

# Lower Waimakariri River

## Braided River Bird Management

### 2020-2021 Season

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#### Introduction

The 2020-2021 season was the eleventh consecutive season that Environment Canterbury has taken steps to promote the breeding success of braided river birds in the lower Waimakariri River. The lower Waimakariri River, from the Gorge to the river mouth, roughly corresponds with the Waimakariri River Regional Park, with Environment Canterbury owning most of the land in that space and being involved as relevant landowners.

The lower Waimakariri is considered to comprise significant habitat for indigenous fauna, particularly for avifauna including black-billed gulls, wrybill, dotterel, and black and white fronted terns. As such, the on-going protection and enhancement of this space is important to promote the success of the species living within it.

Historically, Environment Canterbury's management and monitoring of braided river birds in this space has focused on black-billed gulls and to a lesser extent, black-fronted terns. The lower Waimakariri River is a large space to manage and focusing on the colonial nesting species has allowed for targeted management, with some flow on benefits for those birds living around the periphery of colonies.

#### 2020-2021 Management Strategies and Outcomes

Overall, there was slightly less resourcing available for bird management this season than in previous years, in the form of staff hours. Despite this we still managed to undertake our usual level of monitoring through Keystone Ecology, who also undertook some targeted predator trapping around monitored black-bill and black fronted tern colonies. The reduction in staff hours was mainly reflected in less Southern Black Backed Gull (SBBG) control than in previous years as this requires quite a lot of staff support, although we anticipate this picking up again in future years. However, a notable success from this season has been the development of the Waimakariri Braided River Bird Management Plan (the Plan).

Through the Plan we sought an evaluation of our current management strategies and guidance for future management, monitoring and prioritization of funding. The Plan also clearly outlines the importance of the Waimakariri River as avifauna habitat based on several scientific indicators. While there wasn't time to implement the majority of recommendations in this plan for this season, the Plan should guide future decision making and help to form longer term operational management strategies for managing the lower Waimakariri as successful bird breeding habitat.

The main physical involvement with bird breeding this season was through monitoring known black-billed gull colonies and some black-fronted tern nests, as we have done in previous years. We engaged Keystone Ecology to undertake monitoring throughout the lower Waimakariri, collect data and report back to the contract manager when colonies of these target species were found. Keystone then dedicated the majority of their time to monitoring these colonies, and undertook some targeted predator trapping around the periphery.

Most mammalian predator trapping undertaken to date to protect breeding colonies has been reactive and temporary, primarily targeted around colonies once they are found (although there are some permanent traplines in the very lower reaches of the river). Traps are placed strategically around colonies at points where a predator is likely to travel to be accessing a bird colony. Landscape scale control would be expensive and time consuming to set up and hasn't been feasible to undertake to date on a river wide level. The current targeted trapping has also meant traps can be removed from the riverbed if a large flow event is predicated.

The Plan makes recommendations to gradually increase the level of permanent trapping in the river berms, to supplement temporary trapping around colonies and make meaningful reductions in mammalian predator numbers in the riverbed. The Plan sets guidelines for implementation including spacings and layout, and recommendations for on-going monitoring of catch and target species. We intend to begin implementing this recommendation as soon as possible, including looking into locations where further cat trapping may be possible (ie away from residential or areas of high-risk to non-target species).

The Plan also recommends including wrybill and some banded dotterel monitoring where possible in future seasons, given that the Waimakariri River is nationally important breeding habitat for these small wading birds. River-wide monitoring of these species would be difficult as they nest in individual pairs throughout the riverbed, so the Plan recommends monitoring a sample of wrybill and dotterel nests near to gull and tern colonies we are already watching. These monitored nests would give a representative indication of the nest fate of these species.

Several groups of black-billed gulls were reported in the riverbed throughout the season, with an early group observed upstream of Diversion Road on the north bank of the river, and then a group settling and beginning to nest near Miners Bank Rd on the south side. The Diversion Rd group hung around this area feeding throughout August, September and October, but never settled into a nesting colony and later disbanded. The Miners Bank Rd group settled and began to nest, but also disbanded with the cause believed to be public disturbance. Several dead adult black-billed gulls were found near this site after the colony had left. Birds were handed over to DOC but the cause of death is unconfirmed at time of writing this report.

The main black-billed gull colony monitored this season was out from the end of Courtenay Road (Image 1). These birds were monitored regularly with their breeding data recorded to give an indication of their success over the season, shown in Table 1 below. Keystone also undertook some targeted mammalian predator trapping around this colony and recommended the placement of concrete blocks and signage at main public access points. The blocks were pushed to the side of the track on more than one occasion, but are believed to have deterred the majority of public traffic approaching this area.

Freshes were seen regularly in the river this season but nothing was of real issue until late in the season (see Image 2). The Courtenay Rd colony was breeding relatively late and likely consisted of exhausted birds that had left the earlier Diversion Rd and Miners Bank Rd sites. This final flood was a tipping point for a portion of the colony, with several nests and around 60 chicks lost in the last week before fledging.

In addition to the Courtenay Road colony, it is worth noting that Keystone were also aware of a black-bill colony that had established in the middle of the river near McLeans Island upstream of Haul Road, but monitoring was very limited due to location (access issues). It was deemed that this colony was in a good location from a predator separation point of view and that too much funding would be used attempting to access the colony for regular monitoring. It eventuated that this colony was washed out by the last big flood of the season and no chicks are known to have fledged. These birds are not recorded in the final data.

11 pairs of Black-fronted terns were also being monitored around the Courtenay Rd site, as a representative sample of a wider colony. Tern colonies have generally proved difficult to accurately monitor in the past due to being widely dispersed with chicks that become highly mobile. Representative nests have been gauged the most efficient way to provide data on breeding outcomes, with the Plan recommending this continue in future. Of the 11 nests being monitored, only one is believed to have successfully fledged a chick. The rest were likely disturbed (possibly by SBBG) or washed away by flooding, as the terns were on lower ground than the nearby black-billed gull colony. A group of black fronted terns were also being monitored earlier in the season near the Miners Bank Rd site, but these nests all failed quite quickly due to flooding. As representative samples, this would indicate a very poor season for the terns overall.

Southern black backed gulls (SBBG) are found throughout the lower Waimakariri and are now considered to be unnaturally 'super-abundant' due to increased food supply from human-related land uses. We are increasingly recognizing the pressure the high number of SBBG is placing on other breeding native birds by taking up prime nesting habitat throughout the riverbed and in some instances, directly preying and harassing other braided river bird species. As such, controlling southern black backed gull numbers is one of the few current river wide managements undertaken, and the Plan makes recommendations to continue and expand upon this work.

In November 2020 Christchurch International Airport (CIAL) undertook an aerial survey of the Waimakariri River and surrounding land to count SBBG numbers present. This is the fifth consecutive year we have undertaken an aerial count, at roughly the same time of year, to build up a long-term picture of SBBG population trends in the river. Numbers counted this year seem to indicate the population has been somewhat stable over the past three years, but it is worth noting that previous counts have been undertaken by an external contractor (Wildlife Management International) while this count was done inhouse by CIAL and was also completed slightly later in the year than previous counts, so there may be some discrepancies in the data. We intend to continue these counts annually to build up data and will attempt to use independent contractors to supply the count data.

There was generally less SBBG control undertaken this season than in previous years due to resourcing. However Keystone Ecology did undertake some small-scale physical disruption of SBBG nests within approximately a 2km radius of the Courtenay Road black-billed gull colony, through egg and nest smashing. This disturbance was intended to create a larger buffer zone around the black-billed gulls and push the SBBG further away, which was somewhat successful. The SBBG nests were quite sparse in this area and somewhere between 30 to 50 nests were disturbed to increase this buffer.

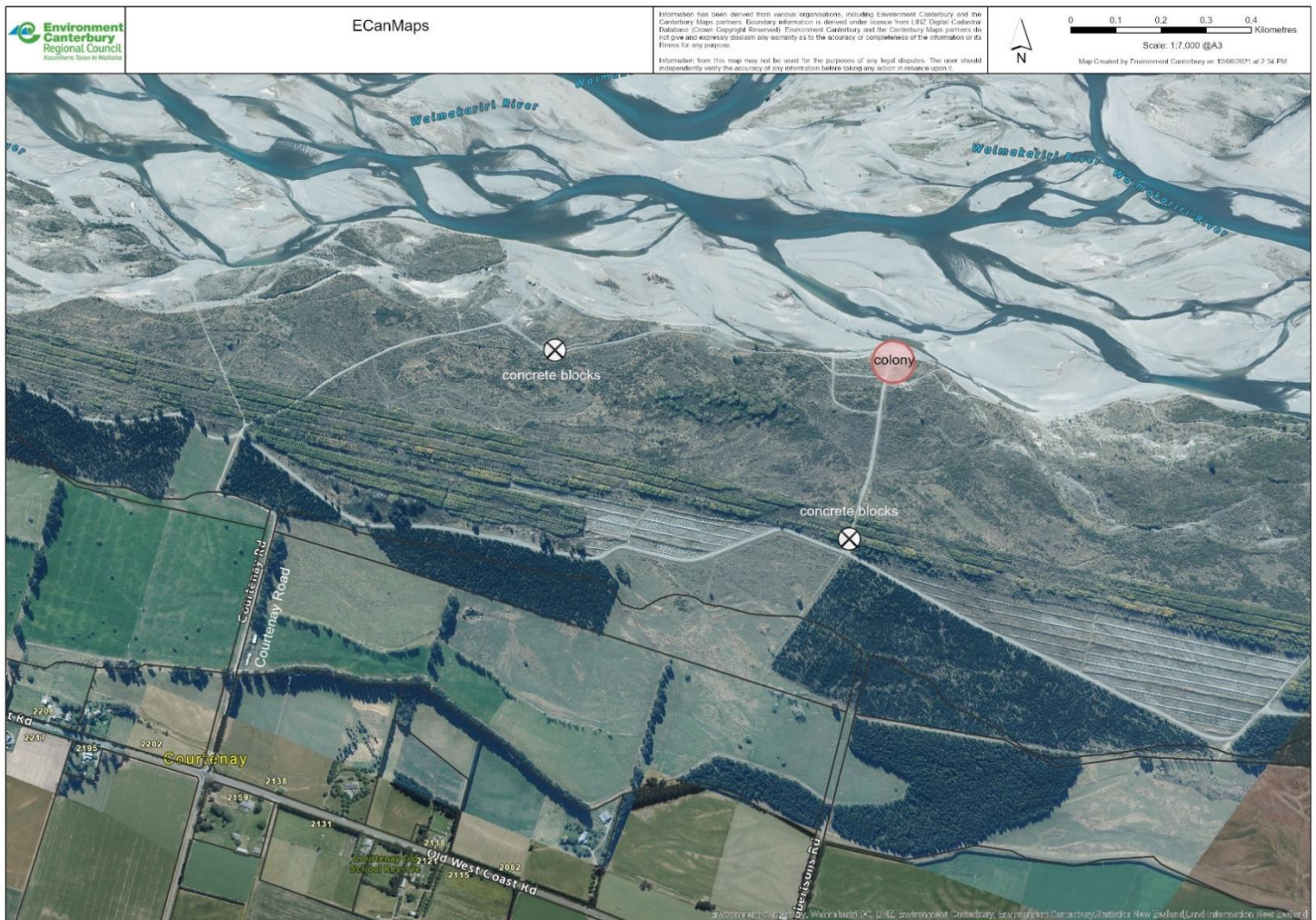
Despite the nest disturbance and increasing the distance between SBBG and the black-bill colony, Keystone still made observations of individual SBBG entering and disturbing the black-bill colony. Particularly after the last big flood of the season, individual SBBG were observed taking black-bill chicks. An interesting observation from inspecting the black-bill colony once the birds had fledged and left the site, was the discovery of approximately 60 dead black-billed gull chicks. The reason for these deaths is unknown but suspected to possibly be caused by abandonment from exhausted parents or perhaps disturbance. However it is worth noting that, even with SBBG noted nearby and even seen entering the colony more than once, these chicks had not been eaten or scavenged.

The black-billed gull colony at Courtenay Rd ended up being the main colony for the season and had fair success, producing an estimated 282 chicks from 418 pairs of breeding adults, for a success rate 0.68 (ie 0.68 chicks produced per pair of breeding adults). An additional 136 chicks would have brought the success rate up to one chick per breeding pair, but are largely accounted for in those washed away in the last flood of the season and the 60 dead chicks found on site during the final nest count. However, a final nest count within the site found 605 nests, which could indicate there were quite a few adult pairs that abandoned the site or did not breed for unknown reasons.

While the lower Waimakariri did successfully produce some black-billed gull chicks this season, there is still ample scope to improve monitoring data and management actions to increase breeding success. Future actions should be guided by the recommendations of the recently completed Waimakariri Braided River Bird Management Plan, with forethought given to medium and long-term planning as well as immediate requirements. A longer-term plan is also required for the management of Southern Black Back Gull numbers, which we hope to have in place before next season.

## Season Summary – Data and Images

Image 1: Courtenay Road black-billed gull colony, with blocked vehicle access points



**Table 1: Courtenay Road Black-billed Gull Colony Counts and Observations**

Date	Total Gulls Counted	Gulls Incubating (pairs)	Chicks Present	Fledglings Present	Nest Count	Comments/observations
24.11.20	600	300	0	0	-	Gulls put up by a harrier during observations.
27.11.20	469	-	0	0	-	Count difficult due to wind. Gulls and nearby terns put up by a harrier during observations.
1.12.20	626	394	0	0	-	Gulls and nearby terns put up by a harrier during observations. Nearby terns also observed dive bombing the gulls.
10.12.20	-	373	0	0	-	
13.12.20	-	351	0	0	-	
15.12.20	612	-	0	0	-	
18.12.20	634	334	6	0	-	
22.12.20	-	417	187	0	-	
23.12.20	566	216	133	0	-	
30.12.20	-	248	394	0	-	
4.1.21	-	160	326	0	-	
6.1.21	-	301	43	282	-	There was a significant drop in the number of chicks counted on this occasion, but this is believed to be due to a less experienced counter.
11.1.21	-	149	115	190	-	A SBBG was observed taking a black-bill chick from within the colony. A harrier was also observed disturbing the black-bills.
21.1.21	-	9	76	202	-	Black-bills were put up by a harrier during observations.
26.1.21	-	0	51	244	-	Black-bills were put up by a harrier during observations.
5.2.21	-	-	-	-	605	Final nest count. At least 60 dead chicks within colony site. 10 poisoned adult SBBG found nearby – these are not from any poison controls within the Waimakariri so presumed from surrounding land or waterways?

**Table 2: Comparison of Black-billed Gull fledging and nesting success rates across monitored nesting sites over previous seasons:**

Season	Recorded adult breeding pairs	Number of known chicks fledged	Nesting success rate
2020-2021	417	282	0.68
2019-2020	600	20	0.03
2018-2019	792	291	0.37
2017-2018	1029	520	0.51
2016-2017	1120	738	0.66
2015-2016	804	339	0.42
2014-2015	1143	1550	1.1
2013-2014	243	121	0.5

**Table 3: Gulls counted in the Waimakariri riverbed between the gorge and the river mouth:**

Date of Heli Survey	Number Counted	Comments
November 2020	6,775 (3,375 pairs)	This count was slightly later in the year and undertaken in-house by CIAL. SBBG colonies tended to be larger and more densely packed in the upper half of the survey area, from approximately Intake Rd west to the Gorge.
31 <sup>st</sup> October 2019	3,810 pairs	Colonies were of smaller average size than in previous years. Birds were very sparse below Thompsons Road, but present in high numbers and dense colonies above this point.
2 <sup>nd</sup> November 2018	4,017 pairs	A large colony of over 6000 black-billed colonies was observed during the flight, although this colony did not successfully nest.
1 <sup>st</sup> November 2017	3,031 pairs	Less birds counted this year was put down to the flight being flown in the opposite direction to the other years, with sunstrike causing sub-optimal viewing conditions (all subsequent flights will be flown east to west, before lunch time).
October 2016	5,015 pairs	The first annual survey conducted by Wildlife Management International Limited. Colonies were present throughout the river and had the highest average colony size of all surveys undertaken to date.

**Image 2: Water levels in the Waimakariri River compared over the previous 3 bird breeding seasons (ie September to March)**

