest total count of this species during this survey thus far.

*Karoro – Southern Black-backed Gulls - Larus dominicanus* (Not Threatened)

Wildlife International Ltd (WMIL) have been surveying the SBBG and consequently their surveyors did not spend too much time trying to get accurate counts of this species. The 2018 WMIL report (available [here](#)) reported 4,071 pairs of SBBG on the lower Waimakariri this year (survey area includes riverbed above and below the sections reported on here). The authors note that while the spread of colonies this year was similar to the 2016 and 2017 surveys, there were a greater number of small colonies and that this may be in response to ongoing gull control operations causing the gulls to disperse more widely.

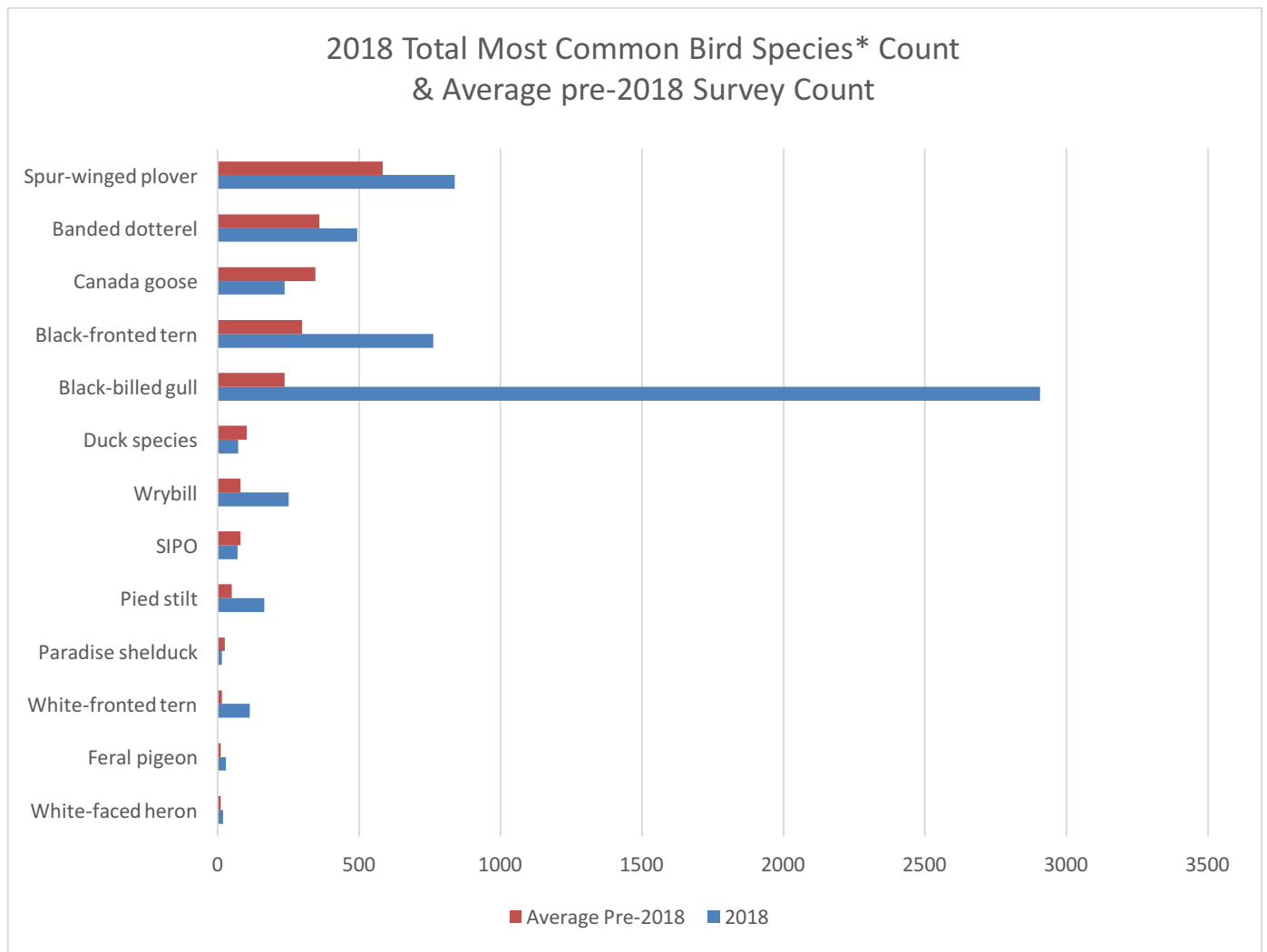
*White-winged black tern - Chlidonias leucopterus* (Native, Northern Hemisphere Migrant)

Below the start of Section 3 at Thompsons Road six [White-winged Black Terns](#) were (excitedly) recorded. It is estimated that less than 20 of these birds visit New Zealand annually and the observation of this bird in its breeding plumage makes this possibly the first such record of the species breeding on the Waimakariri river<sup>2</sup>.

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<sup>1</sup> Population and Threat Status is from NZ Birds Online: <http://nzbirdsonline.org.nz/>

<sup>2</sup> "In the northern hemisphere, white-winged black terns breed colonially in marshes with nests on floating or shore vegetation. The four New Zealand breeding records are from the lower Rakaia River (1917, 3 chicks fledged), Opihi River, South Canterbury (December-February 1973-74), upper Acheron River, Marlborough (December 2012), and near Twizel (January 2015). In 1973-74, a solitary pair bred on the edge of a small black-fronted tern colony at a lagoon front at the mouth of a shingle riverbed. The first nest failed and a second nest produced a chick which appeared not to have fledged. The 2012 and 2015 breeding records were also of single pairs associated with black-fronted tern colonies, with both nests failing due to predation." - [NZBirdsOnline](#)



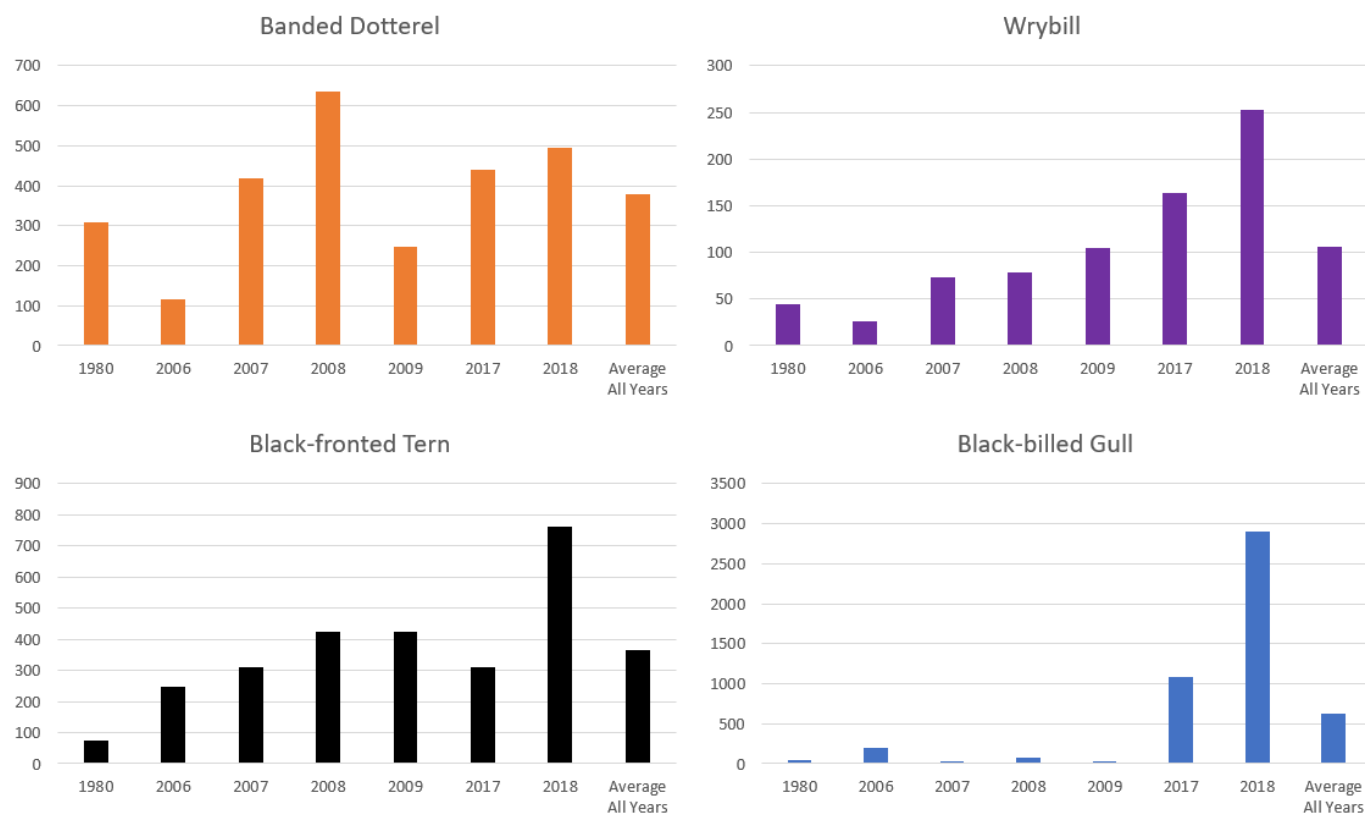
**Figure 3:** Total 2018 adult bird counts of the 12 most abundant species on the Waimakariri river compared to the average survey count of previous surveys (1980, 2006, 07, 08, 09, 17 & 18). \*Excluding Southern Black-backed gull.

**Table 1:** Total adult bird counts of species 1980, 2006, 07, 08, 09, 17 & 18. Species are ordered from the highest to lowest count average across all years. Species ordered by average count across all years (inc. 2018), with the pre-2018 average count shown as a comparison for 2018 counts. Note that surveys undertaken in 1980 & 2006 did not cover Section 4. See Table 2 for a comparison across years for counts across Sections 1-3.

Species	1980	2006	2007	2008	2009	2017	2018	Average Pre-2018
Southern black-backed gull	NC	4019	4801	8763	7723	N/C*	N/C*	6327
Spur-winged plover	52	22	343	1221	115	1754	839	585
Black-billed gull	42	201	18	70	9	1085	2907	238
Banded dotterel	309	116	419	634	246	439	494	361
Black-fronted tern	74	247	312	423	424	312	763	299
Canada goose	170	13	537	497	549	311	237	346
Wrybill	45	26	73	78	105	164	252	82
Duck species	111	157	85	122	106	44	73	104
SIPO	166	27	48	99	45	105	70	82
Pied stilt	58	0	26	65	106	42	166	50
White-fronted tern	0	0	28	23	0	37	113	15
Paradise shelduck	8	0	19	49	45	32	15	26
Feral pigeon	0	7	0	0	0	61	30	11
White-faced heron	12	0	11	14	3	26	19	11
Welcome swallow	0	10	0	4	13	29	0	9
Black shag	8	17	4	2	4	3	1	6
Harrier	0	2	1	1	1	21	7	4
Pipit	0	9	0	5	2	11	1	5
Little shag	0	0	0	12	1	2	0	3
Caspian Tern	4	0	0	1	0	2	3	1
pied shag	0	0	7	0	0	1	1	1
White-winged black tern	0	0	0	0	0	0	6	0
Kingfisher	0	1	0	1	0	1	1	1
Black-fronted dotterel	0	0	0	1	0	0	1	0
Common tern	0	0	0	0	0	0	0	0
Red-billed gull	0	0	0	0	0	0	0	0
Turnstones	0	0	0	0	0	0	0	0

\* Willis & Bell (2018) reported 4,071 pairs of SBBG on the lower Waimakarriri this year (survey area includes riverbed above and below the sections reported on here). In 2016 the number reported was 5,015 pairs and in 2017 3,031 pairs. The 2018 report may be viewed [here](#).

**Figure 4:** Bird species counts over survey years 1980, 2006, 2007, 2008, 2009 and 2017 & 18 on the Waimakariri River. Average count shown includes all years. Note that surveys during 1980 and 2006 did not include Section 4 and 10km of Section 1 during 2018 was not surveyed due to poor weather. See Table 2 below for a comparison of all years for Sections 1-3.



**Table 2:** Total bird counts from Section 1-3 (Gorge to Harewood Crossbank).

<b>Species</b>	<b>1980</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2009</b>	<b>2017</b>	<b>2018</b>
Black-fronted tern	74	247	312	283	424	444	198	602
Caspian Tern	4	0	0	0	0	0	2	3
White-fronted tern	0	0	28	8	0	200	34	53
Common tern	0	0	0	0	0	0	0	0
White-winged black tern	0	0	0	0	0	0	0	6
Black-billed gull	42	201	18	41	9	1509	514	886
Red-billed gull	0	0	0	0	0	0	0	0
Banded dotterel	309	116	419	505	246	246	373	388
Black-fronted dotterel	0	0	0	1	0	0	0	1
Wrybill	45	26	73	61	105	105	128	214
Turnstones	0	0	0	0	0	0	0	0
Southern black-backed gull	NC	4019	4801	6469	7723	7723	N/C	N/C
SIPO	166	27	48	85	45	45	96	56
Pied stilt	58	0	26	45	106	106	30	113
Spur-winged plover	52	22	343	1083	115	115	1620	547
Black shag	8	17	4	2	4	4	3	0
Little shag	0	0	0	1	1	1	2	0
pieb shag	0	0	7	0	0	0	0	0
Paradise shelduck	8	0	19	31	45	45	28	12
Black Swan	0	0	0	0	106	106	0	0
Grey duck	0	0	0	0	549	549	0	0
Mallard	0	0	0	0	0	0	0	0
NZ shoveler	0	0	0	0	13	13	0	0
Duck species	111	157	85	111	106	106	37	60
Canada goose	170	13	537	426	549	549	301	221
Kingfisher	0	1	0	1	0	0	1	1
Welcome swallow	0	10	0	4	13	13	15	0
White-faced heron	12	0	11	10	3	3	24	12
Feral pigeon	0	7	0	0	0	0	46	30
Pipit	0	9	0	5	2	2	11	0
Harrier	0	2	1	1	1	1	21	7



**Table 3:** Adult bird counts by 1km units during the 2018 Waimakariri Mid River Survey. (N/S = Not surveyed due to poor weather conditions forcing surveyors off the river).

KM UNIT	Wrybill	Banded Dotterel	Black-fronted Tern	Black-billed gull	Southern black-backed gull	SIPO	Pied stilt	White-fronted tern	White-faced heron	Black shag	Pied shag	Black-fronted dotterel	Caspian Tern	White-winged black tern
1	0	6	0	0	3	2	0	0	0	0	0	0	0	0
2	1	10	9	1	1	0	0	0	0	0	0	0	0	0
3	14	18	6	0	16	0	3	0	0	0	0	0	0	0
4	10	13	8	2	0	0	0	0	0	0	0	0	0	0
5	8	16	0	0	1	0	0	0	0	0	0	0	0	0
6	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
7	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
8	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
9	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
10	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
11	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
12	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
13	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
14	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
15	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
16	1	5	2	0	34	0	0	0	0	0	0	0	0	0
17	2	6	0	0	630	2	7	0	0	0	0	0	0	0
18	8	24	7	0	4	0	9	0	0	0	0	0	3	0
19	14	20	58	0	2	1	9	0	0	0	0	0	0	0
20	4	5	3	0	0	2	0	0	0	0	0	0	0	0
21	7	15	40	0	705	3	0	0	0	0	0	0	0	0
22	3	10	0	0	200	2	1	0	0	0	0	0	0	0
23	0	14	2	75	49	2	3	0	0	0	0	0	0	0
24	4	13	4	550	276	1	12	0	0	0	0	0	0	0
25	7	7	5	0	2	2	5	2	0	0	0	0	0	0
26	8	18	14	0	0	0	0	0	0	0	0	0	0	0
27	10	13	3	3	10	0	2	0	0	0	0	0	0	0
28	4	9	0	0	0	2	1	0	0	0	0	0	0	0

Table 3 continued.

KM UNIT	Wrybill	Banded Dotterel	Black-fronted Tern	Black-billed gull	Southern black-backed gull	SIPO	Pied stilt	White-fronted tern	White-faced heron	Black shag	Pied shag	Black-fronted dotterel	Caspian Tern	White-winged black tern
29	7	1	1	0	6	0	0	0	0	0	0	0	0	0
30	10	4	2	0	103	0	0	0	0	0	0	0	0	2
31	11	26	3	52	0	2	0	2	0	0	0	0	0	0
32	13	14	2	2	0	0	0	0	0	0	0	0	0	0
33	6	2	2	0	5	5	0	0	0	0	0	0	0	0
34	2	4	2	0	400	0	1	0	0	0	0	0	0	0
35	9	9	5	0	2000	7	0	1	0	0	0	0	0	0
36	7	7	2	0	0	4	6	0	0	0	0	0	0	0
37	2	22	242	200	2	6	19	3	8	0	0	0	0	2
38	11	21	102	1	0	4	10	41	1	0	0	0	0	0
39	15	21	40	0	2	5	8	0	1	0	0	1	0	1
40	11	27	23	0	0	2	9	3	2	0	0	0	0	1
41	5	8	15	0	1	2	8	1	0	0	0	0	0	0
42	5	13	5	18	37	0	7	0	0	0	0	0	0	0
43	4	18	7	0	155	1	7	0	2	0	0	0	0	0
44	9	11	30	0	0	2	13	0	0	0	0	0	0	0
45	4	5	11	1	20	4	6	0	4	0	0	0	0	0
46	1	9	84	2000	10	0	5	60	0	0	0	0	0	0
47	3	10	8	0	0	2	4	0	1	0	0	0	0	0
48	1	6	1	0	0	3	2	0	0	0	0	0	0	0
49	6	7	9	0	0	0	0	0	0	0	0	0	0	0
50	3	9	6	0	2	1	6	0	0	0	0	0	0	0
51	2	9	0	2	0	1	3	0	0	1	0	0	0	0
52	0	7	0	0	0	0	0	0	0	0	1	0	0	0
53	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	252	494	763	2907	4676	70	166	113	19	1	1	1	3	6